

# Schoolcraft Community Schools



SECTION 00 01 10  
TABLE OF CONTENTS

**DIVISION 00 – BIDDING & CONTRACT REQUIREMENTS**

<u>Section</u>	<u>Description</u>
00 01 01	Cover Page
00 01 10	Table of Contents
00 01 15	List of Drawings
00 11 16	Invitation to Bid
00 40 00	Bid Forms
00 21 13	Instructions to Bidders
00 65 00	Contract Close-out

**DIVISION 27 – TECHNOLOGY SYSTEMS**

<u>Section</u>	<u>Description</u>
27 41 16	Multimedia Systems
27 51 16	Public Address System
27 53 13	Clocks & Timers

**DIVISION 28 – ELECTRONIC SAFETY & SECURITY**

<u>Section</u>	<u>Description</u>
28 13 00	Building Access System
28 23 00	Video Monitoring System

**APPENDICES**

<u>Section</u>	<u>Description</u>
A	Room Schedule
B	Door Schedule

END OF SECTION

SECTION 00 01 15  
LIST OF DRAWINGS

<u>File/Name</u>	<u>Description</u>
SCS-NET01	Elementary First Floor Technology Plan
SCS-NET02	Elementary Second Floor Technology Plan
SCS-HS-CAM	High School Camera Alternate

**NOTE:**

*Other coordination drawings may be obtained from the Owner's Construction Manager or may be reviewed on site at the field office at the worksite. Such drawings may include electrical plans, reflected ceiling plans or other plans as may be updated due to issuance of bulletins or field changes.*

END OF SECTION

SECTION 00 11 16  
INVITATION TO BID

PART 1 - GENERAL

1.01 WORK INCLUDED: NEW ELEMENTARY TECHNOLOGY SYSTEMS

- A. Schoolcraft Community Schools (Owner) is seeking bids for purchase and installation of new classroom multimedia, public address, clock, building access systems, and video monitoring systems and associated equipment and installation. Proposed systems shall be configured and installed as described herein.
- B. Project: New Elementary Technology Systems
- C. Owner: Schoolcraft Community Schools  
551 E. Lyons St.  
Schoolcraft, MI 49087
- D. Designer: Communications by Design, Inc.
- E. Sites of Work:
  - 1. Schoolcraft Elementary School  
551 E. Lyon St.  
Schoolcraft, MI 49087

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: July 29, 2022
  - 2. Pre-Bid Meeting: August 10, 2022 at 10:00am
  - 3. Intent to Bids Due: August 11, 2022 at 5:00 PM
  - 4. Question and Clarification Deadline: August 12, 2022 at 5:00 PM
  - 5. Public Bids Due: August 24, 2022 at 1:30pm

### 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. Time: 10:00am on August 10, 2022
- C. Location: Schoolcraft High School – HS Cafeteria  
551 E. Lyons St.  
Schoolcraft, MI 49087
- 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: August 24, 2022 at 1:30pm
- C. Bid Opening Location: Schoolcraft High School – HS Cafeteria  
551 E. Lyons St.  
Schoolcraft, MI 49087
- 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 Grand Rapids, Michigan 49546
2. Email – [rszilagy@cbdconsulting.com](mailto: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 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.

#### 1.09 DEFINITIONS

- A. “Owner” is intended to mean Schoolcraft Community 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 00 40 00  
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 August 11, 2022. Only bidders returning a completed "Intent to Bid Form" will be notified of required addenda.

### Company Information

Name: \_\_\_\_\_

Address Line1: \_\_\_\_\_

Address Line2: \_\_\_\_\_

City, State and Zip Code \_\_\_\_\_

### Primary Contact Information

Name: \_\_\_\_\_

Phone No.: \_\_\_\_\_

Fax. No.: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Portions of the bid for which you will be responding:

- ☐ Section 27 41 16 - Multimedia Systems
- ☐ Section 27 51 16 - Public Address System
- ☐ Section 27 53 13 - Clock System
- ☐ Section 28 13 00 - Building Access System
- ☐ Section 28 23 00 - Video Monitoring System

Submit unaltered and completed form to:

Rebecca Szilagy

Communications by Design, Inc.

[rszilagy@cbdconsulting.com](mailto:rszilagy@cbdconsulting.com)

SEALED BID LABEL

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

---

BID TO: Schoolcraft Community Schools  
Attention: Mr. James Weiss  
551 E. Lyons St.  
Schoolcraft, MI 49087

BID FROM:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT: New Elementary Technology Systems  
TECHNOLOGY BID #2746

INCLUDING Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_  
ADDENDA: Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

DUE: August 24, 2022 at 1:30pm

## BID FORM

BID TO: Schoolcraft Community Schools  
Attention: James Weiss  
551 E. Lyons St.  
Schoolcraft, MI 49087

BID FROM: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT: New Elementary Building Technology Systems  
TECHNOLOGY BID 2746

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

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 \_\_\_\_\_

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.

Alternate A: Classroom 3 Year Warranty \_\_\_\_\_

Alternate B – HS Cameras \_\_\_\_\_

Alternate C \_\_\_\_\_

Alternate D \_\_\_\_\_

Alternate E \_\_\_\_\_

Alternate F \_\_\_\_\_

Alternate G \_\_\_\_\_

**PRINCIPAL SUBCONTRACTORS**

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

Legal Name: \_\_\_\_\_ Work Proposed \_\_\_\_\_

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, dismissal of consideration of bid submitted, and/or personal liability against the signatory.

**AGREEMENT:**

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

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

Respectfully submitted,

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

Firm Name: \_\_\_\_\_

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

Signed: \_\_\_\_\_

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

Official Address: \_\_\_\_\_

\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

Primary Contact Email Address: \_\_\_\_\_

*(If Corporation, affix Seal)*

**Michigan Familial Relationship Disclosure Statement**

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

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

*(Check only one Box Below)*

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

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

***Bidder***

***Board or Superintendent***

_____	_____
_____	_____
_____	_____
_____	_____

**Bidder Authorized Representative:**

Bidder: \_\_\_\_\_

Representative's Signature: \_\_\_\_\_

Print or Type Name: \_\_\_\_\_

Representative's Title: \_\_\_\_\_

Subscribed and sworn this \_\_\_\_\_ day of \_\_\_\_\_, 2022.

In the County of \_\_\_\_\_ State of \_\_\_\_\_

By \_\_\_\_\_  
Notary Public Signature

Seal or Stamp:

My commission expires on: \_\_\_\_\_

## **IRAN LINKED BUSINESS AFFIDAVIT**

*All Bids shall be accompanied by a sworn statement disclosing any Iran Linked Business relationship that exists within the owners, including its officers, directors, and employees.*

The undersigned, owner or authorized officer of

\_\_\_\_\_ (bidder), pursuant to Michigan Public Act No. 517 of 2012, the “Iran Linked Business” requirement provided in the Schoolcraft Community Schools Proposals hereby represents and warrants that the bidder, including its officers, directors and employees, is not an “Iran Linked Business” within the meaning of the applicable Public Act, and that in the event bidder is awarded a contract as a result of this RFB, the bidder will not become an “Iran Linked Business” at any time during the course of performing under the contract. The bidder 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 District investigation, and reasonable attorney fees, in addition to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on future Requests for Bids for three (3) years from the date that it is determined that the person has submitted the false certification.

**There is not an “Iran Linked Business” that exists within the bidder and/or owner, officers, directors and employees.**

**Bidder:**

\_\_\_\_\_  
[Company Name]

\_\_\_\_\_  
[Signature]

\_\_\_\_\_  
[Title]

**Notary:**

This instrument was acknowledged before me, a Notary Public in and for

\_\_\_\_\_ County, on this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

\_\_\_\_\_  
[Notary Public Signature]

My Commission expires: \_\_\_\_\_

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

## **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><b>Paragraph Number</b></i>	<i><b>Explanation</b></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 for each division/category of work being bid. Submit a completed separate form for each division/category of work clearly delineating on the form the division/category of work for that form. Form submitted must materially match below both in content and format. Electronic version of this form for each project section/division/category being bid is required with bid package as Microsoft Excel compatible spreadsheet on a USB drive. Failure to provide appropriate and complete SCHEDULE OF VALUES for each division/category of work, as determined by the Owner and/or Designer, may result in disqualification of Bid.)*

Bidder: \_\_\_\_\_

Bid Division: \_\_\_\_\_

[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. The Owner reserves the right to award portions of the project to multiple bidders who will be required to cooperate with one another in order 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 each 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 to the fullest extent allowed by law on a comparison basis of fault.

#### 3.04 MODIFICATION AND WITHDRAWAL

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

#### 3.05 CODES, ORDINANCES, REGULATIONS AND RELATED

- A. All labor and materials shall be furnished and installed in strict accordance with the latest applicable codes, ordinances and regulations of any governing body having jurisdiction over this project.
- B. In the event the quality of labor and materials required by the Drawings and Specifications herein exceeds requirements of current applicable codes, ordinances and regulations, the Drawings and Specifications shall take precedence.
- C. In the event the quality of labor and materials required by current applicable codes, ordinances and regulations having jurisdiction over this project exceeds that of the Drawings and Specifications herein, the applicable codes, ordinances and regulations shall take precedence.
- D. The Contractor shall give all notices and comply with all codes, laws, ordinances, rules, and regulations of any authority having jurisdiction, which bears on the performance of its work. This compliance includes, but is not limited to, the Michigan School Safety Initiative (PA129, PA130, PA131 and PA138) if applicable to work being performed.
- E. The Contractor shall pay for all licenses, permits, taxes, and fees required for this project; and shall comply with all federal, state, local and Owner's codes, laws, ordinances, regulations and other requirements applicable to the work specified at no additional cost to the Owner. Contractor shall submit copies of all approved certificates and approvals to the Owner upon receipt.

### 3.06 SUB-CONTRACTOR AND MATERIAL SUPPLIER

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

### 3.07 BID RESPONSE FORMAT

- A. Bidder shall provide complete Bid copies in two formats as described herein.
  - 1. One (1) Hard copy format responses shall be in a bound tabulated format. Each response shall have tab indicators for each section.
  - 2. One (1) Electronic copy format responses shall be submitted on a USB Drive, readable by a standard Microsoft Windows 11 workstation. Electronic media shall contain separate folders to organize response documentation as described herein. Files submitted electronically shall be **Adobe Acrobat** "PDF" format (SCHEDULE OF VALUES is additionally required to be on the disk in the appropriate folder as a Microsoft Excel compatible 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. REFERENCES
    - d. CONTRACT EXCEPTIONS
    - e. SCHEDULE(s) OF VALUES
    - f. 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 includes but is not limited to all other Sections herein and all related Contract Documents.
- C. Activities relative to Contract close-out are described in, but not limited to, this and other Sections of this document.

1.02 SUBSTANTIAL COMPLETION

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

PART 2 - MATERIALS

2.01 NOT USED FOR THIS SECTION

PART 3 - EXECUTION

3.01 PROCEDURES

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

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

D. Should Designer concur the Work is substantially complete:

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

END OF SECTION

SECTION 27 41 16  
MULTIMEDIA SYSTEMS

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

- A. Work described in this specification section pertains to new classroom multimedia infrastructure and instructional equipment for Schoolcraft Community Schools' new elementary school.
- B. Contractors shall propose Systems and/or components to be deployed using standard procedures and technology components and as specified herein. The system components shall be installed and connected to the owner's existing physical infrastructure and as specified herein.
- C. 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 physical infrastructure.
- D. Contractor shall work collaboratively with Owner and Designer. Work shall include but not be limited to installation of supplied equipment, removal of existing equipment and full operational capacity of system as specified herein.
- E. The Contractor shall design, engineer, configure, supply, connect, test, document, train Owner representatives and warrant a fully operational and compliant system and/or component connection to the system complete and with full functionality as specified herein.
- F. Contractor shall provide all transportation and delivery services in a timely manner to individual work location(s) at each site of work in preparation for installation activity.
- G. Contractor shall coordinate their installation with other contractors, Designer and the Owner as is appropriate.

1.02 WARRANTY

- A. Complete installation shall be free from defect and/or failure for a period of warranty. 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. 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.
  3. Standard manufacturer warranty duration and terms shall be identified for each component with bid.
  4. REQUIRED ALTERNATE: Standard manufacturer warranty duration and terms shall be identified for each component with bid as well as additional fee required for warranty duration election of each of the following terms:
    - a. Three (3) year parts and labor warranty.
- C. On site services provided under the warranty shall be performed by personnel or representatives of manufacturer of individual components and/or appropriately trained and certified Contractor representatives 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. 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. Bidder shall provide current annual maintenance contract pricing, terms and conditions for recommended maintenance programs for all equipment following the specified and included warranty periods as a Voluntary Alternate. 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, 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.

### 1.03 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, data sheets and diagrams shall be submitted by Bidder for approval by Designer with Bid Proposals.
  - 1. Shop drawings, data sheets and diagrams shall show all data relating to structural, electrical, wiring, cross connect, interconnect, equipment arrangement/layout, and any other information deemed significant by the Designer.
  - 2. No work constituting final installation shall be commenced until after approval of shop drawings, data sheets and diagrams 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 do 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. Applications that generate Microsoft Project compatible files shall be management tools of choice. The timeframe described in the Contractor's Schedule shall represent the Contractor's plan for organizing, directing, managing, controlling, staffing,

and executing the work required by the Contract Documents. The district will rely on such schedules to coordinate and otherwise plan the work of the District, other separate contractors, or the District's routine daily work.

#### 1.04 REFERENCE SPECIFICATIONS

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

#### 1.05 CONTRACTOR

- A. The Contractor shall accept complete responsibility for the installation, certification and support of the system and/or components as required herein. 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 specified equipment and perform related tests as recommended by the manufacturer and in accordance with the manufacturer's best practices and methods and as required herein.
- 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 comparable system supply, configuration, and installation. This must be shown by the inclusion of references of at least three (3) projects involving the supply and/or installation of similar systems completed by the Contractor in the prior two (2) years with the sealed Bid Proposal as provided herein.

### PART 2 - PRODUCTS

#### 2.01 Acceptable Manufacturers

- A. Acceptable manufacturers have been provided to comply with a standard for individual components associated with the specified system. Indicated components include particular models and makes currently installed and/or preferred by Owner.
  - B. Any system bid shall be based only on acceptable manufacturer's components.
- 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 AUDIO SPEAKERS
- A. Four (4) classroom speakers shall be installed in/on finished ceiling surfaces in each room as indicated in Appendix A.
  - B. Acceptable Manufacturer:
    - 1. LIGHTSPEED
  - C. Where classroom speakers are to be installed in drop ceilings, they shall be near flush mount and cleanly cut into available tiles for optimal and uniform audio fill of the relevant classroom space. Speakers shall meet or exceed the following minimum standard requirements:
    - 1. 6" driver; 1" horn per speaker
    - 2. Frequency response: 40 Hz – 20 kHz
    - 3. Impedance of 8 Ohms
    - 4. Power handling of 30 watts
    - 5. Speakers shall be mounted in fully enclosed, acoustically appropriate, metallic back boxes and fully supported by appropriate tile bridges.

- D. Where flush mounting is not possible or practical, Contractor shall install surface mounted speakers meeting or exceeding all requirements above.
- E. Where specific speaker location is in question, obtain Owner approval prior to any final installation activity.
- F. All speakers shall include attractive finished white grill.
- G. All speaker wire shall be 16 AWG high quality cable.
- H. All speaker cable shall be connected to audio amplifier at the projector location.

## 2.05 MULTIMEDIA INFRASTRUCTURE CABLE

- A. All cable shall be factory manufactured with terminations and connector assemblies fully attached and integral to the cable to industry published quality standards and meet performance requirements specified herein.
- B. Infrastructure cable to connect projector to a teacher station wall plate shall be provided.
- C. Acceptable Cable:
  - 1. HDBaseT Digital Video Cable shall be of commercial first-class quality manufacture and meet or exceed the following requirements:
    - a. Cable shall meet or exceed Category 6 certification.
    - b. Cable shall be constructed of solid 23 AWG conductors.
    - c. Cable shall be shielded.
    - d. All terminations and connector assemblies shall be shielded.
  - 2. USB extension cable shall be of commercial first-class quality manufacture and meet or exceed the following requirements:
    - a. Cable shall meet or exceed Category 6 certification
  - 3. Audio cable shall be of commercial first-class quality manufacture and meet or exceed the following requirements:
    - a. Two conductor shielded cable with drain wire.
- D. HDBaseT Digital Video Cable shall be constructed using 23 AWG solid conductors and of a high-quality construction method for minimal loss characteristics, to maintain quality high resolution video image and include

support for 1080p video resolution for the installed distance plus a fifteen (15) foot extension for device attachment.

E. All cables originating from wall plate connectors shall terminate in a service loop eight (8) feet in length at projector location.

F. Cable shall terminate in the following connector gender:

1. HDBaseT Digital Video (Category 6 STP)
  - a. Category 6 Male Shielded Modular Plug, 8 Pin, RJ45
  - b. Terminate into an active HDBaseT transmitter wall plate at Teacher Station and include an HDMI Type A 19 pin plug connector to teacher's PC.
  - c. Terminate into an active HDBaseT receiver at Projector location and include an HDMI Type A 19 pin plug connector to Projector.

G. Projector Location Wall Plate

1. Wall plate provided shall be:
  - a. Constructed of commercial grade stainless steel
  - b. 1-gang, Split
  - c. Pass-Through Rubber Grommet, minimum 1" diameter
2. Wall plate shall be provided at each location indicated on drawings as Projector.

H. Teacher Station Wall Plate shall be provided.

I. EPSON Projector Remote input/switcher device.

1. Remote input/switcher device shall be mounted at the wall box available above the input plate.
2. Power for the device shall be routed to the projector receptacle and extended through the raceway.
3. Low voltage power shall be routed in the raceway with the transformer for the device located with other materials at the projector and the AC power plugged into the projector outlet.

## 2.06 MULTIMEDIA CONNECTION BUNDLES

- A. Fully assembled infrastructure cable bundles shall be provided and installed in all locations.
- B. Acceptable Manufacturer
  - 1. Cable shall be of commercial first-class quality manufacture.
- C. All Cable shall be fifteen feet (15') in length and terminate in the following connector genders:
  - 1. HDMI High-Speed Patch Cable (M/M).
  - 2. Classroom Multimedia Workstation USB Category 6 Patch Cable (M/M).
  - 3. 3.5mm Audio Cable M/M
  - 4. A single F6 Woven Wrap-Around Braided Sleeving to contain and protect all associated cable secure with Velcro straps.
    - a. Velcro straps shall be trimmed and flush with sleeving material.
    - b. Velcro straps shall be loose enough for cable movement.
    - c. Coordinate all color selections with Owner and Designer.
    - d. Braided sleeving should be cut and sealed cleanly using a hot knife or similar tool.

## 2.07 ULTRA SHORT-THROW INTERACTIVE VIDEO PROJECTORS

- A. Ultra Short-Throw Interactive Video Projectors each with accompanying projector specific mounts shall be provided and installed in locations as indicated in Appendix A.
- B. Acceptable Manufacturer(s):
  - 1. EPSON
    - a. Brightlink 1485Fi
- C. All features currently a part of the manufacturer's latest commercial release shall be included.
- D. Contractor shall provide Extension Equipment to support connection to supplied remote input/switcher (Category 6 STP). Equipment should include all necessary parts to provide a fully functional and compliant system.

## 2.08 DOCUMENT CAMERA

- A. A Document Camera shall be provided and installed in locations as indicated in Appendix A.
- B. Acceptable Manufacturers
  - 1. IPEVO
    - a. VZ-R HDMI/USB Dual Mode Document Camera
- C. Document Camera shall provide for both HDMI connectivity to projector and USB connection to workstation.
- D. All features currently a part of the manufacturer's latest commercial release shall be included.

## 2.09 VOICE AMPLIFICATION EQUIPMENT

- A. Voice Amplification Systems shall be provided and installed in locations as indicated in Appendix A.
- B. Acceptable Manufacturers
  - 1. LIGHTSPEED
    - a. 975 Access
- C. Voice Amplification systems shall meet or exceed the following minimum standards:
  - 1. DECT (1.9 GHz) communication for complete classroom coverage of two (2) microphones simultaneously.
  - 2. Two (2) highly durable, rechargeable, battery powered, tamper resistant, impact resistant, lanyard based pendant microphones.
    - a. Lightspeed volume control Flexmikes
- D. Voice Amplification systems shall include four (4) DRQ speakers (or equal) in each space containing an appropriate ceiling. Where lay-in ceilings are not installed, contractor shall provide WMQ (or equal) speakers.
  - 1. Speakers shall be installed professionally following all manufacturer installation recommendations and industry best practices.
  - 2. All cable shall be routed in support (D-rings, S-hooks, bridle rings, etc.). Cable supported by the ceiling grid or directly by structural members will be acceptable. No exposed cable shall be visible. Any cable that would be exposed shall be protected in appropriate raceway material approved by designer.

- E. In the event of a power failure, system shall automatically re-initialize and “become active” to the last configuration in use with no human intervention.
- F. Contractor shall provide one (1) audio cable to connect input port on amplifier to 3.5mm jack at Teacher Station (TS) for auxiliary device connection at the instructor’s discretion.
- G. Contractor shall provide one (1) audio cable for connectivity from audio output of projector to amplifier to support a fully functional and compliant system.
- H. Contractor shall supply all mounting hardware and materials to securely mount the audio amplifier on the top of the projector wall mount.

## 2.10 WIRELESS PRESENTATION

- A. Wireless Presentation Systems shall be provided and installed in locations as indicated in Appendix A.
- B. Acceptable Manufacturers:
  - 1. AirServer Connect 2
- C. Wireless presentation device shall allow teacher and student devices to present to the interactive projector without the use of any AV cables or dongles attached to their devices. Device shall be compatible with, Windows, Mac, Chrome, iOS, and Android.
- D. In the event of a power failure, system shall automatically re-initialize and “become active” to the last configuration in use with no human intervention.
- E. Contractor shall provide one (1) HDMI cable and one (1) Category 6 UTP network patch cable for connectivity of wireless presentation device to support a fully functional and compliant system.
  - 1. HDMI to projector
  - 2. UTP to Owner provided data drop near projector
- F. Contractor shall supply all mounting hardware, integration components and labor and materials to securely mount all components and insure compliant, fully functional, first-class operation.

## 2.11 SPECIAL CONFIGURATION SPACES

- A. SPECIAL CONFIGURATION A –  
OFFICE / SMALL COLLABORATION DISPLAY

1. Each space indicated shall be equipped with a SAMSUNG QET Series 65” display (or equal LG or Panasonic) and include, but not be limited to:
  - a. Each display shall be mounted using a Peerless ST650 SmartMount Universal Tilt Mount (or equal).
  - b. Contractor shall provide HDMI cables connecting the display to a wall outlet in an input box and raceway (empty dual gang input box and raceway provided by others). All connectors, face plates and materials for a fully compliant, first class, functioning system shall remain the responsibility of the contractor.
  - c. Integrated wireless presentation AirServer Connect 2 with each display configuration. AirServer Connect 2 network connections are provide by others. However, the contractor shall remain responsible for full configuration of the AirServer, including, but not limited to network parameters for a fully compliant, first class, functioning system.
2. Contractor shall supply all mounting hardware, integration components and labor and materials to securely mount all components and insure compliant, fully functional, first-class operation.

**B. SPECIAL CONFIGURATION B –  
INTERACTIVE DISPLAY STATION**

1. Each space indicated shall be equipped with a SMART MX275 Interactive Display. Display must include, but not be limited to:
  - a. SMART UGK-PCM11-i5, 512GB SSD or Promethean equal
  - b. Adjustable height wall mount Balance Box 650 or eBox
  - c. Logitech K400 Plus Wireless Keyboard Device
  - d. Wall mounted pocket/shelf to store keyboard at display location
  - e. AirServer Connect 2
2. Contractor shall supply all mounting hardware, integration components and labor and materials to securely mount all components and insure compliant, fully functional, first-class operation.

**C. SPECIAL CONFIGURATION C –  
CAFETERIA PRESENTATION SYSTEM**

1. A large venue presentation system for audio and video content shall be provided and installed in the Cafeteria. The system shall meet or exceed, but not be limited to the following:

- a. EPSON EB-PU1008B WUXGA 3LCD Laser Projector
- b. Peerless (or equal) mounting brackets, down pipe and all necessary components for ceiling mounted installation.
- c. Biamp CM60DTD Speakers including back boxes/enclosures and mounting brackets as indicated.
- d. Biamp ALC-404D Combined DSP/Amplification system. Contractor shall reserve one input for connection to building public address system with override programming included.
- e. Lightspeed 975 Access voice amplification system with one each DECT hand held and lanyard microphones paired to and usable in the room system. Input shall be connected to the Amplifier.
- f. AirServer Connect 2. Audio from this connection shall be routed to the system.
- g. DA-LITE 39158L Tensioned Controur Electrol Screen
  - 1. 159" Diagonal
  - 2. HD Progressive 1:1 surface
  - 3. 120v electric motor with low voltage control
  - 4. 16:9 aspect ratio
- h. Contractor shall provide HDMI transport electronics and cables connecting the projector to a wall outlet in an input box and raceway (empty dual gang input box and raceway provided by others). All connectors, face plates and materials for a fully compliant, first class, functioning system shall remain the responsibility of the contractor. Audio input from this connection shall be routed to the system.
- i. Crestron TSW-770-B-S or equal shall be provided with full programming and all supporting materials and labor, including but not limited to, control processor(s) and device connections for a fully functional, compliant, first class system providing, but not limited to the following functions:
  - 1. Screen control
  - 2. Projector control
  - 3. Source selection
  - 4. Audio Control

5. System reset on power on and off
6. System power control
7. System lock-out function
8. System automation for power on/off based on source sensing
- j. Legrand CWR-18-26PD Wall Rack for equipment mounting. Rack shall include, but not be limited to locking doors and access, passive ventilation, in rack power management.
2. Contractor shall supply all mounting hardware, integration components and labor and materials to securely mount all components and insure compliant, fully functional, first-class operation.

**D. SPECIAL CONFIGURATION D –  
ELEMENTARY GYM PRESENTATION SYSTEM**

1. A large venue presentation system for audio and video content shall be provided and installed in the Elementary Gym. The system shall meet or exceed, but not be limited to the following:
  - a. EPSON EB-PU1008B WUXGA 3LCD Laser Projector including a protective enclosure.
  - b. Peerless (or equal) mounting brackets, down pipe and all necessary components for ceiling mounted installation.
  - c. Biamp D10 Speakers including back boxes/enclosures and mounting brackets as indicated.
  - d. Biamp ALC-404D Combined DSP/Amplification system. Contractor shall reserve one input for connection to building public address system with override programming included.
  - e. Lightspeed 975 Access voice amplification system with one each DECT hand held and lanyard microphones paired to and usable in the room system. Input shall be connected to the Amplifier.
  - f. AirServer Connect 2. Audio from this connection shall be routed to the system.
  - g. DA-LITE 39158L Tensioned Controur Electrol Screen
    1. 159” Diagonal
    2. HD Progressive 1:1 surface

3. 120v electric motor with low voltage control
  4. 16:9 aspect ratio
  - h. Contractor shall provide HDMI transport electronics and cables connecting the projector to a wall outlet in an input box and raceway (empty dual gang input box and raceway provided by others). All connectors, face plates and materials for a fully compliant, first class, functioning system shall remain the responsibility of the contractor. Audio input from this connection shall be routed to the system.
  - i. Crestron TSW-770-B-S or equal with protective cover shall be provided with full programming and all supporting materials and labor, including but not limited to, control processor(s) and device connections for a fully functional, compliant, first class system providing, but not limited to the following functions:
    1. Screen control
    2. Projector control
    3. Source selection
    4. Audio Control
    5. System reset on power on and off
    6. System power control
    7. System lock-out function
    8. System automation for power on/off based on source sensing
  - j. Legrand CWR-18-26PD Wall Rack for equipment mounting. Rack shall include, but not be limited to locking doors and access, passive ventilation, in rack power management.
  2. Contractor shall supply all mounting hardware, integration components and labor and materials to securely mount all components and insure compliant, fully functional, first-class operation.
- E. SPECIAL CONFIGURATION E –  
PERFORMANCE GYM AUDIO SYSTEM
1. A large venue audio system shall be provided and installed in the Performance Gym. The system shall meet or exceed, but not be limited to the following:

- a. Eight (8) Electro Voice ZLX-12 or equal Community or JBL speakers. Speakers shall be permanently mounted to the exposed ceiling joists spaced and aimed to provide adequate coverage of the space.
  - b. Biamp ALC-3202D Combined DSP/Amplification system. Contractor shall reserve one input for connection to building public address system with override programming included.
  - c. Audio Technica ATW-1312/L (Two [2] handheld and lavalier microphone / receiver combo package) or equal Shure or Sennheiser.
  - d. Yamaha TF-RACK rack-mount digital mixer.
    - 1. Provide and install physical two (2) microphone cables connected to three (3) locations as shown (AV4 on drawings) (6 channels). Wall connector shall be XLR. Empty box and raceway provide by others. All cable, connectors, face plates and labor for a complete system shall be the responsibility of Contractor.
    - 2. Connect Wireless Audio Technica receiver specified herein.
    - 3. Provide Three (3) Audio Technica AE6100 microphones (or equal Shure or Sennheiser) with microphone stands and 50' cables.
  - e. Provide, install and integrate touch panel control on/in cabinet for system operation by non-audio engineer user community that provides for, but is not limited to the following features and control:
    - 1. Audio source level control (mix)
    - 2. System reset on power on and off
    - 3. System power control
    - 4. System lock-out function
    - 5. System automation for power on/off based on source sensing
  - f. Legrand CWR-18-26PD Wall Rack for equipment mounting. Rack shall include, but not be limited to locking doors and access, passive ventilation, in rack power management.
2. Contractor shall supply all mounting hardware, integration components and labor and materials to securely mount all components and insure compliant, fully functional, first-class operation.

F. SPECIAL CONFIGURATION F –  
MEDIA CENTER PRESENTATION SYSTEM

1. A large venue presentation system for audio and video content shall be provided and installed in the Media Center. The system shall meet or exceed, but not be limited to the following:
  - a. EPSON EB-PU1008B WUXGA 3LCD Laser Projector
  - b. Peerless (or equal) mounting brackets, down pipe and all necessary components for ceiling mounted installation.
  - c. Biamp CM60DTD Speakers including back boxes/enclosures and mounting brackets as indicated.
  - d. Biamp ALC-404D Combined DSP/Amplification system. Contractor shall reserve one input for connection to building public address system with override programming included.
  - e. Lightspeed 975 Access voice amplification system with one each DECT hand held and lanyard microphones paired to and usable in the room system. Input shall be connected to the Amplifier.
  - f. AirServer Connect 2. Audio from this connection shall be routed to the system.
  - g. DA-LITE 39157LS Tensioned Controur Electrol Screen
    1. 133" Diagonal
    2. HD Progressive 1:1 surface
    3. 120v electric motor with low voltage control
    4. 16:9 aspect ratio
  - h. Contractor shall provide HDMI transport electronics and cables connecting the projector to a wall outlet in an input box and raceway (empty dual gang input box and raceway provided by others). All connectors, face plates and materials for a fully compliant, first class, functioning system shall remain the responsibility of the contractor. Audio input from this connection shall be routed to the system.
  - i. Crestron TSW-770-B-S or equal shall be provided with full programming and all supporting materials and labor, including but not limited to, control processor(s) and device connections for a fully functional, compliant, first class system providing, but not limited to the following functions:
    1. Screen control

2. Projector control
  3. Source selection
  4. Audio Control
  5. System reset on power on and off
  6. System power control
  7. System lock-out function
  8. System automation for power on/off based on source sensing
- j. Legrand SRSR-X-14 millwork/cabinet rack insert for equipment mounting. Rack shall include, but not be limited to in rack power management. Coordinate mounting details and installation with Construction Manager and millwork contractor.
2. Contractor shall supply all mounting hardware, integration components and labor and materials to securely mount all components and insure compliant, fully functional, first-class operation.

## 2.12 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 \$12,500 for a student production green screen studio.
  2. Allowance shall be made in the amount of \$6,000 for additional technology program items associated with collaboration spaces including, but not limited to:
    - a. Retractable green screens for C110 and D113
    - b. Lego Wall for D113
    - c. Science probes and sensors for D206
  3. Allowance shall be made in the amount of \$14,000 for contract services related to supply, installation, and connection of contingency upgrades.

## 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 and placement requirements prior to commencement of other installation activities.
- B. Contractor shall completely cooperate with Owner's Construction Manager for all site access, site safety and related matters. Contractor shall obtain current drawings, specifications and plans from Owner's Construction Manager and make field adjustments as required to correctly and reasonably coordinate with other trades. Contractor will attend all CM field coordination and schedule meetings and cooperate with project timelines as directed.
- C. Contractor shall ensure all submittals and have been provided to, and approval has been obtained from Designer and Owner prior to commencement of any final installation activities. Submittals shall include, but not be limited to:
  - 1. Shop drawings, data sheets and system diagrams including specific cable connectors and types proposed to be installed.
  - 2. Asset tag format, composition, attachment method and location on each serialized component being provided.
  - 3. Firmware configuration template to be used for each component provided.
  - 4. Written installation, coordination, and test procedure to be followed by installing technicians and engineers.
  - 5. Final documentation template.

### 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.
  - 1. Appendices depicting general ceiling conditions for areas of buildings are included herein. Contractors shall field verify specific room conditions.
- B. Work Areas shall be cleaned at the end of each day. All debris shall be cleared, removed, and disposed of off premise. All equipment and tools shall be removed from common areas and stored in approved, secure storage locations.

1. Owner shall not be responsible for disposal or transportation of any packaging materials or other waste items.
  2. Owner's waste containers including site dumpsters shall not be used for material disposal.
- 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 system devices to the Owner's intended use and need.
  6. Label with asset tags and other markings provided by Owner all system devices as may be appropriate and required by Owner and Designer.
  7. Work shall be performed to meet local codes and industry standards including proper grounding and bonding of installed equipment. Work shall conform to "best practices" observed by industry professional installers and as required by Owner and Designer.
  8. Work shall include careful coordination and cooperation with others to ensure a timely, cost effective and proper installation for Owner's intended application. Such efforts shall include, but not be limited to, coordinating, and cooperating with other contractors, Owner, Designer and Engineer.
  9. Where cables are to be routed through or on a finished wall, standard connectors must be used at the wall location to terminate call cables. All wall plates shall be stainless steel. Plastic or nylon plates shall not be acceptable. Cables routed out of a wall box on a finished wall without proper standard connection termination shall not be acceptable.

10. All cables shall be proper and adequately supported using hooks or rings no more than eight feet (6') apart. Cables supported by structural steel, ceiling grid or hanger wires will not be acceptable. All cable routing shall be neat and orderly.
11. All cable connecting components mounted in/on Technology Cart, shall have adequate cable slack to provide for full system inspection and or service without the removal (intentional or inadvertent) of connecting cables, including items that will be placed on the keyboard tray of equipment carts.
12. Label all cable connections for intuitive user access and as directed by Owner and Designer.
13. Work may include extending cables from installed equipment, and as required and/or specified herein, to Owner identified connection outlets.
  - a. Work includes supply, connection, and testing of any such cables.
  - b. Work includes neatly routing all cables and securing cables with Velcro straps as may be reasonably required to keep cables in position during normal operating, service, and inspection operations.
  - c. Cables for some devices may be routed in air plenum spaces, above finished ceilings, or in other ways require special care and suitable tools to complete. Where air plenum status is in question and/or may change, plenum rated cable shall be used.
- E. All installation and configuration activity shall fully comply with both the manufacturer's recommended procedures as well as industry best practices.
- F. VIDEO PROJECTORS
  1. Install, configure, and test approved firmware configuration template including, but not limited to:
    - a. Power on Image.
    - b. Lamp setting.
    - c. Firmware based Device ID (Including parameters such as: TCP/IP settings, Host Name, etc.).
    - d. Default port selection.
  2. Neatly configure all cables as directed by Owner.

3. Attach projector to mount using projector security mounting plate provided by others.
4. Connect AC power using cord provided to projector.
5. Align projector with screen.
6. Set keystone adjustment(s) as required.
7. Zoom and focus projector as required.
8. Properly and completely secure all adjustment points.
9. Provide for low voltage power from projector electrical outlet to the remote input/switcher mounted above the input plate. Securely mount transformer with the projector.
10. Coordinate with Owner and Designer markerboard location adjustments.
11. Remove and dispose of all excess materials, and packaging as directed by Owner.

#### G. DOCUMENT CAMERAS

1. Develop with Owner and Designer an approved firmware configuration template for all physical and programmatic settings available on the product.
2. Install, configure, and test approved firmware configuration template in all spaces as indicated on schedules herein.

#### H. WIRELESS PRESENTATION DEVICES

1. Develop with Owner and Designer an approved firmware configuration template for all physical and programmatic settings available on the product.
2. Install, configure, and test approved firmware configuration template in all spaces as indicated on schedules herein.

#### I. VOICE AMPLIFICATION SYSTEM

1. Connect all audio input and output device cables.
2. Secure mounting location with mounting screws or Velcro pads to eliminate involuntary equipment movement.
3. Neatly route all cabling and secure slack.

4. Adjust balance levels for standard configuration.
  5. Verify target volume level in space with sound meter and record level at installation.
- J. It shall be the responsibility of the Contractor to repair or replace any damage done to the structure of finishes in the building by the Contractor. If in the course of work, Contractor damages, marks, or misplaces any surfaces or access plates/panels the Contractor shall repair and/or replace the surface, plate, or panel to the original condition.
1. Repairs shall include, but not be limited to patching and painting.
  2. Final determination as to the damage condition and/or repair/replacement fitness of any surface, plate or panel shall be the sole responsibility of the Designer.
  3. The building and work area shall be returned to its original condition prior to final sign-off of the project.
- K. Following installation and system “turn-up”, but prior to final acceptance of the system, Contractor shall conduct follow-up interviews with Owner identified administrators and staff to review system functionality, suitability and confirm feature and program fitness for Owner applications.
1. Follow-up interviews shall be fully documented by Contractor and submitted to Owner for approval.
- L. All cable and device labels shall match existing standard.
- M. Worksites include the following:
1. Schoolcraft Elementary School  
551 E. Lyons  
Schoolcraft, MI 49087

### 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 and proposed test plan 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 accept or revise the proposed test plan, 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’s manuals of all equipment installed, warranty and maintenance information and other information the Contractor, Designer and/or Owner deem necessary. Documentation shall also be provided in a digital format in file formats and on media as specified by Owner and/or Designer.
- B. Contractor shall be responsible for providing thorough, timely documentation on all hardware, software. Documentation shall include, but not be limited to:
  1. Equipment description.
  2. Equipment make.

3. Model number.
4. Software release.
5. Date installed.
6. Location installed.
7. Manufacturer's warranty.
8. Maintenance contract terms.
9. Verification of maintenance contract engagement.
10. Telephone numbers for service and support.
11. Detailed technical support and service procedure instructions.
12. 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.
13. 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.
14. CAD or Visio as built drawings/diagrams for each building.
15. System Configuration Report.
16. Complete inventory of installed hardware and system software including, but not be limited to, model numbers, Ethernet MAC address, serial numbers, physical installation location and software options.

### 3.05 TRAINING

- A. No training shall be conducted prior to training outline and/or syllabus being approved by Owner, Instructional or overview activities conducted without prior content approval with not be deemed contract training, and Contractor shall remain responsible for delivery of approved training.
- B. Contractor shall provide training for the Owner designated system administrator(s). Training shall be a minimum of one (1), one (1) hour session in length, at the convenience of the Owner personnel, and of sufficient

duration to satisfactorily complete training on all system administration functions including, but not limited to:

1. Basic trouble shooting of the installed system and components including diagnostic and problem resolution actions.
  2. System back-up and restore functions and procedures for all system parameters and configurations.
  3. Device additions moves and changes as well as reconfiguration.
  4. Review of system alerts, logs and monitoring of configuration parameters including, but not limited to and system configuration changes.
- C. Contractor shall provide end user training for classroom instructors district wide via the development of video training segments to be posted on an internal website for distribution. Training shall be available prior to substantial completion. End user video training segments shall include, but not limited to the following:
1. System power up and power down.
  2. Source selection.
  3. Volume control.
  4. Voice amplification use.
  5. Document camera operation.
  6. System care and classroom maintenance best practices.
  7. Equipment cart relocation and adjustments.
  8. Screen operation and care.
  9. Problem reporting.

### 3.06 SCHEDULE, MEETINGS AND PLANS

#### A. Schedule

1. Contractor Chosen: Week of September 12, 2022
2. Work Commences: Week of September 19, 2022
3. Substantial Completion: July 1, 2023
4. Project Close-out: August 1, 2023

- B. Planned sequence of operations shall be established by the Contractor within the guidelines established by the Owner, as required herein and as required to meet schedules.
- C. All work shall be coordinated with Owner's construction manager on site.
- D. Project progress meetings shall be held, but not limited to, weekly at a site and time identified as convenient for Owner and as required herein. Meetings will be attended as required herein.

END OF SECTION

SECTION 27 51 16  
PUBLIC ADDRESS SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

- A. Work described in this specification section pertains to Public Address and Intercom System expansion for Schoolcraft Community Schools. Work shall include, but not be limited to, head-end equipment, cabling, ceiling and/or wall speakers, interface units and all other components and services required for a full and operational system.
- B. Owner desires to add to systems currently in operation and serving indicated locations.
  - 1. Schoolcraft Elementary School  
551 E. Lyons  
Schoolcraft, MI 49087
- C. The Contractor shall design, engineer, configure, supply, connect, test, document, and warrant a fully operational and compliant system, complete and with full functionality as specified herein.
- D. 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.

#### 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:

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 / Intercom 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
    - a. Valcom
    - b. Or Equal

- 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 INTERCOM SYSTEM HEAD END
- A. Contractor shall supply, install, and configure all necessary materials for a fully IP PoE Paging/Intercom system. System shall fully integrate new speakers and intercom devices as specified herein for a fully working and compliant system.
  - B. System shall be Valcom IP 6000 or Equal
  - C. System shall reside on a Contractor provided server that shall be installed in the building MDF.
  - D. System shall provide for, but not be limited to the following:
    - 1. Building wide paging
    - 2. Individual classroom intercom initiated from the classroom, or from the office.
    - 3. Program bells and alerts for normal school operation, configurable by simple calendar-based user interface.
    - 4. Individual volume control of each IP speaker.
    - 5. Full SIP compliance for communication between devices.
    - 6. All other features and functions that are part of the manufacturer's current release of the product offering.
  - E. The Owner has preference for software licensing based on a persistent or perpetual model. Monthly or annual subscription licensing will not be as favorably considered as the preferred model.
- 2.05 COMMON INTERIOR SPEAKERS
- A. One (1) Common Interior Speaker (one way audio) shall be installed in/on finished ceiling surfaces in corridor as indicated on drawings.

- B. Contractor shall provide and install PoE Speakers as indicated herein:
  - 1. Valcom VIP-402A
  - 2. Or equal.
- C. 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.
- D. Speakers shall provide balanced intelligible sound that is free of distortion, free from noise and evenly dispersed.
- E. 2'x2' lay in speaker with 8" cone speaker complete and assembled shall be installed.
  - 1. Capable of >96 dB at 4'.
  - 2. Frequency range is 45-18,000Hz.
- F. All speakers shall be field firmware changeable to support multiple other SIP based software systems.
- G. Any speaker baffles shall be installed with hardware matching the color of the baffle. Baffle color shall match finished ceiling color.
  - 1. All baffles shall be flush against the ceiling and enclosures shall be fully supported. All speakers shall include a back-box.
- H. All devices shall be mounted square and plumb and as recommended by the manufacturer and required by Owner and Architect.
- I. Each speaker shall be connected to central equipment PoE+ compliant cabling provided by Others and provide for system wide broadcast and/or zone-specific broadcast.
- J. Each speaker shall be volume adjustable at installation to accommodate specific acoustical properties of the intended coverage area.
- K. Where 2x2 lay-in speaker installation is not possible contractor shall supply appropriate and compatible speakers:
  - 1. Where ceilings are open Valcom VIP-415 or equal shall be used
  - 2. Where ceilings are hard-lid Valcom VIP-120 or equal shall be used complete with backbox and all supporting components as recommended by manufacturer.
- L. Coordinate final placement of speakers with Designer and/or Architect.

1. Area of coverage will be such that calls will be clearly audible in the operating area and surrounding space.
- M. System shall produce audio at a peak level of approximately eighty-five (85) dBA at probable listener's positions.

## 2.06 CLASSROOM INTERCOM STATIONS

- A. Classroom Intercom Stations shall be provided in each room as indicated on drawings and/or as provided for in Appendix A. Speakers shall be integrated in ceiling spaces near the center of the space, and call switches shall be installed in/on wall surfaces in classrooms and/or other instructional areas as indicated.
- B. Contractor shall provide and install PoE Speakers as indicated herein:
  1. Valcom VIP-422A
  2. Or equal.
- C. Speakers shall provide balanced intelligible sound that is free of distortion, free from noise and evenly dispersed.
- D. Internal microphones shall provide for adequate audio pick-up from anywhere in the room and internally mitigate feedback.
- E. 2'x2' lay in speaker with 8" cone speaker complete assembled to a metal baffle and internal microphone shall be installed.
  1. Capable of >96 dB at 4'.
  2. Frequency range is 45-18,000Hz.
- F. All speakers shall be field firmware changeable to support multiple other SIP based software systems.
- G. Contractor shall provide and install Call-In Switches in classrooms and/or other instructional areas as indicated herein.
- H. Call-in switches shall be fully configured and integrated with the associated classroom speaker. Call-In Switches provided shall be:
  1. Valcom V-2972
  2. Or Equal
- I. All devices shall be mounted square and plumb and as recommended by the manufacturer and required by Owner and Architect.

- J. Each speaker shall be connected to central equipment PoE+ compliant cabling provided by Others and provide for system wide broadcast and/or zone-specific broadcast.
    - 1. Contractor shall connect each call-in switch to it's associated speaker(s) providing all necessary cabling and providing for all cable support. Cabling supported by structure or laying on finished surfaces shall not be accepted.
  - K. Each speaker shall be volume adjustable at installation to accommodate specific acoustical properties of the intended coverage area.
  - L. Where 2x2 lay-in speaker installation is not possible contractor shall supply appropriate and compatible speakers:
    - 1. Where ceilings are open Valcom VIP-415 or equal shall be used
  - M. Coordinate final placement of speakers with Designer and/or Architect.
    - 1. Area of coverage will be such that calls will be clearly audible in the operating area and surrounding space.
  - N. System shall produce audio at a peak level of approximately eighty-five (85) dBA at probable listener's positions.
- 2.07 COMPONENT INTERCONNECTION
- A. All wiring not installed in conduit shall be plenum type cable and shall be so identified with continuous marking.
  - B. No wiring installed shall be visible unless specifically and individually approved by Owner and Designer. All wire that traverses open areas shall be installed in metal raceway of appropriate size for the number of wires installed plus twenty percent more.
    - 1. All metal raceway shall be ordered in standard colors to as closely match the environment in which it is being installed as possible.
    - 2. Metal raceway shall be carefully and neatly installed, to meet manufacturer recommendations and standards for professional installation.
    - 3. Sharp edges, gaps in the covering or corners or other unprofessional workmanship characteristics of installation will not be acceptable.
  - C. Wiring color shall remain the same throughout the system. Colors used for coding shall be as directed by the system manufacturer, Owner, and Architect.
  - D. Wire shall be copper.

## 2.08 ALLOWANCES

A. Contractor shall include allowances for equipment and/or other contract service reimbursements as required below in base bid lump sum amount(s). Equipment and/or contract services shall be provided and sourced at Owner's discretion and convenience with full cooperation by Contractor and paid for from successful bidder's contract in the amount(s) provided for herein. Any allowance amount proving to be excessive for the intended equipment and/or contract services shall be credited to the Owner against contract payment requests.

1. Allowance shall be made in the amount of \$10,000 for contract services related to supply, installation, and connection of contingency upgrades.

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. Contractor shall conduct detailed walk-through examination with Designer and Owner verifying equipment and material locations as well as 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.

E. Worksites include the following:

1. Schoolcraft Elementary School  
551 E. Lyons  
Schoolcraft, MI 49087

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. 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. Testing shall include, but not be limited to the following:
- 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. 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 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. CAD as built drawings for each building.

### 3.05 TRAINING

- A. No training shall be conducted prior to training outline and/or syllabus being approved by Owner. Instructional or overview activities conducted without prior content approval with not be deemed contract training, and Contractor shall remain responsible for delivery of approved training.
- B. Contractor shall provide training for the Owner designated system administrator(s). Training shall be a minimum of one (1), one (1) hour session in length, at the convenience of the Owner personnel, and of sufficient duration to satisfactorily complete training on all system administration functions including, but not limited to:
  - 1. Basic trouble shooting of the installed system and components including diagnostic and problem resolution actions.
  - 2. System back-up and restore functions and procedures for all system parameters and configurations.
  - 3. Device additions moves and changes as well as reconfiguration.
  - 4. Review of system alerts, logs and monitoring of configuration parameters including, but not limited to and system configuration changes.
  - 5. System power-up and power down process.
  - 6. Recording and playing pre-recorded content.
  - 7. System update process
  - 8. System maintenance procedures.
  - 9. Problem reporting.
- C. Contractor shall provide in-person end user training for building office staff. Training shall be available at substantial completion. Training shall include, but not limited to the following:

1. System functionality overview.
2. Bell schedule programming and changes.
3. Paging zone controls.
4. Intercom function use incoming and outgoing.
5. System operation best practices.
6. Building wide all page.
7. Recording and playing pre-recorded content.
8. Problem reporting.

### 3.06 SCHEDULE, MEETINGS AND PLANS

#### A. Schedule

1. Contractor Chosen: Week of September 12, 2022
2. Work Commences: Week of September 19, 2022
3. Substantial Completion: July 1, 2023
4. Project Close-out: August 1, 2023

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

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

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

END OF SECTION

SECTION 27 53 13  
CLOCK SYSTEM

PART 0 - GENERAL

1.01 DESCRIPTION OF PROJECT

- A. Work described in this specification section specification section pertains to Clock System expansion for Schoolcraft Community Schools. Work shall include, but not be limited to, head-end equipment, cabling, single and dual sided wall clocks, and all other components and services required for a full and operational system.
- 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. 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.
- D. 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 one (1) year. 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. Any documents and/or submittals required by individual manufacturers for compliance with the standard and/or applicable extended warranty programs shall be provided and submitted for approval by the Contractor.
  - 2. Contractor shall submit all documents, apply for warranty or extended warranty certification, and provide a Certificate of Warranty or Extended Warranty as may be applicable from the manufacturer prior to project closeout.
- C. On site services provided under the warranty shall be performed by personnel or representatives of Contractor as herein defined and located within physical proximity to provide response levels deemed acceptable to Owner.

- D. Contractor shall provide the following response times for all malfunctioning equipment:
1. Eight (8) 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. Bidder shall provide current annual maintenance contract pricing for recommended maintenance programs for all equipment following the specified and included one (1) year period as a Voluntary Alternate. 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, 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.

#### 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 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

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

2. EIA/TIA Commercial and Administration Standards
3. NEC
4. FCC – All Applicable Rules and Regulations
5. UL
6. 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 security 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 MANUFACTURERS

###### A. Acceptable Manufacturers:

1. Valcom
2. Or Equal

##### 2.02 Supply most current version of all products provided.

- A. Manufacturer shall have five (5) years of experience and history manufacturing similar products to those specified.

- B. Proposed components shall have been field tested and proven in actual use.
  - C. Prior and/or old versions of products, unless specifically approved and documented by Designer and/or Owner shall not be acceptable.
  - D. In cases where a newer version of hardware or software is available at the time of installation, Contractor shall request clarification from Designer on which version is to be used.
- 2.03 Furnish only new, first class quality materials and equipment.
- 2.04 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.
- 2.05 Contractor shall be responsible for final and working system. Use of existing components and materials provided by others during new construction shall be integral to system configuration and cost-effective installation. Bidders are encouraged to use all compatible and working components in system solution. See schedule(s) and reference files for additional detail.
- 2.06 CLOCK SYSTEM
- A. Contractor shall supply, install, and configure all necessary materials to install a fully compliant simple PoE Clock System attached to NTP server as directed by Owner to fully integrate new clock devices as specified herein.
- 2.07 SINGLE SIDED CLOCK
- A. Single sided factory assembled digital clocks shall be provided and installed in classrooms and/or other instructional areas as indicated in associated drawings.
  - B. Clocks shall meet or exceed the following:
    - 1. Analog clock shall be Valcom VIP-D440A or equal.
- 2.08 DOUBLE SIDED CLOCK
- A. Double sided factory assembled digital clocks shall be provided and installed on wall surfaces in corridor and as indicated in associated drawings.
  - B. Clocks shall meet or exceed the following:
    - 1. Analog clock shall be Valcom VIP-D440ADS or equal.

### PART 3 - EXECUTION

#### 3.01 PREPARATION

- A. Contractor shall conduct detailed walk-through examination with Designer and Owner verifying equipment and material locations as well as 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 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. Collect all information necessary to accurately program all system devices to the Owner's intended use and need.
  - 6. Label all system devices as may be appropriate and required by Owner and Designer.

7. Complete end user and system administrator training programs as specified herein.
  8. Work shall be performed to meet local codes and industry standards including proper grounding and bonding of installed equipment.
- E. Worksites include the following:
1. Schoolcraft Elementary School  
551 E. Lyons  
Schoolcraft, MI 49087
- 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 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’s manuals of all equipment installed, warranty and maintenance information and other information the Contractor, Designer and/or Owner deem necessary. Documentation shall also be provided in a digital format in file formats and on media as specified by Owner and/or Designer.
- B. Contractor shall be responsible for providing thorough, timely documentation on all hardware, software. Documentation shall include, but not be limited to:
  1. Equipment description.
  2. Equipment make.
  3. Model number.
  4. Software release.
  5. Date 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. System Configuration Report.
15. Complete inventory of installed hardware and system software. Hardware inventory shall include, but not be limited to, model numbers, serial

### 3.05 TRAINING

- A. Not used.

### 3.06 SCHEDULE, MEETINGS AND PLANS

#### A. Schedule

1. Contractor Chosen: Week of September 12, 2022
2. Work Commences: Week of September 19, 2022
3. Substantial Completion: July 1, 2023
4. Project Close-out: August 1, 2023

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

- C. All work shall be coordinated with Owner's construction manager on site.
- D. Project progress meetings shall be held, but not limited to, weekly at a site and time identified as convenient for Owner and as required herein. Meetings will be attended as required herein.

END OF SECTION

SECTION 28 13 00  
BUILDING ACCESS CONTROLS

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

- A. Work described in this specification section specification section pertains to Building Access Control System expansion for Schoolcraft Community Schools (Owner). Work shall include, but not be limited to, head-end equipment, cabling, door control equipment, and all other components and services required for a full and operational system. Owner currently is licensed for an S2 system running version 5.3.3 on the Owner's existing hardware platform.
- 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. 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.
- D. 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) year. 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. Any documents and/or submittals required by individual manufacturers for compliance with the standard and/or applicable extended warranty programs shall be provided and submitted for approval by the Contractor.
  - 2. Contractor shall submit all documents, apply for warranty or extended warranty certification, and provide a Certificate of Warranty or Extended Warranty as may be applicable from the manufacturer prior to project closeout.
- C. On site services provided under the warranty shall be performed by personnel or representatives of Contractor as herein defined and located within physical proximity to provide response levels deemed acceptable to Owner.

- D. Contractor shall provide the following response times for all malfunctioning equipment:
  - 1. Eight (8) 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. Bidder shall provide current annual maintenance contract pricing for recommended maintenance programs for all equipment following the specified and included one (1) year period as a Voluntary Alternate. 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, 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.

#### 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 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

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

2. EIA/TIA Commercial and Administration Standards
3. NEC
4. FCC – All Applicable Rules and Regulations
5. UL
6. 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 security 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 MANUFACTURERS

- A. Manufacturer of major components of the included Building Access Control 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 (5) years.

1. Acceptable Manufacturers:

- a. S2 (Lenel)

##### 2.02 Supply most current version of all products provided.

- A. Proposed components shall have been field tested and proven in actual use.
  - B. Prior and/or old versions of products, unless specifically approved and documented by Designer and/or Owner shall not be acceptable.
  - C. 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 interoperable components including, but not limited to, controller, credential sensors, and management software integrated into a common working system.
- 2.05 System administrator shall be capable of complete system back-up and full system restoration from a previously saved configuration.
- 2.06 System shall be of a distributed processing design with a fully distributed database including, but not limited to time, date, valid codes, access levels and related data so that each Controller makes access control decisions for that location. If communications with central station equipment is lost, all transactions shall be buffered until the restoration of a connection to the central station.
- 2.07 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.
- 2.08 Contractor shall be responsible for final and working system. Use of existing components and materials provided by others during new construction shall be integral to system configuration and cost-effective installation. Bidders are encouraged to use all compatible and working components in system solution. See schedule(s) and reference files for additional detail.
- 2.09 BUILDING ACCESS CONTROL SYSTEM
- A. Contractor shall supply, install, and configure all necessary materials to expand the Owner’s existing S2 Security system to fully integrate new building access devices as specified herein.
- 2.10 DOOR CONTROLLER
- A. An adequate number of controllers to support the quantity of credential readers shall be provided. A dedicated door controller shall be provided and installed in a lockable enclosure above/behind the finished surface on the secure side of each relevant opening. All power shall be from PoE switches provide by others. No local power at an opening will be permitted.
  - B. Controller(s) shall provide, but not be limited to:

1. Capable of supporting multiple types and styles of credential readers.
2. Two (2) inputs for credential readers.
3. Two (2) outputs for door interface hardware.

C. Door Controller provided shall be:

1. MERCURY
  - a. Mercury 1501 PoE Door Controller

## 2.11 CREDENTIAL READERS

A. Credential Readers shall be provided and installed as indicated herein.  
Credential Reader provided shall meet or exceed the following requirements:

1. HID Corporation
  - a. [HID® MiniProx® 5365](#)
  - b. [HID® Proximity ProxPoint® Plus 6005](#)
  - c. Reader model based on installation location (as shown on drawings) and space provided by other trades.
2. Powered from associated Controller.
3. Response time for passage requests of 800ms.
4. Sealed weatherproof shell enclosure rated for outdoor operation.
5. Surface mounted on exterior surface of structure.
6. LED or other type of visual indicator indicating request status.
7. Audible status indicator upon user prompt.
8. Range of four inches (4”).

B. See associated schedule(s) and or Drawings herein for location and quantity.

## 2.12 DOOR STATIONS

A. A Door Station shall be provided, installed, provisioned, licensed and configured at each location indicated herein.

1. Door stations shall be Axis A8105-E or equal.

2. Devices shall be powered by Ethernet PoE as described herein.
3. Sealed weatherproof shell enclosure rated for outdoor operation.
4. Surface mounted on exterior surface of structure.
5. See associated schedule(s) and or Drawings herein for location and quantity.

#### 2.13 LOCKDOWN BUTTONS

- A. Lockdown button(s) shall be provided and installed as indicated herein and shall meet or exceed the following requirements:
  1. Buttons shall be located near the front entrance desk(s).
  2. New buttons shall be wall mounted and prominently located in an area promoting easy access by staff that may reasonably be required to initiate a lock down.
  3. New lockdown buttons shall be SS2242LD-EN STI Yellow Indoor/Outdoor Flush or approved equal.
  4. Lockdown buttons shall be programmed to provide all functionality defined by Owner, including, but not limited to the integration via contact closure with PA/program system, video monitoring system and clock system. Such integration shall include both a lockdown and all clear integration.
  5. See associated schedule(s) and or Drawings herein for location and quantity.

#### 2.14 COMPONENT INTERCONNECTION

- A. All wiring not installed in conduit shall be plenum type cable and shall be so identified with continuous marking.
- B. Wiring color shall remain the same throughout the system. Colors used for coding shall be as directed by the system manufacturer, Owner and Designer.
- C. Wire shall be copper.
- D. Contractor shall coordinate with all relevant building trades subcontractors as well as Owner's Construction Manager to integrate and interconnect all relevant equipment, components, devices, connections and wires that may be provided by others. Refer to construction documents provided for reference.

#### 2.15 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 \$7,500 for contract services related to supply, installation, and connection of contingency upgrades.

## PART 3 - EXECUTION

### 3.01 PREPARATION

- A. Contractor shall conduct detailed walk-through examination with Designer and Owner verifying equipment and material locations as well as 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 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. Collect all information necessary to accurately program all system devices to the Owner's intended use and need.
  - a. It is intended that work performed, and configurations made by contractor shall include, but is not limited to:
    1. All door control functionality and configurations shall be reviewed with the Owner and Designer prior to final configuration work.
    2. A door position switch shall be provided and installed on all new entrances and configured in the system for door position monitoring and alarming. Refer to provided door schedule for work and components that may be provided by others.
    3. Two lockdown buttons in the Main Office shall be configured to activate locks for doors that provide entry into the building.
    4. Coordination with both hardware and scheduling to program momentary deactivation of magnetic hold opens associated with academic wing access doors. This may be associated with normal schedules as well as special situations including, but not limited to building lockdown.
  5. Lock/Unlock schedules configured for doors as desired by owner.
6. Label all system devices as may be appropriate and required by Owner and Designer.
7. Complete end user and system administrator training programs as specified herein.
8. Work shall be performed to meet local codes and industry standards including proper grounding and bonding of installed equipment.

E. Worksites include the following:

1. Schoolcraft Elementary School  
551 E. Lyons  
Schoolcraft, MI 49087

- 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 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’s manuals of all equipment installed, warranty and maintenance information and other information the Contractor, Designer and/or Owner deem necessary. Documentation shall also be provided in a digital format in file formats and on media as specified by Owner and/or Designer.
- B. Contractor shall be responsible for providing thorough, timely documentation on all hardware, software. Documentation shall include, but not be limited to:
  - 1. Equipment description.
  - 2. Equipment make.
  - 3. Model number.
  - 4. Software release.
  - 5. Date 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. CAD as built drawings for each building.
14. System Configuration Report.
15. 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.

### 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 administrator(s). 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 trouble shooting of the installed system and components including diagnostic and problem resolution actions.
  2. System back-up and restore functions and procedures for all system parameters and configurations.
  3. Review of system alerts, logs and monitoring of configuration parameters including, but not limited to, configuration changes and device status.

### 3.06 SCHEDULE, MEETINGS AND PLANS

A. Schedule

1. Contractor Chosen: Week of September 12, 2022
2. Work Commences: Week of September 19, 2022
3. Substantial Completion of Project: July 1, 2023
4. Project Close-out: August 1, 2023

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

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

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

END OF SECTION

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 Schoolcraft Community Schools.
- 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

- 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

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

#### 1.06 CONTRACTOR

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

forms with the sealed Bid as provided herein. Bid Form(s) may be duplicated as required in order to provide adequate space to list required number of reference installations for each division Bidder is responding to.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

A. Acceptable Manufacturers (In alphabetical order):

1. AVIGILON
2. AXIS COMMUNICATIONS
3. EXACQVISION
4. MILESTONE SYSTEMS

2.02 Supply most current version of all products provided.

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

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

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

### 2.05 CENTRAL VIDEO MONITORING CONTROL SOFTWARE

- A. System shall be capable of and licensed to support the specified configuration and an additional twenty percent (20%) more cameras without additional software investment required (actual camera and mounting hardware cost excluded).
- B. Central control software shall be installed on Contractor supplied server environment.

- C. System shall be capable of being fully administered from any web browser attached to the network.
- D. System shall provide full functionality of the following feature sets and/or standards either in the Central Control software and in conjunction with proposed camera equipment, and shall provide for all management, configuration and control of features and/or standards from Central Control software administrative interface:
  - 1. Administration access shall be protected by unique and secure log on (User ID and Password).
  - 2. System administrator shall be capable of complete system back-up and full system restoration from a previously saved configuration.
  - 3. System reporting shall include, but not be limited to:
    - a. Real time camera status.
    - b. Historical camera utilization for administrator defined period.
    - c. Status of all system components.
    - d. Digital Zoom of streaming and stored images.
    - e. Ad hoc access to streaming and stored video from any properly authenticated device with network access.
    - f. H.264 Decoding.
    - g. Motion detection and alarm-based recording.
    - h. Video client support for the following:
      - 1. Web Browser (Internet Explorer/Firefox/Safari/Chrome)
      - 2. Apple Macintosh (OSX)
      - 3. iOS
      - 4. Android OS
      - 5. Windows 10
- E. System shall be configured to provide standard acceptable Ethernet Quality of Service (QoS) identification at both layer two (2) and layer three (3) to Owner's network infrastructure so as to ensure end-to-end priority delivery of video traffic across the network.

1. IPSec

2. IEEE 802.3p

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

G. All other features currently a part of the manufacturer’s latest commercial release.

## 2.06 CENTRAL VIDEO MONITORING CONTROL SERVER HARDWARE

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

B. Acceptable Manufacturers (In alphabetical order):

1. AVIGILON

2. EXACQVISION

3. MILESTONE SYSTEMS

C. Central Video Monitoring server hardware provided, installed and fully configured and provisioned by Contractor shall meet or exceed the following requirements.

1. District VMS Server

- a. 2U Rack Mount

- b. 96TB VMS Storage

- c. Expandable to 384TB local storage

- d. Intel Xeon Silver 4216

- e. 32GB DDR4 RAM

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

- g. 2 x 1 GbE + 2 x 10GbE

- h. Redundant power supply

## 2.07 CAMERAS

A. Ethernet cameras shall be provided as indicated herein. Cameras shall meet or exceed the following specified capabilities:

1. Standard Camera (SC3)

- a. Axis M3205-LVE or equal
- b. Cameras shall be installed in mechanical flush mounted, integrated, tamper and impact resistant dome enclosure mount adapter to facilitate installation either directly on walls, to a ceiling or to a single gang electrical box providing 10/100/1000 PoE+ UTP connection for installed camera. Domes shall also meet or exceeding the following requirements:
  - 1. Optically correct polycarbonate lower dome with light loss not greater than 11.5 f-stops.
  - 2. Dust and water protection based.
  - 3. Puncture resistant with capability to withstand a pointed impact force of 35 foot-pounds without creating an internal depression greater than .2 inches.
  - 4. Impact resistant with capability to withstand repeated multiple blunt impact forces up to 100 foot-pounds.
  - 5. Camera shall include all necessary mounting hardware and accessories for a fully supported installation.

2. Interior Multidirectional – Dual Sensor (SC1)

- a. P3715-PLVE
- b. 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.
3. Exterior High Resolution (SC4)
  - a. P3719-PLE
  - b. Cameras shall be installed in integrated, tamper and impact resistant, environmentally controlled dome enclosure meeting or exceeding the following requirements:
    1. Optically correct acrylic or polycarbonate lower dome with integral UV protection.
    2. Dust and water protection based on EN60529 standard of IP66.
    3. Optically correct acrylic or polycarbonate lower dome with light loss not greater than 11.5 f-stops and integral UV protection.
    4. Integral sun shroud when mounted outside.
    5. Impact resistant with capability to withstand repeated multiple blunt impact forces up to 100 foot-pounds.
    6. Camera shall include all necessary mounting hardware and accessories for a fully supported installation.
4. Interior/Exterior Panoramic (SC2)
  - a. Axis M4308-PLE or equal
  - b. Availability of dewarped quad view mode
  - c. 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.
    2. Dust and water protection based.
    3. Integrated enclosure mount adapter to facilitate installation either directly on walls, to a ceiling or to a single gang electrical box providing 10/100/1000 PoE+ UTP connection for installed camera.

4. 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.
  - 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.
- 2.08 MANDATORY ALTERNATE – HIGH SCHOOL
- A. Bidders shall provide alternate cost to add Schoolcraft High School to the VMS system with the cameras identified herein. All requirements for materials, licensing, warranty, labor, installation, configuration and system performance shall remain the same.
- 2.09 VOLUNTARY ALTERNATE – HANWA OR AVIGILON CAMERAS
- A. Bidders are encouraged to provide voluntary alternate pricing for Hanwa and/or Avigilon cameras as alternates to Axis. Alternate cameras shall meet or exceed all camera requirement as specified herein and meet or exceed all features of the specified Axis model for each configuration.
- 2.10 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 \$14,250.00 for contract services related to renovation and configuration of necessary infrastructure upgrades at the Owner's sole discretion.

## PART 3 - EXECUTION

### 3.01 PREPARATION

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

### 3.02 INSTALLATION

- A. Contractor shall be familiar with the environment where work will be done as specified herein and make every reasonable effort to minimize interference with Owner's or other contractor's activities.
- B. Work Areas shall be cleaned at the end of each day. All debris shall be cleared, removed and disposed of in an approved container for the site. All equipment and 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 green 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 existing data cabling or data cabling provided by Others.
- b. In locations where new data cabling will be provided, low voltage cabling contractor shall be responsible for installing cabling to adjacent area for connection to camera device.
- c. Where penetrations are made through fire rated walls, Contractor shall be responsible for supplying appropriate fire stop material.

E. Additional and Specific Requirements:

- 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.
- 3. Contractor shall use care and employ best industry practices to ensure installation of Owner provided repair materials, which may include, but not be limited to, ceiling tiles/pads, block/brick filler, and paint professionally and appropriately restores the surface and location vacated by prior equipment to the best possible condition.
- 4. Contractor shall supply and install stainless steel faceplates in all abandoned wall locations.
- 5. All cabling shall be removed to source including all accessories, housings, brackets and connectors.

F. Sites of Work:

1. Schoolcraft Elementary School  
551 E. Lyon St.  
Schoolcraft, MI 49087

G. It shall be the responsibility of the Contractor to repair or replace any damage done to the structure or 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.

H. 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. CAD as built drawings for each building.
17. System Configuration Report.
18. 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 four (4) operators to be trained. Training shall be a minimum of one (1), two (2) hour sessions in length, at the convenience of the Owner personnel, and of sufficient duration

to satisfactorily complete training on all system administration functions including, but not limited to:

1. View live video from camera(s) identified to be of interest.
2. View stored video from camera(s) identified to be of interest, from a range of time in history.
3. Zoom stored video to better identify or better review visual details of portions of video of interest.
4. Review historical video to watch a historical event such as damage to property after normal hours of operation.

C. Contractor shall provide physical on-site training for the Owner designated system administrator(s). Owner shall designate up to Four (4) system administrators to be trained. Training shall be a minimum of one (1), four (4) hour session(s) in length, at the convenience of the Owner personnel, and of sufficient duration to satisfactorily complete training on all system administration functions including, but not limited to:

1. Add, remove and reconfigure cameras on system.
2. Basic configuration and system administration of the installed system
3. Basic trouble shooting of the installed system and components including diagnostic and problem resolution actions.
4. System back-up and restore functions and procedures for all system parameters and configurations.
5. Review of system alerts, logs and monitoring of configuration parameters including, but not limited to, configuration changes and device status.
6. System database updates and maintenance.
7. Review standard system reports

### 3.06 SCHEDULE, MEETINGS AND PLANS

#### A. Schedule

1. Contractor Chosen: Week of September 12, 2022
2. Work Commences: Week of September 19, 2022
3. Substantial Completion of Project: July 1, 2023

4. Project Close-out: August 1, 2023

- B. Planned sequence of operations shall be established by the Contractor within the guidelines established by the Owner, as required herein and as required to meet schedules.
- C. All work shall be coordinated with Owner's construction manager on site.
- D. Project progress meetings shall be held, but not limited to, weekly at a site and time identified as convenient for Owner and as required herein. Meetings will be attended as required herein.

END OF SECTION

# Schoolcraft Community Schools

## Appendix A - Room Schedule

Room	<u>LS</u> <u>Speakers</u>	<u>Lightspeed</u>	<u>IPEVO</u>	<u>EPSON</u> <u>1485Fi</u>	<u>Wireless</u> <u>Preso</u>	<u>Special Cfg ID</u>	<u>Intercom</u> <u>Station</u>	<u>Notes:</u>
A133 Gym						D		
A102 Office						A		
A104 Collaboration						A		
A105 Office						A		
A106 Office						A		
A107 Office								
A108 Office						A		
A117 - Lounge						A		
A120 - Cafeteria						A and C		Special Cfg A to also support Food Service.
B101 - Corridor						B		
B109 Media Center						F		
B110						A		
B111								
B112						A		
B101								
B116 Planning								
C120	4	1	1	1	1		1	
C118	4	1	1	1	1		1	
C111	4	1	1	1	1		1	
C127	4	1	1	1	1		1	
C128	4	1	1	1	1		1	
C110	4	1	1	1	1		1	
C109	4	1	1	1	1		1	
C102	4	1	1	1	1		1	
C131	4	1	1	1	1		1	

# Schoolcraft Community Schools

## Appendix A - Room Schedule

Room	<u>LS</u> Speakers	<u>Lightspeed</u>	<u>IPEVO</u>	<u>EPSON</u> 1485Fi	<u>Wireless</u> Preso	<u>Special Cfg ID</u>	<u>Intercom</u> Station	<u>Notes:</u>
C138	4	1	1	1	1		1	
D102	4	1	1	1	1		1	
D104	4	1	1	1	1		1	
D103						A		
D105	4	1	1	1	1		1	
D106	4	1	1	1	1		1	
D107						A		
D108	4	1	1	1	1		1	
D110	4	1	1	1	1		1	
D111						A		
D112	4	1	1	1	1		1	
D113	4	1	1	1	1		1	
D115	4	1	1	1	1		1	
D116						A		
D117	4	1	1	1	1		1	
E124 Gym						E		
B207	4	1	1	1	1		1	
B209	4	1	1	1	1		1	
B215								
C203	4	1	1	1	1		1	
C204						A		
C205	4	1	1	1	1		1	
C206	4	1	1	1	1		1	
C207	4	1	1	1	1		1	
C208						A		

# Schoolcraft Community Schools

## Appendix A - Room Schedule

Room	<u>LS</u> Speakers	<u>Lightspeed</u>	<u>IPEVO</u>	<u>EPSON</u> 1485Fi	<u>Wireless</u> Preso	<u>Special Cfg ID</u>	<u>Intercom</u> Station	<u>Notes:</u>
C209	4	1	1	1	1		1	
C211	4	1	1	1	1		1	
C212						A		
C213	4	1	1	1	1		1	
C214	4	1	1	1	1		1	
C215	4	1	1	1	1		1	
C216						A		
C217	4	1	1	1	1		1	
D203	4	1	1	1	1		1	
D204						A		
D205	4	1	1	1	1		1	
D206	4	1	1	1	1		1	
D207	4	1	1	1	1		1	
D208						A		
D209	4	1	1	1	1		1	
D211	4	1	1	1	1		1	
D212						A		
D213	4	1	1	1	1		1	
D214	4	1	1	1	1		1	
D216	4	1	1	1	1		1	
D217						A		
D218	4	1	1	1	1		1	

# Appendix B - Door Schedule

TMP Architecture, Inc.

TMP20015

## SECTION 08 71 00 – DOOR HARDWARE

### PART 1 - GENERAL

#### 1.01 SUMMARY

##### A. Section includes:

1. Mechanical and electrified door hardware for:
  - a. Swinging doors.
2. Electronic access control system components

##### B. Section excludes:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

##### C. Related Sections:

1. Division 01 Section "Alternates" for alternates affecting this section.
2. Division 06 Section "Rough Carpentry"
3. Division 06 Section "Finish Carpentry"
4. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
5. Division 08 Sections:
  - a. "Metal Doors and Frames"
  - b. "Flush Wood Doors"
  - c. "Stile and Rail Wood Doors"
  - d. "Interior Aluminum Doors and Frames"
  - e. "Aluminum-Framed Entrances and Storefronts"
6. Division 26 "Electrical" sections for connections to electrical power system and for low-voltage wiring.
7. Division 28 "Electronic Safety and Security" sections for coordination with other components of electronic access control system and fire alarm system.

#### 1.02 REFERENCES

##### A. UL - Underwriters Laboratories

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

##### B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Keying Systems and Nomenclature
4. Installation Guide for Doors and Hardware

C. NFPA – National Fire Protection Association

1. NFPA 70 – National Electric Code
2. NFPA 80 – 2016 Edition – Standard for Fire Doors and Other Opening Protectives
3. NFPA 101 – Life Safety Code
4. NFPA 105 – Smoke and Draft Control Door Assemblies
5. NFPA 252 – Fire Tests of Door Assemblies

D. ANSI - American National Standards Institute

1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
2. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
3. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
4. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
5. ANSI/SDI A250.8 - Standard Steel Doors and Frames

### 1.03 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
2. Prior to forwarding submittal:
  - a. Comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, "EXAMINATION" article, herein.
  - b. Review drawings and Sections from related trades to verify compatibility with specified hardware.
  - c. Highlight, encircle, or otherwise specifically identify on submittals: deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

B. Action Submittals:

1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
  - a. Wiring Diagrams: For power, signal, and control wiring and including:
    - 1) Details of interface of electrified door hardware and building safety and security systems.
    - 2) Schematic diagram of systems that interface with electrified door hardware.
    - 3) Point-to-point wiring.
    - 4) Risers.
3. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.

- a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.

4. Door Hardware Schedule:

- a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.
- b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
- c. Indicate complete designations of each item required for each opening, include:
  - 1) Door Index: door number, heading number, and Architect's hardware set number.
  - 2) Quantity, type, style, function, size, and finish of each hardware item.
  - 3) Name and manufacturer of each item.
  - 4) Fastenings and other pertinent information.
  - 5) Location of each hardware set cross-referenced to indications on Drawings.
  - 6) Explanation of all abbreviations, symbols, and codes contained in schedule.
  - 7) Mounting locations for hardware.
  - 8) Door and frame sizes and materials.
  - 9) Degree of door swing and handing.
  - 10) Operational Description of openings with electrified hardware covering egress, ingress (access), and fire/smoke alarm connections.

5. Key Schedule:

- a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.
- b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
- c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
- d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
- e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
- f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

- 6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory or shop prepared for door hardware installation.

C. Informational Submittals:

- 1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
- 2. Provide Product Data:

- a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
- b. Include warranties for specified door hardware.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
  - a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
  - b. Catalog pages for each product.
  - c. Factory order acknowledgement numbers (for warranty and service)
  - d. Name, address, and phone number of local representative for each manufacturer.
  - e. Parts list for each product.
  - f. Final approved hardware schedule edited to reflect conditions as installed.
  - g. Final keying schedule
  - h. Copies of floor plans with keying nomenclature
  - i. Copy of warranties including appropriate reference numbers for manufacturers to identify project.
  - j. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.

E. Inspection and Testing:

1. Submit a written report of the results of functional testing and inspection for fire door assemblies, in compliance with NFPA 80.
  - a. Written report to be provided to the Owner and be made available to the Authority Having Jurisdiction (AHJ).
  - b. Report to include the door number for each fire door assembly, door location, door and frame material, fire rating, and summary of deficiencies.
2. Submit a written report of the results of functional testing and inspection for required egress door assemblies, in compliance with NFPA 101.
  - a. Written report to be provided to the Owner and be made available to the Authority Having Jurisdiction (AHJ).
  - b. Report to include the door number for each required egress door assembly, door location, door and frame material, fire rating, and summary of deficiencies.

## 1.04 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
  - a. Warehousing Facilities: In Project's vicinity.
  - b. Scheduling Responsibility: Preparation of door hardware and keying schedules.
  - c. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies like those indicated for this Project.

- d. Coordination Responsibility: Assist in coordinating installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.
    - 1) Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.
  2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
  3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
    - a. For door hardware: DHI certified AHC or DHC.
    - b. Can provide installation and technical data to Architect and other related subcontractors.
    - c. Can inspect and verify components are in working order upon completion of installation.
    - d. Capable of producing wiring diagram and coordinating installation of electrified hardware with Architect and electrical engineers.
  4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.
- B. Certifications:
1. Fire-Rated Door Openings:
    - a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.
    - b. Provide only items of door hardware that are listed products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.
  2. Smoke and Draft Control Door Assemblies:
    - a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105
    - b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.
  3. Electrified Door Hardware
    - a. Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.
  4. Accessibility Requirements:
    - a. Comply with governing accessibility regulations cited in "REFERENCES" article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.
- C. Pre-Installation Meetings

1. Keying Conference

- a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
  - 1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
  - 2) Preliminary key system schematic diagram.
  - 3) Requirements for key control system.
  - 4) Requirements for access control.
  - 5) Address for delivery of keys.

2. Pre-installation Conference

- a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
- b. Inspect and discuss preparatory work performed by other trades.
- c. Inspect and discuss electrical roughing-in for electrified door hardware.
- d. Review sequence of operation for each type of electrified door hardware.
- e. Review required testing, inspecting, and certifying procedures.
- f. Review questions or concerns related to proper installation and adjustment of door hardware.

3. Electrified Hardware Coordination Conference:

- a. Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

#### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping.
- B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer's original packaging.
- C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
- D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
- E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.
- F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

## 1.06 COORDINATION

- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.
- B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.
- D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.
- E. Existing Openings: Where existing doors, frames and/or hardware are to remain, field verify existing functions, conditions and preparations and coordinate to suit opening conditions and to provide proper door operation.

## 1.07 WARRANTY

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.
  - 1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
  - 2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.
    - a. Mechanical Warranty
      - 1) Locks
        - a) Schlage L Series: 3 year
      - 2) Exit Devices
        - a) Von Duprin: 3 year
      - 3) Closers
        - a) LCN 4000 Series: 30 year
      - 4) Automatic Operators
        - a) LCN: 2 year
      - 5) Accessories
        - a) Ives Continuous Hinges: Lifetime
    - b. Electrical Warranty
      - 1) Locks
        - a) Schlage: 1 year
      - 2) Exit Devices
        - a) Von Duprin: 1 year
      - 3) Closers
        - a) LCN: 2 year

## 1.08 MAINTENANCE

- A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

- B. Turn over unused materials to Owner for maintenance purposes.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

- A. The Owner requires use of certain products for their unique characteristics and project suitability to ensure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: "No Substitute."
  - 1. Where "No Substitute" is noted, submittals and substitution requests for other products will not be considered.
- B. Approval of manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.
- C. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.
- D. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

### 2.02 MATERIALS

- A. Fasteners
  - 1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
  - 2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
  - 3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru bolts are required.
  - 4. Install hardware with fasteners provided by hardware manufacturer.
- B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
  - 1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.
- C. Cable and Connectors: Hardwired Electronic Access Control Lockset and Exit Device Trim:
  - 1. Data: 24AWG, 4 conductor shielded, Belden 9843, 9841 or comparable.

2. DC Power: 18 AWG, 2 conductor, Belden 8760 or comparable.
3. Provide type of data and DC power cabling required by access control device manufacturer for this installation.
4. Where scheduled in the hardware sets, provide each item of electrified hardware and wire harnesses with enough and wire gauge with standardized Molex plug connectors to accommodate electric function of specified hardware. Provide Molex connectors that plug directly into connectors from harnesses, electric locking and power transfer devices. Provide through-door wire harness for each electrified locking device installed in a door and wire harness for each electrified hinge, electrified continuous hinge, electrified pivot, and electric power transfer for connection to power supplies.

## 2.03 HINGES

### A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. Ives 5BB series.
2. Acceptable Manufacturers and Products:
  - a. Hager BB1191/1279 series.
  - b. Bommer BB5000 series.

### B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. Provide five knuckle, ball bearing hinges.
3. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
  - a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
  - b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high
4. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
  - a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
  - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
5. 2 inches or thicker doors:
  - a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
  - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
6. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
7. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
8. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
9. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
  - a. Steel Hinges: Steel pins
  - b. Non-Ferrous Hinges: Stainless steel pins
  - c. Out-Swinging Exterior Doors: Non-removable pins
  - d. Out-Swinging Interior Lockable Doors: Non-removable pins
  - e. Interior Non-lockable Doors: Non-rising pins

10. Provide hinges with electrified options as scheduled in the hardware sets. Provide with enough and wire gage to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component. Provide mortar guard for each electrified hinge specified.

## 2.04 CONTINUOUS HINGES

### A. Manufacturers:

1. Scheduled Manufacturer:
  - a. Ives.
2. Acceptable Manufacturers:
  - a. Select.

### B. Requirements:

1. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
2. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.
3. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
4. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
5. On fire-rated doors, provide aluminum geared continuous hinges classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
6. Provide aluminum geared continuous hinges with electrified option scheduled in the hardware sets. Provide with enough and wire gage to accommodate electric function of specified hardware.
7. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

## 2.05 ELECTRIC POWER TRANSFER

### A. Manufacturers:

1. Scheduled Manufacturer and Product:
  - a. Von Duprin EPT-10.
2. Acceptable Manufacturers and Products:
  - a. No Substitute.

### B. Requirements:

1. Provide power transfer with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
2. Locate electric power transfer per manufacturer's template and UL requirements, unless interference with operation of door or other hardware items.

## 2.06 FLUSH BOLTS

### A. Manufacturers:

1. Scheduled Manufacturer:
  - a. Ives.
2. Acceptable Manufacturers:
  - a. Burns.
  - b. Trimco.

### B. Requirements:

1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

## 2.07 COORDINATORS

### A. Manufacturers:

1. Scheduled Manufacturer:
  - a. Ives.
2. Acceptable Manufacturers:
  - a. Burns.
  - b. Trimco.

### B. Requirements:

1. Where pairs of doors are equipped with automatic flush bolts, an astragal, or other hardware that requires synchronized closing of the doors, provide bar-type coordinating device, surface applied to underside of stop at frame head.
2. Provide filler bar of correct length for unit to span entire width of opening, and appropriate brackets for parallel arm door closers, surface vertical rod exit device strikes, or other stop mounted hardware. Factory-prepared coordinators for vertical rod devices as specified.

## 2.08 MORTISE LOCKS

### A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. Schlage L9000 series.
2. Acceptable Manufacturers and Products:

- a. No Substitute.

B. Requirements:

1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.
2. Indicators: Where specified, provide indicator window measuring a minimum 2-inch x 1/2 inch with 180-degree visibility. Provide messages color-coded with full text and/or symbols, as scheduled, for easy visibility.
3. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
4. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
5. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1-inch (25 mm) throw, constructed of stainless steel.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
7. Provide electrified options as scheduled in the hardware sets. Where scheduled, provide switches and sensors integrated into the locks and latches.
8. Provide motor based electrified locksets with electrified options as scheduled in the hardware sets and comply with the following requirements:
  - a. Universal input voltage – single chassis accepts 12 or 24VDC to allow for changes in the field without changing lock chassis.
  - b. Fail Safe/Fail Secure – changing mode between electrically locked (fail safe) and electrically unlocked (fail secure) is field selectable without opening the lock case
  - c. Low maximum current draw – maximum 0.4 amps to allow for multiple locks on a single power supply.
  - d. Low holding current – maximum 0.01 amps to produce minimal heat, eliminate "hot levers" in electrically locked applications, and to provide reliable operation in wood doors that provide minimal ventilation and air flow.
  - e. Connections – provide quick-connect Molex system standard.
9. **Verify all lock functions with Owner prior to ordering.**
10. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
  - a. Lever Design: 06N (Escutcheon Trim Only).

## 2.09 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. Von Duprin 98/35A series.
2. Acceptable Manufacturers and Products:
  - a. No Substitute.

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide smooth touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide exit devices with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
7. Provide flush end caps for exit devices.
8. Provide exit devices with manufacturer's approved strikes.
9. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
10. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
11. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
12. Provide dogging indicators for visible indication of dogging status as specified.
13. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
14. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
15. Provide electrified options as scheduled.
16. Concealed Vertical Cable Exit Devices: provide cable-actuated concealed vertical latch system in two-point for non-rated or fire rated wood doors up to a 90 minute rating and less bottom latch (LBL) configuration for non-rated or fire rated wood doors up to 20 minute rating. Vertical rods not permitted.
  - a. Cable: Stainless steel with abrasive resistant coating. Conduit and core wire ends snap into latch and center slides without use of tools.
  - b. Wood Door Prep: Maximum 1 inch x 1.1875 inch x 3.875 inches top latch pocket and 1 inch x 1.1875 inch x 5 inches bottom latch pocket which does not require the use of a metal wrap or edge for non-rated or fire rated wood doors up to a 45 minute rating.
  - c. Latchbolts and Blocking Cams: Manufactured from sintered metal low carbon copper-infiltrated steel, with molybdenum disulfide low friction coating.
  - d. Top Latchbolt: Minimum 0.38 inch (10 mm) and greater than 90-degree engagement with strike to prevent door and frame separation under high static load.
  - e. Bottom Latchbolt: Minimum of 0.44-inch (11 mm) engagement with strike.
  - f. Product Cycle Life: 1,000,000 cycles.
  - g. Latch Operation: Top and bottom latch operate independently of each other. Top latch fully engages top strike even when bottom latch is compromised. Separate trigger mechanisms not permitted.
  - h. Latch release does not require separate trigger mechanism.
  - i. Cable and latching system characteristics:
    - 1) Installed independently of exit device installation, and capable of functioning on door prior to device and trim installation.
    - 2) Connected to exit device at single point in steel and aluminum doors, and two points for top and bottom latches in wood doors.
    - 3) Bottom latch height adjusted, from single point for steel and aluminum doors and two points for wood doors, after system is installed and connected to exit device, while door is hanging

- 4) Bottom latch position altered up and down minimum of 2 inches (51 mm) in steel and aluminum doors without additional adjustment. Bottom latch deadlocks in every adjustment position in wood doors.
  - 5) Top and bottom latches in steel and aluminum doors and top latch in wood doors may be removed while door is hanging.
17. Top latch mounting: double- or single-tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
  18. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.
  19. **Verify all lock functions with Owner prior to ordering.**

## 2.10 ELECTRIC STRIKES

### A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. Von Duprin 6000 Series.
2. Acceptable Manufacturers and Products:
  - a. No Substitute.

### B. Requirements:

1. Provide electric strikes designed for use with type of locks shown at each opening.
2. Provide electric strikes UL Listed as burglary resistant.
3. Where required, provide electric strikes UL Listed for fire doors and frames.
4. Provide transformers and rectifiers for each strike as required. Verify voltage with electrical contractor.

## 2.11 MAGNETIC LOCKS

### A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. Schlage M490 series.
2. Acceptable Manufacturers and Products:
  - a. No Substitute.

### B. Requirements:

1. Provide magnetic locks certified to meet ANSI/BHMA A156.23 classification criteria including minimum holding force of 1,500lbs. Provide magnetic locks equipped with SPDT Magnetic Bond Sensing device, where specified, to monitor whether enough magnetic holding force exists to ensure adequate locking and SPDT Door Status Monitor device, where specified, to monitor whether door is open or closed. Provide bond sensors fully concealed within electromagnet to resist tampering or damage.
2. Provide magnetic locks certified to meet UL10C, and UL1034 for burglary-resistant electronic locking mechanisms.

3. Provide fasteners, mounting brackets, and spacer bars required for mounting and details.
4. Provide power supply recommended and approved by manufacturer of magnetic locks.
5. Where magnetic locks are scheduled, provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of magnetic locks for each individual leaf. Switches control both doors simultaneously at pairs. Locate controls as directed by Architect.

## 2.12 PUSHBUTTONS

### A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. Schlage 660-PB.
2. Acceptable Manufacturers and Products:
  - a. No Substitute.

### B. Requirements:

1. Provide push buttons as specified in hardware groups.

## 2.13 POWER SUPPLIES

### A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. Schlage/Von Duprin PS900 Series.
2. Acceptable Manufacturers and Products:
  - a. No Substitute.

### B. Requirements:

1. Provide power supplies approved by manufacturer of supplied electrified hardware.
2. Provide appropriate quantity of power supplies necessary for proper operation of electrified locking components as recommended by manufacturer of electrified locking components with consideration for each electrified component using power supply, location of power supply, and approved wiring diagrams. Locate power supplies as directed by Architect.
3. Provide regulated and filtered 24 VDC power supply, and UL class 2 listed.
4. Provide power supplies with the following features:
  - a. 12/24 VDC Output, field selectable.
  - b. Class 2 Rated power limited output.
  - c. Universal 120-240 VAC input.
  - d. Low voltage DC, regulated and filtered.
  - e. Polarized connector for distribution boards.
  - f. Fused primary input.
  - g. AC input and DC output monitoring circuit w/LED indicators.
  - h. Cover mounted AC Input indication.

- i. Tested and certified to meet UL294.
- j. NEMA 1 enclosure.
- k. Hinged cover w/lock down screws.
- l. High voltage protective cover.

## 2.14 CYLINDERS

### A. Manufacturers and Products:

- 1. Scheduled Manufacturer and Product: Exterior
  - a. Schlage Everest 29 T.
- 2. Scheduled Manufacturer and Product: Interior
  - a. Schlage Everest 29 S.
- 3. Acceptable Manufacturers and Products:
  - a. No Substitute.

### B. Requirements:

- 1. Provide cylinders/cores compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset; manufacturer's series as indicated. Refer to "KEYING" article, herein.
- 2. Provide cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.
  - a. Conventional Patented Restricted: cylinder with permanent core with patented, restricted keyway.
- 3. Patent Protection: Cylinders/cores requiring use of restricted, patented keys, patent protected.
- 4. Nickel silver bottom pins.
- 5. This supplier shall meet with Architect and Owner to finalize keying requirements and obtain keying instructions in writing.
  - a. Supplier shall include the cost of this service in his proposal.
- 6. The intent of this key and cylinder specification is to provide key control to assure complete security throughout the construction and occupancy phases of this project. The project owner is assured that the cylinders and keys used during construction are replaced before project completion and the permanent cylinders and keys are a high security type with the control of key availability jointly shared by the manufacturer and the project owner.

### C. Construction Keying:

- 1. Temporary Construction Cylinder Keying.
  - a. Provide construction cores that permit voiding construction keys without cylinder removal, furnished in accordance with the following requirements.
    - 1) Split Key or Lost Ball Construction Keying System.

- 2) 3 construction control keys, and extractor tools or keys as required to void construction keying.
  - 3) 12 construction change (day) keys.
- b. Owner or Owner's Representative will void operation of temporary construction keys.

## 2.15 KEYING

- A. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.
- B. Requirements:
1. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
    - a. Master Keying system as directed by the Owner.
  2. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
  3. Provide keys with the following features:
    - a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
    - b. Patent Protection: Keys and blanks protected by one or more utility patent(s).
  4. Identification:
    - a. Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
    - b. Identification stamping provisions must be approved by the Architect and Owner.
    - c. Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
    - d. Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
    - e. Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.
  5. Quantity: Furnish in the following quantities.
    - a. Change (Day) Keys: 3 per cylinder/core.
    - b. Master Keys: 6.

## 2.16 KEY CONTROL SYSTEM

- A. Manufacturers:
1. Scheduled Manufacturer:
    - a. Telkee.
  2. Acceptable Manufacturers:

- a. HPC.
- b. Lund.

B. Requirements:

1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.
  - a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
  - b. Provide hinged-panel type cabinet for wall mounting.

## 2.17 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. LCN 4040XP series.
2. Acceptable Manufacturers and Products:
  - a. No Substitute.

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2-inch (38 mm) diameter with 5/8-inch (16 mm) diameter double heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.
11. **Through-bolt door closers on all wood doors.**

## 2.18 ELECTRO-MECHANICAL CLOSER/HOLDERS

### A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. LCN 4040SE/4310ME/4410ME series
2. Acceptable Manufacturers and Products:
  - a. No Substitute.

### B. Requirements:

1. Provide single-point or multi-point hold-open electro-mechanical closer/holders as specified. Coordinate voltage requirements and provide transformer if necessary.
2. Provide multi-point electro-mechanical closer/holders with swing free arms.
3. Provide closer/holders that function as full rack and pinion door closer when current is interrupted or continuous hold-open is not engaged.
4. Provide door closers with fully hydraulic, full rack and pinion action with high strength cylinder and full complement bearings at shaft.
5. Cylinder Body: 1-1/2-inch (38 mm) diameter with 5/8-inch (16 mm) diameter double heat-treated pinion journal.
6. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
7. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
8. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
9. Pressure Relief Valve (PRV) Technology: Not permitted.
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.
11. **Through-bolt door closers on all wood doors.**

## 2.19 ELECTRO-HYDRAULIC AUTOMATIC OPERATORS

### A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
  - a. LCN 4600 series
2. Acceptable Manufacturers and Products:
  - a. No Substitute.

### B. Requirements:

1. Provide low energy automatic operator units with hydraulic closer complying with ANSI/BHMA A156.19.
2. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.

3. Provide units with conventional door closer opening and closing forces unless power operator motor is activated. Provide door closer assembly with adjustable spring size, back-check, and opening and closing speed adjustment valves to control door
4. Provide units with on/off switch for manual operation, motor start up delay, vestibule interface delay, electric lock delay, and door hold open delay.
5. Provide drop plates, brackets, and adapters for arms as required for details.
6. Provide hard-wired actuator switches and receivers for operation as specified.
7. Provide weather-resistant actuators at exterior applications.
8. Provide key switches with LED's, recommended and approved by manufacturer of automatic operator as required for function described in operation description of hardware group below. Cylinders: Refer to "KEYING" article, herein.
9. Provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of automatic operator for each individual leaf. Actuators control both doors simultaneously at pairs. Sequence operation of exterior and vestibule doors with automatic operators to allow ingress or egress through both sets of openings as directed by Architect. Locate actuators, key switches, and other controls as directed by Architect.
10. Provide units with vestibule inputs that allow sequencing operation of two units, and SPDT relay for interfacing with latching or locking devices.

## 2.20 DOOR TRIM

### A. Manufacturers:

1. Scheduled Manufacturer:
  - a. Ives.
2. Acceptable Manufacturers:
  - a. Burns.
  - b. Trimco.

### B. Requirements:

1. Provide push plates, push bars, pull plates, pulls, and hands-free reversible door pulls with diameter and length as scheduled.

## 2.21 PROTECTION PLATES

### A. Manufacturers:

1. Scheduled Manufacturer:
  - a. Ives.
2. Acceptable Manufacturers:
  - a. Burns.
  - b. Trimco.

### B. Requirements:

1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Size plates 2 inches (51 mm) less width of door on single doors, pairs of doors with a mullion, and doors with edge guards. Size plates 1 inch (25 mm) less width of door on pairs without a mullion or edge guards.
3. At fire rated doors, provide protection plates over 16 inches high with UL label.

## 2.22 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

### A. Manufacturers:

1. Scheduled Manufacturers:
  - a. Glynn-Johnson.
2. Acceptable Manufacturers:
  - a. No Substitute.

### B. Requirements:

1. Provide overhead stop at any door where conditions do not allow for a wall stop or floor stop presents tripping hazard.
2. Provide friction type at doors without closer and positive type at doors with closer.

## 2.23 DOOR STOPS AND HOLDERS

### A. Manufacturers:

1. Scheduled Manufacturer:
  - a. Ives.
2. Acceptable Manufacturers:
  - a. Burns.
  - b. Trimco.

### B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide concave type where lockset has a push button or thumbturn.
2. Where a wall stop cannot be used, provide universal floor stops.
3. Where wall or floor stop cannot be used, provide overhead stop.
4. Provide roller bumper where doors open into each other and overhead stop cannot be used.

## 2.24 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

### A. Manufacturers:

1. Scheduled Manufacturer:

- a. Zero International.
  2. Acceptable Manufacturers:
    - a. Everlast (Kalamazoo).
    - b. National Guard.
    - c. Reese.
- B. Requirements:
1. Provide thresholds, weather-stripping, and gasketing systems as specified and per architectural details. Match finish of other items.
  2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
  3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
  4. Size thresholds 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width unless otherwise specified in the hardware sets or detailed in the drawings.

## 2.25 SILENCERS

- A. Manufacturers:
1. Scheduled Manufacturer:
    - a. Ives.
  2. Acceptable Manufacturers:
    - a. Burns
    - b. Trimco
- B. Requirements:
1. Provide "push-in" type silencers for hollow metal or wood frames.
  2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
  3. Omit where gasketing is specified.

## 2.26 MAGNETIC HOLDERS

- A. Manufacturers:
1. Scheduled Manufacturer:
    - a. LCN.
  2. Acceptable Manufacturers:
    - a. No Substitute.
- B. Requirements:

1. Provide wall or floor mounted electromagnetic door release as specified with minimum of 25 pounds of holding force. Coordinate projection of holder and armature with other hardware and wall conditions to ensure that door sits parallel to wall when fully open. Connect magnetic holders on fire-rated doors into the fire control panel for fail-safe operation.

## 2.27 FINISHES

### A. Finish: BHMA 626/652 (US26D); except:

1. Hinges at Exterior Doors: BHMA 630 (US32D)
2. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
3. Protection Plates: BHMA 630 (US32D)
4. Overhead Stops and Holders: BHMA 630 (US32D)
5. Door Closers: Powder Coat to Match
6. Weatherstripping: Clear Anodized Aluminum
7. Thresholds: Mill Finish Aluminum

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION

- A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
  1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
  2. Custom Steel Doors and Frames: HMMA 831.
  3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
  4. Installation Guide for Doors and Hardware: DHI TDH-007-20
- B. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
- D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

- E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
- G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.
- H. Lock Cylinders:
  - 1. Install construction cores to secure building and areas during construction period.
  - 2. Replace construction cores with permanent cores as indicated in keying section.
  - 3. Furnish permanent cores to Owner for installation.
- I. Wiring: Coordinate with Division 26, ELECTRICAL and Division 28 ELECTRONIC SAFETY AND SECURITY sections for:
  - 1. Conduit, junction boxes and wire pulls.
  - 2. Connections to and from power supplies to electrified hardware.
  - 3. Connections to fire/smoke alarm system and smoke evacuation system.
  - 4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
  - 5. Connections to panel interface modules, controllers, and gateways.
  - 6. Testing and labeling wires with Architect's opening number.
- J. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- K. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.
- L. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.
- M. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.
- N. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
- O. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.
- P. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- Q. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- R. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

### 3.03 FIELD QUALITY CONTROL

#### A. Inspection and Testing:

1. Provide functional testing and inspection of fire door assemblies by a qualified person in accordance with NFPA 80.
  - a. Schedule fire door assembly inspection within 90 days of Substantial Completion of the Project.
  - b. Submit a signed, written final report as specified in Paragraph 1.03.E.1.
  - c. Correct all deficiencies and schedule a reinspection of fire door assemblies noted as deficient on the inspection report.
  - d. Inspector to reinspect fire door assemblies after repairs are made.
2. Provide inspection of required egress door assemblies by a qualified person in accordance with NFPA 101.
  - a. Schedule egress door assembly inspection within 90 days of Substantial Completion of the Project for the required openings.
  - b. Submit a signed, written final report as specified in Paragraph 1.03.E.2.
  - c. Correct all deficiencies and schedule a reinspection of egress door assemblies noted as deficient on the inspection report.
  - d. Inspector to reinspect required egress door assemblies after repairs are made.

### 3.04 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
  1. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
  2. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
- B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

### 3.05 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items per manufacturer's instructions to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

## 3.06 DOOR HARDWARE SCHEDULE

- A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.
- B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application.
- C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.
- D. Hardware Sets:

## Hardware Group No. 01

For use on Door #(s):

B110                      B112

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	L9010 06N	626	SCH
1	EA	WALL STOP	WS33(X)	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 02

For use on Door #(s):

A125

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	PASSAGE SET	L9010 06N	626	SCH
1	EA	SURFACE CLOSER	4040XP HW/PA - PUSH-SIDE	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 03

For use on Door #(s):

A129

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	PASSAGE SET	L9010 06N	626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA - PULL-SIDE	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER

## Hardware Group No. 04

For use on Door #(s):

E103

E107

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	PUSH PLATE	8200 6" X 16"	630	IVE
1	EA	PULL PLATE	8303 10" 4" X 16" F	630	IVE
1	EA	SURFACE CLOSER	4040XP RW/PA - PULL-SIDE	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 05

For use on Door #(s):

A115

C104

C107

C113

C116

C122

C125

C133

C136

E116

E119

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	PRIVACY W/DEADBOLT	L9440 06N 09-544 L283-722	626	SCH
1	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER

## Hardware Group No. 06

For use on Door #(s):

A113	A124	B106	B204	B213	C129
D114	D215	E104			

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	PRIVACY W/DEADBOLT	L9440 06N 09-544 L283-722	626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA - PULL-SIDE	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER

## Hardware Group No. 07

For use on Door #(s):

B113	B115
------	------

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	PRIVACY W/DEADBOLT	L9440 06N 09-544 L283-722	626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA - PUSH-SIDE	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER

Hardware Group No. 08

For use on Door #(s):

A112

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	DBL CYL STORE W/DB	L9466P 06N	626	SCH
			- EV29 S KEYWAY		
<del>1</del>	<del>EA</del>	<del>MAGNETIC LOCK</del>	<del>M490P ATS/LED</del>	<del>628</del>	<del>SCE</del>
<u>1</u>	<u>EA</u>	<u>MAGNETIC LOCK</u>	<u>M490P TJ490 ATS/LED</u>	<u>628</u>	<u>SCE</u>
1	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
			<del>- PUSH-SIDE (-PULL-SIDE)</del>		
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
3	EA	SILENCER	SR64	GRY	IVE
		POWER SUPPLY	PROVIDED BY DOOR		
		(CENTRALIZED)	HARDWARE SUPPLIER		
			- SPECIFIED UNDER POWER		
			SUPPLY HW SET		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

THE MAGNETIC LOCK SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM THROUGH A SET OF NORMALLY CLOSED, DRY CONTACTS (SUPPLIED BY THE FIRE ALARM CONTRACTOR). MAGNETIC LOCK NORMALLY DE-ENERGIZED AND UNLOCKED. MAGNETIC LOCK ONLY ENERGIZED AND LOCKED WHEN ACTIVATED BY LOCKDOWN.

## Hardware Group No. 09

For use on Door #(s):

A116A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	DBL CYL STORE W/DB	L9466P 06N	626	SCH
		- EV29 S KEYWAY			
1	EA	MAGNETIC LOCK	M490P ATS/LED	✓ 628	SCE
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP RW/PA ST-1630	689	LCN
		- PULL-SIDE			
1	EA	TOP JAMB MTG PLATE	4040XP-18TJ	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE
1		POWER SUPPLY	PROVIDED BY DOOR	✓	
		(CENTRALIZED)	HARDWARE SUPPLIER		
			- SPECIFIED UNDER POWER		
			SUPPLY HW SET		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

THE MAGNETIC LOCK SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM THROUGH A SET OF NORMALLY CLOSED, DRY CONTACTS (SUPPLIED BY THE FIRE ALARM CONTRACTOR). MAGNETIC LOCK NORMALLY DE-ENERGIZED AND UNLOCKED. MAGNETIC LOCK ONLY ENERGIZED AND LOCKED WHEN ACTIVATED BY LOCKDOWN.

## Hardware Group No. 10

For use on Door #(s):

E201B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	DBL CYL STORE W/DB	L9466P 06N	626	SCH
		- EV29 T KEYWAY			
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30	689	LCN
1	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD	566A	A	ZER
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

## Hardware Group No. 11

For use on Door #(s):

A105	A106	A107	A108	A114	A123
B111	C204B	C204C	C208B	C208C	C212B
C212C	C216B	C216C	D103B	D103C	D107B
D107C	D111B	D111C	D116B	D116C	D204B
D204C	D208B	D208C	D212B	D212C	D217B
D217C	E115	E120			

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070P 06N - EV29 S KEYWAY	626	SCH
1	EA	WALL STOP	WS33(X)	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 12

For use on Door #(s):

A102A	A104A	A104B
-------	-------	-------

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070P 06N - EV29 S KEYWAY	626	SCH
1	EA	OH STOP	100S	630	GLY
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 13

For use on Door #(s):

A121B	A122D
-------	-------

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070P 06N - EV29 S KEYWAY	626	SCH
1	EA	SURFACE CLOSER	4040XP HW/PA - PULL-SIDE	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 14

For use on Door #(s):

B208 B210

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070P 06N - EV29 S KEYWAY	626	SCH
<del>1</del>	<del>EA</del>	<del>SURFACE CLOSER</del>	<del>4040XP RW/PA</del> <del>- PULL-SIDE</del>	<del>689</del>	<del>LCN</del>
<del>1</del>	<del>EA</del>	<del>KICK PLATE</del>	<del>8400 10" X 2" LDW B-CS</del>	<del>630</del>	<del>IVE</del>
<del>1</del>	<del>EA</del>	<del>WALL STOP</del>	<del>WS33(X)</del>	<del>626</del>	<del>IVE</del>
<del>1</del>	<del>EA</del>	<del>WALL STOP/HOLDER</del>	<del>WS45(X)</del>	<del>626</del>	<del>IVE</del>
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 15

For use on Door #(s):

E113A E121A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	L9070P 06N - EV29 S KEYWAY	626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA - PUSH-SIDE	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 16

For use on Door #(s):

A122A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	L9070P 06N - EV29 S KEYWAY	626	SCH
1	EA	SURFACE CLOSER	4040XP SHCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 17

For use on Door #(s):

~~B104~~ C201 D201 ~~E106A~~ B103A E111 E113B  
E121B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM LOCK	L9070P 06N	626	SCH
			- EV29 S KEYWAY		
1	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
			- PULL-SIDE		
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER

## Hardware Group No. 18

For use on Door #(s):

A128

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	L9070P 06N	626	SCH
			- EV29 S KEYWAY		
1	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
			- PUSH-SIDE		
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER

## Hardware Group No. 19

For use on Door #(s):

A131 E102 E123

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	L9070P 06N	626	SCH
			- EV29 S KEYWAY		
1	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
			- PUSH-SIDE		
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER

## Hardware Group No. 20

For use on Door #(s):

A130

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HINGE	5BB1HW 5 X 4.5 NRP	652	IVE
1	SET	AUTO FLUSH BOLT	FB41P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	CLASSROOM LOCK	L9070P 06N - EV29 S KEYWAY	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	MOUNTING BRACKET	MB	689	IVE
2	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER
1	EA	MEETING STILE	8217S	BK	ZER

## Hardware Group No. 21

For use on Door #(s):

A110

~~B103~~ E106

B107

B114

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080P 06N - EV29 S KEYWAY	626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA - PULL-SIDE	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 22

For use on Door #(s):

B205 B212

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080P 06N - EV29 S KEYWAY	626	SCH
1	EA	SURFACE CLOSER	4040XP HW/PA - PULL-SIDE	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
<u>1</u>	<u>EA</u>	<u>WALL STOP</u>	<u>WS33(X)</u>	<u>626</u>	<u>IVE</u>
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 23

For use on Door #(s):

B116	B207	B209	B215	C102	C109
C111	C118	C120	C127	C128	C131
C138	C203	C205	C207	C209	C211
C213	C215	C217	D102	D104	D106
D108	D110	D112	D115	D117	D203
D205	D207	D209	D211	D213	D216
D218					

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080P 06N - EV29 S KEYWAY	626	SCH
<u>1</u>	<u>EA</u>	<u>SURFACE CLOSER</u>	<u>4040XP RW/PA ST-2687</u> <u>- PUSH-SIDE</u>	<u>689</u>	<u>LCN</u>
<u>4</u>	<u>EA</u>	<u>SURFACE CLOSER</u>	<u>4040XP RW/PA</u> <u>- PUSH-SIDE</u>	<u>689</u>	<u>LCN</u>
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
<u>1</u>	<u>EA</u>	<u>WALL STOP</u>	<u>WS33(X)</u>	<u>626</u>	<u>IVE</u>
<u>4</u>	<u>EA</u>	<u>WALL STOP/HOLDER</u>	<u>WS45(X)</u>	<u>626</u>	<u>IVE</u>
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 24

For use on Door #(s):

C214

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
<del>3</del>	<del>EA</del>	<del>HINGE</del>	<del>5BB1HW 4.5 X 4.5 NRP</del>	<del>652</del>	<del>IVE</del>
<del>3</del>	<del>EA</del>	<del>HINGE</del>	<del>5BB1HW 5 X 4.5 NRP</del>	<del>652</del>	<del>IVE</del>
1	EA	STOREROOM LOCK	L9080P 06N	626	SCH
			- EV29 S KEYWAY		
<del>1</del>	<del>EA</del>	<del>SURFACE CLOSER</del>	<del>4040XP RW/PA ST-2687</del>	<del>689</del>	<del>LCN</del>
			<del>- PUSH-SIDE</del>		
<del>1</del>	<del>EA</del>	<del>SURFACE CLOSER</del>	<del>4040XP RW/PA</del>	<del>689</del>	<del>LCN</del>
			<del>- PUSH-SIDE</del>		
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
<del>1</del>	<del>EA</del>	<del>WALL STOP</del>	<del>WS33(X)</del>	<del>626</del>	<del>IVE</del>
<del>1</del>	<del>EA</del>	<del>WALL STOP/HOLDER</del>	<del>WS45(X)</del>	<del>626</del>	<del>IVE</del>
1	EA	GASKETING	870AA-S	AA	ZER
1	EA	DOOR BOTTOM	364AA-Z49 PL	AA	ZER

## Hardware Group No. 25

For use on Door #(s):

D105

D214

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080P 06N	626	SCH
			- EV29 S KEYWAY		
<del>1</del>	<del>EA</del>	<del>SURFACE CLOSER</del>	<del>4040XP RW/PA ST-2687</del>	<del>689</del>	<del>LCN</del>
			<del>- PUSH-SIDE</del>		
<del>1</del>	<del>EA</del>	<del>SURFACE CLOSER</del>	<del>4040XP RW/PA</del>	<del>689</del>	<del>LCN</del>
			<del>- PUSH-SIDE</del>		
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
<del>1</del>	<del>EA</del>	<del>WALL STOP</del>	<del>WS33(X)</del>	<del>626</del>	<del>IVE</del>
<del>1</del>	<del>EA</del>	<del>WALL STOP/HOLDER</del>	<del>WS45(X)</del>	<del>626</del>	<del>IVE</del>
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 26

For use on Door #(s):

C130

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	HINGE	5BB1HW 5 X 4.5 NRP	652	IVE
<b>1</b>	<b>EA</b>	<b><u>CLASSROOM LOCK</u></b>	<b><u>L9070P 06N</u></b>	<b><u>626</u></b>	<b><u>SCH</u></b>
			<b><u>- EV29 S KEYWAY</u></b>		
<b>1</b>	<b>EA</b>	<b><u>STOREROOM LOCK</u></b>	<b><u>L9080P 06N</u></b>	<b><u>626</u></b>	<b><u>SCH</u></b>
			<b><u>- EV29 S KEYWAY</u></b>		
1	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
			- PUSH-SIDE		
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 27

For use on Door #(s):

C200	C204A	C208A	C212A	C216A	D103A
D107A	D111A	D116A	D200	D204A	D208A
D212A	D217A				

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080P 06N	626	SCH
			- EV29 S KEYWAY		
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 28

For use on Door #(s):

D206A D206B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	SET	CONST LATCHING BOLT	FB61P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080P 06N	626	SCH
			- EV29 S KEYWAY		
<del>1</del>	<del>EA</del>	<del>COORDINATOR</del>	<del>COR-X FL</del>	<del>628</del>	<del>IVE</del>
<del>2</del>	<del>EA</del>	<del>MOUNTING BRACKET</del>	<del>MB</del>	<del>689</del>	<del>IVE</del>
<del>1</del>	<del>EA</del>	<del>OH STOP</del>	<del>100S</del>	<del>630</del>	<del>GLY</del>
<del>1</del>	<del>EA</del>	<del>SURFACE CLOSER</del>	<del>4040XP RW/PA ST-2687</del>	<del>689</del>	<del>LCN</del>
			<del>- PUSH-SIDE</del>		
<del>2</del>	<del>EA</del>	<del>SURFACE CLOSER</del>	<del>4040XP SCUSH</del>	<del>689</del>	<del>LCN</del>
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
2	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 29

For use on Door #(s):

A111 ~~B104~~ ~~C201~~ ~~D201~~ ~~E106A~~

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080P 06N	626	SCH
			- EV29 S KEYWAY		
1	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
			- PULL-SIDE		
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER

## Hardware Group No. 30

For use on Door #(s):

E200 E201A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	L9080P 06N - EV29 S KEYWAY	626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA - PULL-SIDE	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER

## Hardware Group No. 31

For use on Door #(s):

E112

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
<b>1</b>	<b>EA</b>	<b><u>CLASSROOM LOCK</u></b>	<b><u>L9070P 06N</u></b> <b><u>- EV29 S KEYWAY</u></b>	<b><u>626</u></b>	<b><u>SCH</u></b>
<del>1</del>	<del>EA</del>	<del>STOREROOM LOCK</del>	<del>L9080P 06N</del> <del>- EV29 S KEYWAY</del>	<del>626</del>	<del>SCH</del>
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP RW/PA ST-1630 - PULL-SIDE	689	LCN
1	EA	TOP JAMB MTG PLATE	4040XP-18TJ	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	GASKETING	488S	BK	ZER

## Hardware Group No. 32

For use on Door #(s):

B202

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 5 X 4.5	652	IVE
<b>1</b>	<b>EA</b>	<b><u>CLASSROOM LOCK</u></b>	<b><u>L9070P 06N</u></b>	<b><u>626</u></b>	<b><u>SCH</u></b>
			<b><u>- EV29 S KEYWAY</u></b>		
<b>1</b>	<b>EA</b>	<b><u>STOREROOM LOCK</u></b>	<b><u>L9080P 06N</u></b>	<b><u>626</u></b>	<b><u>SCH</u></b>
			<b><u>- EV29 S KEYWAY</u></b>		
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP RW/PA ST-1630	689	LCN
			- PULL-SIDE		
1	EA	TOP JAMB MTG PLATE	4040XP-18TJ	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	GASKETING	488S	BK	ZER

## Hardware Group No. 33

For use on Door #(s):

E108

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	SET	AUTO FLUSH BOLT	FB41P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
<b>1</b>	<b>EA</b>	<b><u>CLASSROOM LOCK</u></b>	<b><u>L9070P 06N</u></b>	<b><u>626</u></b>	<b><u>SCH</u></b>
			<b><u>- EV29 S KEYWAY</u></b>		
<b>1</b>	<b>EA</b>	<b><u>STOREROOM LOCK</u></b>	<b><u>L9080P 06N</u></b>	<b><u>626</u></b>	<b><u>SCH</u></b>
			<b><u>- EV29 S KEYWAY</u></b>		
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	MOUNTING BRACKET	MB	689	IVE
2	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
			- PUSH-SIDE		
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
2	EA	FIRE/LIFE WALL MAG	SEM7850 (COORDINATE	689	LCN
			VOLTAGE AS REQ'D)		
1	EA	GASKETING	488S	BK	ZER
1	EA	MEETING STILE	8217S	BK	ZER

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

THE WALL MAGNETS SHALL BE WIRED TO THE FIRE ALARM PANEL THROUGH A SET OF NORMALLY-CLOSED, DRY CONTACTS (SUPPLIED BY THE FIRE ALARM CONTRACTOR).

MAGNETIC HOLD OPENS ARE CONTINUOUSLY ENERGIZED ALLOWING THE DOORS TO BE HELD OPEN UNDER NORMAL BUILDING CONDITIONS. WHEN THE FIRE ALARM IS ACTIVATED, POWER TO THE MAGNETIC HOLD OPEN IS DISCONNECTED CAUSING THE DOOR CLOSER TO CLOSE THE DOORS.

Hardware Group No. 34

For use on Door #(s):

A117

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080P 06N	626	SCH
			- EV29 S KEYWAY		
1	EA	ELECTRIC STRIKE	6400 FSE	✓ 630	VON
1	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
			- PUSH-SIDE		
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	CARD READER	PROVIDED BY SECURITY	✓	
			CONTRACTOR		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

UNLOCKED HOURS: DOOR ELECTRONICALLY UNLOCKED VIA ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE.

LOCKED HOURS: DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY UNLOCK THE ELECTRIC STRIKE ALLOWING ACCESS.

DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.

## Hardware Group No. 35

For use on Door #(s):

A101A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080P 06N	626	SCH
			- EV29 S KEYWAY		
1	EA	ELECTRIC STRIKE	6400 FSE	✓ 630	VON
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE
1	EA	CARD READER	PROVIDED BY SECURITY	✓	
			CONTRACTOR		
1	EA	INTERCOM SYSTEM	PROVIDED BY SECURITY	✓	
			CONTRACTOR		
1	EA	DESK MOUNT BUTTON	660-PB	✓ 628	SCE

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

DOOR NORMALLY CLOSED AND LOCKED. PRESENTING A VALID CREDENTIAL TO THE READER OR PRESSING DOOR RELEASE BUTTON LOCATED AT RECEPTION DESK WILL MOMENTARILY UNLOCK THE ELECTRIC STRIKE ALLOWING ACCESS. DOOR TO REMAIN LOCKED UPON LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.

## Hardware Group No. 36

For use on Door #(s):

A101B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080P 06N - EV29 S KEYWAY	626	SCH
1	EA	ELECTRIC STRIKE	6400 FSE	✓ 630	VON
1	EA	MAGNETIC LOCK	M490P ATS/LED	✓ 628	SCE
1	EA	SURFACE CLOSER	4040XP CUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
3	EA	SILENCER	SR64	GRY	IVE
2	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	✓	
1	EA	DESK MOUNT BUTTON	660-PB	✓ 628	SCE
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER - SPECIFIED UNDER POWER SUPPLY HW SET	✓	

## NOTES:

1) STOREROOM LOCK TO BE KEYED OFFICE SIDE.

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

THE MAGNETIC LOCK SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM THROUGH A SET OF NORMALLY CLOSED, DRY CONTACTS (SUPPLIED BY THE FIRE ALARM CONTRACTOR).

UNLOCKED HOURS: MAGNETIC LOCK SHALL BE CONTROLLED BY ACCESS CONTROL AND LOCKDOWN SYSTEM AND BE DE-ENERGIZED (UNLOCKED) DURING SCHOOL HOURS. FREE ENTRY FROM SCHOOL CORRIDOR INTO OFFICE. OFFICE SIDE ALWAYS LOCKED PREVENTING FREE PASSAGE FROM OFFICE INTO THE SCHOOL CORRIDOR. PRESENTING A VALID CREDENTIAL TO THE READER ON OFFICE SIDE, OR PUSH BUTTON AT RECEPTION DESK, WILL MOMENTARILY UNLOCK THE ELECTRIC STRIKE ALLOWING ACCESS INTO THE SCHOOL CORRIDOR. DOOR TO REMAIN LOCKED UPON LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM AND UNLOCKED UPON ACTIVATION OF THE FIRE ALARM.

LOCKED HOURS: MAGNETIC LOCK SHALL BE CONTROLLED BY ACCESS CONTROL AND LOCKDOWN SYSTEM AND BE ENERGIZED (LOCKED) AFTER SCHOOL HOURS THUS LOCKED IN BOTH DIRECTIONS. PRESENTING A VALID CREDENTIAL TO THE READER ON EITHER SIDE RELEASES MAGNETIC LOCK AND ELECTRIC STRIKE ALLOWING ACCESS. DOOR TO REMAIN LOCKED UPON LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM AND UNLOCKED UPON ACTIVATION OF THE FIRE ALARM.

## Hardware Group No. 37

For use on Door #(s):

A119B      C100B      D100B      E110B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	224HD	628	IVE
<del>1</del>	<del>EA</del>	<del>MULLION</del>	<del>FIXED MULLION</del>		
2	EA	DUMMY PUSH BAR	350	626	VON
2	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630- 316	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP EDA	689	LCN
<u>2</u>	<u>EA</u>	<u>KICK PLATE</u>	<u>8400 10" X 1" LDW B-CS</u>	<u>630</u>	<u>IVE</u>
<del>2</del>	<del>EA</del>	<del>KICK PLATE</del>	<del>8400 10" X 2" LDW B-CS</del>	<del>630</del>	<del>IVE</del>
2	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 38

For use on Door #(s):

E100D      E100E

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	DUMMY PUSH BAR	350	626	VON
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630- 316	IVE
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

## Hardware Group No. 39

For use on Door #(s):

E100F

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	DUMMY PUSH BAR	350	626	VON
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630-316	IVE
1	EA	OH STOP	100SE	630	GLY
1	EA	SURF. AUTO OPERATOR	4642 WMS	✓ 689	LCN
1	EA	ACTUATOR, WALL MOUNT	8310-853T	✓ 630	LCN
1	EA	FLUSH WALL MOUNT BOX	8310-867F	✓ 689	LCN
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

## NOTES:

1) ACTUATOR LISTED W/DOOR E100C.

## Hardware Group No. 40

For use on Door #(s):

B109A

B109B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 5 X 4.5 NRP	652	IVE
<del>1</del>	<del>EA</del>	<del>PANIC HARDWARE</del>	<del>98-L-NL-06</del>	<del>626</del>	<del>VON</del>
<del>4</del>	<del>EA</del>	<del>PANIC HARDWARE</del>	<del>CDSI-98-L-NL-06</del>	<del>626</del>	<del>VON</del>
<del>4</del>	<del>EA</del>	<del>MORTISE CYL TURN</del>	<del>09-904NH XB11-720</del>	<del>626</del>	<del>SCH</del>
1	EA	RIM CYLINDER	20-022 EV29 S	626	SCH
1	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
			- PUSH-SIDE		
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
3	EA	SILENCER	SR64	GRY	IVE

## Hardware Group No. 41

For use on Door #(s):

A132A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	SET	AUTO FLUSH BOLT	FB41P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	FIRE EXIT HARDWARE	9875-L-NL-F-06	626	VON
1	EA	MORTISE CYLINDER	20-001 EV29 S	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	MOUNTING BRACKET	MB	689	IVE
2	EA	SURFACE CLOSER	4040XP RW/PA - PUSH-SIDE	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
2	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER
1	EA	MEETING STILE	8217S	BK	ZER

## Hardware Group No. 42

For use on Door #(s):

B2

C2

D2

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	224HD	628	IVE
2	EA	FIRE EXIT HARDWARE	9827-L-BE-F-LBR-06-499F	626	VON
2	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER
1	EA	MEETING STILE	8217S	BK	ZER

## Hardware Group No. 43

For use on Door #(s):

B1A

C1A

D1A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224HD	628	IVE
1	EA	FIRE EXIT HARDWARE	98-L-BE-F-06	626	VON
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	GASKETING	488S	BK	ZER

## Hardware Group No. 44

For use on Door #(s):

E105A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224HD	628	IVE
1	EA	FIRE EXIT HARDWARE	98-L-F-06	626	VON
1	EA	RIM CYLINDER	20-022 EV29 S	626	SCH
1	EA	FIRE/LIFE CLOSER	4414ME	✓ 689	LCN
1	EA	MOUNTING PLATE	4410ME-18G	689	LCN
1	EA	TRANSFORMER	4410ME-3210	✓	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33(X)	626	IVE
1	EA	GASKETING	488S	BK	ZER

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

THE ELECTRONIC DOOR CLOSER SHALL BE WIRED TO THE FIRE ALARM PANEL THROUGH A SET OF NORMALLY-CLOSED, DRY CONTACTS (SUPPLIED BY THE FIRE ALARM CONTRACTOR).

ELECTRONIC DOOR CLOSER IS CONTINUOUSLY ENERGIZED ALLOWING THE DOOR TO BE HELD OPEN UNDER NORMAL BUILDING CONDITIONS. WHEN THE FIRE ALARM IS ACTIVATED, POWER TO THE ELECTRONIC DOOR CLOSER IS DISCONNECTED CAUSING THE DOOR TO CLOSE.

## Hardware Group No. 45

For use on Door #(s):

E105B

E105C

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224HD	628	IVE
1	EA	FIRE EXIT HARDWARE	98-L-F-06	626	VON
1	EA	RIM CYLINDER	20-022 EV29 S	626	SCH
1	EA	OH STOP	100SE	630	GLY
1	EA	FIRE/LIFE CLOSER	4414ME	✓ 689	LCN
1	EA	MOUNTING PLATE	4410ME-18G	689	LCN
1	EA	TRANSFORMER	4410ME-3210	✓	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	GASKETING	488S	BK	ZER

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

THE ELECTRONIC DOOR CLOSER SHALL BE WIRED TO THE FIRE ALARM PANEL THROUGH A SET OF NORMALLY-CLOSED, DRY CONTACTS (SUPPLIED BY THE FIRE ALARM CONTRACTOR).

ELECTRONIC DOOR CLOSER IS CONTINUOUSLY ENERGIZED ALLOWING THE DOOR TO BE HELD OPEN UNDER NORMAL BUILDING CONDITIONS. WHEN THE FIRE ALARM IS ACTIVATED, POWER TO THE ELECTRONIC DOOR CLOSER IS DISCONNECTED CAUSING THE DOOR TO CLOSE.

Hardware Group No. 46

For use on Door #(s):

**A120A****A120B****A120C**

A133A

A133B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	224HD	628	IVE
1	EA	FIRE RATED REMOVABLE MULLION	9954 STAB	689	VON
2	EA	FIRE EXIT HARDWARE	98-L-F-06	626	VON
2	EA	RIM CYLINDER	20-022 EV29 S	626	SCH
2	EA	SURFACE CLOSER	4040XP RW/PA - PUSH-SIDE	689	LCN
2	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
2	EA	FIRE/LIFE WALL MAG	SEM7850 (COORDINATE VOLTAGE AS REQ'D)	✓ 689	LCN
1	EA	GASKETING	488S	BK	ZER
1	EA	MEETING STILE	8217S	BK	ZER

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

THE WALL MAGNETS SHALL BE WIRED TO THE FIRE ALARM PANEL THROUGH A SET OF NORMALLY-CLOSED, DRY CONTACTS (SUPPLIED BY THE FIRE ALARM CONTRACTOR).

MAGNETIC HOLD OPENS ARE CONTINUOUSLY ENERGIZED ALLOWING THE DOORS TO BE HELD OPEN UNDER NORMAL BUILDING CONDITIONS. WHEN THE FIRE ALARM IS ACTIVATED, POWER TO THE MAGNETIC HOLD OPEN IS DISCONNECTED CAUSING THE DOOR CLOSER TO CLOSE THE DOORS.

## Hardware Group No. 47

For use on Door #(s):

A133C                      E124A                      E124B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	224HD	628	IVE
1	EA	FIRE EXIT HARDWARE	9849-L-DT-F-06-LBL	626	VON
1	EA	FIRE EXIT HARDWARE	9849-L-NL-F-06-LBL	626	VON
1	EA	RIM CYLINDER	20-022 EV29 S	626	SCH
2	EA	SURFACE CLOSER	4040XP RW/PA - PUSH-SIDE	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
2	EA	FIRE/LIFE WALL MAG	SEM7850 (COORDINATE VOLTAGE AS REQ'D)	✓ 689	LCN
1	EA	GASKETING	488S	BK	ZER
1	EA	MEETING STILE	8217S	BK	ZER

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

THE WALL MAGNETS SHALL BE WIRED TO THE FIRE ALARM PANEL THROUGH A SET OF NORMALLY-CLOSED, DRY CONTACTS (SUPPLIED BY THE FIRE ALARM CONTRACTOR).

MAGNETIC HOLD OPENS ARE CONTINUOUSLY ENERGIZED ALLOWING THE DOORS TO BE HELD OPEN UNDER NORMAL BUILDING CONDITIONS. WHEN THE FIRE ALARM IS ACTIVATED, POWER TO THE MAGNETIC HOLD OPEN IS DISCONNECTED CAUSING THE DOOR CLOSER TO CLOSE THE DOORS.

## Hardware Group No. 48

For use on Door #(s):

B101	B102	C119	C210	D210
------	------	------	------	------

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	224HD	628	IVE
1	EA	CONT. HINGE	224HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	✓ 689	VON
1	EA	PANIC HARDWARE	LD-9827-L-DT-LBR-06	626	VON
1	EA	ELEC PANIC HARDWARE	QEL-9827-L-NL-LBR-06-CON	✓ 626	VON
1	EA	RIM CYLINDER	20-022 EV29 S	626	SCH
2	EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
		- PUSH-SIDE			
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
2	EA	FIRE/LIFE WALL MAG	SEM7850 (COORDINATE VOLTAGE AS REQ'D)	✓ 689	LCN
2	EA	SILENCER	SR64	GRY	IVE
1	EA	WIRE HARNESS	CON-XX/XXP (AS REQ'D)	✓	SCH
		- ELECTRIFIED HARDWARE TO POWER TRANSFER (EVALUATE CONDITIONS AND MODIFY WIRE LENGTH AS REQ'D)			
1	EA	WIRE HARNESS	CON-6W	✓	SCH
		- WIRE EXTENSION FROM POWER TRANSFER TO POWER SUPPLY			
1	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	✓	
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER	✓	
			- SPECIFIED UNDER POWER SUPPLY HW SET		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

ALL WIRING AND CONDUIT BY ELECTRICAL CONTRACTOR. COORDINATE ALL WIRING AND INSTALLATION WITH ELECTRICAL AND SECURITY CONTRACTORS.

DOORS NORMALLY HELD OPEN BY MAGNETIC HOLD OPENS. MAGNETIC HOLD OPENS ARE WIRED TO THE LOCKDOWN SYSTEM. WHEN SYSTEM IS ACTIVATED, THE MAGNETS RELEASE, AND THE DOORS CLOSE AND LOCK. DOORS CAN ALSO BE MANUALLY RELEASED FROM THE MAGNET.

WHEN DOORS ARE CLOSED AND LOCKED, PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH ALLOWING ACCESS. DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.

Hardware Group No. 49

For use on Door #(s):

A100D

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	✓ 689	VON
<b>1</b>	<b>EA</b>	<b>ELEC PANIC HARDWARE</b>	<b>SD-QEL-98-EO-CON</b>	✓ <b>626</b>	<b>VON</b>
<b>4</b>	<b>EA</b>	<b>ELEC PANIC HARDWARE</b>	<b>SD-QEL-98-NL-OP-110MD-CON</b>	✓ <b>626</b>	<b>VON</b>
1	EA	MORTISE CYLINDER	20-001 EV29 S XQ11-949	626	SCH
<b>4</b>	<b>EA</b>	<b>RIM CYLINDER</b>	<b>20-022 EV29 S</b>	<b>626</b>	<b>SCH</b>
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630-316	IVE
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	WIRE HARNESS	CON-XX/XXP (AS REQ'D) - ELECTRIFIED HARDWARE TO POWER TRANSFER (EVALUATE CONDITIONS AND MODIFY WIRE LENGTH AS REQ'D)	✓	SCH
1	EA	WIRE HARNESS	CON-6W - WIRE EXTENSION FROM POWER TRANSFER TO POWER SUPPLY	✓	SCH
<b>4</b>	<b>EA</b>	<b>CARD READER</b>	<b>PROVIDED BY SECURITY CONTRACTOR</b>	✓	
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER - SPECIFIED UNDER POWER SUPPLY HW SET	✓	
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

UNLOCKED HOURS: DOOR ELECTRONICALLY DOGGED DOWN VIA ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE.

LOCKED HOURS: DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM.

DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES. ~~(OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.~~

~~UNLOCKED HOURS: DOOR ELECTRONICALLY DOGGED DOWN VIA ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE.~~

~~LOCKED HOURS: DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH ALLOWING ACCESS.~~

~~DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.)~~

## Hardware Group No. 50

For use on Door #(s):

A100F

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	✓ 689	VON
1	EA	ELEC PANIC HARDWARE	SD-QEL-98-NL-OP-110MD-CON	✓ 626	VON
1	EA	MORTISE CYLINDER	20-001 EV29 S XQ11-949	626	SCH
1	EA	RIM CYLINDER	20-022 EV29 S	626	SCH
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630-316	IVE
1	EA	OH STOP	100SE	630	GLY
1	EA	SURF. AUTO OPERATOR	4642 WMS	✓ 689	LCN
1	EA	ACTUATOR, JAMB MOUNT	8310-818T	✓ 630	LCN
1	EA	FLUSH JAMB MOUNT BOX	8310-819F	✓ PLA	LCN
1	EA	ACTUATOR, WALL MOUNT	8310-853T	✓ 630	LCN
1	EA	FLUSH WALL MOUNT BOX	8310-867F	✓ 689	LCN
1	EA	WIRE HARNESS	CON-XX/XXP (AS REQ'D) - ELECTRIFIED HARDWARE TO POWER TRANSFER (EVALUATE CONDITIONS AND MODIFY WIRE LENGTH AS REQ'D)	✓	SCH
1	EA	WIRE HARNESS	CON-6W - WIRE EXTENSION FROM POWER TRANSFER TO POWER SUPPLY	✓	SCH
1	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	✓	
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER - SPECIFIED UNDER POWER SUPPLY HW SET	✓	
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

UNLOCKED HOURS: DOOR ELECTRONICALLY DOGGED DOWN VIA ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE. PUSHING EITHER AUTO OPERATOR ACTUATOR WILL SIGNAL AUTO OPERATOR TO MOMENTARILY OPEN THE ONE LEAF.

LOCKED HOURS: DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH (ALLOWING ACCESS) AND ACTIVATE EXTERIOR AUTO OPERATOR ACTUATOR. PUSHING EXTERIOR AUTO OPERATOR ACTUATOR AT THIS TIME WILL SIGNAL AUTO OPERATOR TO MOMENTARILY OPEN ONE LEAF. PUSH INTERIOR ACTUATOR AT ANY TIME WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH AND SIGNAL AUTO OPERATOR TO MOMENTARILY OPEN ONE LEAF.

DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.

## Hardware Group No. 51

For use on Door #(s):

A100E

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	✓ 689	VON
1	EA	ELEC PANIC HARDWARE	SD-QEL-98-EO-CON	✓ 626	VON
1	EA	MORTISE CYLINDER	20-001 EV29 S XQ11-949	626	SCH
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630-316	IVE
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	WIRE HARNESS	CON-XX/XXP (AS REQ'D) - ELECTRIFIED HARDWARE TO POWER TRANSFER (EVALUATE CONDITIONS AND MODIFY WIRE LENGTH AS REQ'D)	✓	SCH
1	EA	WIRE HARNESS	CON-6W - WIRE EXTENSION FROM POWER TRANSFER TO POWER SUPPLY	✓	SCH
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER - SPECIFIED UNDER POWER SUPPLY HW SET	✓	
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

UNLOCKED HOURS: DOOR ELECTRONICALLY DOGGED DOWN VIA ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE.

LOCKED HOURS: DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM.

DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.

## Hardware Group No. 52

For use on Door #(s):

A109                  B109C                  E118

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	✓ 689	VON
1	EA	ELEC PANIC HARDWARE	SD-QEL-98-NL-OP-110MD-CON	✓ 626	VON
1	EA	MORTISE CYLINDER	20-001 EV29 S XQ11-949	626	SCH
1	EA	RIM CYLINDER	20-022 EV29 T	626	SCH
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630-316	IVE
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD	566A	A	ZER
1	EA	WIRE HARNESS	CON-XX/XXP (AS REQ'D) - ELECTRIFIED HARDWARE TO POWER TRANSFER (EVALUATE CONDITIONS AND MODIFY WIRE LENGTH AS REQ'D)	✓	SCH
1	EA	WIRE HARNESS	CON-6W - WIRE EXTENSION FROM POWER TRANSFER TO POWER SUPPLY	✓	SCH
1	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	✓	
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER - SPECIFIED UNDER POWER SUPPLY HW SET	✓	
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH ALLOWING ACCESS. DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.

## Hardware Group No. 53

For use on Door #(s):

A100A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	✓ 689	VON
<b>1</b>	<b>EA</b>	<b>ELEC PANIC HARDWARE</b>	<b>SD-QEL-98-EO-CON</b>	✓ <b>626</b>	<b>VON</b>
<b>4</b>	<b>EA</b>	<b>ELEC PANIC HARDWARE</b>	<b>SD-QEL-98-NL-OP-110MD-CON</b>	✓ <b>626</b>	<b>VON</b>
1	EA	MORTISE CYLINDER	20-001 EV29 S XQ11-949	626	SCH
<b>4</b>	<b>EA</b>	<b>RIM CYLINDER</b>	<b>20-022 EV29 T</b>	<b>626</b>	<b>SCH</b>
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630-316	IVE
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD	566A	A	ZER
1	EA	WIRE HARNESS	CON-XX/XXP (AS REQ'D) - ELECTRIFIED HARDWARE TO POWER TRANSFER (EVALUATE CONDITIONS AND MODIFY WIRE LENGTH AS REQ'D)	✓	SCH
1	EA	WIRE HARNESS	CON-6W - WIRE EXTENSION FROM POWER TRANSFER TO POWER SUPPLY	✓	SCH
<b>4</b>	<b>EA</b>	<b>CARD READER</b>	<b>PROVIDED BY SECURITY CONTRACTOR</b>	✓	
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER - SPECIFIED UNDER POWER SUPPLY HW SET	✓	
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

UNLOCKED HOURS: DOOR ELECTRONICALLY DOGGED DOWN VIA ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE.

LOCKED HOURS: DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM.

DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES. ~~(OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.~~

~~UNLOCKED HOURS: DOOR ELECTRONICALLY DOGGED DOWN VIA ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE.~~

~~LOCKED HOURS: DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH ALLOWING ACCESS.~~

~~DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.)~~

## Hardware Group No. 54

For use on Door #(s):

A126

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	✓ 689	VON
1	EA	ELEC PANIC HARDWARE	SD-QEL-98-NL-CON	✓ 626	VON
1	EA	MORTISE CYLINDER	20-001 EV29 S XQ11-949	626	SCH
1	EA	RIM CYLINDER	20-022 EV29 T	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP HEDA	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD	566A	A	ZER
1	EA	WIRE HARNESS	CON-XX/XXP (AS REQ'D) - ELECTRIFIED HARDWARE TO POWER TRANSFER (EVALUATE CONDITIONS AND MODIFY WIRE LENGTH AS REQ'D)	✓	SCH
1	EA	WIRE HARNESS	CON-6W - WIRE EXTENSION FROM POWER TRANSFER TO POWER SUPPLY	✓	SCH
1	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	✓	
1	EA	INTERCOM SYSTEM	PROVIDED BY SECURITY CONTRACTOR	✓	
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER - SPECIFIED UNDER POWER SUPPLY HW SET	✓	
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH ALLOWING ACCESS. DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.

## Hardware Group No. 55

For use on Door #(s):

A119A      C100A      D100A      E110A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112HD EPT	628	IVE
2	EA	POWER TRANSFER	EPT10 CON	✓ 689	VON
1	EA	MULLION	FIXED MULLION		
1	EA	ELEC PANIC HARDWARE	SD-QEL-98-EO-CON	✓ 626	VON
1	EA	ELEC PANIC HARDWARE	SD-QEL-98-NL-OP-110MD-CON	✓ 626	VON
2	EA	MORTISE CYLINDER	20-001 EV29 S XQ11-949	626	SCH
1	EA	RIM CYLINDER	20-022 EV29 T	626	SCH
2	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630-316	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
2	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD	566A	A	ZER
2	EA	WIRE HARNESS	CON-XX/XXP (AS REQ'D) - ELECTRIFIED HARDWARE TO POWER TRANSFER (EVALUATE CONDITIONS AND MODIFY WIRE LENGTH AS REQ'D)	✓	SCH
2	EA	WIRE HARNESS	CON-6W - WIRE EXTENSION FROM POWER TRANSFER TO POWER SUPPLY	✓	SCH
1	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	✓	
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER - SPECIFIED UNDER POWER SUPPLY HW SET	✓	
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

UNLOCKED HOURS: DOOR ELECTRONICALLY DOGGED DOWN VIA ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE.

LOCKED HOURS: DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH ALLOWING ACCESS.

DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.

## Hardware Group No. 56

For use on Door #(s):

B1B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	✓ 689	VON
1	EA	MULLION	FIXED MULLION		
4	<del>EA</del>	<del>PANIC HARDWARE</del>	<del>LD-98-EQ</del>	<del>626</del>	<del>VON</del>
1	EA	ELEC PANIC HARDWARE	SD-QEL-98-NL-OP-110MD-CON	✓ 626	VON
1	EA	MORTISE CYLINDER	20-001 EV29 S XQ11-949	626	SCH
1	EA	RIM CYLINDER	20-022 EV29 T	626	SCH
2	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630-316	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
2	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD	566A	A	ZER
1	EA	WIRE HARNESS	CON-XX/XXP (AS REQ'D) - ELECTRIFIED HARDWARE TO POWER TRANSFER (EVALUATE CONDITIONS AND MODIFY WIRE LENGTH AS REQ'D)	✓	SCH
1	EA	WIRE HARNESS	CON-6W - WIRE EXTENSION FROM POWER TRANSFER TO POWER SUPPLY	✓	SCH
1	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	✓	
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER - SPECIFIED UNDER POWER SUPPLY HW SET	✓	
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH ALLOWING ACCESS. DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.

## Hardware Group No. 57

For use on Door #(s):

A100C

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	✓ 689	VON
1	EA	ELEC PANIC HARDWARE	SD-QEL-98-NL-OP-110MD-CON	✓ 626	VON
1	EA	MORTISE CYLINDER	20-001 EV29 S XQ11-949	626	SCH
1	EA	RIM CYLINDER	20-022 EV29 T	626	SCH
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630-316	IVE
1	EA	OH STOP	100SE	630	GLY
1	EA	SURF. AUTO OPERATOR	4642 WMS	✓ 689	LCN
1	EA	WEATHER RING	8310-801	PLA	LCN
1	EA	ACTUATOR, JAMB MOUNT	8310-818T	✓ 630	LCN
1	EA	FLUSH JAMB MOUNT BOX	8310-819F	✓ PLA	LCN
1	EA	ACTUATOR, WALL MOUNT	8310-853T	✓ 630	LCN
1	EA	FLUSH WALL MOUNT BOX	8310-867F	✓ 689	LCN
1	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD	566A	A	ZER
1	EA	WIRE HARNESS	CON-XX/XXP (AS REQ'D) - ELECTRIFIED HARDWARE TO POWER TRANSFER (EVALUATE CONDITIONS AND MODIFY WIRE LENGTH AS REQ'D)	✓	SCH
1	EA	WIRE HARNESS	CON-6W - WIRE EXTENSION FROM POWER TRANSFER TO POWER SUPPLY	✓	SCH
1	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	✓	
1	EA	INTERCOM SYSTEM	PROVIDED BY SECURITY CONTRACTOR	✓	
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER - SPECIFIED UNDER POWER SUPPLY HW SET	✓	
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

UNLOCKED HOURS: DOOR ELECTRONICALLY DOGGED DOWN VIA ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE. PUSHING EITHER AUTO OPERATOR ACTUATOR WILL SIGNAL AUTO OPERATOR TO MOMENTARILY OPEN THE ONE LEAF.

LOCKED HOURS: DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH (ALLOWING ACCESS) AND ACTIVATE EXTERIOR AUTO OPERATOR ACTUATOR. PUSHING EXTERIOR AUTO OPERATOR ACTUATOR AT THIS TIME WILL SIGNAL AUTO OPERATOR TO MOMENTARILY OPEN ONE LEAF. PUSH INTERIOR ACTUATOR AT ANY TIME WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH AND SIGNAL AUTO OPERATOR TO MOMENTARILY OPEN ONE LEAF.

DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.

## Hardware Group No. 58

For use on Door #(s):

E100C

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	✓ 689	VON
1	EA	ELEC PANIC HARDWARE	SD-QEL-98-NL-OP-110MD-CON	✓ 626	VON
1	EA	MORTISE CYLINDER	20-001 EV29 S XQ11-949	626	SCH
1	EA	RIM CYLINDER	20-022 EV29 T	626	SCH
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630-316	IVE
1	EA	OH STOP	100SE	630	GLY
1	EA	SURF. AUTO OPERATOR	4642 WMS	✓ 689	LCN
1	EA	WEATHER RING	8310-801	PLA	LCN
1	EA	ACTUATOR, WALL MOUNT	8310-853T	✓ 630	LCN
1	EA	ACTUATOR, WALL MOUNT	8310-855	✓ 630	LCN
			- SHARED W/DOOR E100F		
2	EA	FLUSH WALL MOUNT BOX	8310-867F	✓ 689	LCN
1	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD	566A	A	ZER
1	EA	WIRE HARNESS	CON-XX/XXP (AS REQ'D)	✓	SCH
			- ELECTRIFIED HARDWARE TO POWER TRANSFER (EVALUATE CONDITIONS AND MODIFY WIRE LENGTH AS REQ'D)		
1	EA	WIRE HARNESS	CON-6W	✓	SCH
			- WIRE EXTENSION FROM POWER TRANSFER TO POWER SUPPLY		
1	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	✓	
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER	✓	
			- SPECIFIED UNDER POWER SUPPLY HW SET		
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

UNLOCKED HOURS: DOOR ELECTRONICALLY DOGGED DOWN VIA ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE. PUSHING EITHER AUTO OPERATOR ACTUATOR WILL SIGNAL AUTO OPERATOR TO MOMENTARILY OPEN THE ONE LEAF.

LOCKED HOURS: DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH (ALLOWING ACCESS) AND ACTIVATE EXTERIOR AUTO OPERATOR ACTUATOR. PUSHING EXTERIOR AUTO OPERATOR ACTUATOR AT THIS TIME WILL SIGNAL AUTO OPERATOR TO MOMENTARILY OPEN ONE LEAF. PUSH INTERIOR ACTUATOR AT ANY TIME WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH AND SIGNAL AUTO OPERATOR TO MOMENTARILY OPEN ONE LEAF.

DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.

## Hardware Group No. 59

For use on Door #(s):

A100B          E100A          E100B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD EPT	628	IVE
1	EA	POWER TRANSFER	EPT10 CON	✓ 689	VON
1	EA	ELEC PANIC HARDWARE	SD-QEL-98-EO-CON	✓ 626	VON
1	EA	MORTISE CYLINDER	20-001 EV29 S XQ11-949	626	SCH
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630-316	IVE
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD	566A	A	ZER
1	EA	WIRE HARNESS	CON-XX/XXP (AS REQ'D) - ELECTRIFIED HARDWARE TO POWER TRANSFER (EVALUATE CONDITIONS AND MODIFY WIRE LENGTH AS REQ'D)	✓	SCH
1	EA	WIRE HARNESS	CON-6W - WIRE EXTENSION FROM POWER TRANSFER TO POWER SUPPLY	✓	SCH
		POWER SUPPLY (CENTRALIZED)	PROVIDED BY DOOR HARDWARE SUPPLIER - SPECIFIED UNDER POWER SUPPLY HW SET	✓	
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

UNLOCKED HOURS: DOOR ELECTRONICALLY DOGGED DOWN VIA ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE.

LOCKED HOURS: DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM.

DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.

## Hardware Group No. 60

For use on Door #(s):

C103	C108	C112	C117	C121	C126
C132	C137				

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	LD-98-NL-OP-110MD	626	VON
1	EA	RIM CYLINDER	20-022 EV29 T	626	SCH
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O	630-316	IVE
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD WEATHERSTRIPPING	566A PROVIDED BY DOOR/FRAME MFG.	A	ZER

## Hardware Group No. 61

For use on Door #(s):

A132C

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	LD-98-NL	626	VON
1	EA	RIM CYLINDER	20-022 EV29 T	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD WEATHERSTRIPPING	566A PROVIDED BY DOOR/FRAME MFG.	A	ZER

## Hardware Group No. 62

For use on Door #(s):

B109D

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	LD-98-EO	626	VON
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD WEATHERSTRIPPING	566A PROVIDED BY DOOR/FRAME MFG.	A	ZER

## Hardware Group No. 63

For use on Door #(s):

C1B D1B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112HD	628	IVE
1	EA	MULLION	FIXED MULLION		
2	EA	PANIC HARDWARE	LD-98-EO	626	VON
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
2	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD	566A	A	ZER

## Hardware Group No. 64

For use on Door #(s):

E124F

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112HD	628	IVE
1	EA	REMOVABLE MULLION	4954 STAB	689	VON
2	EA	PANIC HARDWARE	LD-98-EO	626	VON
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
2	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD	566A	A	ZER

## Hardware Group No. 65

For use on Door #(s):

E124E

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112HD	628	IVE
1	EA	REMOVABLE MULLION	KR4954 STAB	689	VON
2	EA	PANIC HARDWARE	LD-98-EO	626	VON
1	EA	MORTISE CYLINDER	20-001 EV29 S	626	SCH
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP HEDA	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
1	EA	MULLION SEAL	8780N	BK	ZER
2	EA	DOOR SWEEP (W/DRIP CAP)	8198AA	AA	ZER
1	EA	THRESHOLD	566A	A	ZER
		WEATHERSTRIPPING	PROVIDED BY DOOR/FRAME MFG.		

## Hardware Group No. 66

For use on Door #(s):

A120D

A121A

A132B

~~E106B~~B103B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
			HARDWARE BY DOOR MANUFACTURER		

## Hardware Group No. 67-PS

For use on Door #(s):

POWER  
SUPPLIES

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	POWER SUPPLY	PS904 900-4R - DOORS A101B, A112, A116A	✓	VON
1	EA	POWER SUPPLY	PS904 900-4RL - DOORS C210, D210	✓	VON
<del>1</del>	<del>EA</del>	<del>POWER SUPPLY</del>	<del>PS904 900-4RL 900-4RL</del> <del>- DOORS A100C, A100F, A119A,</del> <del>E100C</del>	<del>✓</del>	<del>VON</del>
<del>1</del>	<del>EA</del>	<del>POWER SUPPLY</del>	<del>PS906 900-4RL</del> <del>- DOORS E100A, E100B, B1B,</del> <del>E118</del>	<del>✓</del>	<del>VON</del>
1	EA	POWER SUPPLY	PS906 900-4RL 900-4RL - DOORS A100A, A100B, A100D, A100E, A109	✓	VON
1	EA	POWER SUPPLY	PS906 900-4RL 900-4RL - DOORS A126, B101, B102, B109C, C119	✓	VON
1	EA	POWER SUPPLY	PS906 900-4RL 900-4RL - DOORS C100A, D100A, E110A	✓	VON
<u>1</u>	<u>EA</u>	<u>POWER SUPPLY</u>	<u>PS906 900-4RL 900-4RL</u> <u>- DOORS A100C, A100F, A119A,</u> <u>E100C</u>	<u>✓</u>	<u>VON</u>
<u>1</u>	<u>EA</u>	<u>POWER SUPPLY</u>	<u>PS906 900-4RL 900-4RL</u> <u>- DOORS E100A, E100B, B1B,</u> <u>E118</u>	<u>✓</u>	<u>VON</u>

## NOTES:

1) COORDINATE POWER SUPPLY REQUIREMENTS AND LOCATION W/SECURITY PROVIDER,  
ARCHITECT, AND OWNER.

Hardware Group No. 68

For use on Door #(s):

A120AA120BA120C

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
<u>2</u>	<u>EA</u>	<u>CONT. HINGE</u>	<u>224HD</u>	<u>628</u>	<u>IVE</u>
<u>1</u>	<u>EA</u>	<u>REMOVABLE MULLION</u>	<u>4954 STAB</u>	<u>689</u>	<u>VON</u>
<u>1</u>	<u>EA</u>	<u>PANIC HARDWARE</u>	<u>98-L-DT-06</u>	<u>626</u>	<u>VON</u>
<u>1</u>	<u>EA</u>	<u>PANIC HARDWARE</u>	<u>98-L-NL-06</u>	<u>626</u>	<u>VON</u>
<u>1</u>	<u>EA</u>	<u>RIM CYLINDER</u>	<u>20-022 EV29 S</u>	<u>626</u>	<u>SCH</u>
<u>2</u>	<u>EA</u>	<u>SURFACE CLOSER</u>	<u>4040XP RW/PA</u>	<u>689</u>	<u>LCN</u>
			<u>- PUSH-SIDE</u>		
<u>2</u>	<u>EA</u>	<u>KICK PLATE</u>	<u>8400 10" X 2" LDW B-CS</u>	<u>630</u>	<u>IVE</u>
<u>2</u>	<u>EA</u>	<u>FIRE/LIFE WALL MAG</u>	<u>SEM7850 (COORDINATE</u>	<u>689</u>	<u>LCN</u>
			<u>VOLTAGE AS REQ'D)</u>		
<u>2</u>	<u>EA</u>	<u>SILENCER</u>	<u>SR64</u>	<u>GRY</u>	<u>IVE</u>

OPERATIONAL DESCRIPTION: COORDINATE SYSTEM OPERATION AND COMPONENT LOCATIONS WITH THE OWNER, THE ARCHITECT, AND ALL RELATED TRADES.

ALL WIRING AND CONDUIT BY ELECTRICAL CONTRACTOR. COORDINATE ALL WIRING AND INSTALLATION WITH ELECTRICAL AND SECURITY CONTRACTORS.

MAGNETIC HOLD OPEN IS CONTINUOUSLY ENERGIZED ALLOWING THE DOORS TO BE HELD OPEN UNDER NORMAL BUILDING CONDITIONS. LOSS OF POWER TO THE MAGNETIC HOLD OPEN WILL RELEASE THE MAGNETS CAUSING THE DOOR CLOSER TO CLOSE THE DOOR. DOOR CAN ALSO BE MANUALLY RELEASED FROM THE MAGNET.

END OF SECTION



REGISTRATION SEAL

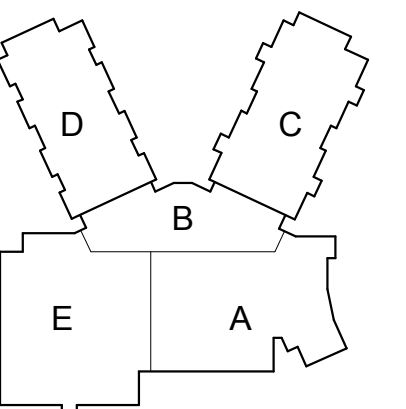
CONSULTANT

PROJECT TITLE

## New Elementary School

**Schoolcraft Community Schools**  
**SCHOOLCRAFT, MI**

DRAWING TITLE



## KEYPLAN

## ISSUE DATES

1-21-21 DESIGN DEVELOPMENT

DATE: ISSUED FOR:

**DRAWN**      **Author**

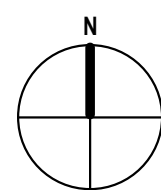
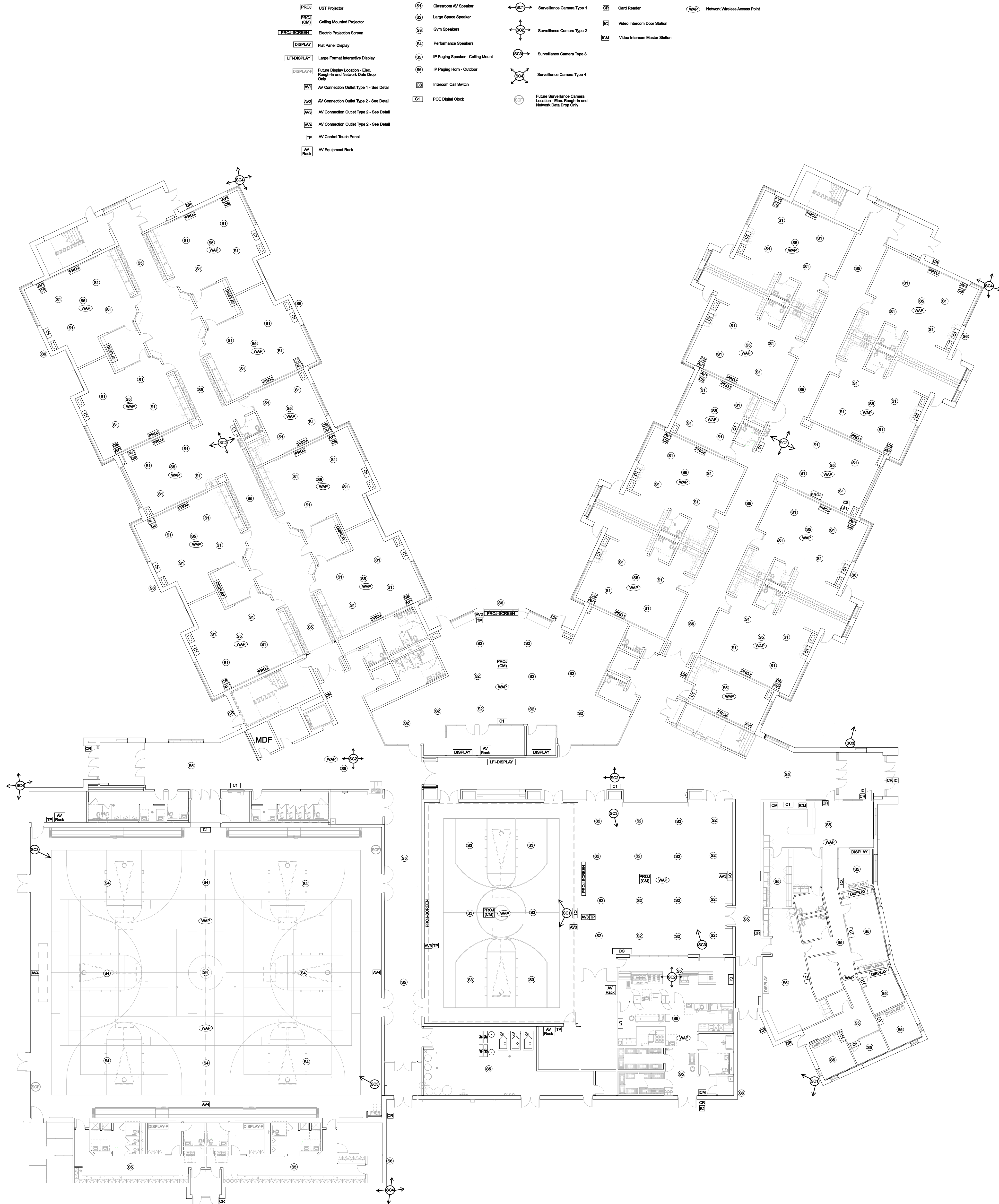
CHECKED      Checked

PROJECT NO.

# 20015

DRAWING NO.

SCS-NET01



SCALE: 1/16" = 1'-0"



REGISTRATION SEAL

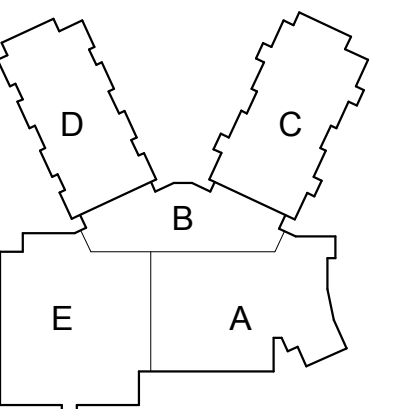
CONSULTANT

PROJECT TITLE

## New Elementary School

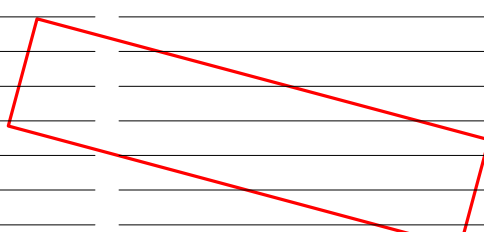
**Schoolcraft Community Schools**  
**SCHOOLCRAFT, MI**

DRAWING TITLE



## KEYPLAN

## ISSUE DATES



01-21-21	DESIGN DEVELOPMENT
----------	--------------------

DATE: ISSUED FOR:

DRAWN Author

CHECKED      Checker

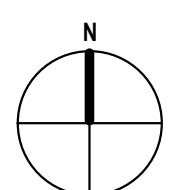
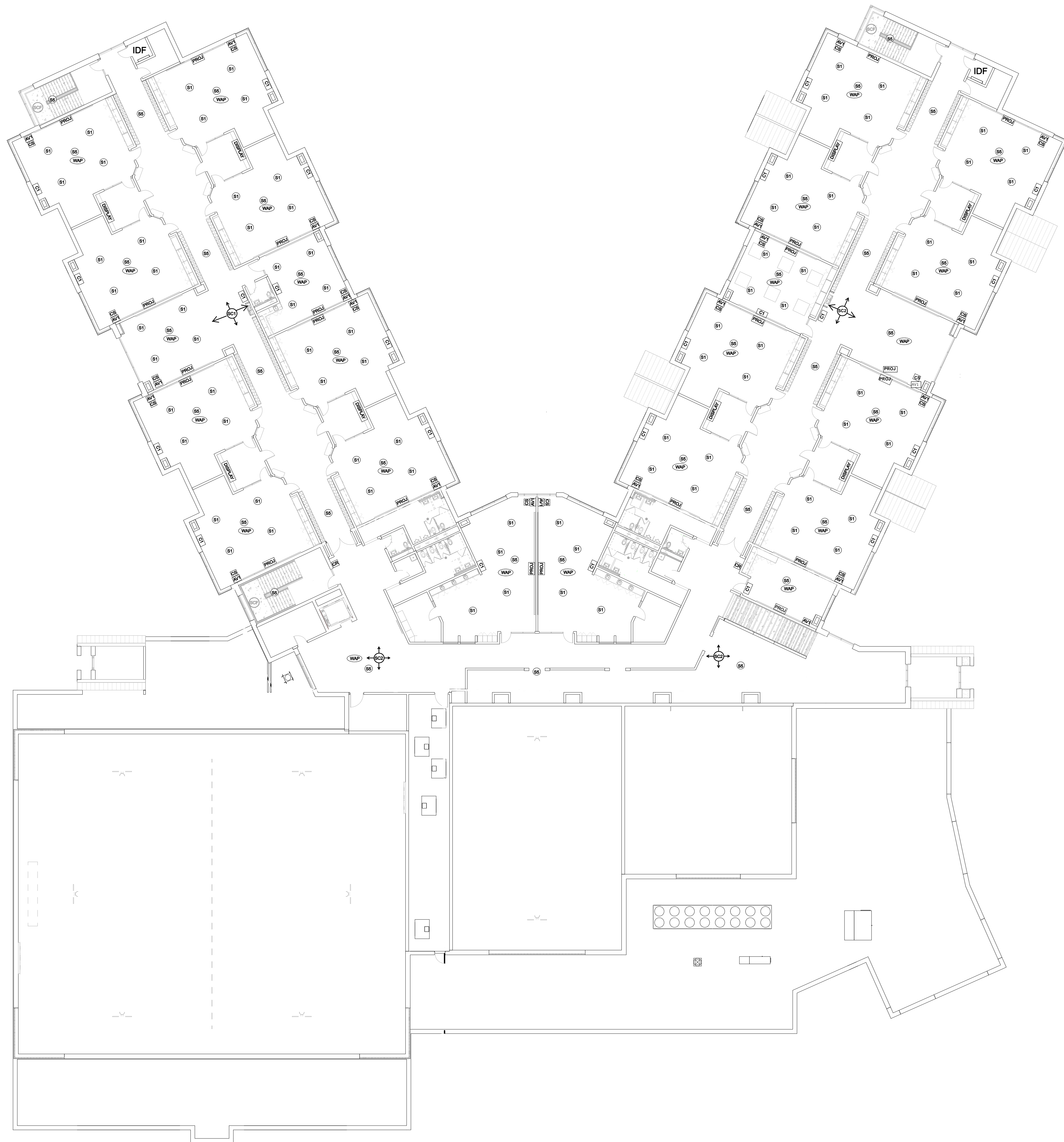
APPROVED      Approver

PROJECT NO.

## 20015

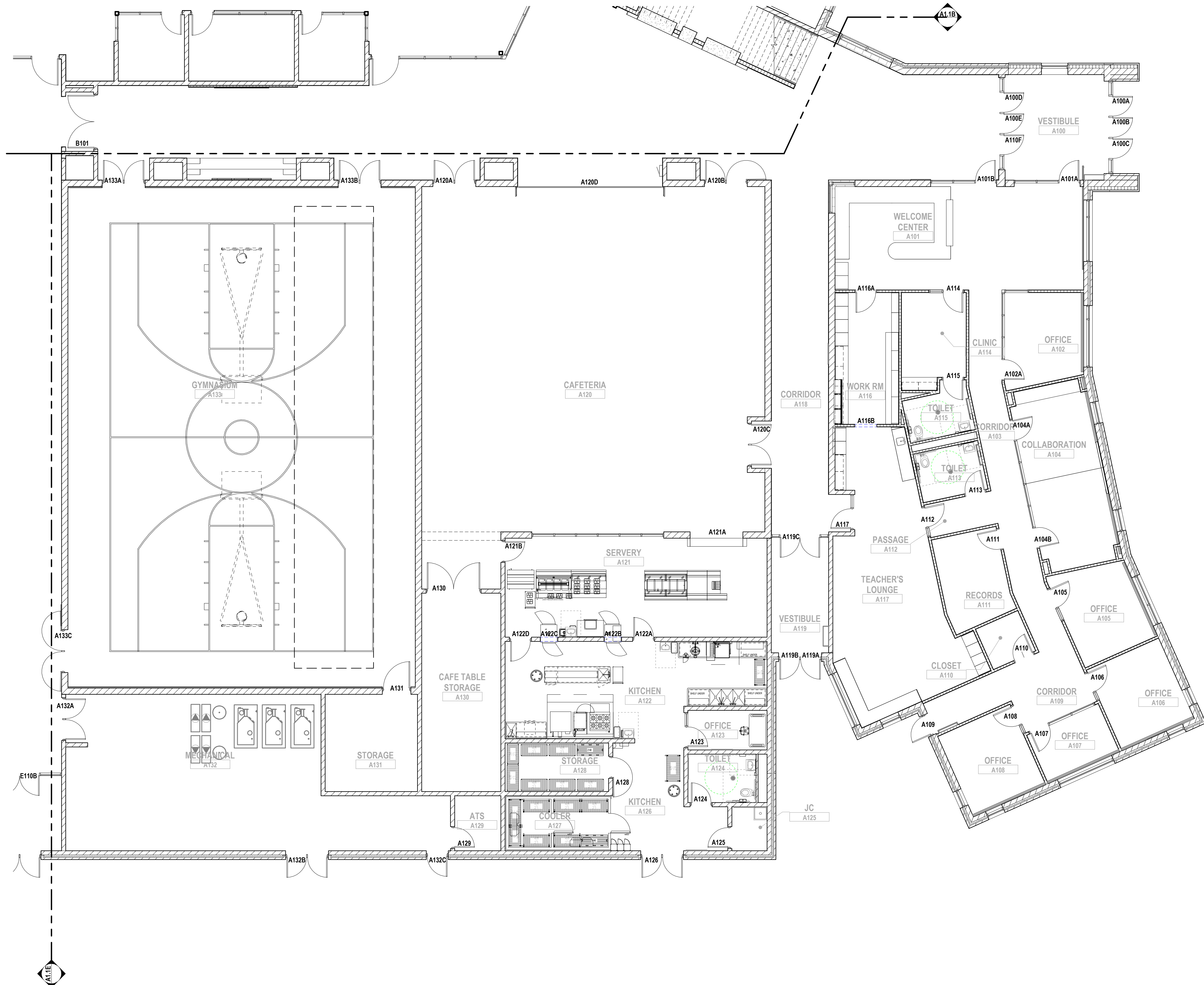
DRAWING NO.

SCS-NET02

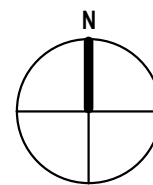
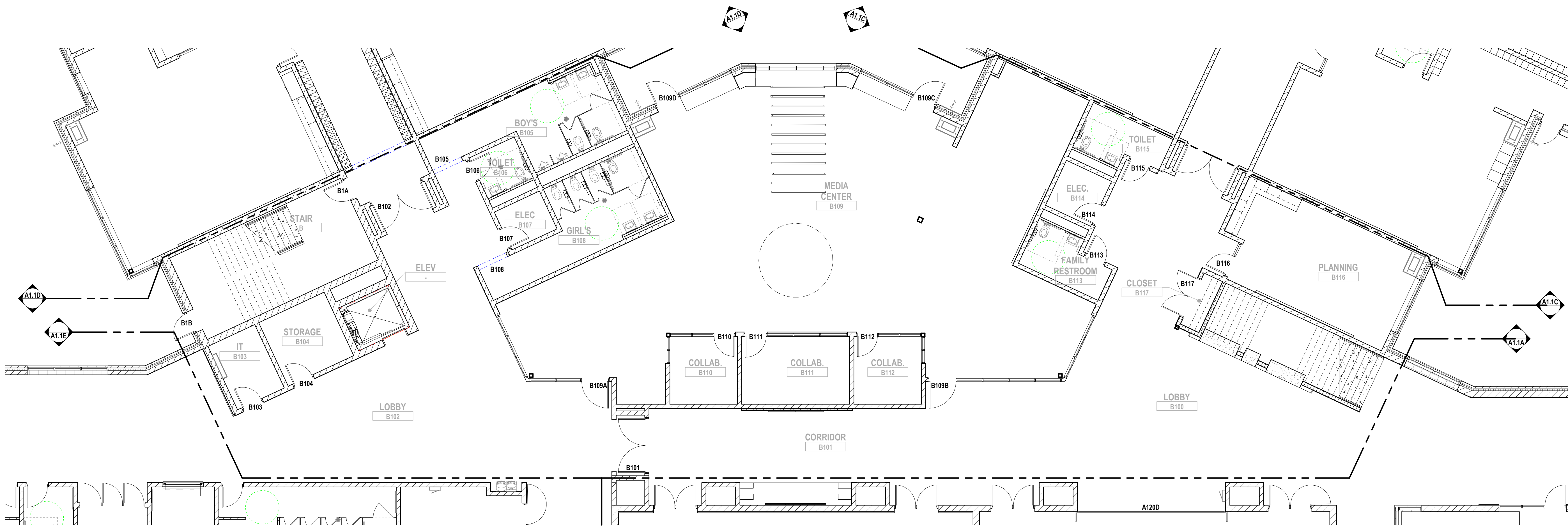


SCALE: 1/16" = 1'-0"

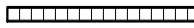
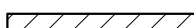
SCALE: 1/8" = 1'-0"



### A1.1A



FIRST FLOOR PLAN - ZONE 'B'  
SCALE: 1/8" = 1'-0"

WALL / PARTITION KEY	
	METAL STUD PARTITION
	CMU PARTITION
WALL / PARTITION LEGEND	
1A	2 1/2" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING
1B	3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING
1E	2 1/2" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
1F	3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
1G	6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
2A	3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO 6" ABOVE CEILING
2B	6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO 6" ABOVE CEILING
2C	3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE
2D	6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE
2L	GYPSUM BOARD WALL - RAILING: 6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES - REFER TO SECTION FOR WALL HEIGHT
4A	4" CMU TO ONE FULL COURSE ABOVE CEILING
4B	8" CMU TO ONE FULL COURSE ABOVE CEILING
4C	8" CMU TO ONE FULL COURSE ABOVE CEILING
4E	4" CMU TO STRUCTURE ABOVE
4G	8" CMU TO STRUCTURE ABOVE
4H	12" CMU TO STRUCTURE ABOVE
4J	4" CMU TO 7'-4" AFF
4K	8" CMU TO 7'-4" AFF
4M	8" CMU TO STRUCTURE ABOVE - SMOKE PARTITION FOR EGRESS CORRIDORS
4N	12" CMU TO STRUCTURE ABOVE - SMOKE PARTITION FOR EGRESS CORRIDORS
5C	6" CMU TO STRUCTURE ABOVE, 1HR FIRE PARTITION FOR STORAGE AND UTILITY ROOMS
5E	12" CMU TO STRUCTURE ABOVE, 1HR FIRE BARRIER FOR EXIT ENCLOSURE
5F	12" CMU TO STRUCTURE ABOVE, 1HR SMOKE AND FIRE BARRIER
5G	12" CMU TO STRUCTURE ABOVE, 1HR FIRE BARRIER FOR ELEVATOR HOISTWAYS
NOTES:	
1. ALL GYPSUM WALLS TO RECEIVE ABUSE RESISTANT GYPSUM BOARD BELOW 4'-0" AFF. TYPICAL	
2. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.	
3. PROVIDE BULLNOSE CMU UNITS AT ALL OUTSIDE CORNERS WHEN CORNERS ARE EXPOSED IN FINAL CONSTRUCTION. DO NOT BULLNOSE CORNERS WHEN ABUTTING CONSTRUCTION (i.e. GYPSUM BOARD) IS INTENDED TO BE FLUSH WITH CMU.	
4. WHERE FINISH PLANS (A1) SERIES DRAWINGS) CALL FOR WALL TILE, PROVIDE CEMENT BOARD SUBSTRATE IN LIEU OF GYPSUM BOARD.	
5. COORDINATE WITH THE REFLECTED CEILING PLANS FOR RATED WALLS, WALLS WHICH EXTEND UP TO THE STRUCTURE ABOVE AND WALLS WHICH EXTEND ONLY A MINIMUM OF 4" ABOVE THE ADJACENT HIGHEST CEILING. REFER TO BUILDING SECTIONS, WALL SECTIONS AND INTERIOR ELEVATIONS FOR BANDING OF SPECIAL CMU TYPES OR ANY OTHER SPECIAL CONDITIONS. PARTIAL HEIGHT CMU WALLS WILL BE NOTED AS SUCH ON THE FLOOR PLANS.	
6. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.	
7. AT FIRE-RATED AND SMOKE-RESISTING WALLS (MASONRY OR GYPSUM BOARD), PROVIDE U.L. APPROVED, FIRE-RATED, HEAD-OF-WALL TERMINATIONS AS SPECIFIED IN SPECIFICATION SECTION 09046 (1 OR 2) PROVIDE "BASIS OF DESIGN", HEAD-OF-WALL TERMINATIONS AS SPECIFIED IN SPECIFICATION SECTION 09046 (1 OR 2) HOOK AS APPROPRIATE. PROVIDE MINIMUM 1 HOUR TERMINATION AT EXISTING SMOKE-RESISTING WALLS.	
GENERAL NOTES:	
1. COORDINATE SIZE AND LOCATION OF ALL CONCRETE HOUSEKEEPING PADS, ELEVATOR EQUIPMENT SUPPORTS WITH APPROPRIATE EQUIPMENT MANUFACTURER.	
2. COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH TRADE REQUIRING THE SAME. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE REQUIRED TO BE PROVIDED BY EACH TRADE. ALL LOCATIONS MUST BE COORDINATED AND APPROVED BY THE ARCHITECT'S FIELD REPRESENTATIVE.	
3. CONTRACTORS SHALL VERIFY ALL EXISTING BUILDING DIMENSIONS, PARTITION AND WALL LOCATIONS, AND FLOOR ELEVATIONS IN THE FIELD AND NOTIFY THE ARCHITECT'S REPRESENTATIVE OF ANY DISCREPANCIES BEFORE START OF WORK.	
4. FLOOR PLANS ARE DIMENSIONED TO NOMINAL WALL THICKNESS - TYPICAL.	
5. DIMENSIONS FOLLOWED BY ± SHOULD BE REVIEWED AND ALL NECESSARY ADJUSTMENTS MADE PRIOR TO FABRICATION AND/OR INSTALLATION OF AFFECTED WORK. NOTIFY ARCHITECTS REPRESENTATIVE IF DISCREPANCIES ARISE BEFORE PROCEEDING WITH THE WORK.	
6. INSTALL CONTROL JOINTS IN GYPSUM BOARD AND METAL STUD-FRAMED PARTITIONS, WALLS, CEILINGS, BULKHEADS, FASCIAE AND SOFFITS IN COMPLIANCE WITH SPECIFICATIONS, AND WITH GENERAL REQUIREMENTS OF ASTM C840. PRIOR TO COMMENCEMENT OF FRAMING INSTALLATION SUBMIT COORDINATION DRAWINGS INDICATING PROPOSED LOCATIONS OF ALL CONTROL JOINTS, AS SPECIFIED.	
7. PROVIDE CONTROL JOINTS WHERE INTERIOR CMU (ON SLAB) ABUTS EXTERIOR/INTERIOR MASONRY (ON FOUNDATIONS OR FOOTINGS).	
8. VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK. PROVIDE ALL LINTELS REQUIRED FOR THESE OPENINGS PER SPECIFICATIONS.	
9. REFER TO LIFE SAFETY PLANS FOR LOCATIONS OF REQUIRED FIRE RESISTANCE RATINGS. BECAUSE OF THE DRAWING SCALE OF THE LIFE SAFETY PLANS, COORDINATE THE REQUIRED FIRE RESISTANCE RATINGS WITH THOSE SHOWN ON THE REFLECTED CEILING PLANS.	
10. REFER TO REFLECTED CEILING PLANS FOR EXTENSION OF PARTITION WALLS TO FLOOR OR ROOF CONSTRUCTION ABOVE AND WALL FIRE RESISTANCE RATING REQUIREMENTS.	
11. REFER TO STRUCTURAL DRAWINGS FOR ALL WIND FRAME LOCATIONS AT INTERIOR AND EXTERIOR WALLS.	
12. REFER TO A10... SERIES DRAWINGS FOR FLOOR FINISH PATTERNS AND ROOM FINISHES.	
13. REFER TO STRUCTURAL DRAWINGS FOR ORIENTATION AND SIZES OF ALL STRUCTURAL COLUMNS.	
14. VERIFY ALL DIMENSIONS IN FIELD.	
15. PROVIDE WOOD BLOCKING WITHIN STUD WALLS FOR WALL MOUNTED ITEMS I.e. GRAB BARS, TOWEL DISPENSERS, PENCIL SHARPENERS, WALL STOPS, ACCORDIAN PARTITION JAMBS, ETC. REFER ALSO TO A9... SERIES AND A6... SERIES DRAWINGS.	
16. REFER TO EXTERIOR ELEVATIONS AND PLAN DETAILS FOR LOCATIONS OF CONTROL JOINTS IN EXTERIOR WALLS.	
17. PAINT ALL EXPOSED EXISTING STRUCTURAL STEEL COLUMNS WITH INTUMESCENT PAINT TO ACHIEVE FIRE RATINGS OF ADJACENT WALLS	



T M P A R C H I T E C T U R E I N C  
259 EAST MICHIGAN AVE., SUITE 107  
KALAMAZOO - MICHIGAN 49007  
PH - 269.327.0077, FX - 269.327.8090  
EM - INFO@TMP-ARCHITECTURE.COM

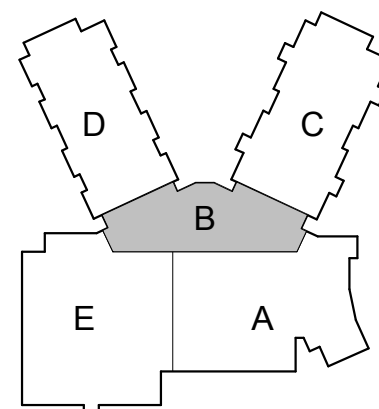
REGISTRATION SEAL

CONSULTANT

PROJECT TITLE  
**New Elementary School**

Schoolcraft Community Schools  
**SCHOOLCRAFT, MI**

DRAWING TITLE  
**First Floor Plan - Zone 'B'**



KEYPLAN

ISSUE DATES

**PRELIMINARY**  
**NOT FOR CONSTRUCTION**

05-21-21 DESIGN DEVELOPMENT

DATE: ISSUED FOR:

DRAWN Author

CHECKED Checker

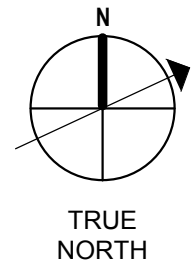
APPROVED Approver

PROJECT NO.

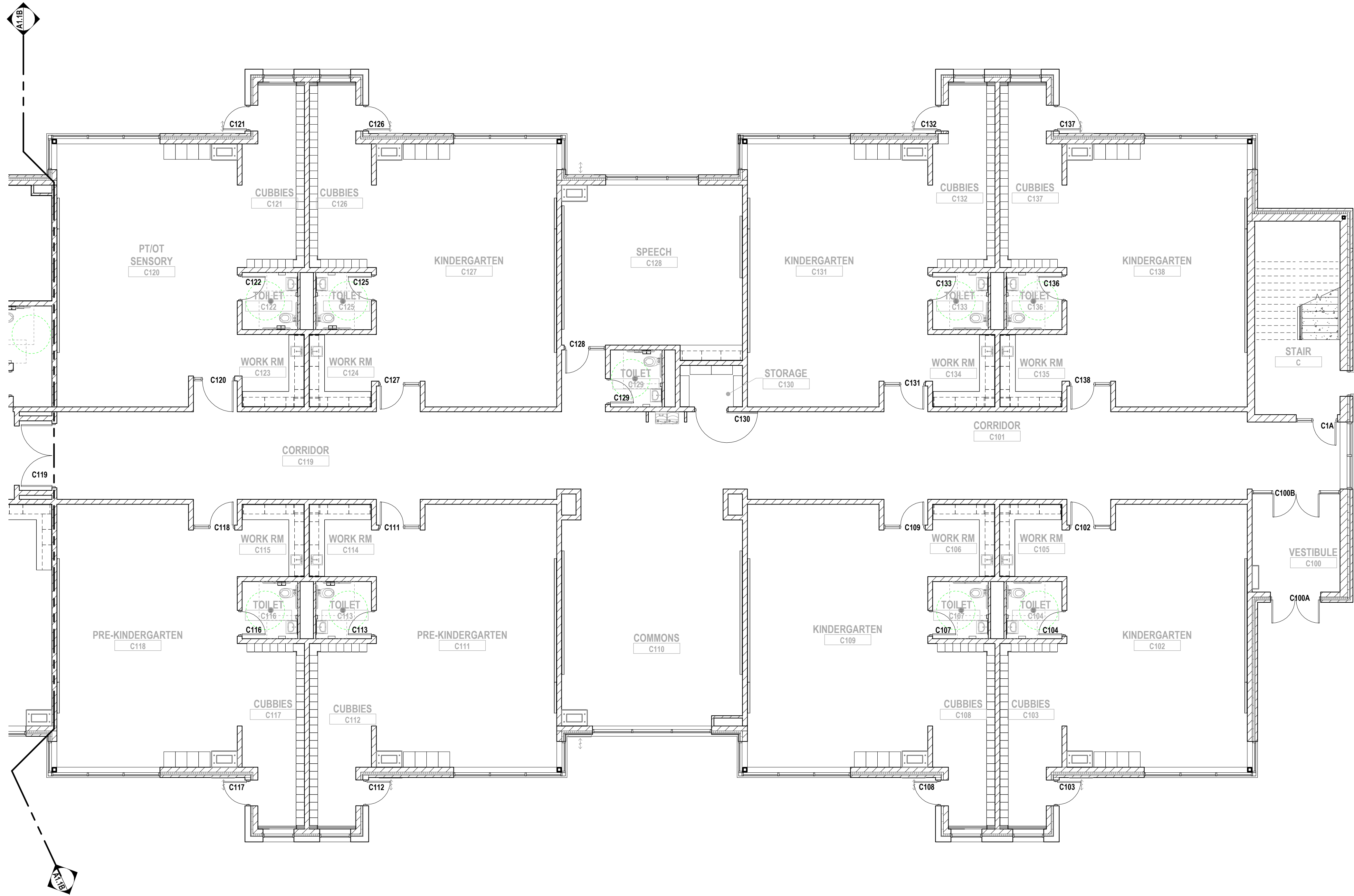
**20015**

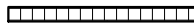
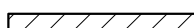
DRAWING NO.

**A1.1B**



FIRST FLOOR PLAN - ZONE 'C'  
SCALE: 1/8" = 1'-0"



WALL / PARTITION KEY	
	METAL STUD PARTITION
	CMU PARTITION
WALL / PARTITION LEGEND	
1A	2 1/2" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING
1B	3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING
1E	2 1/2" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
1F	3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
1G	6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
2A	3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO 6" ABOVE CEILING
2B	6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO 6" ABOVE CEILING
2C	3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE
2D	6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE
2L	GYPSUM BOARD WALL - RAILING: 6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES - REFER TO SECTION FOR WALL HEIGHT
4A	4" CMU TO ONE FULL COURSE ABOVE CEILING
4B	8" CMU TO ONE FULL COURSE ABOVE CEILING
4C	8" CMU TO ONE FULL COURSE ABOVE CEILING
4E	4" CMU TO STRUCTURE ABOVE
4H	8" CMU TO STRUCTURE ABOVE
4I	12" CMU TO STRUCTURE ABOVE
4J	4" CMU TO 7'-4" AFF
4K	8" CMU TO 7'-4" AFF
4M	8" CMU TO STRUCTURE ABOVE - SMOKE PARTITION FOR EGRESS CORRIDORS
4N	12" CMU TO STRUCTURE ABOVE - SMOKE PARTITION FOR EGRESS CORRIDORS
5C	8" CMU TO STRUCTURE ABOVE, 1HR FIRE PARTITION FOR STORAGE AND UTILITY ROOMS
5E	12" CMU TO STRUCTURE ABOVE, 1HR FIRE BARRIER FOR EXIT ENCLOSURE
5F	12" CMU TO STRUCTURE ABOVE, 1HR SMOKE AND FIRE BARRIER
5G	12" CMU TO STRUCTURE ABOVE, 1HR FIRE BARRIER FOR ELEVATOR HOISTWAYS
NOTES:	
1. ALL GYPSUM WALLS TO RECEIVE ABUSE RESISTANT GYPSUM BOARD BELOW 4'-0" AFF. TYPICAL	
2. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.	
3. PROVIDE BULLNOSE CMU UNITS AT ALL OUTSIDE CORNERS WHEN CORNERS ARE EXPOSED IN FINAL CONSTRUCTION. DO NOT BULLNOSE CORNERS WHEN ABUTTING CONSTRUCTION (i.e. GYPSUM BOARD) IS INTENDED TO BE FLUSH WITH CMU.	
4. WHERE FINISH PLANS (A1) SERIES DRAWINGS) CALL FOR WALL TILE, PROVIDE CEMENT BOARD SUBSTRATE IN LIEU OF GYPSUM BOARD.	
5. COORDINATE WITH THE REFLECTED CEILING PLANS FOR RATED WALLS, WALLS WHICH EXTEND UP TO THE STRUCTURE ABOVE AND WALLS WHICH EXTEND ONLY A MINIMUM OF 4" ABOVE THE ADJACENT HIGHEST CEILING. REFER TO BUILDING SECTIONS, WALL SECTIONS AND INTERIOR ELEVATIONS FOR BANDING OF SPECIAL CMU TYPES OR ANY OTHER SPECIAL CONDITIONS. PARTIAL HEIGHT CMU WALLS WILL BE NOTED AS SUCH ON THE FLOOR PLANS.	
6. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.	
7. AT FIRE-RATED AND SMOKE-RESISTING WALLS (MASONRY OR GYPSUM BOARD), PROVIDE U.L. APPROVED, FIRE-RATED, HEAD-OF-WALL TERMINATIONS AS SPECIFIED IN SPECIFICATION SECTION 070406 (1 OR 2 HOOK AS APPLICABLE). PROVIDE MINIMUM 1 HOUR TERMINATION AT EXISTING SMOKE-RESISTING WALLS.	
GENERAL NOTES:	
1. COORDINATE SIZE AND LOCATION OF ALL CONCRETE HOUSEKEEPING PADS, ELEVATOR EQUIPMENT SUPPORTS WITH APPROPRIATE EQUIPMENT MANUFACTURER.	
2. COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH TRADE REQUIRING THE SAME. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE REQUIRED TO BE PROVIDED BY EACH TRADE. ALL LOCATIONS MUST BE COORDINATED AND APPROVED BY THE ARCHITECT'S FIELD REPRESENTATIVE.	
3. CONTRACTORS SHALL VERIFY ALL EXISTING BUILDING DIMENSIONS, PARTITION AND WALL LOCATIONS, AND FLOOR ELEVATIONS IN THE FIELD AND NOTIFY THE ARCHITECT'S REPRESENTATIVE OF ANY DISCREPANCIES BEFORE START OF WORK.	
4. FLOOR PLANS ARE DIMENSIONED TO NOMINAL WALL THICKNESS - TYPICAL.	
5. DIMENSIONS FOLLOWED BY ± SHOULD BE REVIEWED AND ALL NECESSARY ADJUSTMENTS MADE PRIOR TO FABRICATION AND/OR INSTALLATION OF AFFECTED WORK. NOTIFY ARCHITECT'S REPRESENTATIVE IF DISCREPANCIES ARISE BEFORE PROCEEDING WITH THE WORK.	
6. INSTALL CONTROL JOINTS IN GYPSUM BOARD AND METAL STUD-FRAMED PARTITIONS, WALLS, CEILINGS, BULKHEADS, FASCIAE AND SOFFITS IN COMPLIANCE WITH SPECIFICATIONS, AND WITH GENERAL REQUIREMENTS OF ASTM C640. PRIOR TO COMMENCEMENT OF FRAMING INSTALLATION SUBMIT COORDINATION DRAWINGS INDICATING PROPOSED LOCATIONS OF ALL CONTROL JOINTS, AS SPECIFIED.	
7. PROVIDE CONTROL JOINTS WHERE INTERIOR CMU (ON SLAB) ABUTS EXTERIOR/INTERIOR MASONRY (ON FOUNDATIONS OR FOOTINGS).	
8. VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK. PROVIDE ALL LINTELS REQUIRED FOR THESE OPENINGS PER SPECIFICATIONS.	
9. REFER TO LIFE SAFETY PLANS FOR LOCATIONS OF REQUIRED FIRE RESISTANCE RATINGS. BECAUSE OF THE DRAWING SCALE OF THE LIFE SAFETY PLANS, COORDINATE THE REQUIRED FIRE RESISTANCE RATINGS WITH THOSE SHOWN ON THE REFLECTED CEILING PLANS.	
10. REFER TO REFLECTED CEILING PLANS FOR EXTENSION OF PARTITION WALLS TO FLOOR OR ROOF CONSTRUCTION ABOVE AND WALL FIRE RESISTANCE RATING REQUIREMENTS.	
11. REFER TO REFLECTED CEILING PLANS FOR ALL WIND FRAME LOCATIONS AT INTERIOR AND EXTERIOR WALLS.	
12. REFER TO A10... SERIES DRAWINGS FOR FLOOR FINISH PATTERNS AND ROOM FINISHES.	
13. REFER TO STRUCTURAL DRAWINGS FOR ORIENTATION AND SIZES OF ALL STRUCTURAL COLUMNS.	
14. VERIFY ALL DIMENSIONS IN FIELD.	
15. PROVIDE WOOD BLOCKING WITHIN STUD WALLS FOR WALL MOUNTED ITEMS I.e. GRAB BARS, TOWEL DISPENSERS, PENCIL SHARPENERS, WALL STOPS, ACCORDIAN PARTITION JAMBS, ETC. REFER ALSO TO A9... SERIES AND A6... SERIES DRAWINGS.	
16. REFER TO EXTERIOR ELEVATIONS AND PLAN DETAILS FOR LOCATIONS OF CONTROL JOINTS IN EXTERIOR WALLS.	
17. PAINT ALL EXPOSED EXISTING STRUCTURAL STEEL COLUMNS WITH INTUMESCENT PAINT TO ACHIEVE FIRE RATINGS OF ADJACENT WALLS	



T M P ARCHITECTURE I N C  
259 EAST MICHIGAN AVE., SUITE 107  
KALAMAZOO - MICHIGAN 49007  
PH - 269.327.0077, FX - 269.327.8090  
EM - INFO@TMP-ARCHITECTURE.COM

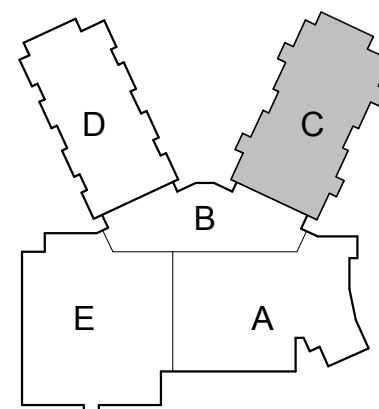
REGISTRATION SEAL

CONSULTANT

PROJECT TITLE  
**New Elementary School**

Schoolcraft Community Schools  
**SCHOOLCRAFT, MI**

DRAWING TITLE  
**First Floor Plan - Zone 'C'**



KEYPLAN

ISSUE DATES



01-21-21 DESIGN DEVELOPMENT  
DATE: ISSUED FOR:

DRAWN Author

CHECKED Checker

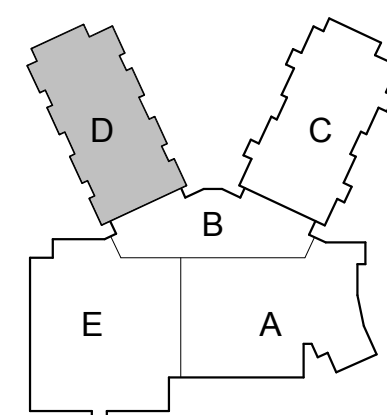
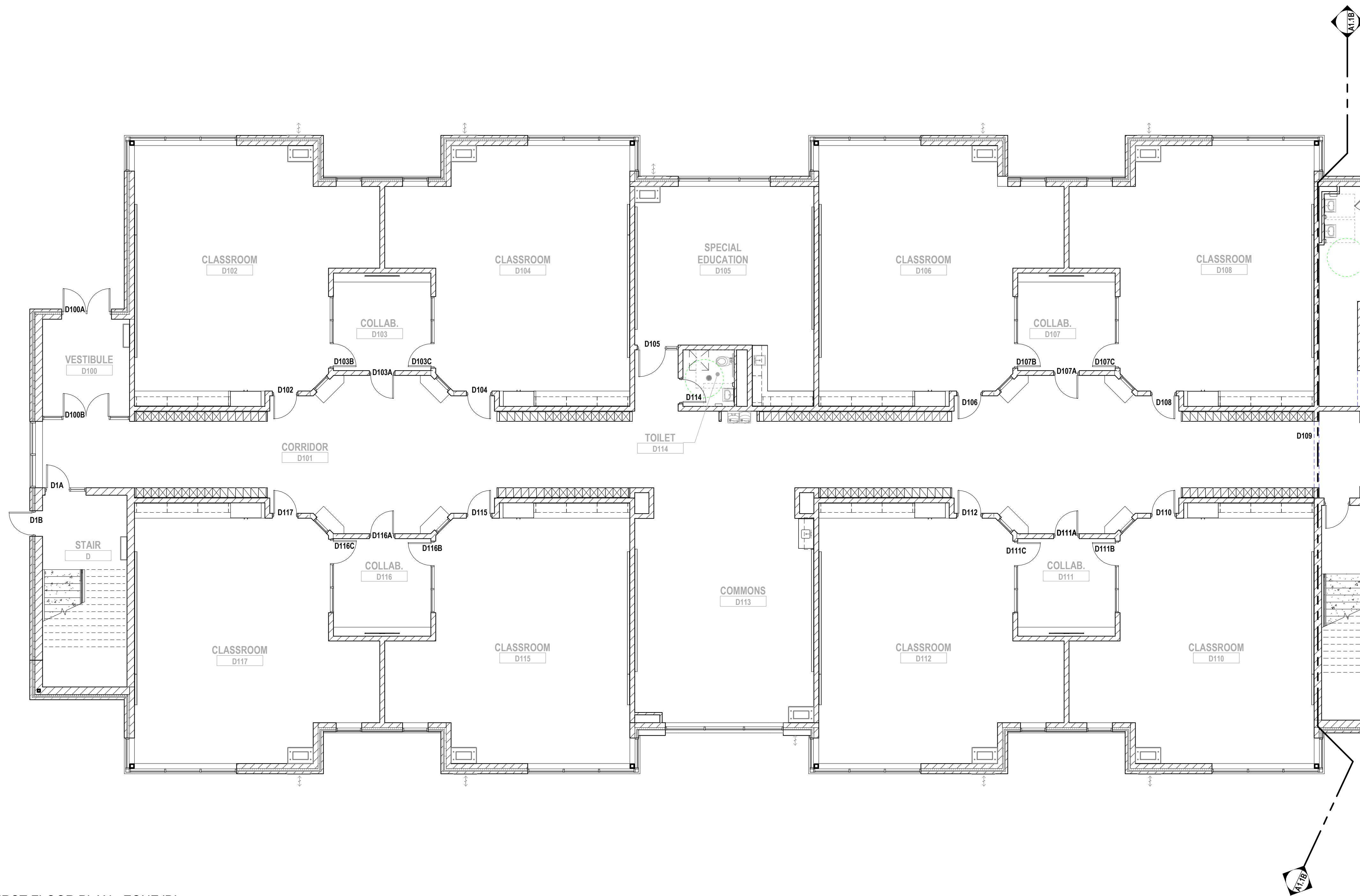
APPROVED Approver

PROJECT NO.

**20015**

DRAWING NO.

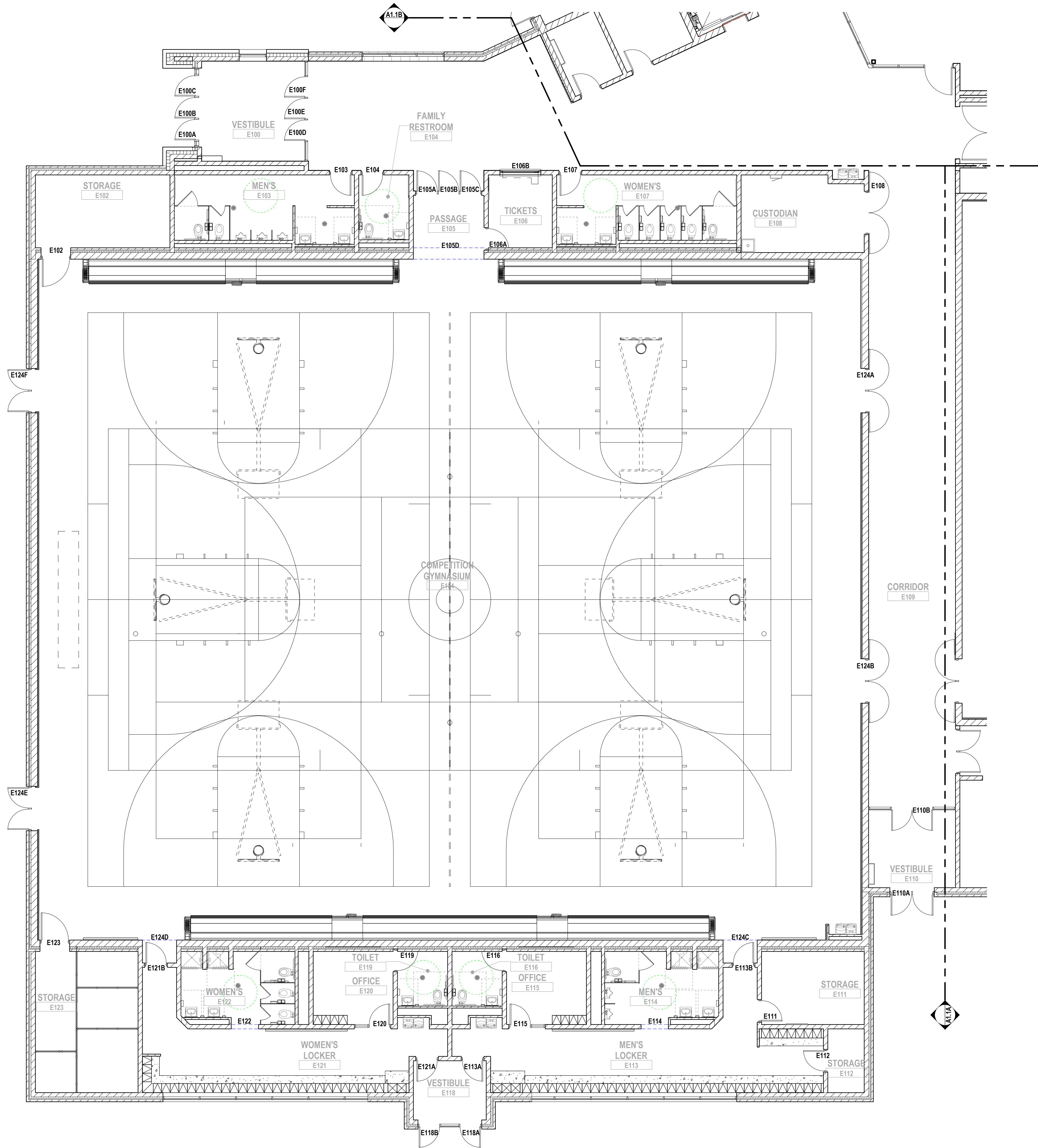
**A1.1C**



APPROVED Approver

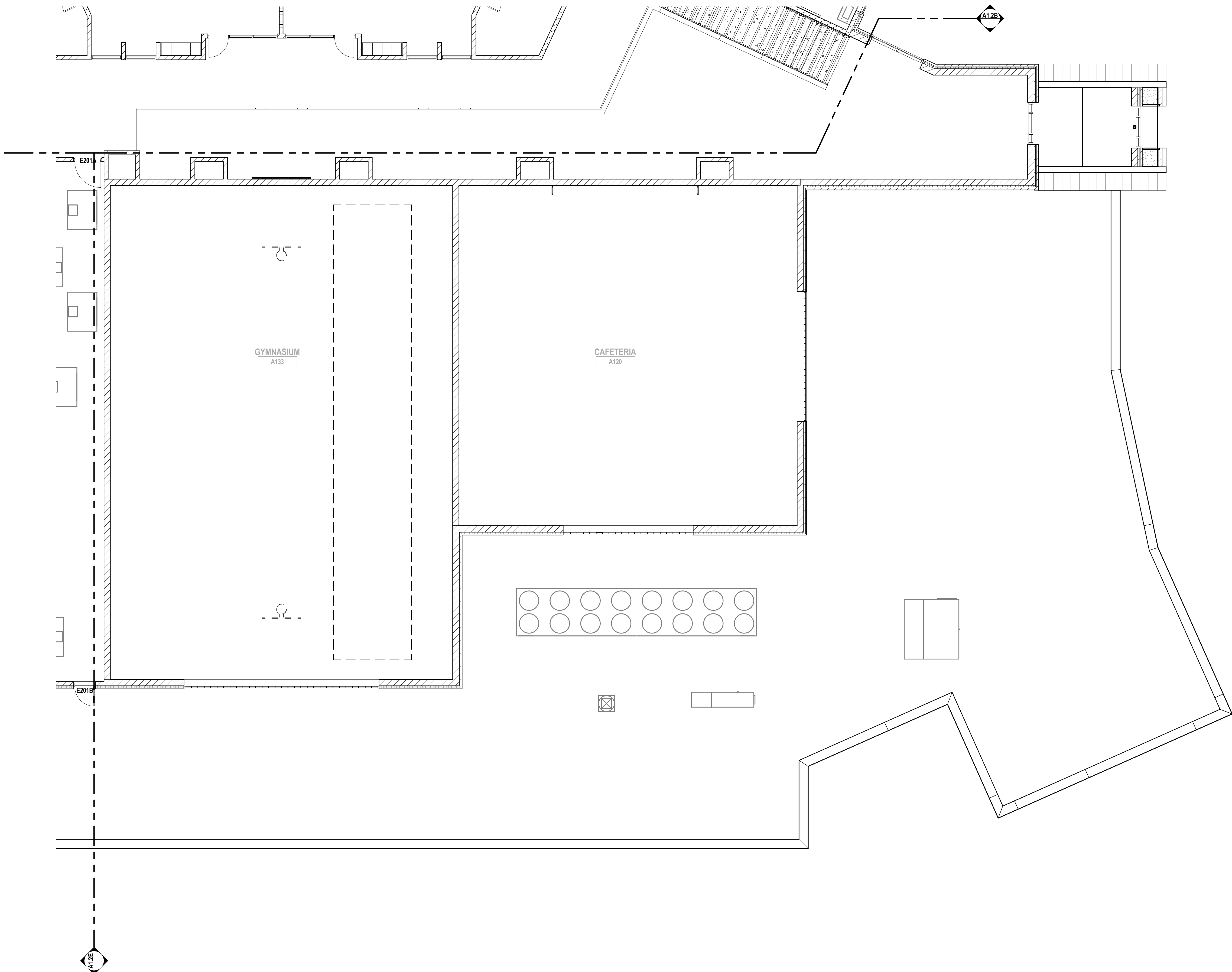
### A1.1D

SCALE: 1/8" = 1'-0"

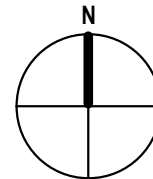
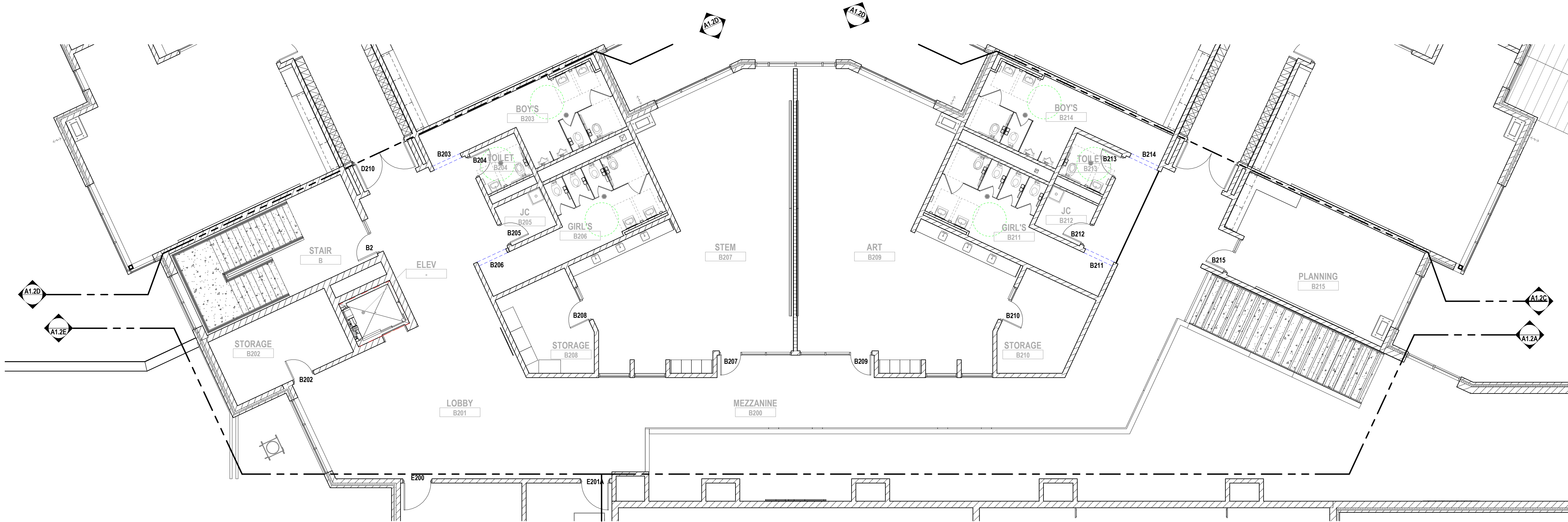


## A1.1E

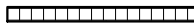
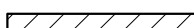
SCALE: 1/8" = 1'-0"



## A1.2A



SECOND FLOOR PLAN - ZONE 'B'  
SCALE: 1/8" = 1'-0"

WALL / PARTITION KEY	
	METAL STUD PARTITION
	CMU PARTITION
WALL / PARTITION LEGEND	
1A	2 1/2" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING
1B	3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING
1E	2 1/2" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
1F	3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
1G	6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
2A	3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO 6" ABOVE CEILING
2B	6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO 6" ABOVE CEILING
2C	3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE
2D	6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE
2L	GYPSUM BOARD WALL - RAILING: 6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES - REFER TO SECTION FOR WALL HEIGHT
4A	4" CMU TO ONE FULL COURSE ABOVE CEILING
4B	8" CMU TO ONE FULL COURSE ABOVE CEILING
4C	8" CMU TO ONE FULL COURSE ABOVE CEILING
4E	4" CMU TO STRUCTURE ABOVE
4F	8" CMU TO STRUCTURE ABOVE
4H	12" CMU TO STRUCTURE ABOVE
4J	4" CMU TO 7'-4" AFF
4K	8" CMU TO 7'-4" AFF
4M	8" CMU TO STRUCTURE ABOVE - SMOKE PARTITION FOR EGRESS CORRIDORS
4N	12" CMU TO STRUCTURE ABOVE - SMOKE PARTITION FOR EGRESS CORRIDORS
5C	8" CMU TO STRUCTURE ABOVE, 1HR FIRE PARTITION FOR STORAGE AND UTILITY ROOMS
5E	12" CMU TO STRUCTURE ABOVE, 1HR FIRE BARRIER FOR EXIT ENCLOSURE
5F	12" CMU TO STRUCTURE ABOVE, 1HR SMOKE AND FIRE BARRIER
5G	12" CMU TO STRUCTURE ABOVE, 1HR FIRE BARRIER FOR ELEVATOR HOISTWAYS
NOTES:	
1. ALL GYPSUM WALLS TO RECEIVE ABUSE RESISTANT GYPSUM BOARD BELOW 4'-0" AFF. TYPICAL	
2. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.	
3. PROVIDE BULLNOSE CMU UNITS AT ALL OUTSIDE CORNERS WHEN CORNERS ARE EXPOSED IN FINAL CONSTRUCTION. DO NOT BULLNOSE CORNERS WHEN ABUTTING CONSTRUCTION (i.e. GYPSUM BOARD) IS INTENDED TO BE FLUSH WITH CMU.	
4. WHERE FINISH PLANS (A1) SERIES DRAWINGS) CALL FOR WALL TILE, PROVIDE CEMENT BOARD SUBSTRATE IN LIEU OF GYPSUM BOARD.	
5. COORDINATE WITH THE REFLECTED CEILING PLANS FOR RATED WALLS, WALLS WHICH EXTEND UP TO THE STRUCTURE ABOVE AND WALLS WHICH EXTEND ONLY A MINIMUM OF 4" ABOVE THE ADJACENT HIGHEST CEILING. REFER TO BUILDING SECTIONS, WALL SECTIONS AND INTERIOR ELEVATIONS FOR BANDING OF SPECIAL CMU TYPES OR ANY OTHER SPECIAL CONDITIONS. PARTIAL HEIGHT CMU WALLS WILL BE NOTED AS SUCH ON THE FLOOR PLANS.	
6. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.	
7. AT FIRE-RATED AND SMOKE-RESISTING WALLS (MASONRY OR GYPSUM BOARD), PROVIDE U.L. APPROVED, FIRE-RATED, HEAD-OF-WALL TERMINATIONS AS SPECIFIED IN SPECIFICATION SECTION 070446 (1 OR 2) HOOK AS APPLICABLE. PROVIDE MINIMUM 1 HOUR TERMINATION AT EXISTING SMOKE-RESISTING WALLS.	
GENERAL NOTES: 1. COORDINATE SIZE AND LOCATION OF ALL CONCRETE HOUSEKEEPING PADS, ELEVATOR EQUIPMENT SUPPORTS WITH APPROPRIATE EQUIPMENT MANUFACTURER.	
2. COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH TRADE REQUIRING THE SAME. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE REQUIRED TO BE PROVIDED BY EACH TRADE. ALL LOCATIONS MUST BE COORDINATED AND APPROVED BY THE ARCHITECT'S FIELD REPRESENTATIVE.	
3. CONTRACTORS SHALL VERIFY ALL EXISTING BUILDING DIMENSIONS, PARTITION AND WALL LOCATIONS, AND FLOOR ELEVATIONS IN THE FIELD AND NOTIFY THE ARCHITECT'S REPRESENTATIVE OF ANY DISCREPANCIES BEFORE START OF WORK.	
4. FLOOR PLANS ARE DIMENSIONED TO NOMINAL WALL THICKNESS - TYPICAL.	
5. DIMENSIONS FOLLOWED BY ± SHOULD BE REVIEWED AND ALL NECESSARY ADJUSTMENTS MADE PRIOR TO FABRICATION AND/OR INSTALLATION OF AFFECTED WORK. NOTIFY ARCHITECTS REPRESENTATIVE IF DISCREPANCIES ARISE BEFORE PROCEEDING WITH THE WORK.	
6. INSTALL CONTROL JOINTS IN GYPSUM BOARD AND METAL STUD-FRAMED PARTITIONS, WALLS, CEILINGS, BULKHEADS, FASCIAE AND SOFFITS IN COMPLIANCE WITH SPECIFICATIONS, AND WITH GENERAL REQUIREMENTS OF ASTM C840. PRIOR TO COMMENCEMENT OF FRAMING INSTALLATION SUBMIT COORDINATION DRAWINGS INDICATING PROPOSED LOCATIONS OF ALL CONTROL JOINTS, AS SPECIFIED.	
7. PROVIDE CONTROL JOINTS WHERE INTERIOR CMU (ON SLAB) ABUTS EXTERIOR/INTERIOR MASONRY (ON FOUNDATIONS OR FOOTINGS).	
8. VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK. PROVIDE ALL LINTELS REQUIRED FOR THESE OPENINGS PER SPECIFICATIONS.	
9. REFER TO LIFE SAFETY PLANS FOR LOCATIONS OF REQUIRED FIRE RESISTANCE RATINGS. BECAUSE OF THE DRAWING SCALE OF THE LIFE SAFETY PLANS, COORDINATE THE REQUIRED FIRE RESISTANCE RATINGS WITH THOSE SHOWN ON THE REFLECTED CEILING PLANS.	
10. REFER TO REFLECTED CEILING PLANS FOR EXTENSION OF PARTITION WALLS TO FLOOR OR ROOF CONSTRUCTION ABOVE AND WALL FIRE RESISTANCE RATING REQUIREMENTS.	
11. REFER TO STRUCTURAL DRAWINGS FOR ALL WIND FRAME LOCATIONS AT INTERIOR AND EXTERIOR WALLS.	
12. REFER TO A10. SERIES DRAWINGS FOR FLOOR FINISH PATTERNS AND ROOM FINISHES.	
13. REFER TO STRUCTURAL DRAWINGS FOR ORIENTATION AND SIZES OF ALL STRUCTURAL COLUMNS.	
14. VERIFY ALL DIMENSIONS IN FIELD.	
15. PROVIDE WOOD BLOCKING WITHIN STUD WALLS FOR WALL MOUNTED ITEMS i.e. GRAB BARS, TOWEL DISPENSERS, PENCIL SHARPENERS, WALL STOPS, ACCORDIAN PARTITION JAMBS, ETC. REFER ALSO TO A9. SERIES AND A6. SERIES DRAWINGS.	
16. REFER TO EXTERIOR ELEVATIONS AND PLAN DETAILS FOR LOCATIONS OF CONTROL JOINTS IN EXTERIOR WALLS.	
17. PAINT ALL EXPOSED EXISTING STRUCTURAL STEEL COLUMNS WITH INTUMESCENT PAINT TO ACHIEVE FIRE RATINGS OF ADJACENT WALLS	



T M P ARCHITECTURE I N C  
259 EAST MICHIGAN AVE., SUITE 107  
KALAMAZOO - MICHIGAN 49007  
PH - 269.327.0077, FX - 269.327.8090  
EM - INFO@TMP-ARCHITECTURE.COM

REGISTRATION SEAL

CONSULTANT

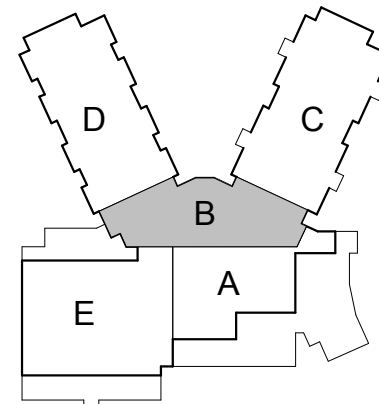
PROJECT TITLE

New Elementary School

Schoolcraft Community Schools  
SCHOOLCRAFT, MI

DRAWING TITLE

Second Floor Plan - Zone 'B'



KEYPLAN

ISSUE DATES

PRELIMINARY  
NOT FOR CONSTRUCTION

01-21-21 DESIGN DEVELOPMENT

DATE: ISSUED FOR:

DRAWN Author

CHECKED Checker

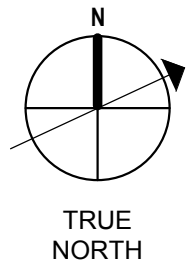
APPROVED Approver

PROJECT NO.

20015

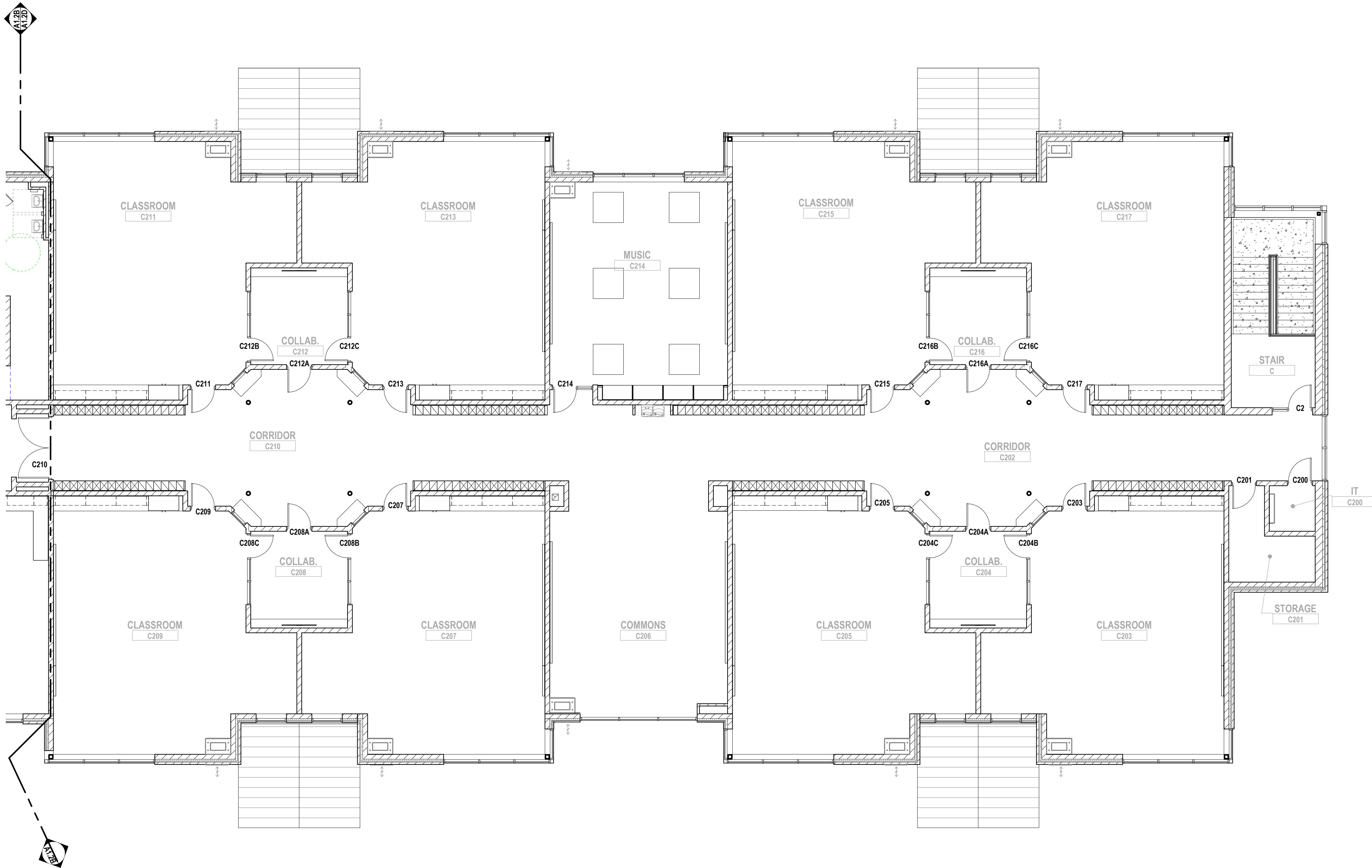
DRAWING NO.

A1.2B



SECOND FLOOR PLAN - ZONE 'C'

SCALE: 1/8" = 1'-0"



WALL / PARTITION KEY

METAL STUD PARTITION

CMU PARTITION

WALL / PARTITION LEGEND

1A

2 1/2" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING

1B

3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING

1E

2 1/2" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE

1F

3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE

1G

6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE

2A

3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO 6" ABOVE CEILING

2B

6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO 6" ABOVE CEILING

2C

3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE

2D

6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE

2L

GYPSUM BOARD WALL - RAILING: 6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES - REFER TO SECTION FOR WALL HEIGHT

4A

4" CMU TO ONE FULL COURSE ABOVE CEILING

4B

6" CMU TO ONE FULL COURSE ABOVE CEILING

4C

8" CMU TO ONE FULL COURSE ABOVE CEILING

4E

4" CMU TO STRUCTURE ABOVE

4G

8" CMU TO STRUCTURE ABOVE

4H

12" CMU TO STRUCTURE ABOVE

4J

4" CMU TO 7'-4" AFF

4K

8" CMU TO 7'-4" AFF

4M

8" CMU TO STRUCTURE ABOVE - SMOKE PARTITION FOR EGRESS CORRIDORS

4N

12" CMU TO STRUCTURE ABOVE - SMOKE PARTITION FOR EGRESS CORRIDORS

5C

6" CMU TO STRUCTURE ABOVE, 1HR FIRE PARTITION FOR STORAGE AND UTILITY ROOMS

5E

12" CMU TO STRUCTURE ABOVE, 1HR FIRE BARRIER FOR EXIT ENCLOSURE

5F

12" CMU TO STRUCTURE ABOVE, 1HR SMOKE AND FIRE BARRIER

5G

12" CMU TO STRUCTURE ABOVE, 1HR FIRE BARRIER FOR ELEVATOR HOISTWAYS

NOTES:

1.

ALL GYPSUM WALLS TO RECEIVE ABUSE RESISTANT GYPSUM BOARD BELOW 4'-0" AFF. TYPICAL

2.

REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.

3.

PROVIDE BULLNOSE CMU UNITS AT ALL OUTSIDE CORNERS WHEN CORNERS ARE EXPOSED IN FINAL CONSTRUCTION. DO NOT BULLNOSE CORNERS WHEN ABUTTING CONSTRUCTION (i.e. GYPSUM BOARD) IS INTENDED TO BE FLUSH WITH CMU.

4.

WHERE FINISH PLANS (A1) SERIES DRAWINGS) CALL FOR WALL TILE, PROVIDE CEMENT BOARD SUBSTRATE IN LIEU OF GYPSUM BOARD.

5.

COORDINATE WITH THE REFLECTED CEILING PLANS FOR RATED WALLS, WALLS WHICH EXTEND UP TO THE STRUCTURE ABOVE AND WALLS WHICH EXTEND ONLY A MINIMUM OF 4" ABOVE THE ADJACENT HIGHEST CEILING. REFER TO BUILDING SECTIONS, WALL SECTIONS AND INTERIOR ELEVATIONS FOR BANDING OF SPECIAL CMU TYPES OR ANY OTHER SPECIAL CONDITIONS. PARTIAL HEIGHT CMU WALLS WILL BE NOTED AS SUCH ON THE FLOOR PLANS.

6.

REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.

7.

AT FIRE-RATED AND SMOKE-RESISTING WALLS (MASONRY OR GYPSUM BOARD), PROVIDE U.L. APPROVED, FIRE-RATED, HEAD-OF-WALL TERMINATIONS AS SHOWN IN SPECIFICATION SECTION 09046 (1 OR 2) AS APPLICABLE. PROVIDE MINIMUM 1 HOUR TERMINATION AT EXISTING SMOKE-RESISTING WALLS.

GENERAL NOTES

1.

COORDINATE SIZE AND LOCATION OF ALL CONCRETE HOUSEKEEPING PADS, ELEVATOR EQUIPMENT SUPPORTS WITH APPROPRIATE EQUIPMENT MANUFACTURER.

2.

COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH TRADE REQUIRING THE SAME. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE REQUIRED TO BE PROVIDED BY EACH TRADE. ALL LOCATIONS MUST BE COORDINATED AND APPROVED BY THE ARCHITECT'S FIELD REPRESENTATIVE.

3.

CONTRACTORS SHALL VERIFY ALL EXISTING BUILDING DIMENSIONS, PARTITION AND WALL LOCATIONS, AND FLOOR ELEVATIONS IN THE FIELD AND NOTIFY THE ARCHITECT'S REPRESENTATIVE OF ANY DISCREPANCIES BEFORE START OF WORK.

4.

FLOOR PLANS ARE DIMENSIONED TO NOMINAL WALL THICKNESS - TYPICAL.

5.

DIMENSIONS FOLLOWED BY ± SHOULD BE REVIEWED AND ALL NECESSARY ADJUSTMENTS MADE PRIOR TO FABRICATION AND/OR INSTALLATION OF AFFECTED WORK. NOTIFY ARCHITECT'S REPRESENTATIVE IF DISCREPANCIES ARISE BEFORE PROCEEDING WITH THE WORK.

6.

INSTALL CONTROL JOINTS IN GYPSUM BOARD AND METAL STUD-FRAMED PARTITIONS, WALLS, CEILINGS, BULKHEADS, FASCIAE AND SOFFITS IN COMPLIANCE WITH SPECIFICATIONS, AND WITH GENERAL REQUIREMENTS OF ASTM C840. PRIOR TO COMMENCEMENT OF FRAMING INSTALLATION SUBMIT COORDINATION DRAWINGS INDICATING PROPOSED LOCATIONS OF ALL CONTROL JOINTS, AS SPECIFIED.

7.

PROVIDE CONTROL JOINTS WHERE INTERIOR CMU (ON SLAB) ABUTS EXTERIOR/INTERIOR MASONRY (ON FOUNDATIONS OR FOOTINGS).

8.

VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK. PROVIDE ALL LINTELS REQUIRED FOR THESE OPENINGS PER SPECIFICATIONS.

9.

REFER TO LIFE SAFETY PLANS FOR LOCATIONS OF REQUIRED FIRE RESISTANCE RATINGS. BECAUSE OF THE DRAWING SCALE OF THE LIFE SAFETY PLANS, COORDINATE THE REQUIRED FIRE RESISTANCE RATINGS WITH THOSE SHOWN ON THE REFLECTED CEILING PLANS.

10.

REFER TO REFLECTED CEILING PLANS FOR EXTENSION OF PARTITION WALLS TO FLOOR OR ROOF CONSTRUCTION ABOVE AND WALL FIRE RESISTANCE RATING REQUIREMENTS.

11.

REFER TO STRUCTURAL DRAWINGS FOR ALL WIND FRAME LOCATIONS AT INTERIOR AND EXTERIOR WALLS.

12.

REFER TO A10... SERIES DRAWINGS FOR FLOOR FINISH PATTERNS AND ROOM FINISHES.

13.

REFER TO STRUCTURAL DRAWINGS FOR ORIENTATION AND SIZES OF ALL STRUCTURAL COLUMNS.

14.

VERIFY ALL DIMENSIONS IN FIELD.

15.

PROVIDE WOOD BLOCKING WITHIN STUD WALLS FOR WALL MOUNTED ITEMS i.e. GRAB BARS, TOWEL DISPENSERS, PENCIL SHARPENERS, WALL STOPS, ACCORDIAN PARTITION JAMBS, ETC. REFER ALSO TO A9... SERIES AND A6... SERIES DRAWINGS.

16.

REFER TO EXTERIOR ELEVATIONS AND PLAN DETAILS FOR LOCATIONS OF CONTROL JOINTS IN EXTERIOR WALLS.

17.

PAIN ALL EXPOSED EXISTING STRUCTURAL STEEL COLUMNS WITH INTUMESCENT PAINT TO ACHIEVE FIRE RATINGS OF ADJACENT WALLS

T M P ARCHITECTURE I N C  
259 EAST MICHIGAN AVE., SUITE 107  
KALAMAZOO - MICHIGAN 49007  
PH - 269.327.0077, FX - 269.327.8090  
EM - INFO@TMP-ARCHITECTURE.COM

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

New Elementary School

Schoolcraft Community Schools  
SCHOOLCRAFT, MI

DRAWING TITLE

Second Floor Plan - Zone 'C'

KEYPLAN

ISSUE DATES

PRELIMINARY  
NOT FOR CONSTRUCTION

01-21-21 DESIGN DEVELOPMENT  
DATE: ISSUED FOR:

DRAWN Author

CHECKED Checker

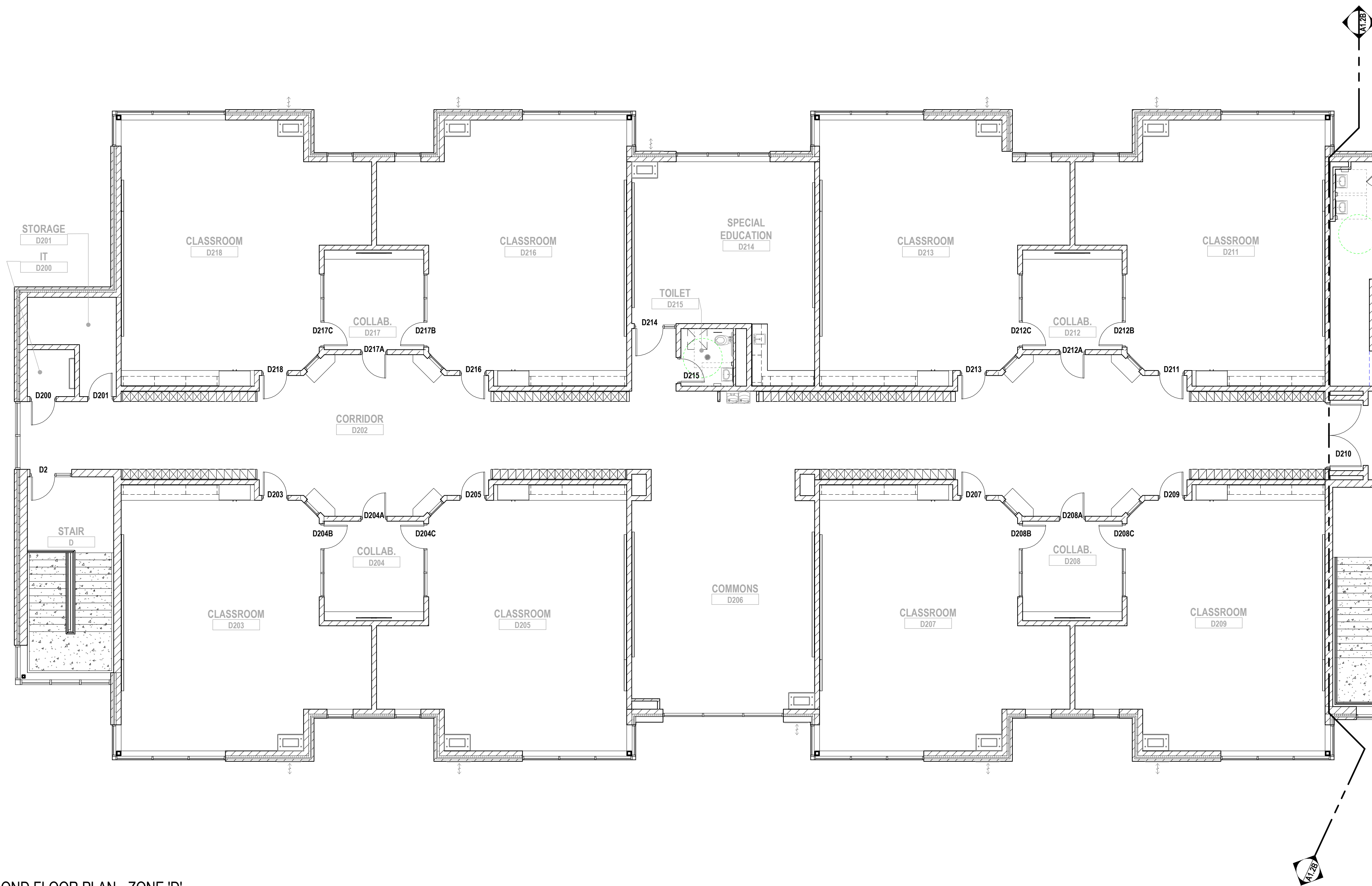
APPROVED Approver

PROJECT NO.

20015

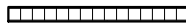
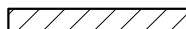

DRAWING NO.

A1.2C



SECOND FLOOR PLAN - ZONE 'D'

SCALE: 1/8" = 1'-0"

WALL / PARTITION KEY	
	METAL STUD PARTITION
	CMU PARTITION
	<b>WALL / PARTITION LEGEND</b>
1A	2 1" METAL STUDS @ 16" OC (MAX) W 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING
1B	3 3/8" METAL STUDS @ 16" OC (MAX) W 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING
1C	2 1" METAL STUDS @ 16" OC (MAX) W 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
1F	3 3/8" METAL STUDS @ 16" OC (MAX) W 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
6	6" METAL STUDS @ 16" OC (MAX) W 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
2A	3 3/8" METAL STUDS @ 16" OC (MAX) W 5/8" GYP BOARD BOTH SIDES TO 6" ABOVE CEILING
2B	6" METAL STUDS @ 16" OC (MAX) W 5/8" GYP BOARD BOTH SIDES TO 6" ABOVE CEILING
2C	3 3/8" METAL STUDS @ 16" OC (MAX) W 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE
2D	6" METAL STUDS @ 16" OC (MAX) W 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE
4A	4" CMU TO ONE FULL COURSE ABOVE CEILING
4B	4" CMU TO ONE FULL COURSE ABOVE CEILING
4C	8" CMU TO ONE FULL COURSE ABOVE
4E	8" CMU TO STRUCTURE ABOVE
4F	12" CMU TO STRUCTURE ABOVE
4I	4" CMU TO 7'-4" AFF
4K	8" CMU TO 7'-4" AFF
4M	8" CMU TO STRUCTURE ABOVE. SMOKE PARTITION FOR EGRESS CORRIDORS
4N	12" CMU TO STRUCTURE ABOVE. SMOKE PARTITION FOR EGRESS CORRIDORS
4O	8" CMU TO STRUCTURE ABOVE. 1HR FIRE BARRIER FOR STORAGE AND UTILITY ROOMS
4P	12" CMU TO STRUCTURE ABOVE. 1HR FIRE BARRIER FOR EXT ENCLOSURE
4Q	12" CMU TO STRUCTURE ABOVE. 1HR SMOKE AND FIRE BARRIER
4R	12" CMU TO STRUCTURE ABOVE. 1HR FIRE BARRIER FOR ELEVATOR HOISTWAYS
<b>NOTES:</b>	
1. ALL GYPSUM WALLS TO RECEIVE ABUSE RESISTANT GYPSUM BOARD BELOW 4'-0" AFF. TYPICAL.	
2. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.	
3. PROVIDE BULLNOSE CMU UNITS AT ALL OUTSIDE CORNERS WHEN CORNERS ARE EXPOSED IN FINAL CONSTRUCTION. DO NOT BULLNOSE CORNERS WHEN ABUTTING CONSTRUCTION (OR LAUNCH BOARDING) IS INTENDED TO BE FINISH WITH CMU.	
4. WHERE FINISH PLANS (A10 SERIES DRAWINGS) CALL FOR WALL TIE, PROVIDE CEMENT BOARD SUBSTRATE IN LIEU OF GYPSUM BOARD.	
5. COORDINATE WITH THE REFLECTED CEILING PLANS FOR RATED WALLS, WALLS WHICH EXTEND UP TO THE STRUCTURE ABOVE AND WALLS WHICH EXTEND ONLY A MINIMUM OF 6" ABOVE THE ADJACENT HIGHEST CEILING. REFER TO BUILDING SECTION 0510 (CEILING BOARDING) FOR MINIMUM 1 HOUR TERMINATION AT EXISTING CMU TYPES OR ON ANY OTHER SPECIAL CONDITIONS. PARTIAL HEIGHT CMU WALLS WILL BE NOTED AS SUCH ON THE FLOOR PLANS.	
6. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.	
7. AT FIRE-RATED AND SMOKE-RESISTING WALLS (MASONRY OR GYPSUM BOARD), PROVIDE THE FOLLOWING: HEAD-OF-WALL TERMINATIONS AS SHOWN; APPROVED, FIRE-RATED, HEAD-OF-WALL TERMINATIONS AS SHOWN; APPROVED, FIRE-RATED, HEAD-OF-WALL TERMINATIONS AS SHOWN.	
<b>GENERAL NOTES:</b> 1. PROVIDE "BASIS OF DESIGN," HEAD-OF-WALL TERMINATIONS AS SHOWN; APPROVED, FIRE-RATED, HEAD-OF-WALL TERMINATIONS AS SHOWN; APPROVED, FIRE-RATED, HEAD-OF-WALL TERMINATIONS AS SHOWN.	
2. COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH TRADE REQUIRING THE SAME. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE REQUIRED TO BE PROVIDED BY EACH TRADE. ALL LOCATIONS MUST BE COORDINATED AND APPROVED BY THE ARCHITECT'S FIELD REPRESENTATIVE.	
3. CONTRACTORS SHALL VERIFY ALL EXISTING BUILDING DIMENSIONS, PARTITION AND WALL LOCATIONS, AND FLOOR ELEVATIONS IN THE FIELD AND NOTIFY THE ARCHITECT'S REPRESENTATIVE OF ANY DISCREPANCIES BEFORE START OF WORK.	
4. FLOOR PLANS ARE DIMENSIONED TO NOMINAL WALL THICKNESS - TYPICAL.	
5. DIMENSIONS FOLLOWED BY ± SHOULD BE REVIEWED AND ALL NECESSARY ADJUSTMENTS MADE PRIOR TO FABRICATION AND/OR INSTALLATION OF AFFECTED WORK. NOTIFY ARCHITECT'S REPRESENTATIVE IF DISCREPANCIES ARISE BEFORE PROCEEDING WITH THE WORK.	
6. INSTALL CONTROL JOINTS IN GYPSUM BOARD AND METAL STUD-FRAMED PARTITIONS, WALLS, CEILINGS, BULKHEADS, FASCIAE AND SOFFITS IN COMPLIANCE WITH SPECIFICATIONS, AND WITH GENERAL REQUIREMENTS OF ASTM C840. PRIOR TO COMMENCEMENT OF FRAMING INSTALLATION SUBMIT COORDINATION DRAWINGS INDICATING PROPOSED LOCATIONS OF ALL CONTROL JOINTS, AS SPECIFIED.	
7. PROVIDE CONTROL JOINTS WHERE INTERIOR CMU (ON SLAB) ABUTS EXTERIOR/INTERIOR MASONRY (ON FOUNDATIONS OR FOOTINGS).	
8. VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK. PROVIDE ALL LITTELS REQUIRED FOR THESE OPENINGS PER SPECIFICATIONS.	
9. REFER TO LIFE SAFETY PLANS FOR LOCATIONS OF REQUIRED FIRE RESISTANCE RATINGS. BECAUSE OF THE DRAWING SCALE OF THE LIFE SAFETY PLANS, COORDINATE THE REQUIRED FIRE RESISTANCE RATINGS WITH THOSE SHOWN ON THE REFLECTED CEILING PLANS.	
10. REFER TO REFLECTED CEILING PLANS FOR EXTENSION OF PARTITION WALLS TO FLOOR OR ROOF CONSTRUCTION ABOVE AND WALL FIRE RESISTANCE RATING REQUIREMENTS.	
11. REFER TO STRUCTURAL DRAWINGS FOR ALL WIND FRAME LOCATIONS AT INTERIOR AND EXTERIOR WALLS.	
12. REFER TO A101... SERIES DRAWINGS FOR FLOOR FINISH PATTERNS AND ROOM FINISHES.	
13. REFER TO STRUCTURAL DRAWINGS FOR ORIENTATION AND SIZES OF ALL STRUCTURAL COLUMNS.	
14. VERIFY ALL DIMENSIONS IN FIELD.	
15. PROVIDE WOOD BLOCKING WITH STUD WALLS FOR WALL MOUNTED ITEMS i.e. GRAB BARS, TOWEL DISPENSERS, PENCIL SHARPENERS, WALL STOPS, ACCORDIAN PARTITION JAMBS, ETC. REFER ALSO TO A8... SERIES AND A8... SERIES DRAWINGS.	
16. REFER TO EXTERIOR ELEVATIONS AND PLAN DETAILS FOR LOCATIONS OF CONTROL JOINTS IN EXTERIOR WALLS.	
17. PAINT ALL EXPOSED EXISTING STRUCTURAL STEEL COLUMNS WITH INTUMESCENT PAINT TO ACHIEVE FIRE RATINGS OF ADJACENT WALLS	



T M P A R C H I T E C T U R E I N C  
259 EAST MICHIGAN AVE., SUITE 107  
KALAMAZOO · MICHIGAN · 49007  
PH · 269.327.0077 FX · 269.327.8090  
EM · INFO@TMP-ARCHITECTURE.COM

REGISTRATION SEAL

CONSULTANT

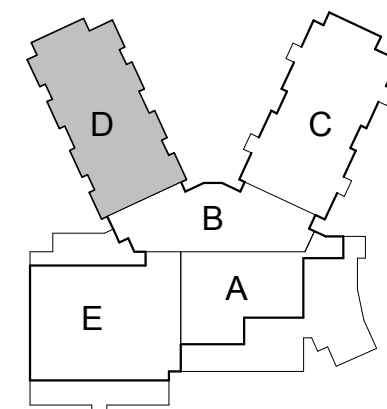
PROJECT TITLE

# New Elementary School

**Schoolcraft Community Schools**  
**SCHOOLCRAFT, MI**

DRAWING TITLE

## Second Floor Plan - Zone 'D'



KEYPLAN

## ISSUE DATES

01-21-21	DESIGN DEVELOPMENT
----------	--------------------

DATE: ISSUED FOR

DRAWN      Autho

CHECKED      Checker

APPROVED Approver:

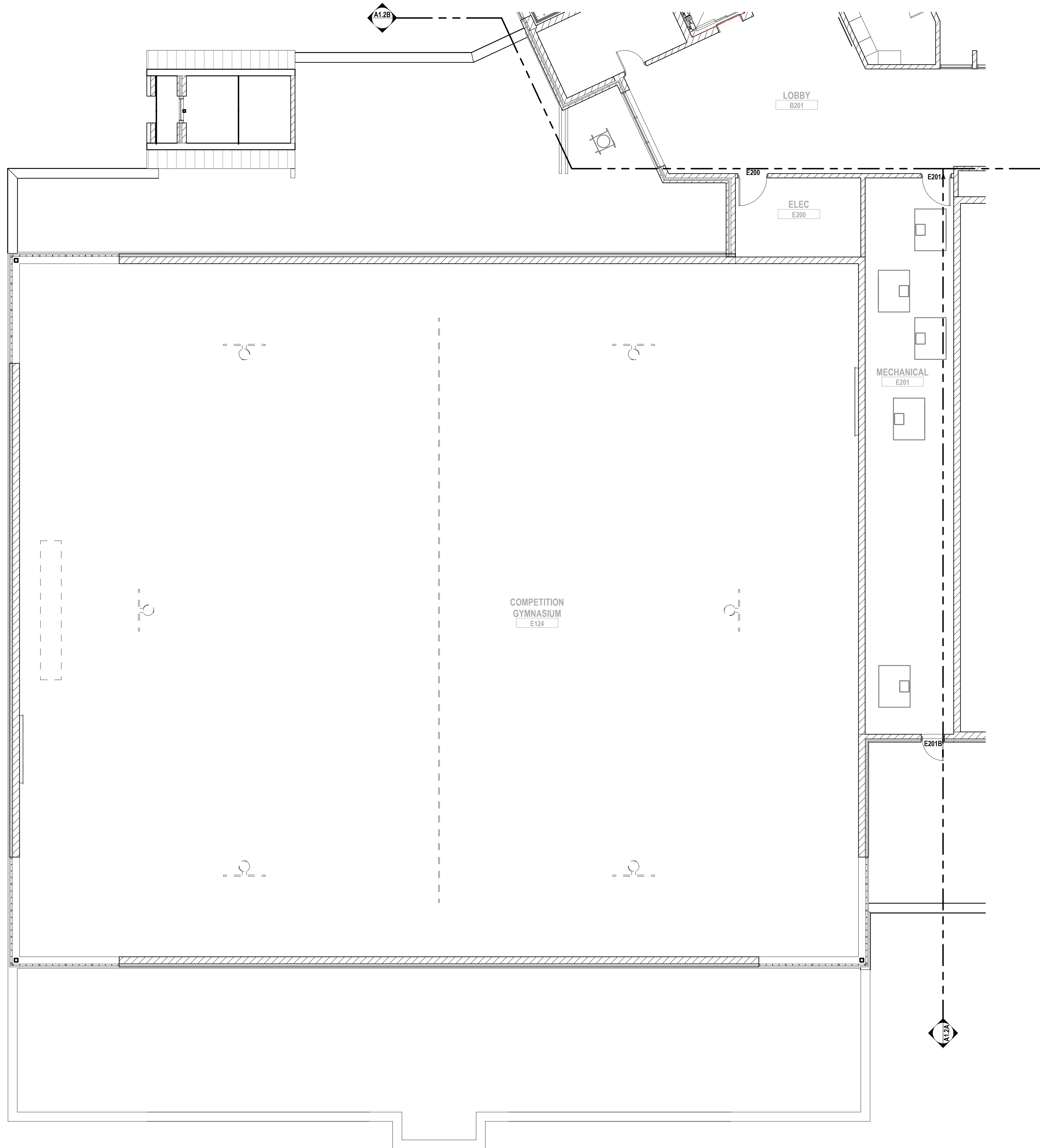
PROJECT NO.

## 20015

DRAWING NO

## A1.2D

**SCALE: 1/8" = 1'-0"**



 METAL STUD PARTITION

 CMU PARTITION

- 1A 1/2 METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING
- 1B 3/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING
- 1C 1/2" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE
- 1F 1/2" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
- 2 6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
- 2A 3/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO 6" ABOVE CEILING
- 2B 6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO 6" ABOVE CEILING
- 2C 3/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE
- 2D 6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE
- 2E 3/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES TO STRUCTURE ABOVE
- 2L 2X6 GYP BOARD WALL - RAILING 6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD BOTH SIDES - REFER TO SECTION FOR WALL HEIGHT
- 4A 4" CMU TO ONE FULL COURSE ABOVE CEILING
- 4B 4" CMU TO ONE FULL COURSE ABOVE CEILING
- 4C 8" CMU TO ONE FULL COURSE ABOVE CEILING
- 4E 4" CMU TO STRUCTURE ABOVE
- 4F 8" CMU TO STRUCTURE ABOVE
- 4J 12" CMU TO STRUCTURE ABOVE
- 4K 4" CMU TO 7'-4" AFF
- 4L 8" CMU TO 7'-4" AFF
- 5 12" CMU TO STRUCTURE ABOVE - SMOKE PARTITION FOR EGRESS CORRIDORS
- 4H 12" CMU TO STRUCTURE ABOVE - SMOKE PARTITION FOR EGRESS CORRIDORS
- 5C 8" CMU TO STRUCTURE ABOVE, 1HR FIRE BARRIER FOR STORAGE AND UTILITY ROOMS
- 5D 12" CMU TO STRUCTURE ABOVE, 1HR FIRE BARRIER FOR EXTEND ENCLOSE REAR
- 5F 12" CMU TO STRUCTURE ABOVE, 1HR FIRE BARRIER AND FIRE BARRIER
- 5G 12" CMU TO STRUCTURE ABOVE, 1HR FIRE BARRIER FOR ELEVATOR HOISTWAYS

1. ALL GYP SUM WALLS TO RECEIVE ADHESANT RESISTANT GYPSUM BOARD BELOW 4'-0" AFF. TYPICAL
2. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.
3. PROVIDE BULLNOSE CUM UNITS AT ALL OUTSIDE CORNERS WHEN CORNERS ARE EXPOSED IN FINAL CONSTRUCTION; DO NOT BULLNOSE CORNERS WHEN ADJUTING WALLS TO MATCH EXISTING WALLS.
4. WHERE FINISH PLANS (A10 SERIES DRAWINGS) CALL FOR WALL TIE, PROVIDE CEMENT BOARD SUBSTRATE IN LIEU OF GYPSUM BOARD.
5. COORDINATE WITH THE REFLECTED CEILING PLANS FOR RATED WALLS. WALLS SHALL BE RATED TO MATCH THE RATED CEILING AND WALL WHICH EXTEND INTO A MINIMUM OF 4' ABOVE THE ADJACENT HIGHEST CEILING. REFER TO BUILDING SECTIONS, WALL SECTIONS AND INTERIOR ELEVATIONS FOR RATING OF SPECIAL WALLS. WHERE OTHER SPECIAL WALLS ARE SHOWN, PARTIAL HEIGHT CUM WALLS WILL BE NOTED AS SUCH ON THE FLOOR PLANS.
6. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.
7. FIRE RATED WALLS SHALL BE CONSTRUCTED WITH MASONRY OR GYPSUM BOARD PROVIDED W/ APPROVED FIRE-RATED HEAD-OF-WALL TERMINATIONS AS

1. COORDINATE SIZE AND LOCATION OF ALL CONCRETE HOUSEKEEPING PANS, AND/OR EQUIPMENT SUPPORTS WITH APPROPRIATE EQUIPMENT MANUFACTURER.
2. COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH TRADE REQUIRING THE SAME. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE REQUIRED TO BE PROVIDED BY EACH TRADE. ALL LOCATIONS MUST BE COORDINATED AND APPROVED BY THE ARCHITECT'S FIELD REPRESENTATIVE.
3. CONTRACTORS SHALL VERIFY ALL EXISTING BUILDING DIMENSIONS, PARTITION AND WALL LOCATIONS, AND FLOOR ELEVATIONS IN THE FIELD AND NOTIFY THE ARCHITECT REPRESENTATIVE OF ANY DISCREPANCIES BEFORE START OF WORK.
4. FLOOR PLANS ARE DIMENSIONED TO NOMINAL WALL THICKNESS - TYPICAL.
5. DIMENSIONS FOLLOWED BY # SHOULD BE REVIEWED AND ALL NECESSARY ADJUSTMENTS MADE PRIOR TO FABRICATION AND/OR INSTALLATION OF ARCHITECTURE. NOTIFY ARCHITECT'S REPRESENTATIVE IF DISCREPANCIES ARISE BEFORE PROCEEDING WITH THE WORK.
6. INSTALL CONTROL JOINTS IN GYPSUM BOARD AND METAL, STUD-FRAMED PARTITIONS, WALLS, CEILINGS, BULKHEADS, FASCIAE AND SOFFITS IN ACCORDANCE WITH SPECIFICATIONS, AND WITH GENERAL REQUIREMENTS OF ARCHITECTURE. COORDINATION OF FRAMING INSTALLATION MUST BEHIND COORDINATION DRAWINGS INDICATING PROPOSED LOCATIONS OF ALL CONTROL JOINTS, AS SPECIFIED.
7. PROVIDE CONTROL JOINTS WHERE INTERIOR CMU (ON SLAB) ADJUTS EXTERIOR/INTERIOR MASONRY (ON FOUNDATIONS OR FOOTINGS).
8. VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK. PROVIDE ALL LIMITS REQUIRED FOR THESE OPENINGS PER SPECIFICATIONS.
9. REFER TO LIFE SAFETY PLANS FOR LOCATIONS OF REQUIRED FIRE RESISTANCE RATINGS. BECAUSE OF THE DRAWING SCALE OF THE LIFE SAFETY PLANS, COORDINATE THE REQUIRED FIRE RESISTANCE RATINGS WITH THOSE SHOWN ON THE REFLECTED CEILING PLANS.
10. REFER TO REFLECTED CEILING PLANS FOR EXTENSION OF PARTITION WALLS TO FLOOR FINISHES FOR CONSTRUCTION ABOVE AND WALL FIRE RESISTANCE RATING REQUIREMENTS.
11. REFER TO STRUCTURAL DRAWINGS FOR ALL WIND FRAME LOCATIONS AT INTERIOR AND EXTERIOR WALLS.
12. REFER TO A10. SERIES DRAWINGS FOR FLOOR FINISH PATTERNS AND ROOF FINISHES.
13. REFER TO STRUCTURAL DRAWINGS FOR ORIENTATION LOCATIONS AND SIZES OF ALL STRUCTURAL COLUMNS.
14. VERIFY ALL DIMENSIONS IN FIELD.
15. PROVIDE WOOD BLOCKING WITH STUD WALLS FOR WALL MOUNTED ITEMS i.e. GRAB BARS, TOWEL DISPENSERS, PENCIL SHARPENERS, WALL STOPS, ACCURATOR, PARTITION JAMBS, ETC. REFER ALSO TO A. SERIES AND A. SERIES DRAWINGS.
16. REFER TO EXTERIOR ELEVATIONS AND PLAN DETAILS FOR LOCATIONS OF CONTROL JOINTS IN EXTERIOR WALLS.
17. PAINT ALL EXPOSED EXISTING STRUCTURAL STEEL COLUMNS WITH INTUMESCENT PAINT TO ACHIEVE FIRE RATINGS OF ADJACENT WALLS



REGISTRATION SEAL

CONSULTANT

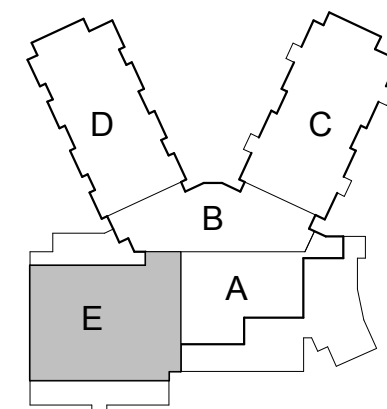
PROJECT TITLE

# New Elementary School

**Schoolcraft Community Schools**  
**SCHOOLCRAFT, MI**

DRAWING TITLE

## Second Floor Plan - Zone 'E'



KEYPLAN

## ISSUE DATES



01-21-21	DESIGN DEVELOPMEN
----------	-------------------

DATE: ISSUED FOR

DRAWN      Autho

CHECKED      Checker

APPROVED Approver:

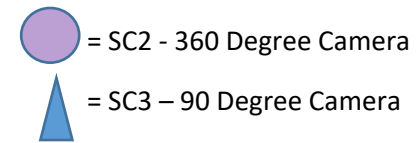
PROJECT NO.

## 20015

DRAWING NO

## A1.2E

**Letter** Indicates Entrance Label



# SCHOOLCRAFT HIGH SCHOOL

