

DISTRICT TECHNOLOGY RENOVATIONS

Technology Request for Bid



SECTION 00 01 10
TABLE OF CONTENTS

DIVISION 00 - BIDDING AND CONTRACT REQUIREMENTS

<u>Section</u>	<u>Description</u>
00 01 01	Cover Page
00 01 10	Table of Contents
00 11 16	Invitation to Bid
00 40 00	Bid Forms
00 21 13	Instructions to Bidders
00 65 00	Contract Close-out

DIVISION 26 – ELECTRICAL

<u>Section</u>	<u>Description</u>
26 33 53	Uninterruptable Power Supplies

DIVISION 27 - TECHNOLOGY SYSTEMS

<u>Section</u>	<u>Description</u>
27 51 16	Public Address & Program System

DIVISION 28 – ELECTRONIC SAFETY & SECURITY

<u>Section</u>	<u>Description</u>
28 20 00	Video Monitoring Equipment

APPENDICES

<u>Section</u>	<u>Description</u>
A	UPS Schedule
B	UPS Building Breakdown
C	Paging Diagrams
D	Video Monitoring Schedule
E	Video Monitoring Diagrams

END OF SECTION

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 cabling, UPS units, video monitoring and public address 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. Alaiedon Elementary School
1723 Okemos Road
Mason, Michigan 48854
 - 2. James C. Harvey Education Center
400 S. Cedar Street
Mason, Michigan 48854
 - 3. Mason Middle School
235 Temple Street
Mason, Michigan 48854
 - 4. Mason High School
235 Temple Street
Mason, Michigan 48854
 - 5. Mason Public Schools Administration
201 W. Ash Street Suite 2A
Mason, Michigan 48854
 - 6. North Aurelius Elementary
115 North Aurelius Road
Mason, Michigan 48854

7. Steele Elementary School
531 Steele Street
Mason, Michigan 48854

8. Transportation Building
801 Kim Drive
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: January 12, 2024
2. Pre-Bid Meeting: January 24, 2024 at 10:00am
3. Intent to Bids Due: January 25, 2024 at 5:00pm
4. Public Bids Due: February 12, 2024 at 10:00am

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 24, 2024 at 10:00am

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: February 12, 2024 at 10:00am
- 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 UNIVERSAL SERVICE FUND (USF) CONDITIONS

- A. IDENTIFICATION NUMBER – the service provider's USF Service Provider Identification Number (SPIN) must be included in the Bid. Direct all questions regarding the USF requirements in this document to the Universal Service Administrative Company (USAC), Schools and Libraries Division (SLD) at (888) 203-8100.
- B. FUNDING REQUESTS (FY24 E-rate) - The specified products and/or services are to be provided for FY24 (July 1, 2024-June 30, 2025) and qualify for universal service discounts under the FY24 universal service support mechanism, E-rate. No invoices will be dated or paid before July 1, 2024.
- C. UNIVERSAL SERVICE DISCOUNTS – The service provider contract may be conditional upon the Owner receiving universal service discounts under the FY24 universal service support mechanism, E-rate. The Owner reserves the unrestricted right to change the contract amount by adding to, and/or reducing the amount of services and/or products in order to meet budget requirements in the event the level of universal service discounts is changed. Any such adjustments to the contract amount will be taken prior to the start of the specific work being adjusted or eliminated on a given building and/or project.
- D. UNIVERSAL SERVICE DISCOUNT IMPLEMENTATION – The Owner reserves the unrestricted right to specify the filing option for the universal service discount for each product and/or service offered within the Bid: Billed Entity Applicant Reimbursement (BEAR) or Service Provider Invoice (SPI).
- E. ELIGIBLE PRODUCTS AND SERVICES – The USF eligible products and/or services identified on the USAC FY24 (2024-2025) Eligible Services List, which is incorporated herein by reference, must be identified separately from any and all "ineligible" products and/or services in the Bid. Bidder shall note eligibility of items on required Schedule of Values form(s).
- F. FUNDING AVAILABILITY – Owner may or may not elect to proceed with project in whole or, or in part based on multiple possible sources of funding. Approval of E-rate funding will not be the sole criteria for Owner approval to proceed with any/all/some implementation activity on or after July 1, 2024.

1.10 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.

1.11 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 25, 2024. 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 26 33 53 -- Uninterruptible Power Supplies
- ☐ Section 27 15 16 -- Public Address System
- ☐ 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

BID FORM

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

BID FROM: _____

PROJECT: DISTRICT TECHNOLOGY RENOVATIONS
TECHNOLOGY BID #3026

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 (Paging) - 5 Year Warranty _____

Voluntary Alternate A _____

Voluntary Alternate B _____

Voluntary Alternate C _____

Voluntary Alternate D _____

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 _____, 2024.

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 **DISTRICT TECHNOLOGY 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/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

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: 26 33 53

[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 15 16

[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 subcontractors 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 subcontractors and suppliers within forty-eight (48) hours after the bid opening.
- C. Names of any principal subcontractors 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 26 33 53
UNINTERRUPTABLE POWER SUPPLIES

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

- A. Work described in this specification section pertains to supply and installation of new uninterruptable power supply (UPS) units for Mason Public Schools.
- B. Contractor shall advise, coordinate and work cooperatively with Owner representatives and/or owner's designee related to any installation or special security provisions.
- C. Contractor shall configure, supply, connect, test, document, train Owner representatives and warrant a fully operational and compliant system, complete and with full functionality as specified herein.
- D. Contractor shall coordinate installation with other contractors, Architect and the Owner as is appropriate.
- E. Contractor shall provide service rates for additional services not specified herein for Owner consideration. Rates shall be provided for the duration of the warranty period. Owner will consider rate structures for additional services outside of the base contract as a factor in determining contract award.

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, unsupportable 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. 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. System Warranty shall commence on date of substantial completion as certified by Architect 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 Architect.

1.03 STORAGE OF MATERIALS

- A. All materials shall be secured when not in use by the Contractor.
- 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 Proposals.
- B. Shop drawings and diagrams shall be submitted by Bidder for approval by Architect with Bid Proposals.
 - 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 Architect.
 - 2. No work constituting final installation shall be commenced until after approval of shop drawings by Architect.
- 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 Proposals.
- 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 Architect. All replacement costs including, but not limited to material and labor, shall be the sole responsibility of the Contractor.

1. The Owner and/or Architect 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.

1.05 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. FCC – All Applicable Rules and Regulations
 3. IEEE
 4. MOSHA Safety Standards
 5. NEC
 6. UL

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 relevant similar 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 Proposal as provided herein. Bid Proposal 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 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 Architect 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 Architect on which version is to be used.
- 2.02 Acceptable Manufactures (in alphabetical order)
 - A. APC
 - B. EATON
 - C. LIEBERT/EMERSON
 - D. Or Equal
- 2.03 Furnish only new, first-class quality materials and equipment.
- 2.04 Administration access shall be protected by unique and secure log on.
- 2.05 In the event of a power failure, complete system shall automatically re-initialize and “become active” to the last configuration in use with no human intervention.
- 2.06 UNINTERRUPTABLE POWER SUPPLIES (UPS) UNITS -TYPE A
 - A. Sixteen (16) Uninterruptable Power Supplies shall be provided, meeting or exceed the following required feature sets, specifications and/or standards:
 - 1. 3000KVA
 - 2. Each unit shall include specific rack mount kit
 - 3. Units shall protect all active components from power surges, sags and/or spikes in the power system.
 - B. Each unit shall attach to Owner’s existing Ethernet network using standard 10/100/1000 port and provide alerting and management tools.

- C. Where individual units cannot be installed in Owner racks, units shall be securely and permanently mounted on walls in communication closets by Contractor. Contractor shall supply all materials and labor for a safe, Secure and permanent wall mounting of UPS unit adjacent to wall mounted communication cabinet or rack.
- D. UPS equipment shall be SNMP manageable and be connected to a dedicated Ethernet port in each wire center (IDF/MDF).
- E. UPS equipment shall be installed and mounted as space, location details, and Owner standards dictate.
- F. Full UPS monitoring and management software shall be included providing, but not limited to, the following features:
 - 1. Battery Condition
 - 2. Power Quality
 - 3. All other features currently a part of the manufacturer's latest commercial release.

2.07 UNINTERRUPTABLE POWER SUPPLIES (UPS) UNITS – TYPE B

- A. Twelve (12) Uninterruptable Power Supplies shall meet or exceed the following required feature sets, specifications and/or standards:
 - 1. 1500KVA
 - 2. Each unit shall include specific rack mount kit
 - 3. Units shall protect all active components from power surges, sags and/or spikes in the power system.
- B. Each unit shall attach to Owner's existing Ethernet network using standard 10/100/1000 port and provide alerting and management tools.
- C. Where individual units cannot be installed in Owner racks, units shall be securely and permanently mounted on walls in communication closets by Contractor. Contractor shall supply all materials and labor for a safe, Secure and permanent wall mounting of UPS unit adjacent to wall mounted communication cabinet or rack.
- D. UPS equipment shall be SNMP manageable and be connected to a dedicated Ethernet port in each wire center (IDF/MDF).
- E. UPS equipment shall be installed and mounted as space, location details, and Owner standards dictate.

- F. Full UPS monitoring and management software shall be included providing, but not limited to, the following features:
 - 1. Battery Condition
 - 2. Power Quality
 - 3. All other features currently a part of the manufacturer's latest commercial release.

2.08 ALLOWANCES

- A. Contractor shall include allowances for contract service reimbursements as required in base bid lump sum amount(s).
 - 1. Allowance shall be made in the amount of \$2,500.00 for power renovations necessary to support new uninterruptable power supply units.
- B. Contract services shall be provided and sourced at Owner's discretion, direction and convenience with full cooperation by Contractor, and paid for from successful bidder's contract in the amount(s) provided for herein.
- C. 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.
- D. No material or labor charges and/or mark-ups or margins will be permitted on allowance expenditures approved by Owner and Designer.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Contractor shall conduct detailed system overview and examination with Architect verifying equipment and material locations as well as mounting and placement requirements prior to commencement of other installation activities.
- B. Contractor shall insure all submittals and shop drawings have been provided to, and approval has been obtained from Architect prior to commencement of any final installation activities.

3.02 INSTALLATION

- A. Installation work shall take place after school hours. 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.

- B. Contractor shall conduct an initial programming meeting with the Owner and designer to review content available and planned, as well as establish schedule for project completion.
- C. 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.
- D. The Contractor shall furnish, set in place, and install all equipment necessary for a fully compliant and operational system as specified herein. Such materials shall include all items necessary for full and final operation of the system. 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. Collect all information necessary to accurately program all system devices to the Owner's intended use and need.
- E. 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.
- F. Worksites include the following:
 - 1. Alaiedon Elementary School
1723 Okemos Road
Mason, Michigan 48854
 - 2. James C. Harvey Education Center
400 S. Cedar Street
Mason, Michigan 48854
 - 3. Mason Middle School
235 Temple Street
Mason, Michigan 48854

4. Mason High School
235 Temple Street
Mason, Michigan 48854
5. Mason Public Schools Administration
201 W. Ash Street Suite 2A
Mason, Michigan 48854
6. North Aurelius Elementary
115 North Aurelius Road
Mason, Michigan 48854
7. Steele Elementary School
531 Steele Street
Mason, Michigan 48854
8. Transportation Building
801 Kim Drive
Mason, Michigan 48854

3.03 DEMOLITION

- A. Contractor shall carefully remove all existing UPS equipment and transport to Owner designated location for inspection. Any equipment not retained shall be properly disposed of by Contractor.
- B. Contractor shall remove and dispose of all UPS mounting brackets, cables and accessories.

3.04 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, 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 Architect 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, Architect will provide a test schedule and coordinate testing date(s) with Owner and Contractor.

3. Should Architect determine the Work is not acceptably configured or not of adequate integrity:
 - a. Architect 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 Architect in writing when ready for re-testing.
 - c. Architect will schedule re-test of the Work.
 - d. Excessive re-testing of Work may result in fees being assessed Contractor.
4. Should Architect and Owner concur the Work is configured properly and system integrity is as required:
 - a. Architect 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.

3.05 DOCUMENTATION

- A. Contractor shall provide Owner as-built drawings and manuals of all equipment installed, warranty and maintenance information and other information the Contractor, Architect 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 Architect.
- 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 installed.
 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 Architect.
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, serial number, physical installation location and software/firmware options.
15. Complete record of all system and administrative passwords for full operation and administration of all system components and operations.

3.06 TRAINING

- A. Contractor shall provide physical on-site training for the Owner designated system administrator(s). Owner shall designate up to two (2) system administrators to be trained. Training shall be a minimum of one (1), one (1) 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. Basic configuration and system administration of the installed system
 2. Basic trouble shooting of the installed system and components including diagnostic and problem resolution actions.
 3. System back-up and restore functions and procedures for all system parameters and configurations.
 4. Review of system alerts, logs and monitoring of configuration parameters including, but not limited to, configuration changes and device status.
 5. System database updates and maintenance.
 6. Review standard system reports

3.07 SCHEDULE, MEETINGS AND PLANS

- A. The 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.
- B. Schedule
 - 1. Post bid Interviews: Week of February 19, 2024
 - 2. Contractor Chosen: Week of March 11, 2024
 - 3. Work Commences: April 1, 2024
 - 4. Substantial Completion of Project: August 1, 2024
 - 5. Project Close-out: September 1, 2024
- 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 51 16
PUBLIC ADDRESS AND PROGRAM SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

- A. Work described in this specification section pertains to replacement of existing analog paging head end devices with new equipment at Alaiedon Elementary School, North Aurelius Elementary and Mason Middle School. Work shall include, but not be limited to public address head end equipment, amplifier(s), cabling, ceiling and/or wall speakers, interface units and all other components and services required for a full and operational system.
- B. Contractor shall propose a system to be installed and connected to the owner's existing infrastructure.
- C. All head-end equipment shall be installed to the Owner's Main Distribution Frame (MDF) or designated IDF.
- D. The Contractor shall design, engineer, configure, supply, connect, test, document, train Owner representatives and warrant a fully operational and compliant system, complete and with full functionality as specified herein.
- E. Contractor shall coordinate their installation with other communication systems, contractors, Designer, and the Owner as is appropriate.

1.02 WARRANTY

- A. Complete installation shall be fully functional and 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.
 - 1. Owner shall be provided full operation of system functions and features during the complete warranty period incurring absolutely no costs during that time.
- B. Manufacturer's warranty shall be provided for all components of the system.
 - 1. Any paperwork 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 paperwork, 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 twenty percent (20%) or more of the system users unable to maintain normal productivity.
 - 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. Bidder shall provide current monthly maintenance/service contract pricing for recommended programs for all equipment following the specified and included period as additional information. This information will be considered by Owner and Designer as part of the bid evaluation process.
- F. System Warranty shall commence on date of substantial completion as certified by Designer and provided for herein. Delivery to work site of materials, connection of circuits, turn-up of system, 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.
- G. MANDATORY ALTERNATE: Contractor shall provide alternate for five (5) year warranty in lieu of the specified and required warranty. Such warranty shall maintain the same requirements for performance, but for five years rather than the specified base bid duration.

1.03 STORAGE OF MATERIALS

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

- B. Shop drawings and diagrams shall be submitted by Bidder for approval by Designer with Bid Proposals.
 - 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 Proposals.
- 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 five (5) 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. 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:

PUBLIC ADDRESS

27 51 16 – 47

1. EIA/TIA Commercial and Administration Standards
2. NEC
3. IEEE 802
4. IETF RFCs
5. FCC Emissions Ratings
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 Voice Communication 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 Public Address 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 Proposal as provided herein.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturer of major components of the included Public Address / Paging system shall be known and leading entity in the relevant communications field, and shall have been designing, manufacturing and installing similar systems for a period of no less than three (3) years.
 1. Acceptable Manufacturers (In alphabetical order):
 - a. CAREHAWK

b. VALCOM

2.02 Supply most current version of all products provided.

- A. Prior and/or old versions of products, unless specifically approved and documented by Designer and/or Owner shall not be acceptable.
- B. 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 PUBLIC ADDRESS AND PROGRAM SYSTEM

- A. A fully compliant public address and program system shall be configured and installed to service Owner's worksite(s) listed herein. Each facility shall be capable of independent administration of all program functions and meet or exceed all functional and performance requirements as established herein.
- B. Administration access to all system functions shall be by both computer via a web browser across the Owner's existing data network and by telephone from the Owner's system provided by others and shall be protected by unique and secure log on.
- C. System administrator shall be capable of complete system back-up and full system restoration from a previously saved configuration.
- D. In the event of a power failure, complete system shall automatically re-initialize and "become active" to the last configuration in use with no human intervention.

E. CENTRAL CONTROLLER

- 1. Strong preference will be given to industry standard servers that provide for a multi-functional SIP interface and control across multiple manufacturers.
- 2. Central Controller shall provide for distribution of balanced audio that is free from distortion, clear of noise and intelligible.
- 3. Central Controller shall be configured and installed for amplification and distribution of audio programming to all areas of the facility. Owner applications may include, but will not be limited to:
 - a. Emergency alerting including possible building evacuation, shelter in place and/or lock-down.
 - 1. Installation shall include the installation and programming installation of programmable buttons in each office respectively. Contractor shall

PUBLIC ADDRESS

include all cabling, programming, raceway and accessories to place programmable button interface in convenient location at each site.

- b. System access from remote locations via either telephone and/or web browser to individual buildings for zone paging and/or alerting.
 - c. System access from remote locations via web browser to allow for program changes (i.e. Regular schedule to Snow day).
4. Central Controller and all attached devices shall be installed and configured to meet or exceed all of the following requirements:
- a. Interface to Voice Communication system (phone system) as primary voice input connection.
 - 1. Specific coded authorization shall be required to authenticate any user attempting to broadcast on the system. Codes shall originate by DTMF from voice terminals and shall be up to four (4) tones (keys) in length.
 - 2. Capable of integrating with existing phone system over SIP protocol. Integration using FXO adapter will be considered but there is a strong Owner preference for native SIP capability.
 - b. Interface to computer data network system over Owner provided Ethernet.
 - 1. Specific password protected authorization shall be required to authenticate any user attempting to broadcast or modify programming on the system.
 - 2. Access shall be by standard web browser (MS Edge, Safari, Chrome, etc.) and shall not require specific application software be loaded onto access devices.
 - c. System shall store pre-recorded schedule for tone generation and interface to Owner's existing time sync (NTP Server) over Ethernet. System shall broadcast school "bells".
 - 1. Unlimited number of schedules must be supported for each building/facility (half day, normal day, exam schedule, etc.)
 - d. System shall store pre-recorded emergency alert messages matching owners existing standard in use at other facilities.
 - 1. Broadcast of up to six (6) alarm tones, pre-recorded messages or emergency voice messages to all or selected areas of the facility.
 - 2. Specific alarm tones shall be given priority over any other broadcast material.

- e. System shall provide four (4) additional contact closures (to be interfaced to by Others), which when activated result in broadcast of predefined alarm tone(s) to predefined zone(s).
 - f. Zones of discreet communication shall be provided. Creating combinations of the provided zones shall be easily modified using a standard web browser. Building zones are as follows:
 - 1. Alaiedon Elementary School – 1 zone
 - 2. North Aurelius Elementary School – 1 zone
 - 3. Mason Middle School – 5 zones (classroom, hallways, exterior, gym, café)
 - g. Suitable speech amplifiers(s) shall drive the speaker lines.
 - 1. Common area zone amplifiers may consist of multiple power amplifiers connected in series.
 - 2. Provided amplifiers shall have internal anti-clipping protection.
 - 3. Contractor shall supply all necessary amplifiers to adequately drive zones as defined above.
 - h. System shall contain one (1) physical external interface in addition to telephone (SIP primary voice interface) for connection to any one of a variety of music sources (including, but not limited to MP3, tuner, etc.) to be broadcast to designated zones or groups of zones. This interface shall be 3.5mm audio jack and located in building central office to provide for building administrator convenient access.
 - i. System shall automatically generate and transmit a pre-announcement attention signal prior to any voice broadcast.
 - j. Feedback elimination precautions or system features shall be employed to suppress any audio coupling between and audio source and nearby speaker.
 - k. All building-based equipment shall be mounted in Owner designated rack in MDF room(s).
 - l. Gain control of alarms and announcements shall be individually configurable to different volume levels.
 - m. The unit shall operate from standard owner supplied 110 VAC power outlets within six feet (6') of required rack mounting in normal ambient climatic conditions for office communication closets.
5. Program System shall provide for, but not be limited to:

PUBLIC ADDRESS

- a. Integrated calendar for storage of various different programs to be scheduled
 1. Normal Day
 2. Half Day
 3. Early Release Day
 4. Exam Day
 5. Delayed Start Day
- b. Six (6) different tones/chimes/bells to signify class start/end/tardy etc.
- c. Password protected unique User ID access to the system by individual building principals and/or secretaries to manage and administer program calendars. Such credentials shall be integrated with the Owner's existing Microsoft Active Directory for common login control across the network.
- d. Separate program databases for each facility that can be manipulated/managed by that facility's specific administrative team.

F. EXISTING CABLING REWORK

1. Contractor shall provide all necessary cabling, labor and accessories to complete the following analog speaker cabling rework:
 - a. Alaiedon Elementary School
 1. Contractor shall extend all existing analog speaker cabling from existing electrical room to IT closet location. Contractor shall include a metallic surface mount box to consolidate existing cabling as necessary for a fully secure and functional system.
 - b. North Aurelius Elementary School
 1. Contractor shall extend all existing analog speaker cabling from existing head end location in office to IT closet location. Contractor shall include a metallic surface mount box to consolidate existing cabling as necessary for a fully secure and functional system.
 - c. Mason Middle School
 1. Contractor shall rework and reconfigure existing intercom system cabling in building MDF location into discreet paging zones as defined above.

G. COMMON INTERIOR SPEAKERS – TILE REPLACEMENT

1. Ten (10) speakers shall be included in project to be installed in locations where speakers are inadequate or not functioning. Contractor shall supply all necessary cabling connect speaker to existing cabling.
2. Acceptable Manufacturer(s)
 - a. ATLASIED
 - b. BOGEN
 - c. QUAM
 - d. VALCOM
 - e. Or Equal.
3. Speakers shall provide balanced intelligible sound that is free of distortion, free from noise and evenly dispersed.
4. Ceiling Grid Mounted 2'x2' high-efficiency speaker.
5. Maximum power – 15 watts @ 8-ohm
6. SPL @ 1W/1M – 94 dB
7. 8" main cone with secondary high-frequency cone
8. Accessible volume control
9. 70V/25V, 4-watt transformer (4,2,1,0.5, 0.25) taps: selected by rotary switch.
10. Seismic attachment points
11. Bright white color.
12. Frequency response – 80 Hz – 20 kHz
13. Speaker baffles shall be installed with hardware matching the color of the baffle. Baffle color shall match finished ceiling color.
14. All baffles shall be flush against the ceiling and enclosures shall be fully supported. All recessed speakers shall include integral back box.
15. All devices, including but not limited to, amplifiers, brackets, baffles, and Control Unit shall be mounted square and plumb and as recommended by the manufacturer and required by Owner and Architect.
16. Each speaker shall be connected to central equipment using approved and appropriate media.

PUBLIC ADDRESS

27 51 16 – 53

17. All speaker cabling shall be installed using manufacturer recommended media and installation practices.
18. Each speaker shall be volume adjustable at installation to accommodate specific acoustical properties of the intended coverage area.

H. WIDE ANGLE EXTERIOR HORNS

1. Acceptable Manufacturer(s)
 - a. ATLASIED
 - b. BOGEN
 - c. QUAM
 - d. VALCOM
 - e. Or Equal.
2. Exterior Speakers shall be provided at exterior common public areas of the facility as identified on provided drawings and as provided for herein.
 - a. Final speaker placement shall be adjusted as needed for appropriate audio intelligibility, volume levels and ceiling obstructions and/or conditions and shall remain the responsibility of the contractor.
3. Horns shall meet or exceed the following requirements:
 - a. Rated for exterior use.
 - b. Dispersion of 120-degrees horizontal and 90-degree vertical
 - c. Continuous power rating of 15 Watts RMS.
 - d. Frequency response of 225Hz – 14 kHz.
 - e. Output rating of 121 dB @ 4'.
 - f. Each speaker shall be connected to central equipment with approved and appropriate media to provide for system wide broadcast and/or zone-specific broadcast.
 - g. All speaker cabling shall be installed using manufacturer recommended media and installation practices.
 - h. Contractor shall include all parts and accessories for a fully functional and securely installed system using manufacturer and industry best practices.

PUBLIC ADDRESS

4. Final placement of exterior horns shall be carefully coordinated with Designer and/or Owner.

I. LED STROBE/VISUAL INDICATORS

1. Strobe devices shall be supplied in the following locations and quantities:
 - a. Alaiedon Elementary School Gym – One (1)
 - b. Alaiedon Elementary School Cafeteria – One (1)
 - c. North Aurelius Elementary School Gym – One (1)
 - d. North Aurelius Elementary School Cafeterior – One (1)
 - e. Mason Middle School – Gym – Two (2)
 - f. Mason Middle School – Café – Two (2)
2. LED Strobe/Visual indicators shall be installed in the locations identified on drawings and as specified herein.
 - a. Gymnasium strobe/visual indicators shall include protective enclosure to prevent breakage.
 - b. System shall be capable of providing a bright and visible indicator when paging system is engaged.
 - c. Indicators shall be blue in color and be securely mounted to ceilings or ceiling structures.
 - d. Indicators shall be installed and integrated into Public Address System for consistent and reliable operation.
 - e. Contractor shall supply all parts, accessories and labor for a fully functional system.
 - f. Devices shall flash 1-3 times at the initiation of a page, and then remain illuminated through the duration of the address. Power for the device is the responsibility of the Contractor.

J. ADMIN PHONE

1. Contractor shall supply admin phone for each system to access paging and program capabilities if VOIP phone system is not functional.

PUBLIC ADDRESS

2. Admin phone shall be installed in office location. Contractor shall supply all necessary cabling and accessories to extend cabling as necessary to connect provided admin phone.
3. Admin phone shall be capable of accessing all paging zones.
4. Contractor shall supply all necessary cabling and accessories to install new Admin phone in building office.

K. PUSH TO TALK MICROPHONE

1. Contractor shall supply a push to talk microphone for each system.
2. Push to talk microphone shall be installed in front office area. Contractor shall supply all necessary cabling and accessories for connection of unit.

L. COMPONENT INTERCONNECTION

1. All wiring not installed in conduit shall be plenum type cable and shall be so identified with continuous marking.
2. No wiring installed shall be visible unless specifically and individually approved by Owner and Designer.
3. Wiring color shall remain the same throughout the system. Colors used for coding shall be as directed by the system manufacturer, Owner and Architect.
4. Wire shall be copper.

M. Owner shall provide adequate PoE+ ports in the designated MDF and IDF locations for the connection of all devices required for system operation. Contractor shall remain responsible for all connection to switches, including, but not limited to patch cables at both the closet and device location. All patch cable colors must be coordinated with Owner to match Owner site standards.

2.05 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 \$5,000.00 for contract services related to Owner directed infrastructure upgrades, installation and configuration.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Contractor shall conduct detailed walk-through examination verifying equipment and material locations as well as mounting and placement requirements prior to commencement of other installation activities.
- B. 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.
- 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 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.
- 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. Collect all information necessary to accurately program all sets and/or system devices to the Owner's intended use and need.
 - 6. Complete end user and system administrator training programs as specified herein.
 - 7. Work shall be performed to meet local codes and industry standards, including, but not limited to:

- a. Adequate gas tube protection for outside plant cable connections.
 - b. Grounding and Bonding.
 - 8. Work includes extending cable bundles, as required, to Owner identified equipment installation locations at all locations.
 - 9. Owner will provide contractor with permanent asset tags for each system component that exceeds \$100.00 in value. Equipment installed in wiring closets will have district asset tags installed in a prominent location. Assets installed in public areas, such as staff desktop devices, will have asset tags installed in discreet but consistent area of each asset.
 - a. Asset number, device/component description, serial number, make, model, part-number, site, room number/name and any other critical asset information shall be recorded for Owner.
 - 10. Contractor shall program all bells, alerts, and schedules into the system to support initial operations. No Owner programming shall be required for successful system cut-over in any building.
 - 11. Contractor shall conduct a full post installation site verification to ensure a fully functional and compliant system.
- E. Worksites include the following:
- 1. Alaiedon Elementary School
1723 Okemos Road
Mason, Michigan 48854
 - 2. Mason Middle School
235 Temple Street
Mason, Michigan 48854
 - 3. North Aurelius Elementary
115 North Aurelius Road
Mason, Michigan 48854
- F. 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.
- G. Following installation and 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.
- H. Contractor shall collect, consolidate and otherwise prepare for shipping or disposal Owner's existing telecommunications system components, including, but not limited to stations, processors, cards, options, and application servers in a manner acceptable to, and consistent with, Owner's intended disposition of the items.

3.03 TESTING

- A. Contractor shall fully test existing paging speakers to verify all speakers are functioning. Any areas not functional shall be reported back to Owner and Designer.
- B. In an effort to ensure a smooth cut-over to the new system Contractor shall submit to a thorough testing process as defined herein prior to cut-over. Testing shall include, but not be limited to the following:
1. 100% of all speakers
 2. Paging and Public Address programming
- C. 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.

D. PROCEDURES

1. Prior to system cut-over, 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.

PUBLIC ADDRESS

- 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 cut-over plan, and upon finding it acceptable issue a memorandum of Testing Completion to Owner and Contractor after which system cut-over 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 (file drawers, folders, dividers, etc.), to contain all as-built drawings, owner's manuals of all equipment installed, warranty and maintenance information and other information the Contractor, Designer and/or Owner deem necessary.
- 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 installed.
 - 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. As built drawings for each building.
14. Complete inventory of installed station hardware and system software. Hardware inventory shall include set type (model number), Ethernet MAC address, serial number, location, software groups.

3.05 TRAINING

- 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 training for the Owner designated system user(s). Owner shall designate up to nine (9) administrators to be trained in each building where a system is installed. Training shall be a minimum of One (1), one (1) hour session in length, repeated in each building where a system is installed, 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. Zone and building public address functions.
 2. Placing intercom calls in the system.
 3. Emergency alerts.
 4. Program manipulation.
- C. Contractor shall provide training for the Owner designated system administrator(s). Owner shall designate up to four (4) administrators to be trained. Training shall be a minimum of One (1), four (4) 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.

PUBLIC ADDRESS

2. System back-up and restore functions and procedures for all system parameters and configurations.
3. Device additions and changes as well as device reconfiguration.
4. Program manipulation.

3.06 SCHEDULE, MEETINGS AND PLANS

- A. The 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.
- B. Schedule
 1. Post bid Interviews: Week of February 19, 2024
 2. Contractor Chosen: Week of March 11, 2024
 3. Work Commences: April 1, 2024
 4. Substantial Completion of Project: August 1, 2024
 5. Project Close-out: September 1, 2024
- 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 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 Alaiedon Elementary School, North Aurelius Elementary School and Harvey Center Early Childhood Center.
- B. 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.
- C. The centralized server recording equipment shall be installed in the Owner's existing district administration building Main Distribution Frame (MDF) and as required.
- D. 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.).
- E. 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.
- F. 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.

1.03 STORAGE OF MATERIALS

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

VIDEO MONITORING SYSTEM

- 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 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

VIDEO MONITORING SYSTEM

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. AXIS COMMUNICATIONS

VIDEO MONITORING SYSTEM

2. HANWA VISION

- 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 LOW VOLTAGE CABLING
- A. Contractor shall supply necessary data cabling for all cameras on provided diagrams.
 - B. Acceptable Manufacturers (In alphabetical order):
 - 1. Belden / Mohawk
 - 2. Berk-Tek
 - 3. Corning/Siecor
 - 4. General Cable
 - 5. Hubbel
 - 6. Panduit
 - 7. Superior Essex
 - C. All station cable shall terminate on modular jacks that meet or exceed:
 - 1. Category 6 compliant
 - 2. 8 position T568B compliant modular female jack.

3. Snap-in, high impact housing
4. Field verify and coordinate insert color to match Owner requirements.
5. Field verify and coordinate plates and/or outlet frame colors and materials to coordinate with electrical devices and Owner requirements.
6. Where station cable is to terminate above finished ceiling or behind a finished wall for cameras, speakers, or other special station devices, modular jack may be surface mounted in appropriate high strength, impact resistant plastic enclosure.
7. Furnish and install smear resistant, mechanically imprinted polyester or similar material labels to identify each port of all patch panels (fiber optic and copper) in compliance with EIA/TIA 606 standards or Owner required scheme. Labels shall be permanently affixed to patch panels.
8. Contractor shall provide above ceiling outlets including, but not limited to:
 - a. UTP station cable(s) terminated on compliant patch panel in nearest IDF and wire device with a single surface mounted biscuit jack.
 - b. Device location shall be as indicated on drawings and above finished ceiling/surface, but accessible for station connection.
 - c. Surface mount device box shall be bright in color and/or contain a permanently attached brightly colored reflective identification label to facilitate visual location of connection point behind finished surfaces.

2.06 CENTRAL VIDEO MONITORING CONTROL SOFTWARE

- A. New camera devices will be physically installed and aimed by Contractor but configured in existing Blue Iris software by Owner. All licensing and configuration of software shall be provided by Owner. Contractor shall work collaboratively with Owner to make devices fully functional.

2.07 CENTRAL VIDEO MONITORING CONTROL SERVER HARDWARE

- A. New camera devices will be added to existing, Owner provided server. Owner shall be responsible for providing and configuring all licensing, server hardware and configuration.

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:

VIDEO MONITORING SYSTEM

1. Interior/Outdoor Single Lens Camera (Type A)

- a. Hanwha Axis PND-A9081RV approved Axis Equal.
- b. Activity/motion detection
- c. 0.05 lux at 50 IRE, F1.6 minimum illumination (Color)
- d. 3840 x 2160 Image Size (8MP Resolution)
- e. H.264 Compression
- f. Motion JPEG Compression
- g. 10/100 Ethernet (RJ-45) connector
- h. IEEE power over Ethernet 802.3at compliance
- i. Internal image memory for motion-based buffering
- j. Operating temperature range from -35 – +120 degrees Fahrenheit.
- k. 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.

2. Interior/Outdoor Multidirectional – Dual Sensor (Type B)

- a. Hanwha – PNM-12082RVD approved Axis Equal.

VIDEO MONITORING SYSTEM

- 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. 6MP 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. 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.
 - 5. Impact resistant with capability to withstand repeated multiple blunt impact forces up to 100 foot-pounds.
- 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.

VIDEO MONITORING SYSTEM

28 20 00 – 70

- 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 \$4,000.00 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.

VIDEO MONITORING SYSTEM

- 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 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.

VIDEO MONITORING SYSTEM

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 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.
2. 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.

G. Sites of Work:

1. Alaiedon Elementary School
1723 Okemos Road
Mason, Michigan 48854
2. James C. Harvey Education Center
400 S. Cedar Street
Mason, Michigan 48854
3. North Aurelius Elementary
115 North Aurelius Road
Mason, Michigan 48854

H. 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.
- I. 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.
- 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:
 - 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

- 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

VIDEO MONITORING SYSTEM

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. The 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.

B. Schedule

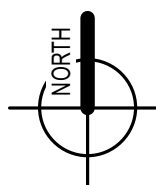
1. Post bid Interviews: Week of February 19, 2024
2. Contractor Chosen: Week of March 11, 2024
3. Work Commences: April 1, 2024
4. Substantial Completion of Project: August 1, 2024
5. Project Close-out: September 1, 2024

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

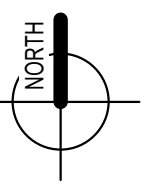
D. Project progress meetings shall be held, but not limited to, weekly at a site and time identified as convenient for Owner and as required herein. Meetings will be attended as required herein.

Appendix A - UPS Location Schedule			
Building	Closet	3000KVA - Type A	1500KVA - Type B
Mason Administration Office	AD-MDF		1
Mason High School	HS-MDF	4	
	HS-RM14-IDF	1	
	HS-RM51-IDF	1	
	HS-RM64-IDF	1	
	HS-OFFICE-IDF	1	
	HS-PB-IDF		
	HS-FH-IDF		1
Mason Middle School	MS-IDF	1	
	MS-R41-IDF	1	
	MS-R44-IDF	1	
	MS-R19-IDF	1	
Alaiedon Elementary School	MDF	1	
	IDF-1		1
	IDF-2		1
North Aurelius Elementary	MDF	1	
	IDF-1		1
	IDF-2		1
	IDF-3		1
Steele Elementary School	MDF	1	
	IDF-1		1
	IDF-2		1
James C. Harvey Education Center	MDF	1	
	IDF-1		1
	IDF-2 (Gym)		1
Transportation	Transportation		1
Totals		16	12

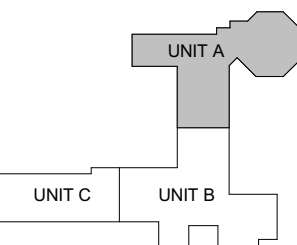
Appendix B - UPS Building Breakdown	
Building	Quantity
Mason Administration	
3000KVA	0
1500KVA	1
Mason High School	
3000KVA - Type A	8
1500KVA - Type B	1
Mason Middle School	
3000KVA	4
1500KVA	0
Alaiedon Elementary School	
3000KVA	1
1500KVA	2
North Aurelius Elementary	
3000KVA	1
1500KVA	3
Steele Elementary School	
3000KVA	1
1500KVA	2
James C. Harvey Education Center	
3000KVA	1
1500KVA	2
Transportation	
3000KVA	0
1500KVA	1

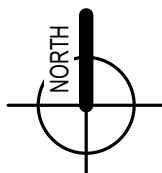


UNIT 'A' FIRST FLOOR POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"

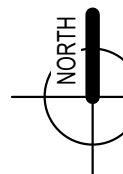


KEYPLAN

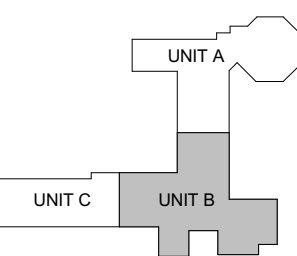


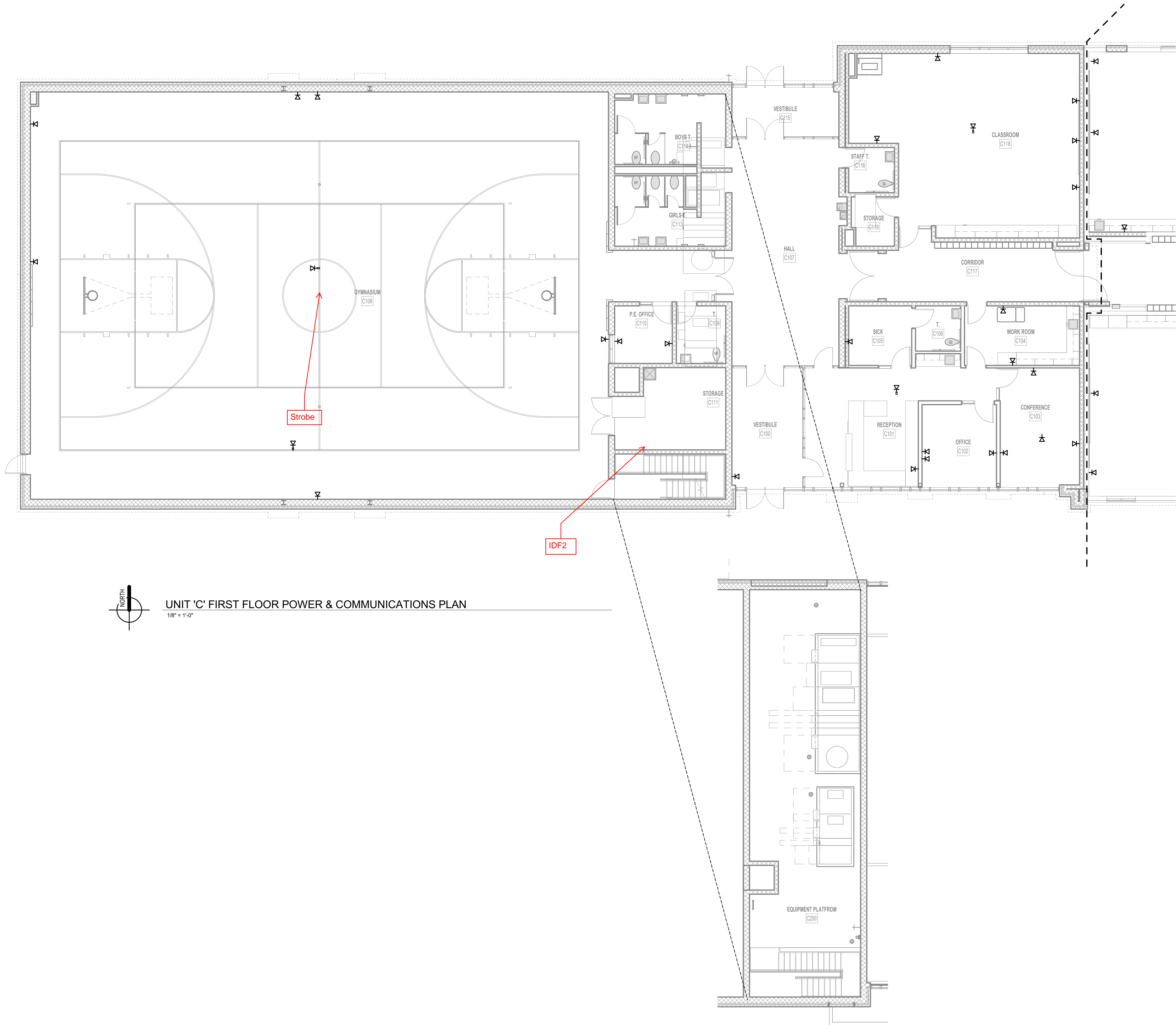


UNIT 'B' FIRST FLOOR POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"



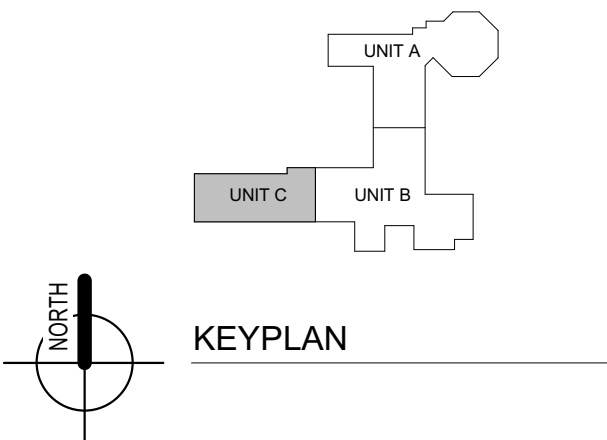
KEYPLAN





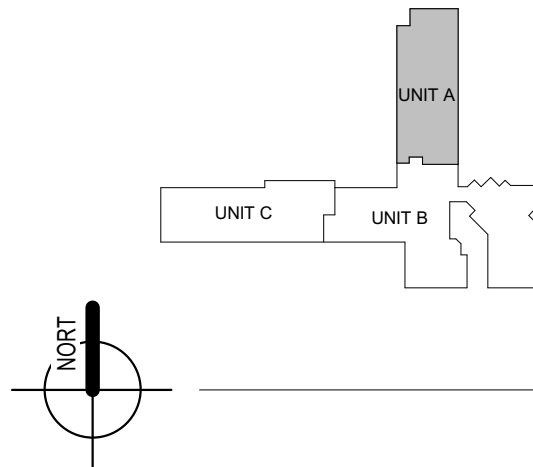
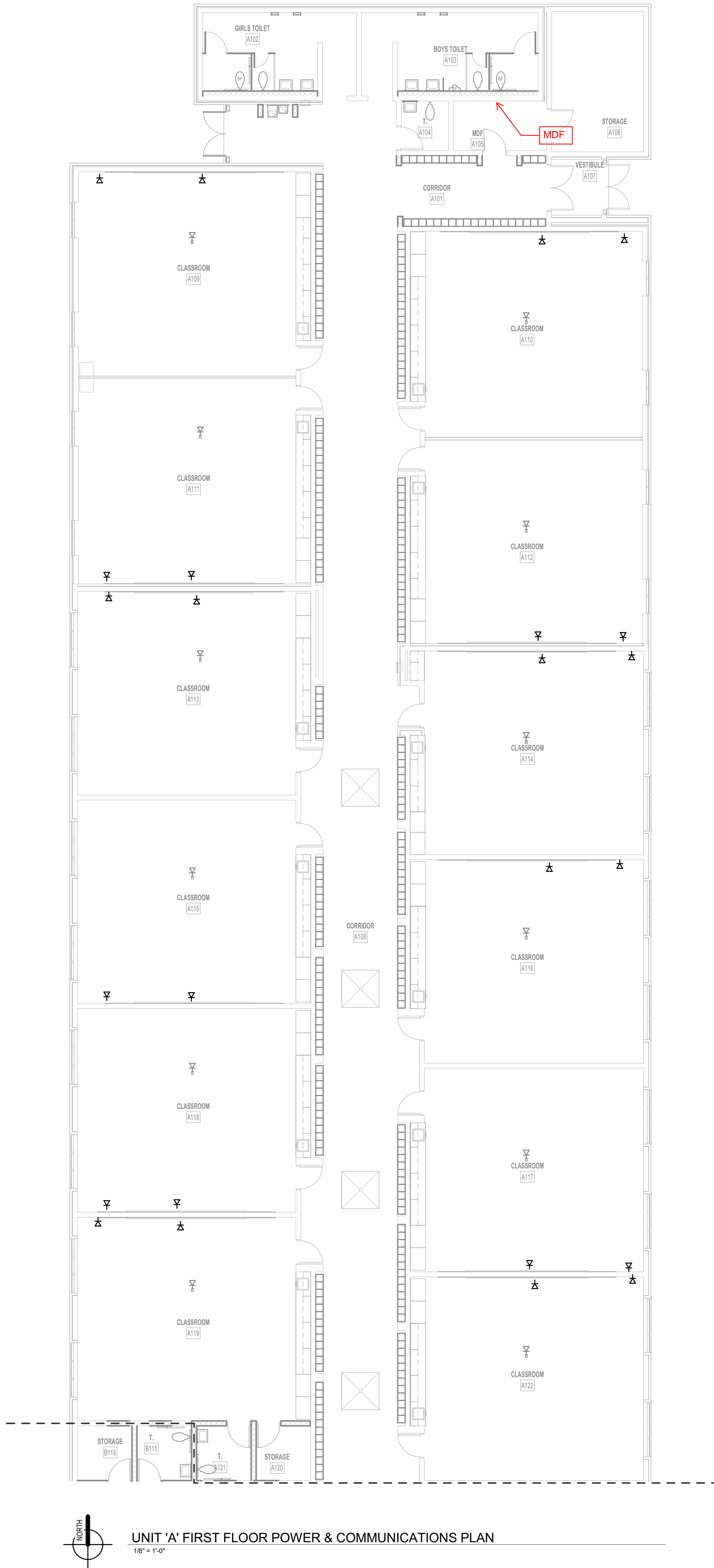
UNIT 'C' FIRST FLOOR POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"

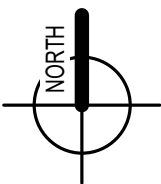
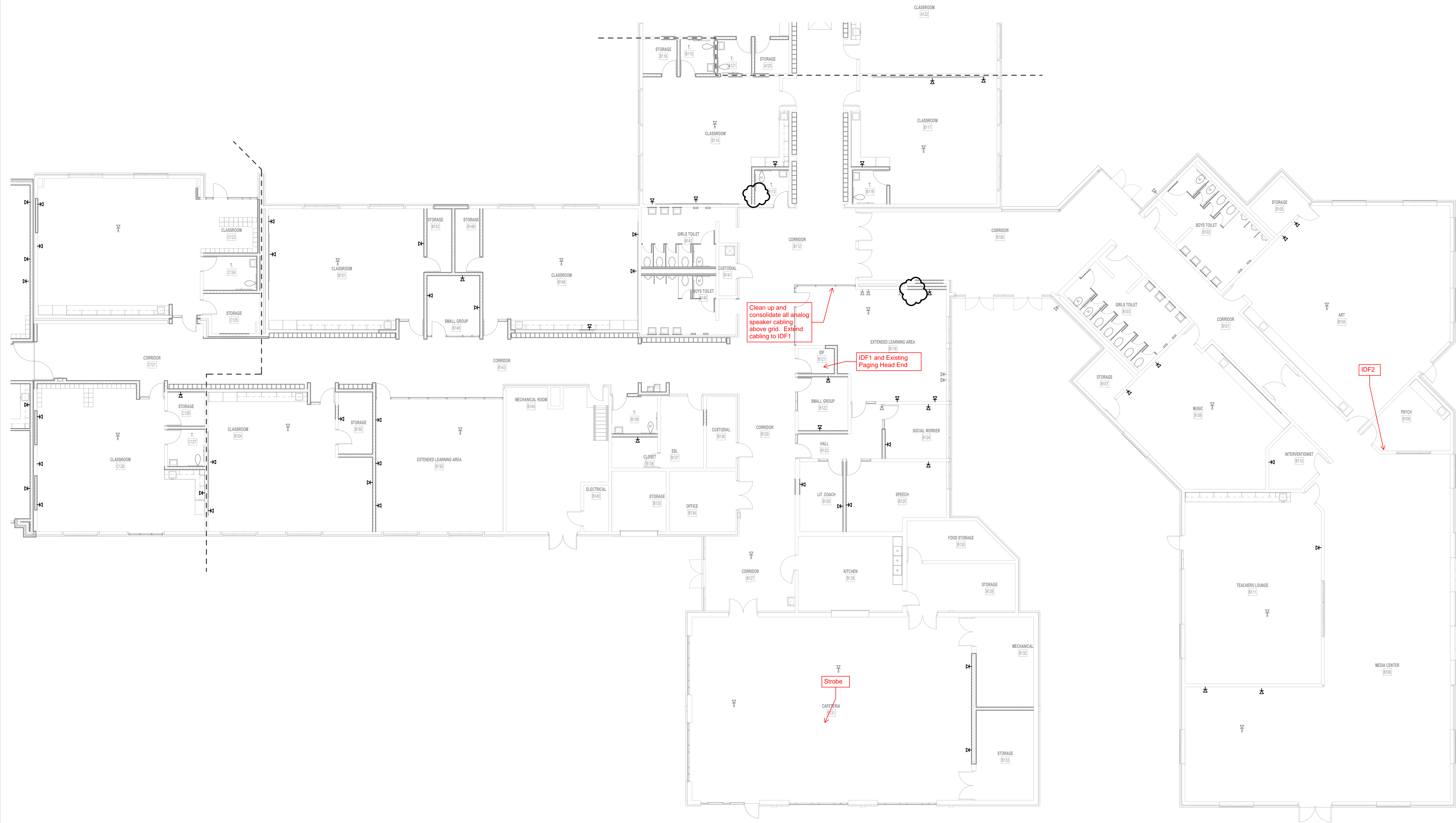
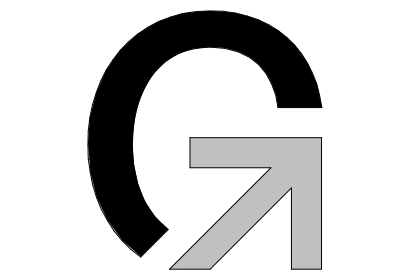
EQUIPMENT PLATFORM
1/8" = 1'-0"



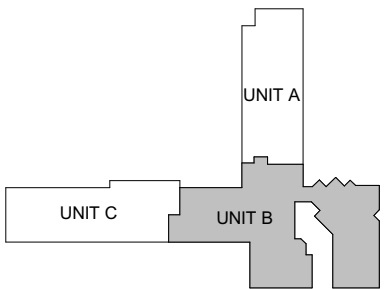
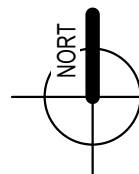
Appendix C - Paging Diagrams

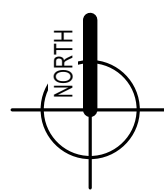
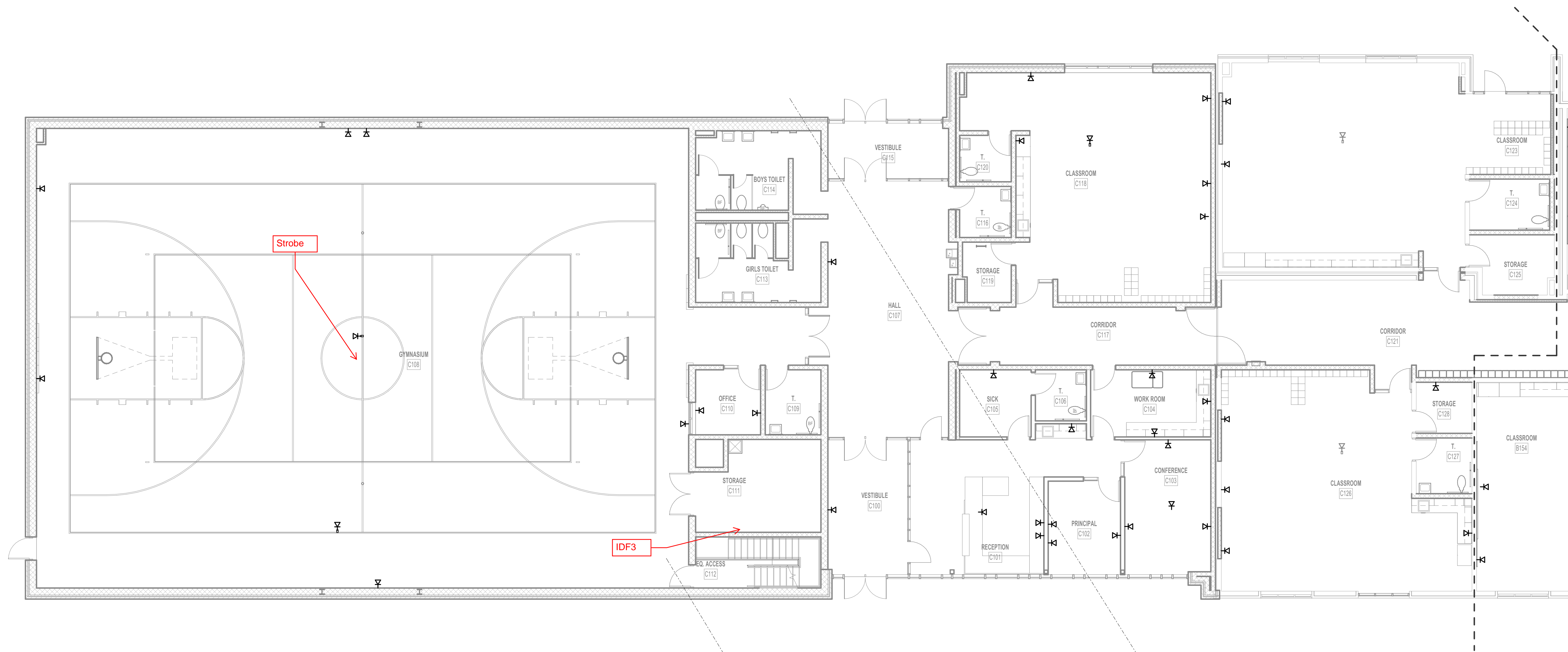






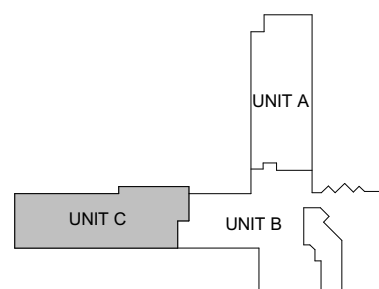
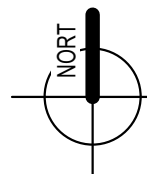
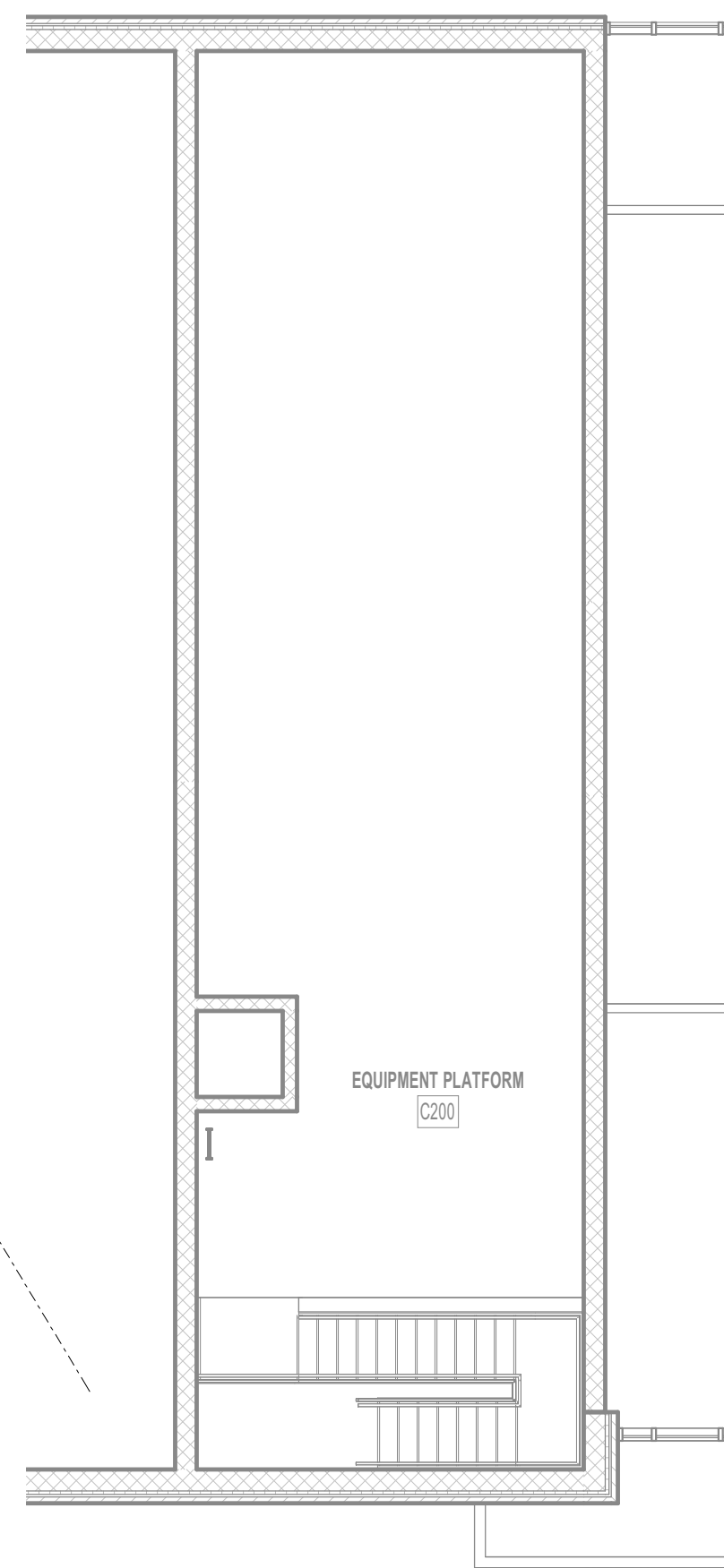
UNIT 'B' FIRST FLOOR POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"





UNIT 'C' FIRST FLOOR POWER & COMMUNICATIONS PLAN

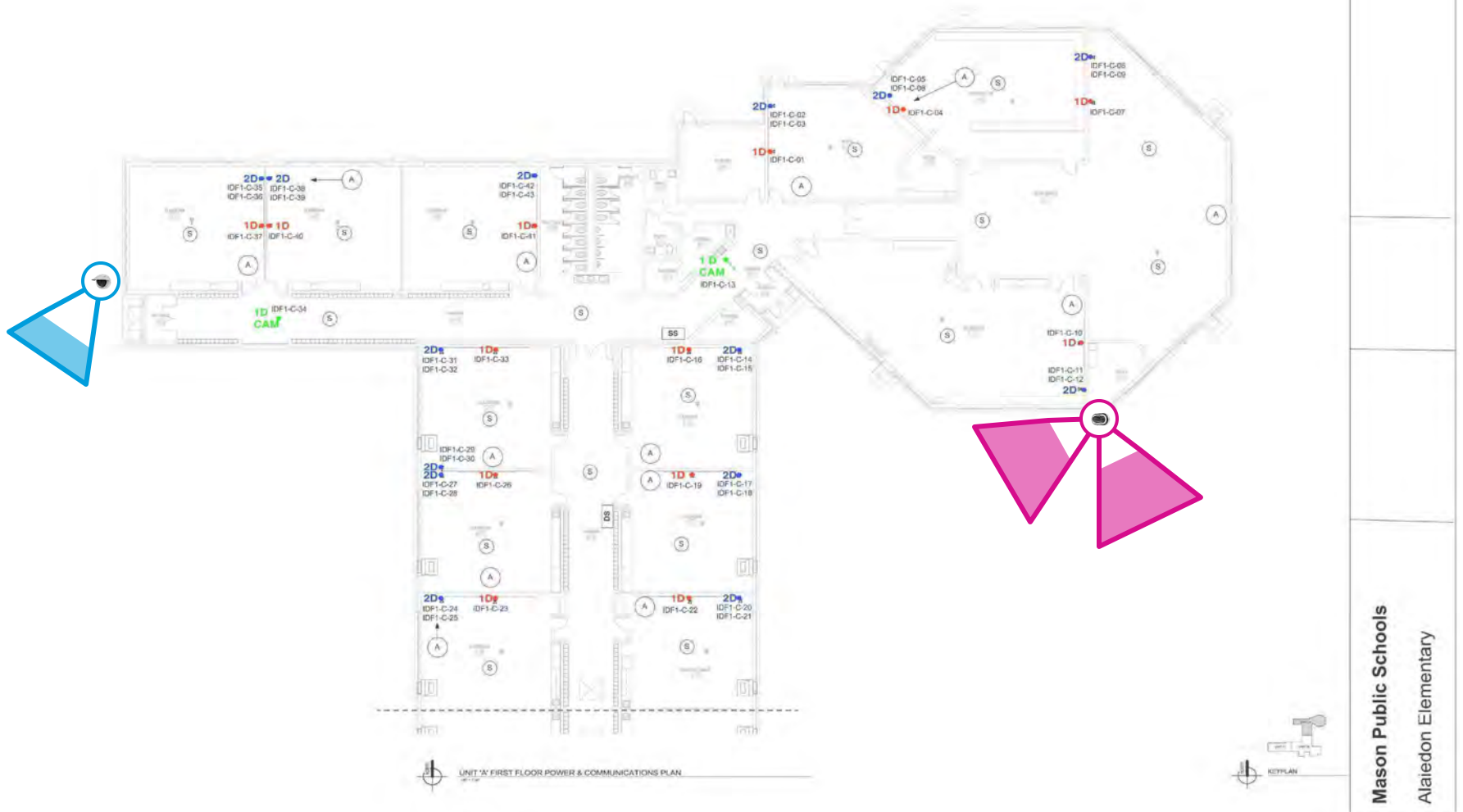
1/8" = 1'-0"



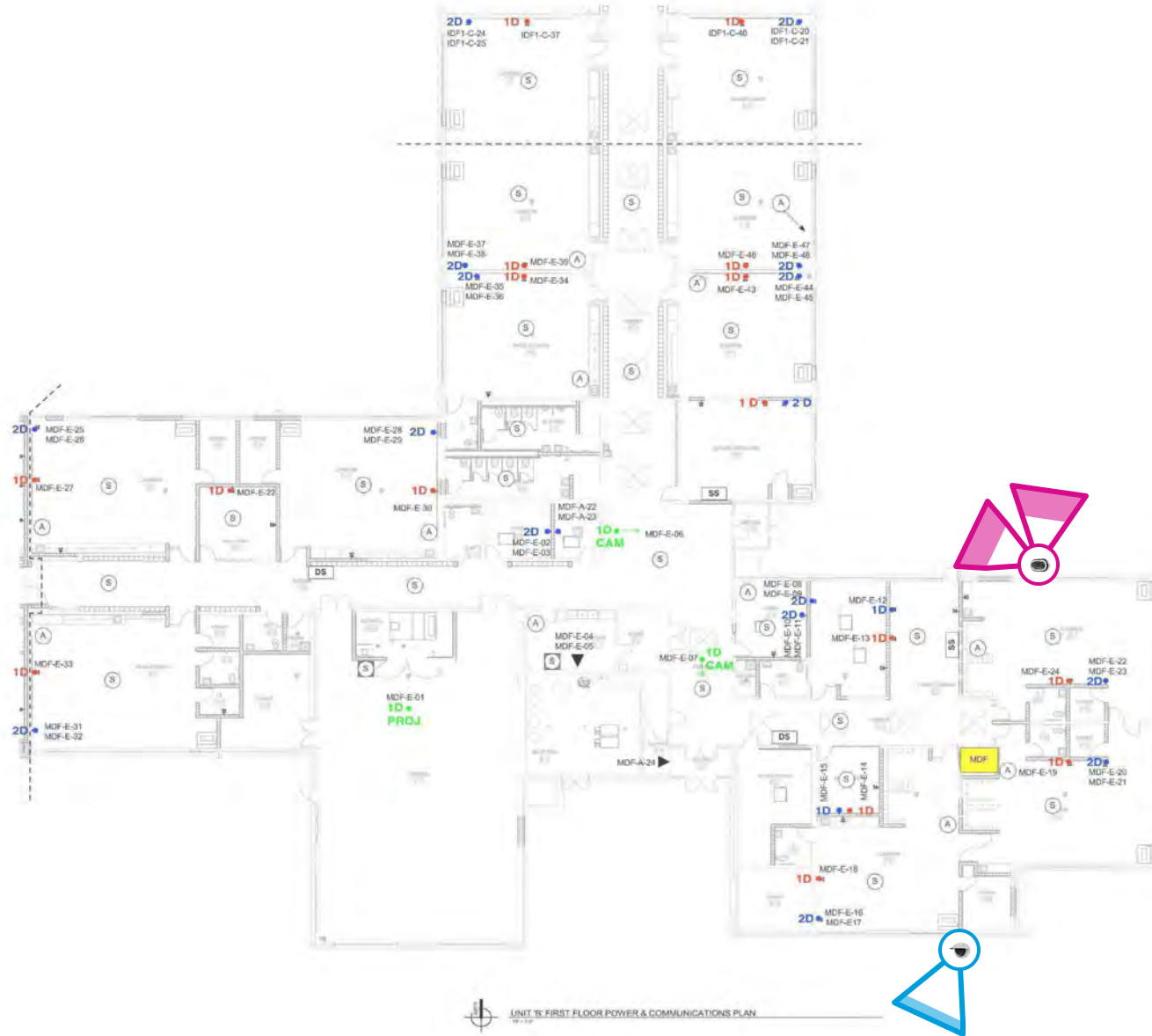
Appendix D - Video Monitoring Schedule

	Interior/Exterior - Single Lens - Camera Type A	Interior/Exterior Multidirectional - DUAL - Camera Type B	Total All Cameras
Alaiedon Elementary School	5	2	7
Harvey Center Early Childhood Center	4	4	8
North Aurelius Elementary School	6	1	7
Steele Elementary School	2	2	4
	17	9	26

Appendix E - Video Monitoring Diagrams

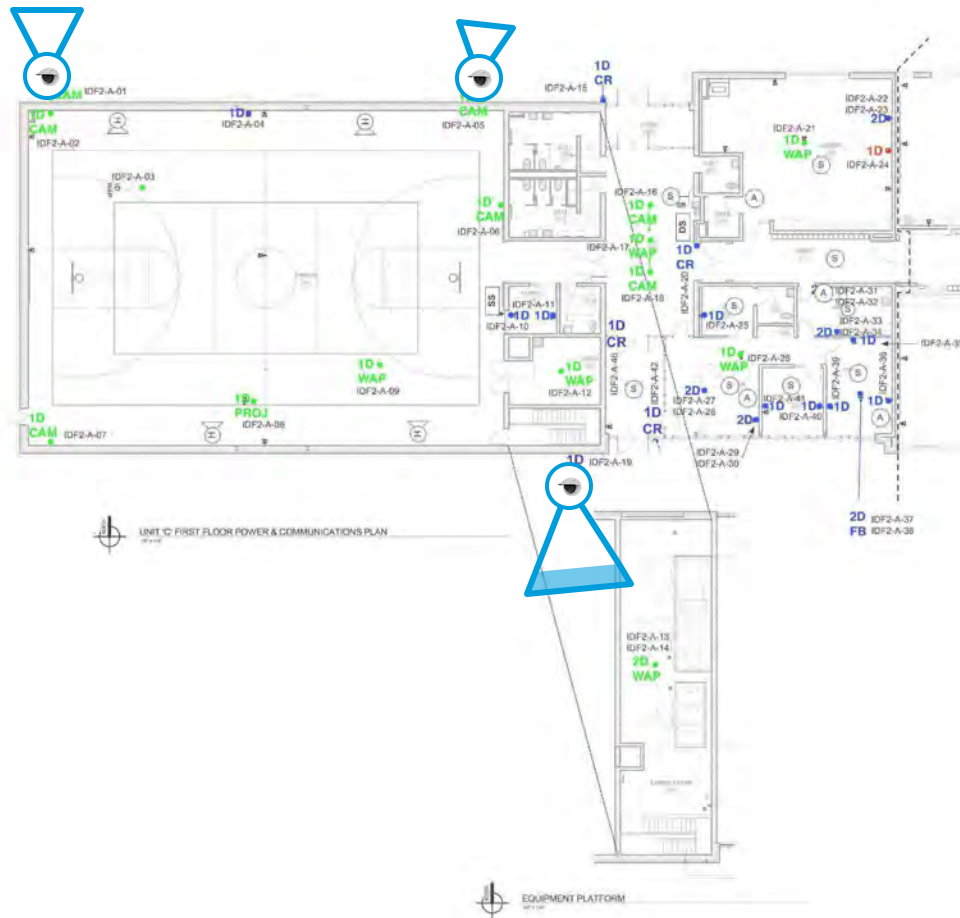


Appendix E - Video Monitoring Diagrams



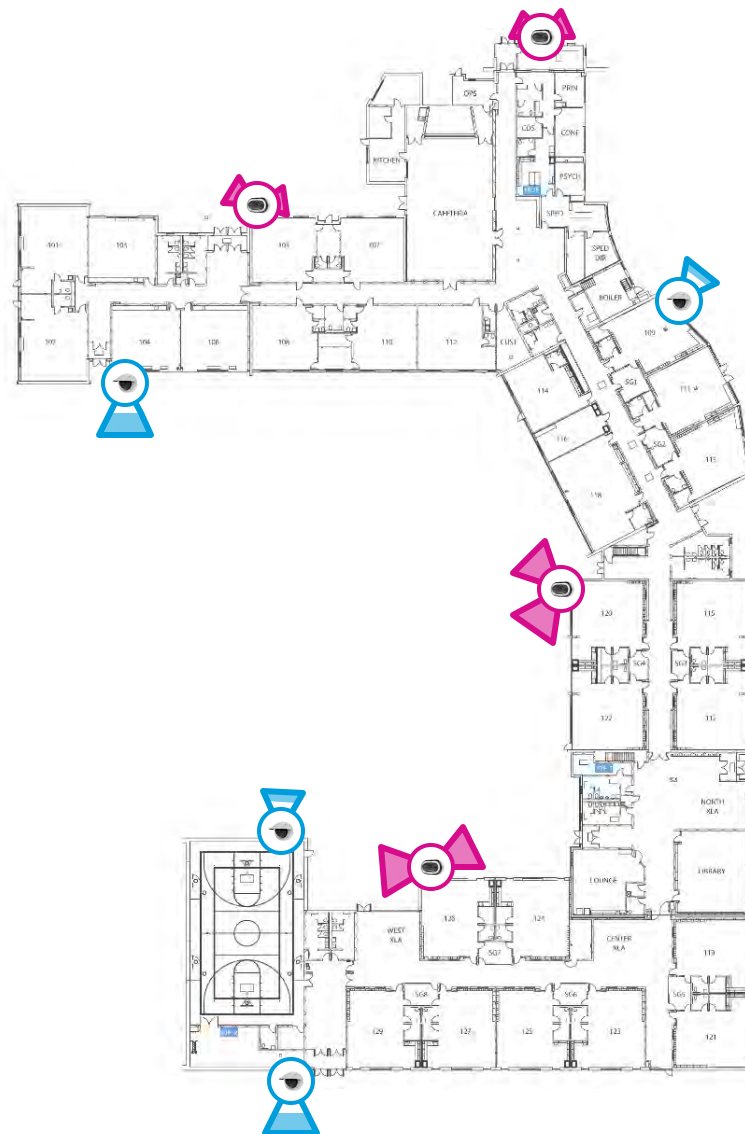
Mason Public Schools
Alaiedon Elementary

Appendix E - Video Monitoring Diagrams

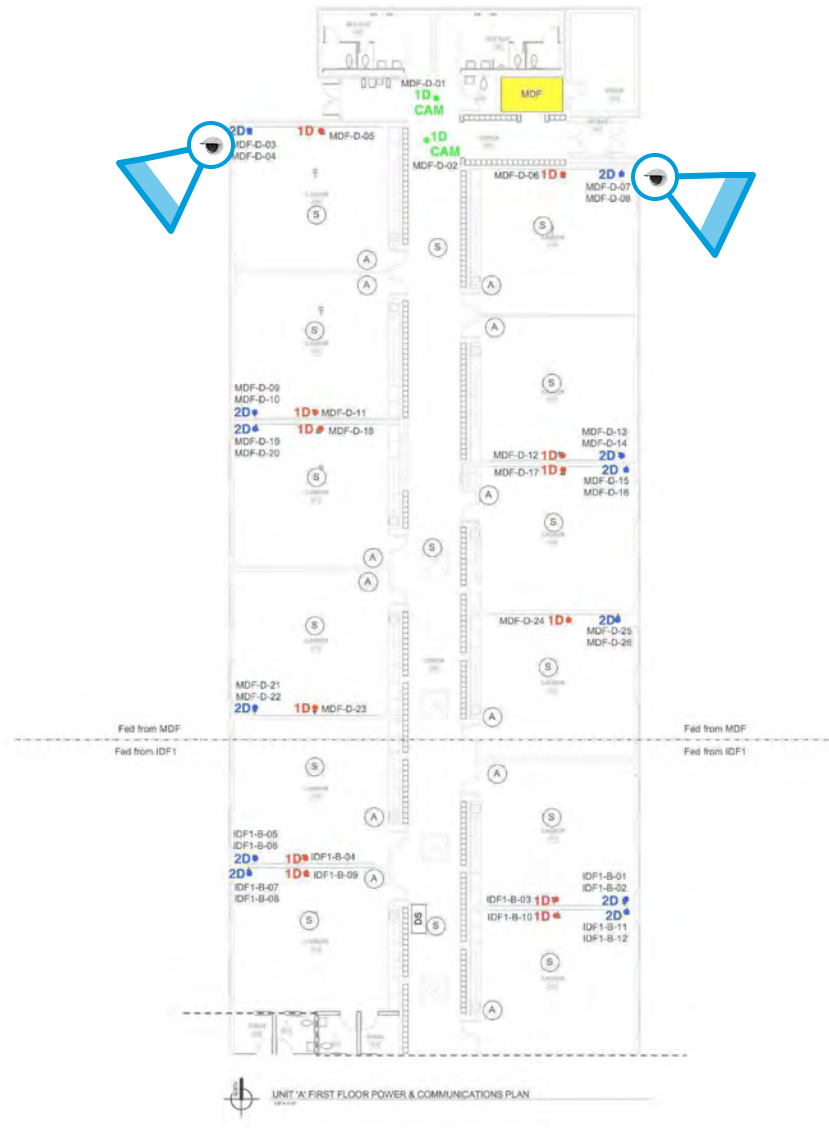


Mason Public Schools
Alameda Elementary

Appendix E - Video Monitoring Diagrams



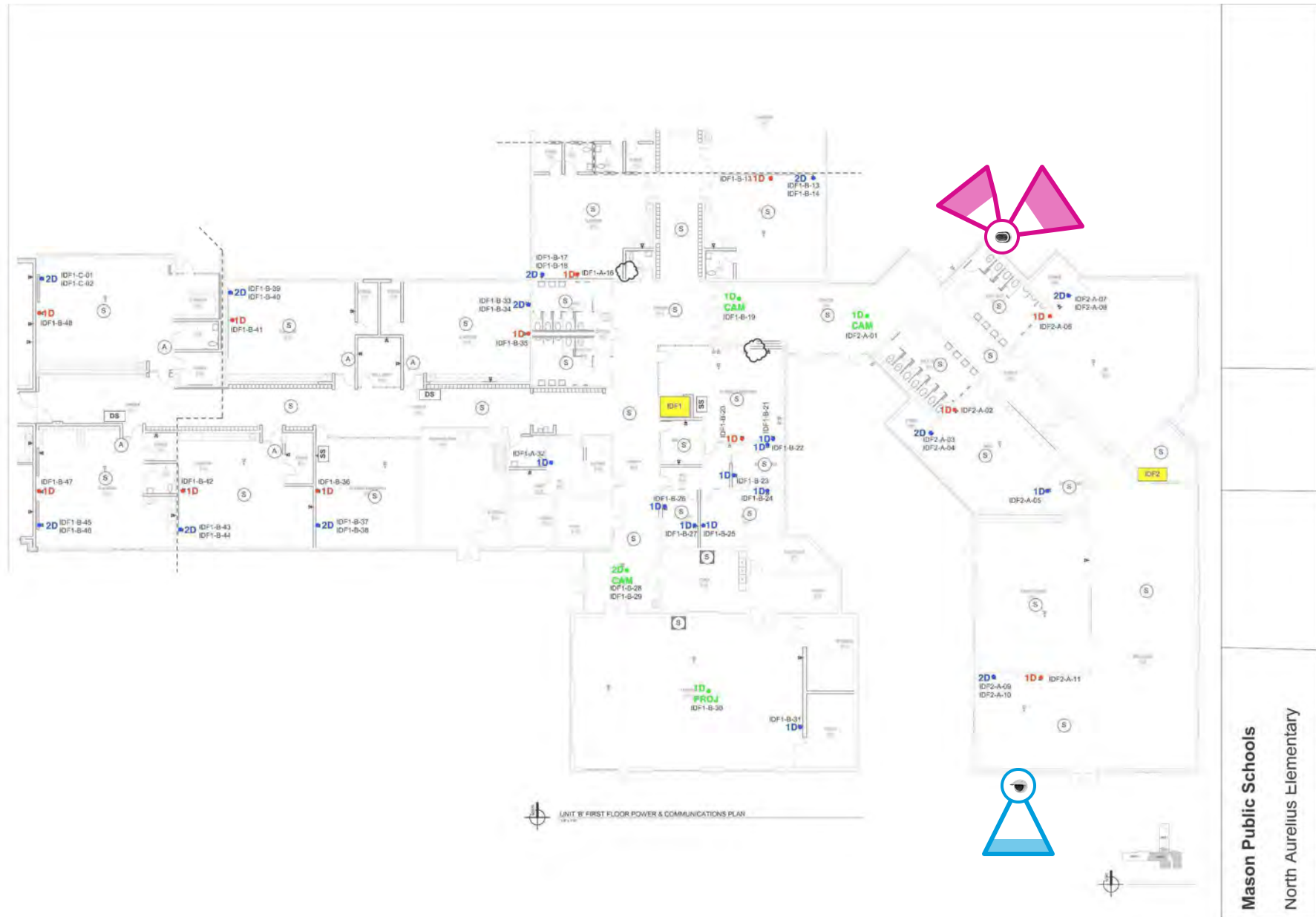
Appendix E - Video Monitoring Diagrams



Mason Public Schools
North Aurelius Elementary

10 m
30 ft

Appendix E - Video Monitoring Diagrams

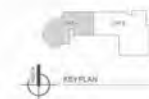
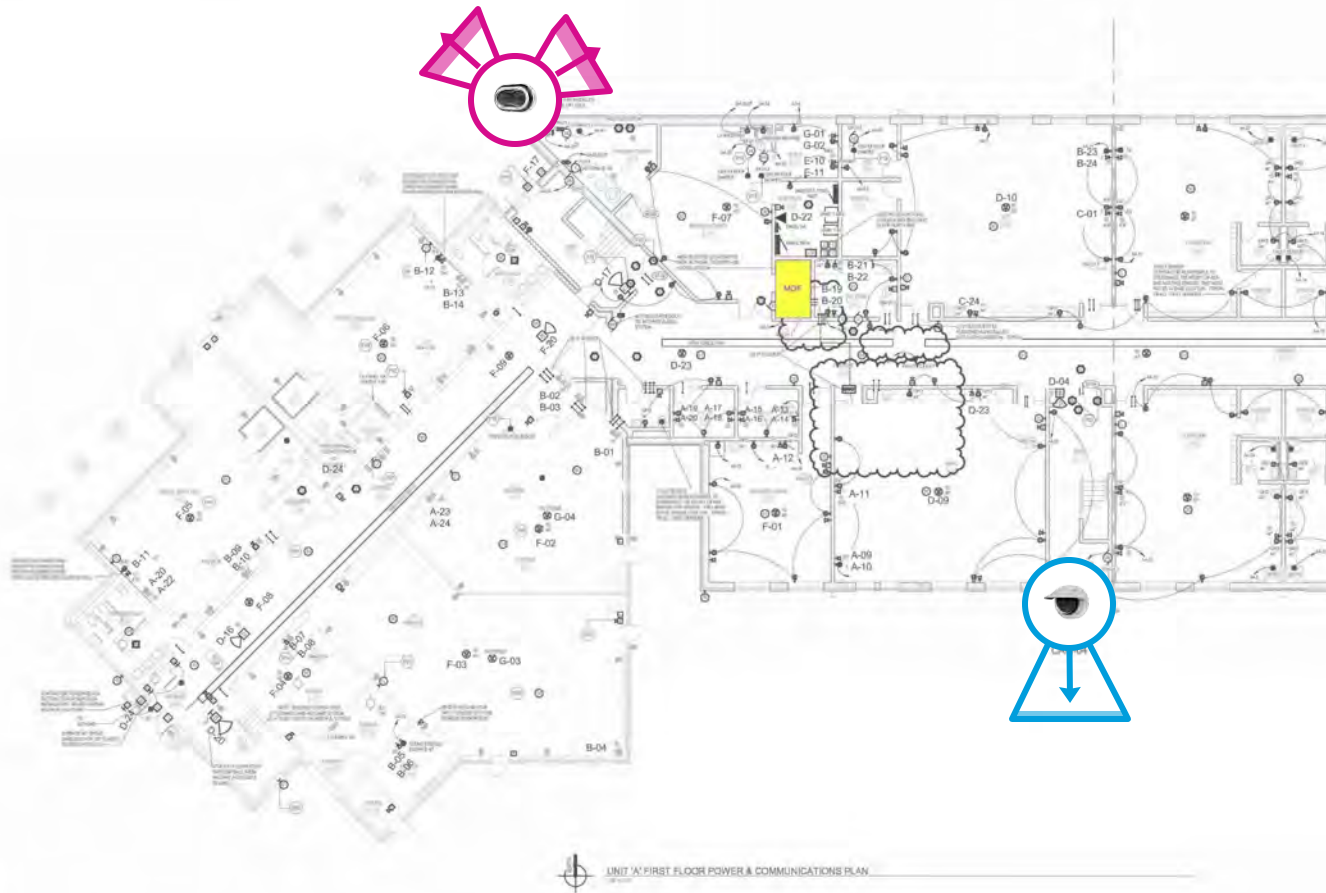


Appendix E - Video Monitoring Diagrams



Mason Public Schools
North aurelius Elementary

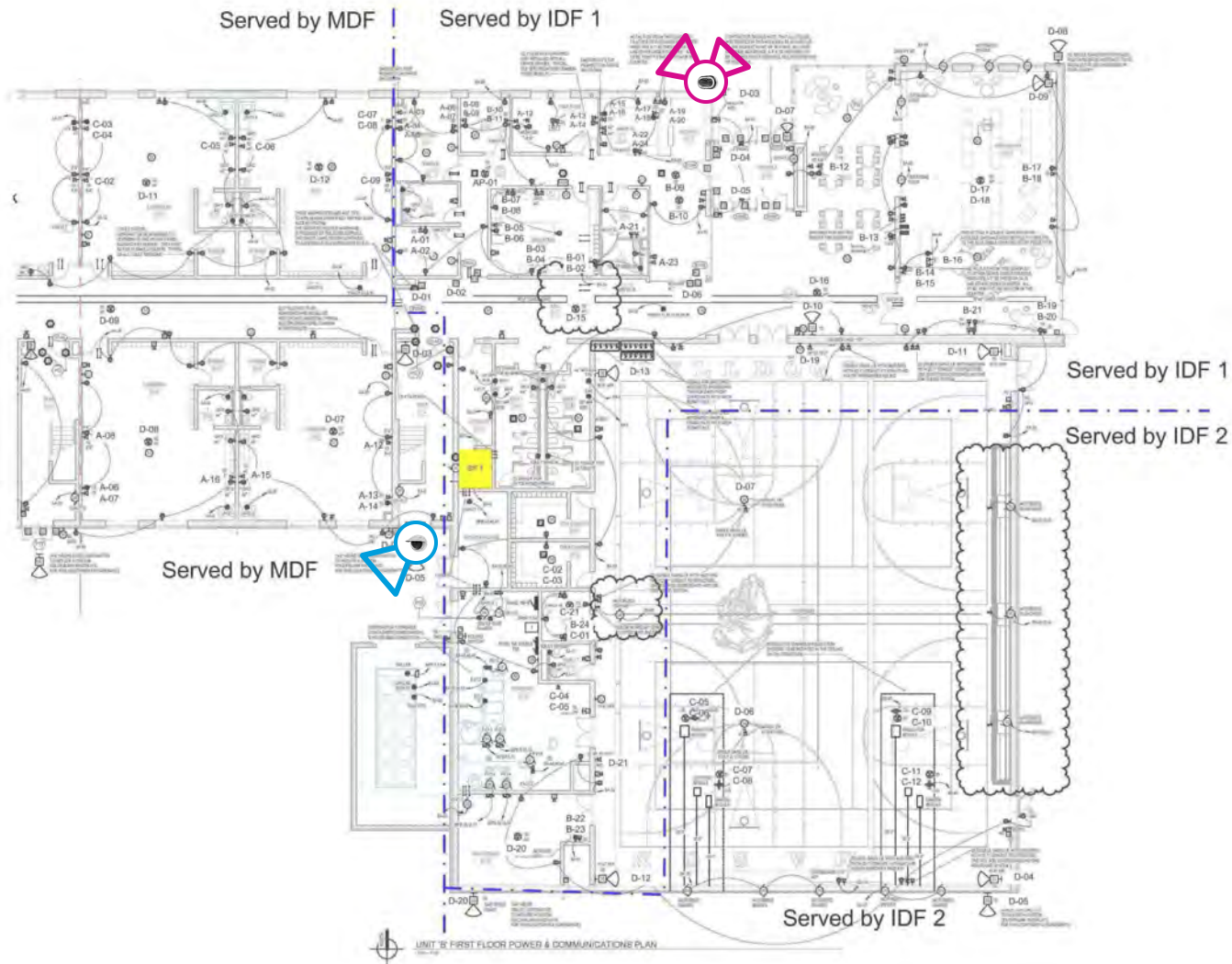
Appendix E - Video Monitoring Diagrams



MASON PUBLIC SCHOOLS
STEELE ELEMENTARY
ADDITIONS AND RENOVATIONS
First Floor Unit A

5 m
20 ft

Appendix E - Video Monitoring Diagrams



MASON PUBLIC SCHOOLS
STEELE ELEMENTARY
ADDITIONS AND RENOVATIONS
 First Floor Unit B