Project Owner:	Hudsonville Public Schools
Project Name:	Technology Additions and Renovations
Issue Date:	August 25, 2023

ADDENDUM NO. 1

This Addendum No. 1 of the Technology Request for Bid for the above referenced project hereby amends, supplements and/or augments all prior issued document(s) as described herein, and becomes an inseparable part of the Contract Documents, superseding all previous, contrary and/or conflicting information.

AD1 - 1	Bid Forms 00 40 00 - Alternates is hereby revised and attached hereto.
AD1 - 2	Section 27 41 16. Part 1 General 1.01 Description of Project is hereby revised as follows: A. Projectors are existing and to be replaced with all new equipment as listed in this specification section. Existing projectors only apply to Alternate.
AD1 - 3	Section 27 53 13.1.1.06.E Mandatory Alternate is hereby removed.
AD1 - 4	Section 28 20 00 2.B.1.0.2.06 CAMERAS is hereby removed.
AD1 - 5	Section 28 20 00 2.B.1.01.2.07 BUS UPLOAD is hereby removed.
AD1 - 6	List of Drawings is hereby revised and attached hereto.
AD1 - 7	Appendix “Camera System Inventory” is hereby revised and attached hereto.

END OF ADDENDUM NO. 1

Hudsonville Public Schools

SECTION 00 01 15
LIST OF DRAWINGS

File/Name *Description*

Section

Section 27 10 00 – Low Voltage Cabling - Drawings

Section 27 41 16 – Multimedia System - Drawings

Section 27 51 16 – Public Address System - Drawings

Section 27 53 13 – Clock System – Drawings

Section 28 13 00 – Building Access System - Drawings

Section 28 23 00 – Video Monitoring System – Drawings

ALTERNATES:

Section 27 41 16 – Multimedia System – Alternate Additions Drawings

Section 28 23 00 – Video Monitoring System – Alternate Additions Drawings

APPENDIX:

Typical Drawing

Appendix A: System Counts

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 BUILDING TECHNOLOGY SYSTEMS

A. Hudsonville Public Schools (Owner) is seeking bids for purchase and installation of new classroom multimedia, public address, clock, and video monitoring, bus video monitoring and associated equipment and installation. Proposed systems shall be configured and installed as described herein.

B. Project: Hudsonville Public Schools Technology Additions and Renovations

C. Owner: Hudsonville Public Schools
3886 Van Buren
Hudsonville, MI 49426

D. Designer: Communications by Design, Inc.

E. Sites of Work:

1. Alward Elementary School
3811 Port Sheldon St
Hudsonville, MI 49426

2. Bauer Elementary School
8136 48th Avenue
Hudsonville, MI 49426

3. Forest Grove Elementary School
1645 32nd Avenue
Hudsonville, MI 49426

4. Georgetown Elementary School
3909 Baldwin Street
Hudsonville, MI 49426

5. Jamestown Lower Elementary School
2522 Greenly
Hudsonville, MI 49426

6. Jamestown Upper Elementary School
3291 Lincoln Ct.
Hudsonville, MI 49426

7. Park Elementary School
   5525 Park Avenue
   Hudsonville, MI 49426

8. South Elementary School
   4900 - 40th Avenue
   Hudsonville, MI 49426

9. Park Elementary School
   5525 Park Avenue
   Hudsonville, MI 49426

10. Transportation Building
    3550 Allen Street
    Hudsonville, MI 49426

11. Hudsonville Sports Complex
    7855 36th Avenue
    Hudsonville, MI 49426

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: August 16, 2023

2. Pre-Bid Meeting: August 23rd at 4:00 PM

3. Intent to Bids Due: August 25th at 5:00 PM

4. Question and Clarification Deadline: August 29th at 5:00 PM

5. Public Bids Due: September 6th at 4:00 PM

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: August 23rd at 4:00 PM

1. Bauer Elementary School
8136 48th Avenue
Hudsonville, MI 49426

2. Any drawings identified in the table of contents herein will be distributed and reviewed at this conference.

C. 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: September 6th at 4:00 PM

C. Bid Opening Location: Hudsonville Public Schools
3886 Van Buren
Hudsonville, MI 49426

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

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 Hudsonville Public Schools, a general powers school district.

B. For purposes of this project, the terms "Architect", "Engineer" and "Designer" are used synonymously to refer to Communications by Design, Inc., a Michigan Corporation.

C. The term "Bidder" refers to any organization properly and accurately submitting a complete "Intent to Bid Form" prior to the required time specified herein and subsequently properly submitting completed set of bid documents as specified herein.

D. The term "Contractor" herein is a reference to the firm(s) eventually selected by the Owner to provide the intended system(s), or any portion thereof, and fulfill the terms of the contract.

E. The term Contract is a reference to the collective set of documents, drawings, diagrams, Owner's Purchase Order, Addenda, and all other materials as provided for herein defining arrangement between Owner and Contractor.

F. The term Addenda (or Addendum) are that portion of the Contract consisting of modifications, amendments, deletions, or substitutions to the contract documents issued prior to the execution of the Contract.

END OF SECTION

SECTION 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 4:00 PM on September 6 , 2023. 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 10 00 – Low Voltage Cabling
- ☐ 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

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: Hudsonville Public Schools
Attention: Mr. Patrick Briggs
3886 Van Buren
Hudsonville, MI 49426

BID FROM: _____

_____

_____

PROJECT: Hudsonville Public Schools Technology Additions and Renovations
TECHNOLOGY BID 3019

INCLUDING ADDENDA: Addendum No._1____Dated_____8/25/2023_____
Addendum No._____Dated_____

DUE: September 6, 2023

BID FORM

BID TO: Hudsonville Public Schools
Attention: Mr. Patrick Briggs
3886 Van Buren
Hudsonville, MI 49426

BID FROM: _____

_____

_____

PROJECT: Hudsonville Public Schools Technology Additions and Renovations
TECHNOLOGY BID 3019

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

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: Multimedia System Additions_____

Alternate B: Video Monitory System Additions_____

Alternate C: 5 Year Warranty on Access Control System Equipment and Software_____

Alternate D: Multimedia Three (3) year parts and labor warranty_____

Alternate E: _____

Alternate F: _____

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 _____, 2023.

In the County of _____ State of _____

By _____ Seal or Stamp:
Notary Public Signature

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 Hudsonville Public 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:

Paragraph Number	***Explanation***

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 <u>this</u> 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 <u>Microsoft Excel</u> 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: ______

ID	***Qty***	***Part Number***	***Mfg and Description***	***Unit Cost***	***Unit Labor Cost***	***Total Proposed Cost***
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			GRAND TOTAL (Must match base 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: _____

ID	*Qty*	*Part Number*	*Mfg and Description*	*Unit Cost*	*Unit Labor Cost*	*Total Proposed Cost*
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			GRAND TOTAL (Must match base bid)			

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Bidder: _____ Bid Division: _____

ID	*Qty*	*Part Number*	*Mfg and Description*	*Unit Cost*	*Unit Labor Cost*	*Total Proposed Cost*
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			GRAND TOTAL (Must match base bid)			

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Bidder: _____ Bid Division: _____

ID	*Qty*	*Part Number*	*Mfg and Description*	*Unit Cost*	*Unit Labor Cost*	*Total Proposed Cost*
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			GRAND TOTAL (Must match base 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: _____

ID	*Qty*	*Part Number*	*Mfg and Description*	*Unit Cost*	*Unit Labor Cost*	*Total Proposed Cost*
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			GRAND TOTAL (Must match base 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: _____

ID	*Qty*	*Part Number*	*Mfg and Description*	*Unit Cost*	*Unit Labor Cost*	*Total Proposed Cost*
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			GRAND TOTAL (Must match base 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: _____

ID	*Qty*	*Part Number*	*Mfg and Description*	*Unit Cost*	*Unit Labor Cost*	*Total Proposed Cost*
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			GRAND TOTAL (Must match base bid)			

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 WITHDRAWL

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 form offer continuing for ninety (90) calendar days. Bids receive 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 10 00
LOW VOLTAGE CABLING

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

A. Work described in this specification section pertains to structured cabling to support various types and styles of communications systems. Owner expects structured cable system shall be used to provide connectivity for items including, but not limited to, Access Points, Phones, Computers, Printers, Cameras, and video displays.

B. At Park and Bauer Elementary School some locations will be provided by a designated contractor tied to the existing construction project. These locations are indicated on the drawings in “BLACK.” Other locations indicated in “BLUE” will be provided by the Low Voltage Cabling Contractor responding to this RFP.

C. Structured cable system shall be compliant with EIA/TIA 568B.

D. The Contractor shall configure, supply, install, connect, test, document and train Owner representatives and warrant a fully operational and compliant communications transport system, complete and with full functionality as specified herein including, but not limited to:

1. Cables

2. Jacks

3. Cable support hardware

4. Communication distribution racks

5. Cross connect blocks and devices

E. Contractor shall coordinate their installation with other contractors, Architect, Construction Manager, Architect/Engineer and the Owner as is appropriate.

1.02 DRAWINGS

A. Drawings show the location and general arrangement of equipment, systems and related items. They shall be followed as closely as elements of construction permit.

B. Examine drawings of other trades and verify conditions of work sites. Arrange work accordingly.

C. Deviations from drawings, with the exception of minor changes in routing and other such incidental changes not affecting functionality or serviceability of systems, shall not be made without written approval of Architect/Engineer.

1.03 WARRANTY

A. Complete installation shall be free from defect and/or failure for a period of fifteen (15) 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. 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.

1. Contractor shall provide response times for all malfunctioning equipment of two (2) business days or less.

2. Response time shall be measured from the time Contractor is notified by Owner to the time work is begun to resolve the matter.

1.04 SUBMITTALS

A. Submittals shall consist of technical cut sheets and 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.

B. Equipment or material installed for this project that does not have an approved submittal associated with it, shall be removed and replaced with acceptable equipment or material as defined by the Architect/Engineer. All replacement costs including, but not limited to material and labor, shall be the sole responsibility of the Contractor.

1. The Owner and/or Architect/Engineer 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.

C. Shop drawings and diagrams shall be submitted by Bidder for approval by Architect/Engineer with Bids.

1. Shop drawings and diagrams shall show all data relating to structural, electrical, wiring, cross connect, interconnect, equipment arrangement/layout, and any other information deemed significant by the Architect/Engineer.

2. No work constituting final installation shall be commenced until after approval of shop drawings by Architect/Engineer.

D. Determination of acceptance of proposed equal equipment is at the sole discretion of the Designer/Owner.

1.05 REFERENCE STANDARDS

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

1. ANSI/NFPA

2. EIA/TIA Commercial and Administration Standards

3. NECA

4. BICSI

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 provide proof of manufacturer support by photocopy of certification and letter of support from major component manufacturers for this specific project. 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. Certification of such training shall promptly be provided if requested by Architect/Engineer.

D. The Contractor shall have a proven track record in structured cable 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.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer(s) of major components of the structured cable system shall be a known and leading entities in the communications field, and shall have been designing, manufacturing and installing similar systems for a period of no less than four (4) years.

B. Acceptable Manufacturers (In alphabetical order):

1. AT&T / Systimax
2. Belden
3. Berk-Tek
4. Corning/Siecor
5. General Cable
6. Hubbell
7. Nordx-CDT
8. Panduit

C. System shall be built upon an open and standard platform, supporting industry standards. Systems that are deemed Proprietary in nature shall not be considered.

2.02 COPPER CABLE

A. Station Cable shall meet or exceed:

1. Four (4) pair Category 6 Unshielded Twisted Pair (UTP) cable.

2. All wiring not installed in conduit shall be plenum type cable and shall be so identified with continuous marking.

3. Twenty-three (23) AWG

4. Compliant as per EIA/TIA-36 specifications

5. Certified under UL's LAN Cable Certification Program

B. All cables shall be terminated for T568B compliant connection.

C. Coordinate cable color(s) with Owner requirements prior to installation.

D. MANDATORY ALTERNATE: Bidders will provide voluntary alternate pricing for additional data drops.

2.03 CROSS CONNECT EQUIPMENT

A. Cross Connect Equipment shall meet or exceed:

1. Patch Panel for UTP Category 6 Cable Termination.

a. Rack mounted category 6 compliant printed circuit board technology, patch panel with T568B compliant terminations on front of panel and 110 type terminations on rear of panel.

b. Rack mounted patch panels shall be no larger than Forty-eight (48) ports each.

c. Rack mounted patch panels shall be flat.

2. Furnish and install smear resistant, mechanically imprinted polyester or similar material labels to identify each port of all patch panels (fiber optic and copper) in compliance with EIA/TIA 606 standards or Owner required scheme. Labels shall be permanently affixed to patch panels.

2.04 WIRING DEVICES

A. All station cable shall terminate on modular jacks that meet or exceed:

1. Category 6A compliant (Access Points Only)

2. Category 6 compliant

3. 8 position T568B compliant modular female jack.

4. Modular jacks that terminate above finished ceiling will be plenum rated.

5. Snap-in, high impact housing

6. Field verify and coordinate insert color to match Owner requirements.

7. Field verify and coordinate plates and/or outlet frame colors and materials to coordinate with electrical devices and Owner requirements.

8. Where station cable is to terminate above finished ceiling or behind a finished wall for cameras, speakers, or other special station devices, modular jack may be surface mounted in appropriate high strength, impact resistant plenum rated plastic enclosure.

9. Furnish and install matching coordinating blank cover plates for all unused communications outlets indicated on drawings.

10. Mount flush plates so all four edges are in continuous contact with finished surfaces.

11. Furnish and install smear resistant, mechanically imprinted polyester or similar material labels to identify each port of all patch panels (fiber optic and copper) in compliance with EIA/TIA 606 standards or Owner required scheme. Labels shall be permanently affixed to modular jack.

2.05 OWNER STANDARDS

A. Contractor shall provide connectors in a color to match the Owner's existing standards.

B. Contractor shall provide cover plates and any associated keystone inserts as may be required matching Owner's existing standards.

1. Stainless Steel cover plates.

2. Grey keystone inserts.

C. Contractor shall provide connector identification and labels on all terminations matching Owner's existing standard. Field verify all label conditions per site prior to final installation.

2.06 PROJECT CABLE CONFIGURATIONS

A. See Appendix A – Communication Drawings for cable locations and quantity.

B. Wall Data Outlet

1. Contractor shall provide data outlets including, but not limited to:

a. UTP station cable(s) terminated on compliant patch panel in nearest IDF and wire devices in a single box location.

b. Wire device(s) shall be installed in standard keystone insert with six (6) positions. All unused positions shall be blanked.

c. Faceplate compliant with Owner standards shall be provided.

2. Outlet shall be provided at each location indicated on drawings, noting the number of station cables to be terminated.

3. Raceway will need to be provided and installed by the Low Voltage Contractor.

C. Above Ceiling Outlet

1. Contractor shall provide above ceiling outlets as indicated on the drawings including, but not limited to:

a. UTP station cable(s) terminated on compliant patch panel in nearest IDF and wire device with a single surface mounted biscuit jack.

b. Device location shall be as indicated on drawings and above finished ceiling/surface, but accessible for station connection.

c. Surface mount device box shall be bright in color and/or contain a permanently attached brightly colored reflective identification label to facilitate visual location of connection point behind finished surfaces.

2. Outlet shall be provided at each location indicated on drawings, noting the number of station cables to be terminated.

2.07 ALLOWANCES

A. Contractor shall include allowances for contract service reimbursements as required in base bid lump sum amount(s).

1. Allowance shall be made in the amount of $10,00.00 for Owner directed infrastructure upgrades.

B. Contract services shall be provided and sourced at Owner's discretion, direction and convenience with full cooperation by Contractor, and paid for from successful bidder's contract in the amount(s) provided for herein.

C. Any allowance amount proving to be excessive for the intended equipment and/or contract services shall be credited to the Owner against contract payment requests.

D. No material or labor charges and/or mark-ups or margins will be permitted on allowance expenditures approved by Owner and Designer.

PART 3 - EXECUTION

3.01 PREPARATION

A. Contractor shall conduct detailed walk-through examination with Architect/Engineer 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 Architect/Engineer prior to commencement of any final installation activities.

3.02 INSTALLATION

A. Contractor shall be familiar with the environment where work shall 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. Cables installed in a professional manner to prevent tangling and congestion and to facilitate installation or removal of cables in the future.

2. Cables installed without kinks (any bend with a radius less than manufacturer defined minimum).

3. All cable free of abrading or penetrating of cable jacketing.

4. In suspended ceiling where cable trays or conduit are not available, Contractor shall support wiring with “D – rings”, beam clamps or other approved cable support devices at appropriate distances (6 ft. minimum).

5. All information outlets shall be labeled according to the Owner’s cable identification scheme. Labels shall be completed using pre-printed labels. Handwritten labels are <u>not</u> acceptable.

6. The Contractor shall label all cables, jacks, patch panel positions, faceplates and cross connects.

7. In-line cable splicing shall not be permitted.

8. Contractor shall provide 10' minimum service loop above accessible ceiling for each terminated cable in pole access for modular furniture to accommodate future changes.

9. Length of each individual run of horizontal cable from the MDF/IDF to the information outlet shall not exceed 90 meters (295 ft.).

10. IDF(s) and MDF locations have been identified in the appendices herein. Contractor shall calculate distances to ensure the adherence to the EIA/TIA 568 distance limitations. Contractor shall notify Architect/Engineer of cable length exceptions prior to installation in writing and request direction.

11. All copper data cabling shall terminate on Category 6 compliant connectors. Approximately 10 ft. of Category 6 and/or fiber cabling shall be coiled and stored at each cable distribution center in order to accommodate future change.

12. Wiring not installed in conduit shall not be routed within 18 inches of light fixture ballasts or within 36 inches of motors or transformers.

13. Coordinate cable colors with Owner requirements prior to installation.

14. Contractor shall include any sleeves where wall penetrations are needed as identified on provided communications drawings. Sleeves shall be a minimum of 2". All installed sleeves shall be fully fire stopped with compliant fire stop material following cable installation. If other wall penetrations are required to complete work but are not identified on provided drawings, contractor shall supply 1 - 2" sleeve.

15. Provide backboards, properly treated for fire retardation in locations with new racks and required by site conditions.

E. Sites of Work:

1. Alward Elementary School
   3811 Port Sheldon St
   Hudsonville, MI 49426

2. Bauer Elementary School
   8136 48th Avenue
   Hudsonville, MI 49426

3. Forest Grove Elementary School
   1645 32nd Avenue
   Hudsonville, MI 49426

4. Georgetown Elementary School
   3909 Baldwin Street
   Hudsonville, MI 49426

5. Jamestown Lower Elementary School
   2522 Greenly
   Hudsonville, MI 49426

6. Jamestown Upper Elementary School
   3291 Lincoln Ct.
   Hudsonville, MI 49426

7. Park Elementary School
   5525 Park Avenue
   Hudsonville, MI 49426

8. South Elementary School
   4900 - 40th Avenue
   Hudsonville, MI 49426

9. Park Elementary School
   5525 Park Avenue
   Hudsonville, MI 49426

10. Transportation Building
    3550 Allen Street
    Hudsonville, MI 49426

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.

3.03 DOCUMENTATION

A. Contractor shall be responsible for providing thorough, timely documentation. Documentation shall include, but not be limited to both printed and electronic copies of:

1. CAD as-built drawings of each building.

2. Copper station cable test results.

3.04 TESTING

A. End to end testing of UTP copper Category 6 cables shall be conducted at 350 Mhz to meet or exceed reference standards. 100% of all pairs shall be tested. Documentation of test results shall be provided including, but not limited to the following parameters:

1. Attenuation.

2. Near End Cross Talk (NEXT).

3. Signal to noise ratio.

4. continuity

5. Pair integrity

6. EMI interference.

7. Any cable that does not meet EIA/TIA 568 specifications shall be repaired or replaced at the Contractor's expense.

8. Cable length.

3.05 TRAINING

A. Not Used.

3.06 SCHEDULE, MEETINGS AND PLANS

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

B. Schedule

1. Post bid Interviews: September 11 & 12, 2023

2. Contractor Chosen: October 12, 2023

3. Work Commences: October 2023

4. Substantial Completion of Project: March 29, 2024

5. Project Close-out: April 19, 2024

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

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

E. Sequence of operations shall be established by the Contractor within the guidelines established by the Owner, documented herein, required by Architect/Engineer, Architect and/or Construction Manager and as required to meet schedule.

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/remodeled classroom multimedia infrastructure and instructional equipment for all of Hudsonville Elementary Schools. This section also includes new audio visual system for Park Elementary's new gymnasium and Bauer Elementary's new gymnasium.

B. Projectors are existing and to be replaced with all new equipment as listed in this specification section. Existing projectors only apply to Alternate.

C. 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.

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 physical infrastructure.

E. 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.

F. 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.

G. 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.

H. Contractor shall coordinate their installation with other contractors, Designer and the Owner as is appropriate.

I. Audio coverage of the Gymnasium shall be accomplished with two full-range loudspeakers covering the playing surface. Loudspeakers shall be suspended from overhead roof structure in locations of speaker junction boxes shown on the drawings.

J. Several hardwire microphone and media audio inputs shall be installed at various locations in the Gymnasium.

K. Wireless microphone selection shall include a vocal/speech microphone with handheld transmitter and a head-worn microphone with belt pack transmitter.

L. Several digital and analog (auto-switching) audio-video inputs shall be installed at various locations in the Gymnasium, as well as in the equipment rack, for connection of portable audio-video media sources (laptop, game console, etc.) as furnished by Owner.

M. A permanently-mounted video projector with adequate security to withstand typical gymnasium physical abuse and a wall-mounted projection screen shall be integrated into the system for display of video sources.

N. Complete system user controls shall be provided on a wall-mounted LCD touchpanel located in the Gymnasium adjacent to the P.E. office, and shall serve as the only user interface required to operate the system. The control system shall in turn command the function of the audio DSP, audio-video switcher, and various peripheral devices/equipment. Minimum functions controlled at the touchpanel shall include:

1. On/off control of the audio/video rack equipment via interface with the power distribution remote control relay

2. On/off control of video projector

3. Raise/lower control of video projection screen, automatic triggered with projector on/off function, and manual override with virtual buttons.

4. Video media source selection as routed to video projector from various inputs and connected media devices.

5. Volume and mute controls for all audio sources (wired inputs, wireless microphones, audio-video switcher output).

6. Selective ducking of media sources based on microphone sources, selectable for use application:

    a. Performance Mode: No ducking of media sources; best for musical applications

    b. Instruction / Presentation Mode: Ducking shall allow for clear intelligibility of teacher or presenter voice to be heard over the media inputs

7. Display of battery status from wireless microphone receivers

8. Passcode lock to prevent unauthorized use of the control station

9. Custom graphics on lock screen to display school name and logo

10. Audio DSP microphone inputs shall be equalized for specific microphones utilized on the project.

11. A twenty-four-space wall-mounted equipment rack shall be installed in the adjacent P.E. Office. This rack shall hold all system electronics, including mic/line mixers, wireless microphone receivers, amplifiers, audio-video switcher, audio-video media source device (network streaming appliance), audio-video inputs for user-supplied media sources, system audio processing, system control, storage drawers, and other components described herein.

12. Refer to drawings for locations of all equipment that is to be installed.

O. Demolition of existing equipment is shown on the drawings with a dashed outline. Contractor is responsible for removal and safe disposal of all associated equipment related to the old multimedia speaker.

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 STANDARD VIDEO PROJECTORS (Classroom)

A. Standard video projectors shall be provided and installed in each location as indicated in on drawings.

B. Acceptable Manufacturer:

1. EPSON

a. PowerLite L250F Standard Throw Projector

C. Projectors shall meet or exceed the following minimum output, port availability and other standards:

1. 4,500 lumens of color and white brightness

2. 20,000-hour laser light source with no lamps

3. Full HD 1080p[1] resolution

4. Built-in wireless with Miracast for peer-to-peer connectivity

5. 1.62x optical zoom
6. All other features currently a part of the manufacturer's latest commercial release.

2.05 PROJECTOR CEILING PLATES AND MOUNTING BRACKETS

A. Projector Ceiling Plates and Projector Mounting Brackets shall be provided and installed in each location as indicated in drawings.

B. Acceptable Manufacturers:

1. CHIEF

2. PEERLESS

a. CMJ500

b. PRG-UNV

C. All projector mounts shall be firmly and securely mounted to finished ceiling, or other surfaces as required and/or specified herein to maximize coverage and minimize tampering potential.

D. Mounts shall be located in coordination with display boards and/or screens and projectors by others to provide a minimum of 96% coverage for the horizontal viewing area of installed display boards and/or screens with no optical distortion.

E. Projector mounts shall be complete and safely accommodate particular and specific mounting conditions for standard projectors.

F. All work shall conform to manufacturers best practices recommendations.

G. Where standard mounting in drop ceilings is not possible or acceptable to Owner, provide alternative and compliant mounting hardware and installation consistent with other specified materials.

H. Contractor shall supply and install new projector downpipes in each location as indicated on drawings

2.06 POLE MOUNTED EQUIPMENT SHELF

A. Pole mounted equipment shelves shall be provided and installed at each location receiving a new standard video projector as indicated on drawings.

B. Acceptable Manufacturers:

1. EXTRON

a. PMK 155

2. Or Equivalent

2.07 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 by the contractor.

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-C 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.

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. 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.

I. HDMI EXTENSION DEVICES

1. HDMI extension devices (transmitter and receiver) shall be provided and installed in locations as indicated in Appendix B and in the Drawings.

2. Acceptable Manufacturers:

a. ATLONA

b. CRESTRON

1. HD-TX-101-C-1G-E and HD-RX-101-C-E

c. KRAMER

d. Or Equal

3. All materials, cables, connectors, and components for a complete and operational system.

2.08 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-C 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.

2.09 PROJECTION SCREENS (

A. Projection Screens shall be provided and installed in all locations where a projector is indicated on drawings.

A. Acceptable Manufacturers (in alphabetical order):

1. DALITE

    a. Model C

1. DRAPER

B. Projection Screens shall meet or exceed the following minimum standards:

1. Viewing surface of 96” in width.

2. Controlled screen return (CSR).

3. Matte white viewing surface with black masking borders.

4. Constructed of flame retardant and mildew resistant fabric.

5. Neutral color painted 21-gauge steel case.

6. 4’ pull cord securely fastened to bottom of screen.

7. Screens shall be wall mounted at locations indicated by Owner with approved permanent wall L-brackets capable of supporting screen and reasonably expected forces in classroom environment.

8. In locations where wall mounted is not acceptable, coordinate ceiling mounted screens with Owner and Designer.

C. Accessories.

1. Installation Hardware: Fasteners and other components of type, size and spacing recommended by manufacturer for complete, functional, and secure installation of projection screen.

2. Wall Brackets:

    a. Fixed Length: Extends 6 inches.

    b. Color: White.

    c. Capacity: 75 lb. (34 kg) per pair maximum.

3. Furnish optional ceiling trim kit at all Model C units.

4. Zinc plated pull rod. Provide (13) units total at ceiling mounted screens.

2.10 DOCUMENT CAMERA

A. A Document Camera shall be provided and installed in locations where a projector is indicated in classroom spaces on drawings.

B. Acceptable Manufacturers

1. Aveer

    a. M11-8M

C. Document Camera shall provide for both HDMI connectivity to projector and USB-C connection to workstation.

D. All features currently a part of the manufacturer's latest commercial release shall be included.

2.11 VOICE AMPLIFICATION EQUIPMENT (Classroom)

A. Voice Amplification Systems shall be provided and installed in locations where a projector is indicated in classroom spaces on drawings.

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. Classrooms have existing ceiling speakers tied to the existing projector. Speakers are to be demolished along with existing cabling and other associated equipment.

2. Speakers shall be installed professionally following all manufacturer installation recommendations and industry best practices.

3. 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.

2.12 WIRELESS PRESENTATION (Classroom)

A. The Owner will provide and install the wireless presentation systems Apple TV casting devices in locations as indicated in with every projector and display as indicated on drawings.

B. VOLUNTARY ALTERNATE: Bidders are encouraged to provide voluntary alternate pricing for the Audio Enhancement OPTIMUM SYSTEM.

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.

2.13 AUDIO SPEAKERS (Classroom)

A. Classroom speakers are existing unless otherwise noted on Drawings. Speakers are to be removed along with existing cabling and associated equipment.

B. Four (4) classroom speakers shall be installed in/on finished ceiling surfaces in each room as indicated in classrooms with a projector.

C. Acceptable Manufacturer:

1. LIGHTSPEED

D. 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.

E. Where flush mounting is not possible or practical, Contractor shall install surface mounted speakers meeting or exceeding all requirements above.

F. Where specific speaker location is in question, obtain Owner approval prior to any final installation activity.

G. All speakers shall include attractive finished white grill.

H. All speaker wire shall be 16 AWG high quality cable.

I. All speaker cable shall be connected to audio amplifier at the projector location.

2.14 GYMNASIUM EQUIPMENT

A. The following approved manufacturers, quantities, and model numbers shall form the basis of the system. These are minimum requirements. Installing Contractor shall verify all quantities prior to ordering and installation. Quantities are provided for reference only. Installing Contractor is still responsible to provide a complete and working system without claim for additional payment. All equivalents and alternates must be approved by Engineer prior to system installation.

B. The Installing Contractor shall furnish all equipment and work as noted or implied on the drawings or specifications. In case of a conflict between the drawings and specification, furnish the equipment and work with the greatest cost impact.

C. Audio-Video System Components

1. Park Elementary Gymnasium A119

2. Bauer Elementary Gymnasium E121

a. Equipment Rack (qty 1): 24-space wall mount sectional rack with lockable perforated front door. Minimum 20” usable depth. Power for rack to be provided from receptacles mounted inside rack backpan by Electrical Contractor. Verify and coordinate outlet location with rack position. Provide vent and blank panels in unused spaces as necessary.

1. Middle Atlantic DWR-24-22 with VFD-24

2. Lowell LWR-2423 with LFD-24FV

b. Storage Drawer (qty 1): Drawer shall be rack mounted and shall be 4RU high.

1. Middle Atlantic UD4

2. Lowell UDE-414

c. Blank Rack Panel (qty as needed): Flanged 16-gauge steel. Use 2RU maximum size.

    1. Middle Atlantic SB series

    2. Lowell SP series

d. Power Distribution Unit (qty 1): Listed series-mode suppressor, 20A rating, remote on-off control via contact closure, to be triggered by system control interface.

    1. SurgeX SX-1120-RT

    2. Lowell ACSPR-RPC1-2009

e. Power Distribution Strip (qty 1): Ten outlet vertical strip, 15A rating, mounts in rear of rack.

    1. Middle Atlantic PDT-1015C-NS

    2. Lowell ACS-1512

f. Microphone Input Plate (qty 4): Custom single gang stainless steel plate with two female XLR connectors for microphone inputs and engraving. Refer to detail on drawings. (Indicated on Drawings as AV-A-W#)

    1. ProCo PlateWorks Custom

    2. equivalent

g. Custom Rack Panel (qty 1): 3U rack panel with custom punched openings to mount audio-video inputs and engraving. Refer to detail on drawings.

    1. ProCo PlateWorks Custom

    2. equivalent

h. Wireless Microphone Receiver (qty 1): Two-channel rack-mount digital receiver.

    1. Shure ULXD4D

    2. AKG DSR800

i. Wireless Microphone Transmitter (qty 1): Handheld transmitter with (super)cardioid dynamic microphone.

1. Shure ULXD2/SM58

2. AKG DHT800 with D5 WL1

j. Wireless Microphone Transmitter (qty 1): Belt-pack transmitter with moisture-resistant cardioid condenser head-worn fitness instructor microphone and instrument cable.

1. Shure ULXD1 with SM31FH-TQG

2. AKG DPT800 with C544 L

k. Wireless Microphone Antennas (qty 2): Passive omni-directional ½-wave antenna. Provide hardware for mounting antenna on top exterior of audio-video equipment rack and appropriate cable to connect antenna to receiver or antenna distribution system.

1. Shure UA8 with UA505

2. AKG RA4000 EW

l. Wireless Microphone Rechargeable Battery System (qty 1): Rechargeable batteries and charger for two wireless transmitters.

1. Shure SBC200 with power supply and (2) SB900

2. AKG DMS800 CU800 with (2) sets of AA-size NiMH rechargeable batteries

m. Audio Mixer/DSP (qty 1): 12-in (mic/line), 8-out minimum 24-bit digital signal processor, 24-bit A/D and D/A with 48kHz sample rate, capable of fully configurable matrix mixing, crossover, HPF, LPF, equalization, delay, polarity, compressor/limiter, and ducking functions, Ethernet or USB interface for configuration, I/O expansion capability, Ethernet and RS-232 ports for external control system interface.

1. BSS Soundweb London BLU-100

2. Biamp Systems TesiraFORTÉ AVB AI

n. Amplifier (qty 1): Two channel, switch-mode power supply, direct outputs, min. 600W/channel into 8-ohm load. Attenuators, if mounted on front panel, must be covered with security panel or disabled.

1. Ashly nX 8002

2. Crown DCi 2|600

o. Loudspeaker (qty 2): High-output two-way coaxial speaker system, 15-inch woofer with large format compression driver, 90 degrees conical nominal HF coverage pattern, white color. Provide appropriate rigging hardware for mounting to roof structure in locations shown on drawings. Bottom of cabinet face shall be parallel to the floor and shall be at the same elevation as the bottom chord of roof trusses. Provide safety cable to secure cabinet to adjacent roof truss, supplementing primary hardware. (Indicated on Drawings as AV-A-S#)

    1. Danley Sound Labs OS90

    2. JBL AWC159

    3. Tannoy VX 15HP

p. Network Streaming Device (qty 1):

    1. Apple TV, furnished by Owner

q. Rack Shelf Kit (qty 1): For mounting Network Streaming Device, 1RU, includes false faceplates.

    1. Extron RSU 129

r. Audio-Video Presentation System (qty 1): HDBaseT Certified audio-video switcher and scaler (minimum 5x1 configuration, 2 HDBaseT inputs, 1 HDBaseT output), analog audio outputs, integrated control system processing and audio DSP, RS-232 serial ports, relay contact closure output ports, Ethernet interface.

    1. Crestron DMPS3-4K-150-C

s. Audio-Video Transmitter/Switcher (qty 2): HDBaseT Certified wall plate transmitter, HDMI and analog DB15HD video / 3.5mm stereo audio inputs, auto-switching feature, power supplied over HDBaseT connection (PoH), mounts in two-gang wall box. Electrical contractor shall furnish two-gang decorator-style stainless steel wall plate to match other device plates on the project.

    1. Crestron DM-TX-200-C-2G

t. Audio-Video Receiver (qty 1): HDBaseT Certified receiver, HDMI output, CEC/LAN/RS-232control outputs, power supplied over HDBaseT connection (PoH).

    1. Crestron DM-RMC-4K-100-C

u. Audio-Video Wall Plate (qty 1): HDMI feed-through, black color. (Indicated on Drawings as AV-A-V1)

    1. Crestron MP-WP152-B

v. Audio-Video Wall Plate (qty 1): RGBHV/DB15HD and 3.5mm TRS stereo audio feed-through, black color. (Indicated on Drawings as AV-A-V2)

    1. Crestron MP-WP130-B

w. Control Port Expansion Module (qty 1): Additional RS-232 serial port(s) and relay contact closure output port(s) for interfacing with external equipment, compatible with control system.

    1. Crestron C2N-IO

x. Control Touchpanel User Interface (qty 1): Wall-mounted 7" color touchpanel system control interface, white color. (Indicated on Drawing as Av-A-C1)

    1. Crestron TSW-752-W-S

y. Network Switch (qty 1): Ethernet switch, four unmanaged Gigabit Ethernet ports with Power-over-Ethernet, one Gigabit Ethernet port for uplink.

    1. Crestron CEN-SW-POE-5

z. Control System Programming: All control system programming shall be provided by the Installing Contractor. Programming of touchpanels shall be submitted to the Owner's Representative and Engineer prior to writing of programming code. Bids shall allow for at least two revisions of touchpanel layouts. Contractor shall be responsible for all programming and implementation of the Control System. Programming shall include all necessary integration for control of the system via iPad app on an owner-furnished iPad.

    1. Custom Programming by Installing Contractor

aa. Recessed Wall Box (qty 1): 4-gang recessed wall box (6" deep) with solid steel flush locking cover, white powder-coat paint finish.

    1. FSR Metal Products WB-4G-6 and WB-4G-C

bb. Video Projector (qty 1): Native WUXGA with 4K Enhancement Technology, 8,500 lumens, DVI-Dx1, HDMI (HDCP 2.3) x1, HDBaseTx1, RGB D-Sub 15spin, Variable audio out: Mini stereo x 1,

USB connector Type-B x 1, USB connector Type-A x 2, Serial, RS-232c x 1, Remote Stereo Mini, Network: RJ-45. Coordinate exact position of mount with intended projection surface and with Electrical Contractor for rough-in placement. Image shall fill entire intended projection surface without overlapping the edge or border.

1. Epson PowerLite EB-PU1008W or similar with projector mount, furnished and installed by Contractor.

2. Include Epson ELPLM08 lens.

cc. Video Projector Extension Column (qty 1): 1.5" NPT Schedule 40 pipe column with cable access slot for concealing cables, white epoxy paint finish, exact length to be coordinated by contractor for mounting projector as high as possible while maintaining proper image on projection surface. Provide with appropriate ceiling adapter plate for mounting to overhead structure in intended location. Verify length on site.

1. Chief

2. Peerless Industries

3. Or equivalent

dd. Video Projector Security Enclosure (qty 1): Enclosure for protection against physical damage, adjustable front bars for ideal projector lens placement, pipe clamp attachment to 1.5" NPT Schedule 40 pipe column, hinged design for hands-free projector access during installation or maintenance, steel construction with ventilation slots, white epoxy paint finish.

1. Chief PG3AW

ee. HDMI Patch Cable (qty and lengths as req'd): Pre-terminated, Certified HDMI High Speed, Listed for installation in accordance with NEC, lengths no longer than 30'

1. Crestron CBL-HD

2. Extron HDMI M-M Pro

3. equal

ff. Microphone, General Purpose Vocal (qty 1): (Super)cardioid dynamic.

1. Shure SM58

2. AKG D5 C

gg. Audio Interface Box (qty 1): Unbalanced stereo -10dBV inputs for portable music/media

player, balanced mono microphone-level output.

1. Radial Engineering StageBug SB-5

2. Whirlwind pcDIhw

hh. Mic/Line Cable, Portable (qty 2): 25-foot length.

1. ProCo MN-25

2. Whirlwind MK425

ii. Mic/Line Cable, Portable (qty 2): 10-foot length.

1. ProCo MN-10

2. Whirlwind MK410

jj. Microphone Stand, Floor (qty 1): Cast iron stacking base, straight, black finish, one-hand clutch adjustment.

1. K&M Stands 26075

D. Cables

1. Installation Mic/Line Cable (qty as needed): 22AWG 2-cond. shielded, miniature.

a. Belden 9451

b. Gepco 61801EZ

c. West Penn 454

2. Installation Speaker Cable, 4/8-ohm (qty as needed): 12AWG 2-cond. unshielded.

a. Belden 5000UE

b. Gepco IR122BA19

c. West Penn 227

3. Installation Control Wire (qty as needed): 22AWG 4-cond. unshielded.

a. Belden 5502UE

b. West Penn 241

4. Installation RS-232 Control Cable (qty as needed): 22AWG 4-cond. shielded.

   a. West Penn D2400 series

   b. Belden equivalent

5. Installation Category 6 Cable: 23 AWG solid copper conductors, 4-pair, Category 6 UTP.

   a. General Cable GenSPEED 6 series only per Owner standard

6. Installation Category 6A Cable: 23 AWG solid copper conductors, 4-pair, Category 6A F/UTP with foil shield and drain wire, certified by and tested in a HDBaseT Alliance Recognized Testing facility to meet the requirements of the HDBaseT Recommended Cables Program.

   a. West Penn Wire 4246AF

7. Installation Antenna Cable (qty as needed): 50-ohm low-loss RG-8X coaxial cable.

   a. Belden 7808R

   b. Belden 9258

   c. West Penn 807

   d. equivalent pre-terminated by wireless microphone system manufacturer, provided it meets the necessary NEC fire-resistance rating—supply data on cable type, NEC rating, and cable attenuation in Submittals

E. Connectors

1. All connectors shall be manufactured by Neutrik unless otherwise noted or expressly approved on the drawings or specifications. Substitutions shall be pre-approved before bid by the Engineer. All panel-mount receptacles shall be compatible with Neutrik D-series punch holes where possible.

2. Unless otherwise detailed herein, the following types of connectors shall be used on all points of connection in the system, including connection boxes, plates, panels, inter-rack and intra-rack cabling, wireway, and snakes, including shop-terminated, field-terminated, and manufacturer-built custom product.

3. Audio (microphone level) = XLR type

    a. Cable mounted: NC3FXX-BAG or NC3MXX-BAG

    b. Panel Mounted: NC3FD-LX-BAG or NC3MD-LX-BAG

4. Audio (line level) = XLR type

    a. Cable mounted: NC3FXX-BAG or NC3MXX-BAG

    b. Panel mounted: NC3FD-LX-BAG or NC3MD-LX-BAG

5. Audio (line level) = ¼" TS type (use only for interconnecting equipment with no other means of connection, unbalanced connections only)

    a. Cable mounted: NP2X-BAG

6. Audio (line level) = ¼" TRS type (use only for interconnecting equipment with no other means of connection, balanced connections only)

    a. Cable mounted: NP3X-BAG

7. Audio (line level) = stereo RCA phono type (use only for interconnecting equipment with no other means of connection or where noted on the drawings or specifications, unbalanced connections only)

    a. Cable mounted: NF2CB/2 or two NYS373 (with red and white rings)

    b. Panel mounted: NF2D-WT-B and NF2D-R-B

8. Audio (speaker) = Neutrik Speakon type—jack shall be insulated from panel

    a. Cable mounted: NL4FX

    b. Panel mounted: NL4MP-UC

    c. Outdoor cable mounted: NL4FX with BSL-WR drip boot

9. Audio (microphone or line level combination) = XLRF-¼" combo

    a. Panel mounted: NCJ6FI-S (NCJ9FI-S also acceptable)

10. Network, Category 5e (RJ45 modular) = Neutrik EtherCon type

    a. Cable mount version, NE8MC-B or NE8MC-B-1

    b. Panel mount version, NE8FDV-Y110-B

c. Panel mount version with feed-through, NE8FDP-B

11. Network, Category 6A (RJ45 modular) = Neutrik EtherCon type

    a. Cable mount version, NE8MX6-B

    b. Panel mount version, NE8FDX-Y6-B

    c. Panel mount version with feed-through, NE8FDX-P6-B

12. Plates and Panels for Controls and Connectors All custom plates and panels in non-gang sizes (e.g. rack panels, plates for shall be constructed of engraved and filled anodized aluminum plates, anodized photosensitized aluminum, or suitably engraved aluminum-backed plastic laminate engraving stock. Minimum plate thickness shall be 0.125 inches.

13. Standard gang-size plates shall be stainless steel with beveled edges or be aluminum as described above.

14. Plates for recessed (flush-mount) backboxes shall have suitable overlap in each dimension (height and length) beyond the measure of the backbox to conceal wall construction gap around backbox.

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 $15,000 for additional technology program items associated with classrooms.

    2. Allowance shall be made in the amount of $6,000 for additional technology program items associated with Gymnasiums.

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. GYMNASIUM AUDIO VISUAL SYSTEM

1. CONDUIT AND CABLE ROUTING

a. Electrical Contractor shall furnish and install all conduit and boxes associated with the audio and/or video systems as shown on the drawings or as required by the Installing Contractor.

b. Electrical Contractor shall provide all junction boxes for the audio and/or video systems with appropriate covers.

c. All conduits not specifically identified shall be 3/4".

d. All conduits below grade shall be PVC or as required by code. All conduits above grade shall be

e. EMT or as required by code. Refer to conduit specification for details.

f. There shall be no more than two (2) 90-degree bends in audio and/or video conduit between pull points. If a conduit run requires more than two bends or if the conduit run is in excess of 150' in total length, insert a pull box. If it is not practical to install a pull box in the run due to field conditions, the conduit size shall be increased to the next trade size for each additional 90-degree bend. Offsets shall be considered as equivalent to a 90-degree bend.

g. All conduits shall be labeled at the source box with the destination box in a clear and logical manner.

h. Ends of all conduits are shall be deburred.

i. All conduits terminating inside of an audio/video enclosure (e.g. rack) or not terminating in an junction/pull box shall be provided with plastic insulated bushings.

j. Electrical Contractor shall provide a poly pull-line in each conduit.

k. Line voltage conduits shall maintain a minimum of 24" separation from audio and/or video signal conduits except to cross at 90-degree angles when necessary.

2. The main audio racks, any auxiliary audio rack, and any other audio panel that has an electrical power supply circuit(s) with isolated ground shall be isolated or insulated from any grounding path that touches the rack, including metallic conduits, hangers, fasteners, and conductive surfaces (including metal, concrete, or masonry).

    a. The final connection to these audio racks or panels shall be with Type PVC or Type LFNC non-metallic conduit. Or, if not specified to be in conduit, signal cables may enter the rack or panel in a bundle through a bushed opening.

    b. Junction boxes and pull boxes in the conduit system do not have to be isolated, only racks or panels with electrical power and electronic audio devices.

    c. The isolated grounding conductor brought with the electrical power feed shall be effectively bonded with the audio rack or audio panel per NEC requirements. This shall be the only point of connection for grounding/bonding the rack and all components therein.

3. All cables shall be laced or tied securely to assure no malfunctions resulting from interference of other trades or routine future maintenance.

L. GYM AUDIO VISUAL SYSTEM CABLING

1. All wires and cables shall be marked at every termination and connection point with permanent clear wrap-around number or letter cable markers. There shall be no unmarked cables in the systems. Any unmarked cables found at Contractor Checkout shall be immediately labeled. Failure to label wires can be cause for rejection of work by the Owner and shall be corrected at no additional cost to the owner. Marking codes used on cables shall correspond to codes shown on drawings or be approved by the Owner.

2. Audio and video cables utilizing molded plastic or solderless insulation displacement connectors shall be unacceptable.

3. All cable installed in ducts, plenums, and other spaces used for environmental air shall be Type CMP (refer to NEC Article 800.53) or be installed in metallic conduit (in compliance with NEC Article 300.22).

4. There shall be no wire splices in conduit.

5. Terminal block, boards, strips, or connectors shall be furnished for all cables, which interface with racks, cabinets, consoles, or equipment modules.

6. All cables shall be grouped according to the signals being carried in order to reduce signal contamination and cross-talk. Separate groups shall be formed for the following cables.

    a. Group one: Power Cables

    b. Group two: Control Cables

    c. Group three: Video Cables

    d. Group four: Microphone level audio cables.

    e. Group five: Line level audio cables.

    f. Group six: Speaker level audio cables.

7. Do not mix audio cables and electrical power cables in the same conduit.

8. Do not tie-wrap or bundle audio cables to an electrical power cable.

9. Power cables, control cables, and high level cables shall be run on the left side of an equipment rack, as viewed from the rear. All other cables shall be run on the right side of the equipment rack, as viewed from the rear.

10. All inter-rack cabling shall be neatly strapped, dressed, and supported as approved by the Owner. Cabling within racks shall be contained in Panduit finger tray or wire-tied to the side of the rack in a neat and orderly fashion. Such cables shall remain separated as indicated herein.

11. All cables routed outside of racks and conduit shall be contained in a suitable harness or wireway to maintain a neat, clean, and finished product.

12. All cables shall be cut to the length dictated by the run. All equipment installed in racks shall have a service loop of appropriate length.

    a. For equipment mounted in drawers or slides, the interconnecting cables shall be provided with a service loop of appropriate length to allow for full travel of drawer or slide and enough slack to service and remove any necessary items.

    b. For equipment mounted in racks accessible from both front and back, provide a service loop length sufficient to plug and unplug cable from the unit to allow for trouble-shooting and service of equipment.

    c. For equipment mounted in racks accessible from the front only, provide a service loop length sufficient to remove the unit from the rack and easily plug and unplug all connectors.

M. LOUDSPEAKER INSTALLATION

1. Mount loudspeakers per manufacturers' specifications using appropriate brackets.

2. Wire rope rigging shall be installed by certified and experienced rigging professionals, and all applicable codes and standards shall be strictly applied. Use galvanized wire rope, terminated with thimbles and plated copper Nicopress or equal compression sleeves. Proper Nicopress or equal compression tools shall be used for all sleeves. Cable clips, or any other method of termination that requires periodic inspection and tightening, or does not have a 100% efficiency rating, shall not be used without approval of the Architect/Engineer.

3. Loudspeakers shall be supported from building structure or structurally-rated extensions thereof. T-bar lay-in ceiling grid systems are not acceptable for sole support of loudspeakers. A secondary support cable shall be required for all ceiling speaker systems designed to mount in or on lay-in ceiling systems. The cable shall be structurally rated and permanently secured between the building structure above the speaker and a rigging point on the speaker enclosure specifically designed for such a purpose.

4. All rigging and support steel required for installation in addition to any building structure shown on the drawings shall be provided by the Installing Contractor. Installing Contractor is responsible to verify weight and load conditions for all rigging to ensure structural integrity of the building. Any additional structural enhancements shall be performed at the expense of the Installing Contractor without claim for additional payment. If significant structural adjustments are necessary, a Structural Engineer licensed to work in the State of Michigan shall be retained by the Installing Contractor to certify the proposed hanging methods.

5. All loudspeakers shall be installed per plans and arranged as shown on the drawings. All conflicts shall be reported and satisfactorily worked out with other trades.

6. If significant changes are required, verify with the Engineer prior to making changes. Failure to verify with the Engineer shall result in the Installing Contractor assuming full liability for speaker placement. If a changed speaker placement is deemed unacceptable by the Owner, the Installing Contractor shall rectify the problems to the Owner's satisfaction without claim for additional payment.

7. Any changes or revisions must be accompanied with EASE data showing the effect of the resulting configuration as compared to the original design. If a changed speaker placement is deemed unacceptable by the Owner, the

Installing Contractor shall rectify the problems to the owner's satisfaction without claim for additional payment.

N. GROUNDING PROCEDURES

1. Electrical Contractor and Installing Contractor shall coordinate all materials and work related to the grounding of the audio system. Carry out drawing details and notes in these specifications and on the drawings.

2. In order to minimize problems resulting from improper grounding, and to achieve maximum signal-to-noise ratios, the following grounding procedures shall be adhered to:

    a. Under no circumstances shall the racks contact the raceway system, the steel structure of the building or ventilation ducts.

    b. All ground cables shall be insulated, especially if the cable is enclosed in a conduit or has any possibility of contact with metallic boxes or a conduit system.

    c. The system ground copper conductor must not touch any metallic object or device between the main building electrical ground point, and the audio racks. Similarly, with any extension of this ground, to the stage manager panel or other audio panel, caution must be observed to preserve the audio system ground potential by insulating the ground wire at all times.

    d. Under no conditions shall the AC neutral conductor, at any location, be used for a system ground.

3. Audio Cable Shields

    a. All audio cable shields shall be connected to signal ground terminal on respective equipment at one point only; there shall be no exceptions.

    b. For both inter-rack and intra-rack wiring, each cable shield be connected at the input of devices/equipment only. Shields shall not be connected (floated) at the outputs of devices/equipment.

    c. For ungrounded portable equipment, such as microphones, the shield shall be connected at both ends but connected to signal ground at one end only (input of device/equipment).

    d. Do not connect cable shields to metallic balanced connector shells or housings.

e. Equipment chassis grounds shall not be connected with signal grounds unless specifically required to eliminate system noise caused by an individual piece of equipment.

4. There shall be no deviations from the above unless specifically required by the manufacturer of the equipment or when necessary to minimize crosstalk and to maximize signal-to-noise ratios in the audio, video, and control systems.

5. If a different installation practice is desired by the Installing Contractor in regards to the signal grounding, the Installing Contractor may submit alternate grounding methods to the Engineer for approval. Installing contractor shall bear all responsibility for any deviations from the above stated grounding procedure, even if allowed by the Owner or Engineer

O. CONTROL SYSTEM INSTALLATION

1. The Installing Contractor shall provide all touchpanel, button panel, and control system programming.

2. The Installing Contractor shall have all programming performed by a staff Level 2 programmer or contract the services of an approved Independent Programmer.

3. All touchpanel layouts shall be provided to the Engineer and Owner's representative as an executable file for review of function and design before the Control System programming is implemented.

4. The Engineer and Owner's representative shall review the touchpanels for confirmation of function and acceptable overall design. Either party may request changes in overall layouts, colors, text fonts, or other aspects of the design. Such changes shall be incorporated into the touchpanel layouts by the Installing Contractor without claim for additional payment.

5. If the Touchpanel layouts are deemed unacceptable by the Engineer or Owner's Representative, the Installing Contractor shall take whatever means necessary to provide acceptable programming without claim for additional payment.

6. All uncompiled programming code and touchscreen designs shall be written to USB flash media in native digital file format, turned over to the Owner, and become the intellectual property of the Owner at the completion of the project.

P. 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.

Q. All cable and device labels shall match existing standard.

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.

17. A copy of all DSP settings shall be written to USB flash media in native digital file format and placed in the rack that houses the respective DSP after the completion and acceptance of all work and testing. All DSP configuration/programming shall become intellectual property of the Owner at the completion of the project.

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. Post bid Interviews: September 11 & 12, 2023

2. Contractor Chosen: October 12, 2023

3. Work Commences: October 2023

4. Substantial Completion of Project: March 29, 2024

5. Project Close-out: April 19, 2024

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 Hudsonville Public 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 on drawings.

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.

E. Demolition of existing equipment is shown on the drawings with a dashed outline. Contractor is responsible for removal and safe disposal of all associated equipment related to the old public address speaker.

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. Advanced Network Devices

b. Or Equivalent

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 Advanced Network Device

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: (Indicated on Drawings as S1)

   1. IPSCM-RMe

   2. Or Approved Equivalent

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 IPSWS-SM or equal shall be used

   2. Where ceilings are hard-lid Valcom IPSCM-RMe or equal shall be used complete with backbox and all supporting components as recommended by manufacturer. (Indicated on Drawings as S5 and S6)

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 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.

2.07 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. 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.

F. 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.

G. 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. Post bid Interviews: September 11 & 12, 2023

2. Contractor Chosen: October 12, 2023

3. Work Commences: October 2023

4. Substantial Completion of Project: March 29, 2024

5. Project Close-out: April 19, 2024

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 Hudsonville Public 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.

E. Clocks will act as the paging/intercom unit in locations where a clock is indicated, and a public address speaker is not indicated. Contractor to integrate clock into public address system and configure for public address and two-way communication.

F. Demolition of existing equipment is shown on the drawings with a dashed outline. Contractor is responsible for removal and safe disposal of all associated equipment related to the old clock system. Provide and install 12x12 steel cover plate painted white for demolition clock unless otherwise noted on drawings. Clock and Public address combination units that are to be demo will require a 14"x28" steel cover plate painted white.

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. Advanced Network Devices

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. (C1 on drawings)

B. Clocks shall meet or exceed the following:

1. Advanced Network Devices or equal.

    a. IPSWDHD-MW

2. Or Approved Equivalent

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. (C2 on drawings)

B. Clocks shall meet or exceed the following:

1. Advanced Network Devices

    a. IPCSHD-DS-MB

2. Or Approved Equivalent

2.09 LARGE IP SIGNBOARD

A. Large IP signboard assembled digital clock shall be provided and installed on wall surfaces in gymnasium and as indicated in associated drawings. (C3 on drawings)

B. Clocks shall meet or exceed the following:

1. Advanced Network Devices

    a. IPSIGNL-RWB

        1. Include Cage

    b. Or approved Equivalent

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. 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.

F. 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. Post bid Interviews: September 11 & 12, 2023

2. Contractor Chosen: October 12, 2023

3. Work Commences: October 2023

4. Substantial Completion of Project: March 29, 2024

5. Project Close-out: April 19, 2024

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 SYSTEM

PART 1 - GENERAL

3.07 DESCRIPTION OF PROJECT

A. Work described in this specification section pertains to access control additions to the current available system at Park Elementary School and Bauer Elementary School. Both Elementary schools are currently in a remodeling phase with construction additions of new gymnasiums and renovations to other areas of the buildings. It also includes pulling only cabling to the existing doors as indicated on the drawings.

B. Then Owner is currently converting all existing doors with some new doors to a single access control system as part of a previous project. Owner intends to change all facilities to the new open industry standard platform. The selected Contractor is expected to work cooperatively with Owner and Designer to implement strategies for successful operation of a “split” system during a period of transition.

C. Access control additions in this RFP only pertain to doors specified on drawings and in the door hardware schedule.

D. Contractor shall advise, coordinate, and work cooperatively with Owner representatives and/or owner’s designee related to any installation or special security provisions.

E. Contractor shall coordinate, and work cooperatively with the existing access control integrator for programming of all new doors that pertain to this project.

F. 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.

G. Contractor shall coordinate their installation with other contractors, Designer and the Owner as is appropriate.

H. Door hardware specification 087100 and schedules have been provided for both Park Elementary and Bauer Elementary.

3.08 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.

1. **<u>REQUIRED ALTERNATE – 5 YEAR WARRANTY</u>**

    a. Bidder shall provide alternate, as provided for in bid form, for a five (5) year warranty in lieu of base bid warranty term as provided for herein.

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. To facilitate continued satisfactory operation during warranty period, Contractor shall provide the following warranty services at least once each year during the warranty term:

    1. Review of all central server and/or processor logs and files to address errors and/or system anomalies to ensure continued compliance with manufacturer recommended best practices.

    2. Application of latest versions of all applicable manufacturer firmware, software upgrades/updates and any manufacture recommended patches and/or system fixes across the entire system, including, but not limited to all hardware components as well as server(s), to maintain the system in the most current configuration recommended by manufacturers.

    3. Ensure all Owner documentation and record documents are updated with current and accurate information including, but not limited to

equipment/material locations, specific system component hardware models, serial numbers, Software and firmware versions, installation locations, settings, compliance level with district standards of installation, configuration, workmanship, and Server configuration parameters.

4. Functional testing of each system component across the entire enterprise system to ensure all components are functional at manufacturer documented levels.

F. Bidder shall provide current annual maintenance contract pricing for recommended maintenance programs for all equipment following the specified and included period as a Voluntary Alternate. This information will be considered by Owner and Designer as part of the bid evaluation process.

G. 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.

3.09 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.

3.10 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. 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.

3.11 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. MIOSHA Safety Standards

3.12 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. Contractor shall comply with Owner's policies related to background checks for any personnel who work on the project.

D. 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.

E. 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 4 - PRODUCTS

4.01 MANUFACTURERS

A. Acceptable Manufacturers (In alphabetical order):

1. HID

a. Credentials

2. ASSA ABLOY

a. Door Interface Hardware

3. Avigilon

a. Central Management Software

4. Bosch

a. REX, Door Position Switch, Door Cord

5. General Electric

a. REX, Door Position Switch, Door Cord

6. HES

a. Integrated Door Hardware

7. HID / Mercury

a. Control Panel, Credential Reader, Credentials

8. Honeywell

a. Motion Sensor/Motion Request to Exit Device

1. IS310WH

9. Lenel / S2

a. S2 Central Management Software

10. Securitron

a. Door Position Switch

1. DPS-M BK SU

11. Trine

a. Door Interface Hardware

12. Or equal

4.02 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.

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

4.04 System shall be comprised of interoperable components including, but not limited to, controller, credential sensors and management software integrated into a common working system.

4.05 System administrator shall be capable of complete system back-up and full system restoration from a previously saved configuration.

4.06 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.

4.07 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.

4.08 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.

4.09 CENTRAL MANAGEMENT SOFTWARE

A. Central management software shall meet or exceed the following:

1. Accessed natively from a standard Apple Macintosh Personal Computer provided by Owner. Addition of other OS based access to platform will not be favorably considered. Owner preference will be to provide a virtual server on existing Hyper Converged based system.

2. Capable of being fully administered from any web browser attached to the network to view alarm notifications.

3. Administration access shall be protected by unique and secure log on (User ID and Password).

4. Update industry standard controller(s) in real-time for changes including, but not limited to adding and deleting access levels, adding, and deleting card holders and deactivating card holders.

5. Provide badge creation enabling Owner to create customized photo identification credentials. System shall be compatible with both real-time video camera to capture images, or with images taken with a standard digital camera and saved in a standard picture format.

6. Provide communication to credential readers, each with individual associated door interface hardware. See associated schedules herein.

7. System reporting shall include, but not be limited to:

    a. Access through entrance doors.

    b. Attempted access per entrance.

    c. Propped and unsecured door alerting.

8. Systems providing Microsoft Active Directory integration will be favorably considered.

9. System shall provide for Owner definition of access groups, schedules and door groups that can be combined by Owner's system administrator into combinations of access policies for users.

10. All licensing shall be provided for in base bids for complete and functional system as specified herein.

11. Systems providing integration with Video Monitoring System and/or Intrusion Detection System as specified herein shall be favorably considered.

    a. Owner's existing VMS is Exacqvision

    b. The Owner does not currently deploy a standard Intrusion Detection System across all facilities.

4.10 CONTROLLERS

A. In general, Contractor shall provide and install the appropriate number of controllers and I/O monitoring/control expansion interfaces as needed to handle the number of card readers, locking devices, door status devices, and alarm inputs provided for herein and in the included appendices or a fully integrated, functional, and operational system.

    1. Mercury based hardware to support multiple software vendor's systems. Proprietary hardware will not be favorably considered.

    2. Mercury based hardware flashed with manufacturer's supported firmware may be considered.

B. Where new doors are added to the system, Contractor shall provide PoE+ based IP Door Controller(s) as needed (Additional Doors) which shall provide, but not be limited to:

1. Support a wide range of reader technologies, including OSDP, Wiegand, NFC, Bluetooth, and biometric.

2. 802.3at compliant 10/100/1000 PoE+ Ethernet port.

3. Two (2) inputs for credential readers.

4. Two (2) outputs for door interface hardware.

5. Door controllers shall be installed above/behind the finished surfaces on the secure side of the opening and be enclosed in an appropriate tamper proof enclosure.

6. Product shall be Mercury LP series

1.01 CREDENTIAL READERS

A. New Credential Readers (For Additional Doors) shall be provided that meet or exceed the following requirements:

1. Compatible with industry standard 125 kHz proximity and 13.56 MHz contactless technologies.

2. Read Schlage (Allegion Brand) Part #7410 Proximity HID Credentials.

3. DC powered from associated Controller.

4. Response time for passage requests of 800ms.

5. Sealed weatherproof shell enclosure rated for outdoor operation.

6. Surface mounted on exterior or interior surface of structure as indicated herein.

7. LED or other type of visual indicator indicating request status.

8. Audible status indicator upon user prompt.

9. Range of four inches (4”).

10. Native OSDP secure channel compatibility.

11. IP65 Rating

B. Product shall be HID Signo Reader Model 20, or equal.

C. See associated schedule(s) herein for location and quantity.

3.02 DOOR INTERFACE HARDWARE (ELECTRIC STRIKE)

A. Door Interface Hardware shall meet or exceed the following:

1. End-of-line resistors terminated at the controller to protect against surges generated by activation of electric door strikes.

2. Preference will be given to configurations that integrate Door interface hardware Devices (electric strike) with PoE+ based door controllers and eliminate the necessity for additional power sources.

3. Door Interface Hardware shall be Low Current Draw devices from Trine 4000 Series, Trine EN Series, or Equal.

4. Appropriate Door Interface Hardware model and type shall match and be compatible with existing door hardware types and conditions.

B. In locations where Door Interface Hardware is to be installed on a removable mullion, contractor shall provide adequate slack cable and a secure and durable, “quick disconnect point” on power cable for easy and damage free removal and replacement of mullion.

C. Contractor shall provide and install an armored door cord for each door with a continuous hinge that requires power transfer from frame to door.

1. Armored door cord shall be Alarm Controls DL series, or equal.

D. See associated schedule(s) herein for location and quantity.

3.03 REQUEST TO EXIT (REX) DEVICES

A. Each door controlled by the system shall be equipped with PIR REX device.

B. Devices not included integral to door hardware shall be mounted on the overhead door casing.

C. Devices shall provide three (3) beam configurations and include appropriate contact closure for system signaling.

D. Devices shall operate on low DC power (PoE+ friendly). Preference will be given to configurations that integrate REX Devices with PoE+ based door controllers and eliminate the necessity for additional power sources.

3.04 DOOR POSITION SWITCH (DPS)

A. Where new door controllers are to be provided, each door shall be equipped with magnetic DPS and shall be integrated into the door controller installation by Contractor.

B. DPS devices shall be mounted internally to the frame and door wherever possible and shall not be surface mounted except for in rare cases without alternative “hidden” mounting options being available and must be approved by the Designer and Owner on a case by case basis.

3.05 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.

3.06 ALLOWANCES

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

1. Allowance shall be made in the amount of $10,000.00 for contract services related to supply, installation and connection of related Owner provided hardware.

PART 4 - EXECUTION

4.01 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 insure all submittals and shop drawings have been provided to, and approval has been obtained from Designer prior to commencement of any final installation activities.

4.02 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.

    9. Additional Door Upgrade Locations:

        a. New door panel shall be mounted in accessible ceiling above the secure side of the door location.

b. Connect door controller to Owner's PoE+ data network using Contractor supplied patch cords at both ends of tested and certified cable drop supplied by others, and verify connection to Central Management Software.

c. Test to ensure that all components are functioning and configured properly.

1. Doors shall be configured to remain locked until a valid credential is presented.

2. Electric strikes shall be unlocked when energized.

3. Door position switches shall report door status to central management software.

4. REX shall be installed to provide optimal coverage for capturing valid exits and reduce or eliminate false readings.

d. Where possible, all cabling shall be installed inside walls, doors, door frames, and mullions. Provide appropriate metallic channels for cables in locations where it is not possible to install otherwise. There shall be no exposed cabling.

e. All devices shall be securely attached to building structure using manufacturer's installation recommendations and industry best practices.

10. New Construction Locations:

a. Coordinate with Owner's Construction Manager, construction trades and hardware suppliers to ensure functionality of doors provided for herein and as described in respective construction specification documents.

b. Provide licensing and central management system configuration(s) for all devices provided for herein and as described in respective construction specification documents.

E. Worksites include the following:

1. Bauer Elementary
8136 48th Avenue
Hudsonville, Michigan 49426

2. Park Elementary
5525 Park Avenue
Hudsonville, Michigan 49426

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.

4.03 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.

4.04 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.

4.05 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 operators(s). Owner shall designate up to six (6) system operators 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. Basic credential and user adds, changes, and management.

2. Creation of, review of, communication of and response to system alerts.

3. Review of system alerts, logs and monitoring of configuration parameters including, but not limited to, configuration changes and device status.

C. Contractor shall provide training for the Owner designated system administrator(s). Owner shall designate up to four (4) administrators to be trained. Training shall be a minimum of one (1), four (4) hour session(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.

4.06 SCHEDULE, MEETINGS AND PLANS

A. Schedule

1. Post bid Interviews: September 11 & 12, 2023

2. Contractor Chosen: October 12, 2023

3. Work Commences: October 2023

4. Substantial Completion of Project: March 29, 2024

5. Project Close-out: April 19, 2024

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 addition for Hudsonville Public Schools. This included new video monitoring cameras and equipment for approximately half of its bus fleet

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 at building locations.

C. The system components shall be installed in vehicles such that they connect to the owner's Ethernet WiFi infrastructure upon return to the transportation center and as specified herein. System shall be of a "network" architecture using standard cameras and centrally located onboard storage server(s) that communicate with, and transmit stored content to, Owner's existing central server and storage farm across the Owner's network.

D. The centralized server recording equipment shall be installed in the Owner's existing district data center and as required.

E. Contractor shall advise, coordinate and work cooperatively with Owner representatives or owner's designee related to any configuration changes required and/or proposed for Owner's existing Ethernet infrastructure (VLAN configuration, QoS mapping, routing, Firewall security provisions etc.).

F. The Contractor shall design, engineer, configure, supply, connect, test, document, train Owner representatives and warrant a fully operational and compliant network video monitoring system, complete and with full functionality as specified herein.

G. Contractor shall coordinate their installation with other contractors, Designer and the Owner as is appropriate.

1.02 WARRANTY

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

B. Manufacturer's warranty shall be provided for all components of the system.

    1. System integrator or local vendor warranty, without underlying manufacturer's warranty/extended warranty will not be considered an acceptable base bid.

    2. Any documents and/or submittals required by individual manufacturers for compliance with the standard and/or applicable extended warranty programs shall be provided and submitted for approval by the Contractor.

    3. Contractor shall submit all documents, apply for warranty or extended warranty certification, and provide a Certificate of Warranty or Extended Warranty as may be applicable from the manufacturer prior to project closeout.

C. On site services provided under the warranty shall be performed by personnel or representatives of Contractor as herein defined and located within physical proximity to provide response levels deemed acceptable to Owner and without additional charge for any offending components.

D. Contractor shall provide the following response times for all malfunctioning equipment:

    1. Twenty-four (24) hours or less for matters that render twenty percent (20%) or more of the system unable to maintain normal functionality.

    2. Two (2) business days for matters not meeting the above criteria.

    3. Response time shall be measured from the time Contractor is notified by Owner to the time work is begun to resolve the matter.

E. System Warranty shall commence on date of acceptance by Owner. Delivery to work site of materials, physical removal from packaging, issuance of Contractor documents including, but not limited to invoices and/or packing slips, or any event or documentation, not specifically provided for herein, shall have no effect on Warranty or System Acceptance by Owner and/or Designer.

F. Bidder shall provide current annual maintenance contract pricing for recommended maintenance programs for all equipment following the specified and included period as an alternate. This information will be considered by Owner and Designer as part of the bid evaluation process.

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. Exacqvision

2. Or Equivalent

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. Central control software has been provided by others and is installed on standard servers provided by Owner. Servers are, and expected to remain located in the district head end. Contractor shall ensure that cameras and supporting units provided integrate into a common system using the existing Owner provided control software as indicated herein, and that Owner

objectives for focal points and video motion are recorded as required by Owner.

2.06 CAMERAS

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

    a. Mounting conditions are indicated on the drawings.

2. Interior Single Lens 2MP Network Camera (SC1)

    a. Axis P3265-LV

    b. Or Equivalent

3. Interior single lens 5MP Network Camera (SC2)

    a. Axis P3267-LV

    b. Or Equivalent

4. Interior dual lens (2) 2MP Network Camera (SC3)

    a. Axis P4705-PLVE

    b. Or Equivalent

5. Interior/Exterior Mutli-Lens 8MP Network Camera (SC4)

    a. Axis P3807-PVE

    b. Or Equivalent

6. Interior/Exterior multi-lens 12MP Network Camera (SC5)

    a. AXIS M3058-PLVE Network Camera

    b. Or Equivalent

7. Exterior multi-lens 15MP Network Camera (SC6)

    a. Axis P3719-PLE

    b. Or Equivalent

B. Cameras shall properly and acceptably be powered by, communicate over and attach to, standard communications cables provided and installed by Contractor.

C. 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.

D. 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

E. IEEE 802.3 (Ethernet) UTP eight (8) pin modular connector.

F. 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.

G. 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.

H. Include SD Card for all cameras.

2.07 VOLUNTARY ALTERNATE – HANWA OR AVIGILON CAMERAS

A. Bidders are encouraged to provide voluntary alternate pricing for Hanwa Techwin and/or Avigilon cameras as alternates to Axis for building cameras only. 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.

2.08 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 $15,000 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. 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 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

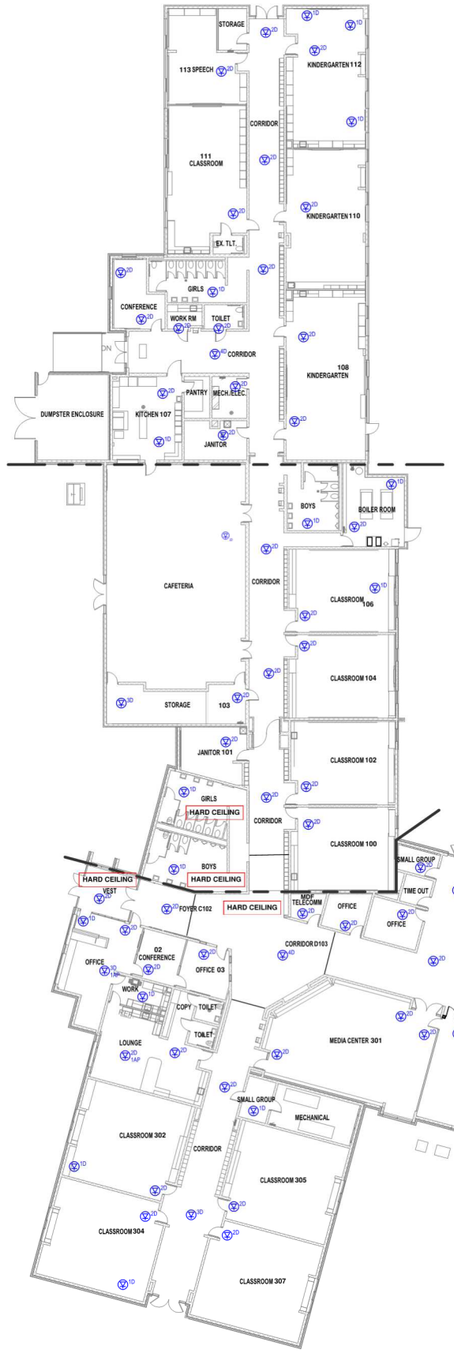
1. Post bid Interviews: September 11 & 12, 2023
2. Contractor Chosen: October 12, 2023
3. Work Commences: October 2023
4. Substantial Completion of Project: March 29, 2024
5. Project Close-out: April 19, 2024

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.

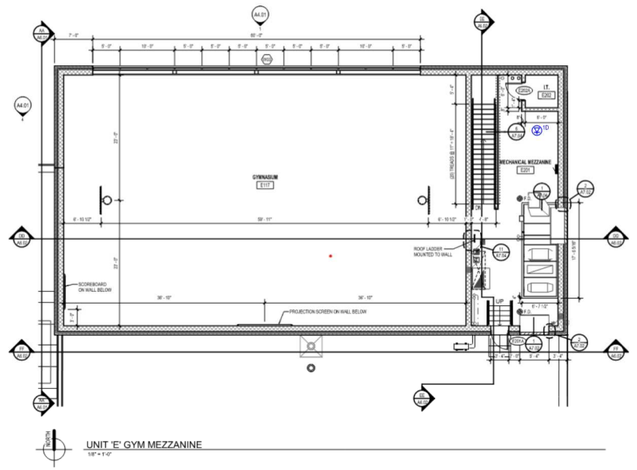
END OF SECTION



NORTH

OVERALL FLOOR PLAN

1/16" = 1'-0"



UNIT 'E' GYM MEZZANINE

1/8" = 1'-0"

SECTION 27 10 00 - Low Voltage Cabling

SYMBOL LEGEND

#D	DATA DROP - CEILING - NEW
#D	DATA DROP - CEILING - BY OTHER
#D	DATA DROP - WALL - NEW
#D	DATA DROP - WALL - NEW BY OTHER

ADDENDUM 1
DATE: 8/28/2023

NORTH

KEYPLAN

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5769

OVERALL FLOOR PLAN

A0.01

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SECTION 27 10 00 - Low Voltage Cabling

SYMBOL LEGEND

#D	DATA DROP - CEILING - NEW
#D	DATA DROP - CEILING - BY OTHER
#D	DATA DROP - WALL - NEW
#D	DATA DROP - WALL - NEW BY OTHER

ADDENDUM 1
DATE: 8/28/2023

NORTH

OVERALL FIRST FLOOR PLAN
1/16" = 1'-0"

NORTH

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

OVERALL FIRST FLOOR PLAN

A0.01

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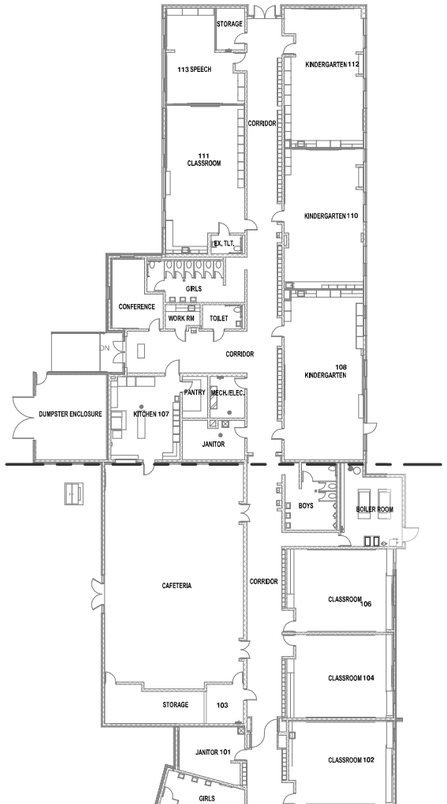
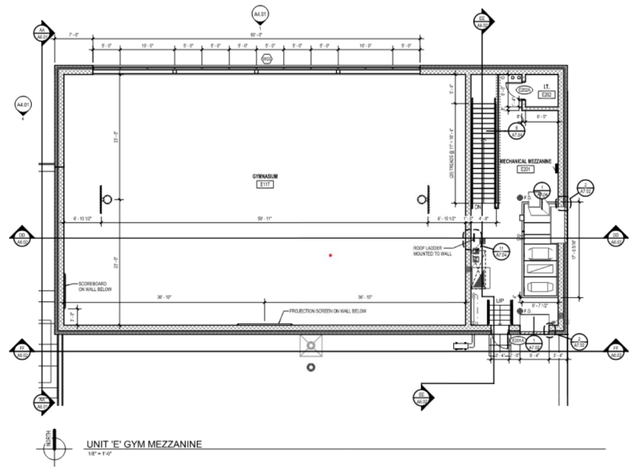


NORTH

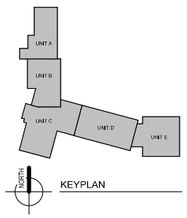
OVERALL FLOOR PLAN

1/16" = 1'-0"



UNIT 'E' GYM MEZZANINE

3/8" = 1'-0"



NORTH

KEYPLAN

SECTION 27 41 16 - Multimedia System

SYMBOL LEGEND

	NEW PROJECTOR
SK	CLASSROOM SPEAKER
WS	TEACHER WORK STATION
SC	PROJECTION SCREEN

ADDENDUM 1
DATE: 8/28/2023

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5769

OVERALL FLOOR PLAN

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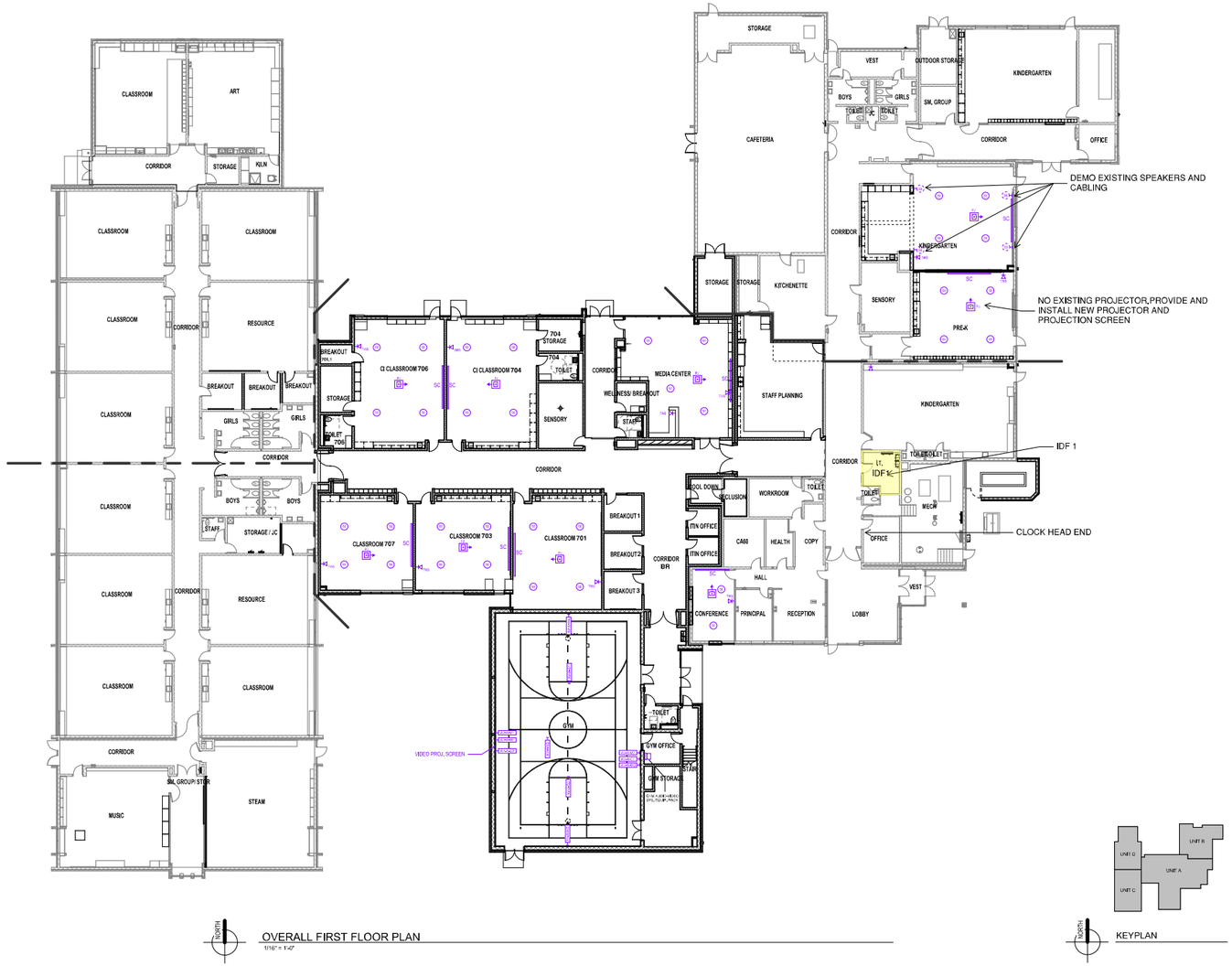
SECTION 27 41 16 - Multimedia System

SYMBOL LEGEND

NP	NEW PROJECTOR
SK	CLASSROOM SPEAKER
TWS	TEACHER WORK STATION
SC	PROJECTION SCREEN

ADDENDUM 1
DATE: 8/28/2023



NORTH

OVERALL FIRST FLOOR PLAN
1/16" = 1'-0"

NORTH

KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

OVERALL FIRST FLOOR PLAN

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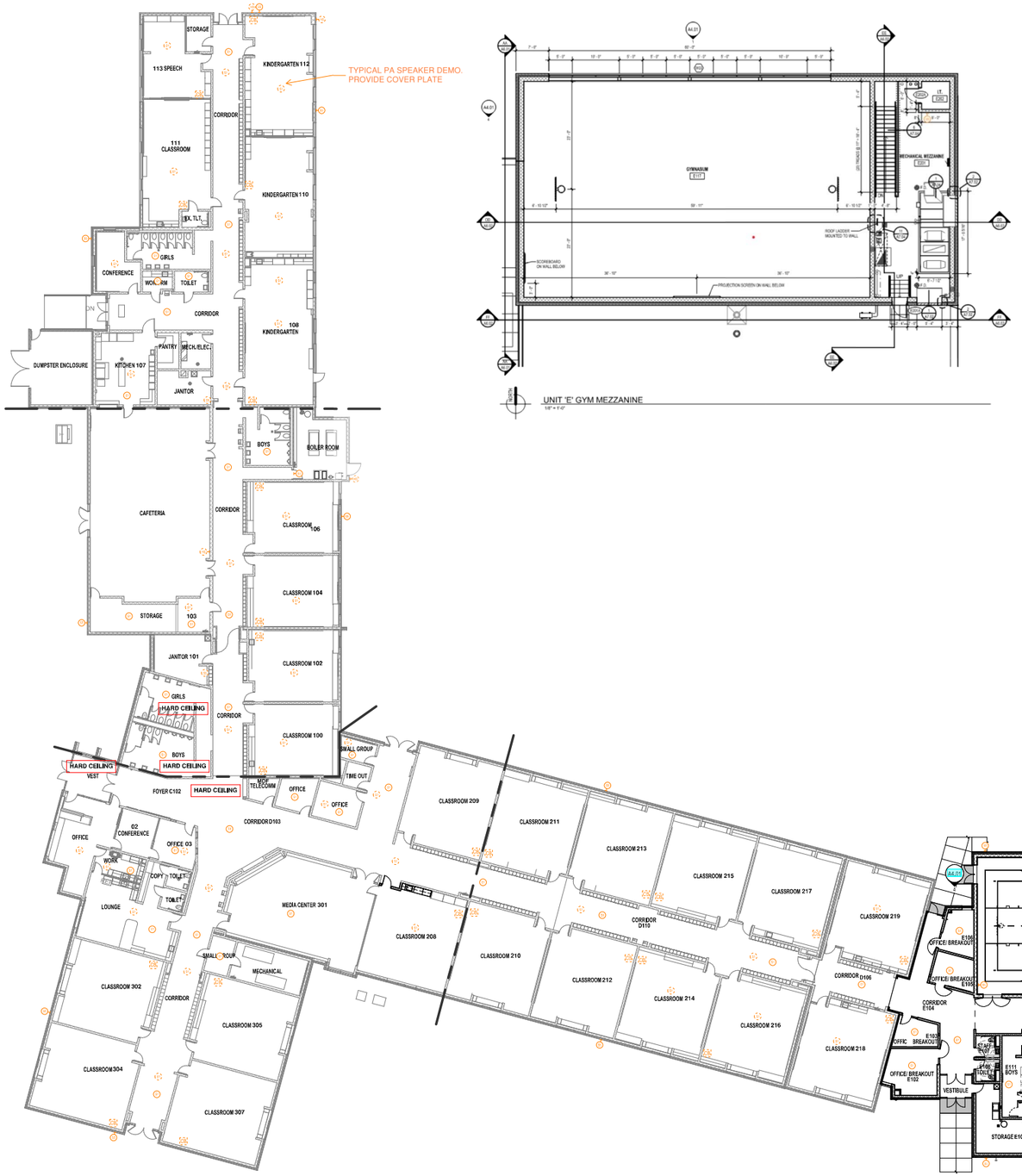
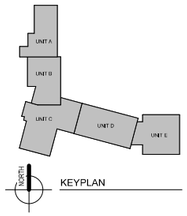


OVERALL FLOOR PLAN
1/16" = 1'-0"

UNIT 'E' GYM MEZZANINE
1/8" = 1'-0"



KEYPLAN

SECTION 27 51 16 - PUBLIC ADDRESS SYSTEM

SYMBOL LEGEND

S1	NEW CEILING MOUNT PA SPEAKER
S2	NEW WALL MOUNT PA SPEAKER
S1	DEMOLITION OF EXISTING PA SPEAKER
PBC	DEMOLITION OF PA CALL BUTTON
HN	DEMOLITION OF EXISTING PA HORN

ADDENDUM 1
DATE: 8/28/2023

GMB
616.796.0200
WWW.GMB.COM

BAUER ELEMENTARY ADDITIONS AND RENOVATIONS
HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

ISSUANCES
10.04.2022 BIDS AND CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5769

OVERALL FLOOR PLAN

A0.01

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769A 2019.rvt
10/4/2022 6:16:14 PM

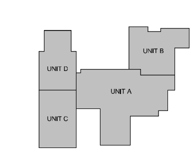
SECTION 27 51 16 - PUBLIC ADDRESS SYSTEM

SYMBOL LEGEND

Symbol	Description
	NEW CEILING MOUNT PA SPEAKER
	NEW WALL MOUNT PA SPEAKER
	DEMOLITION OF EXISTING PA SPEAKER
	DEMOLITION OF PA CALL BUTTON
	DEMOLITION OF EXISTING PA HORN

ADDENDUM 1
DATE: 8/28/2023

OVERALL FIRST FLOOR PLAN
1/16" = 1'-0"



KEYPLAN

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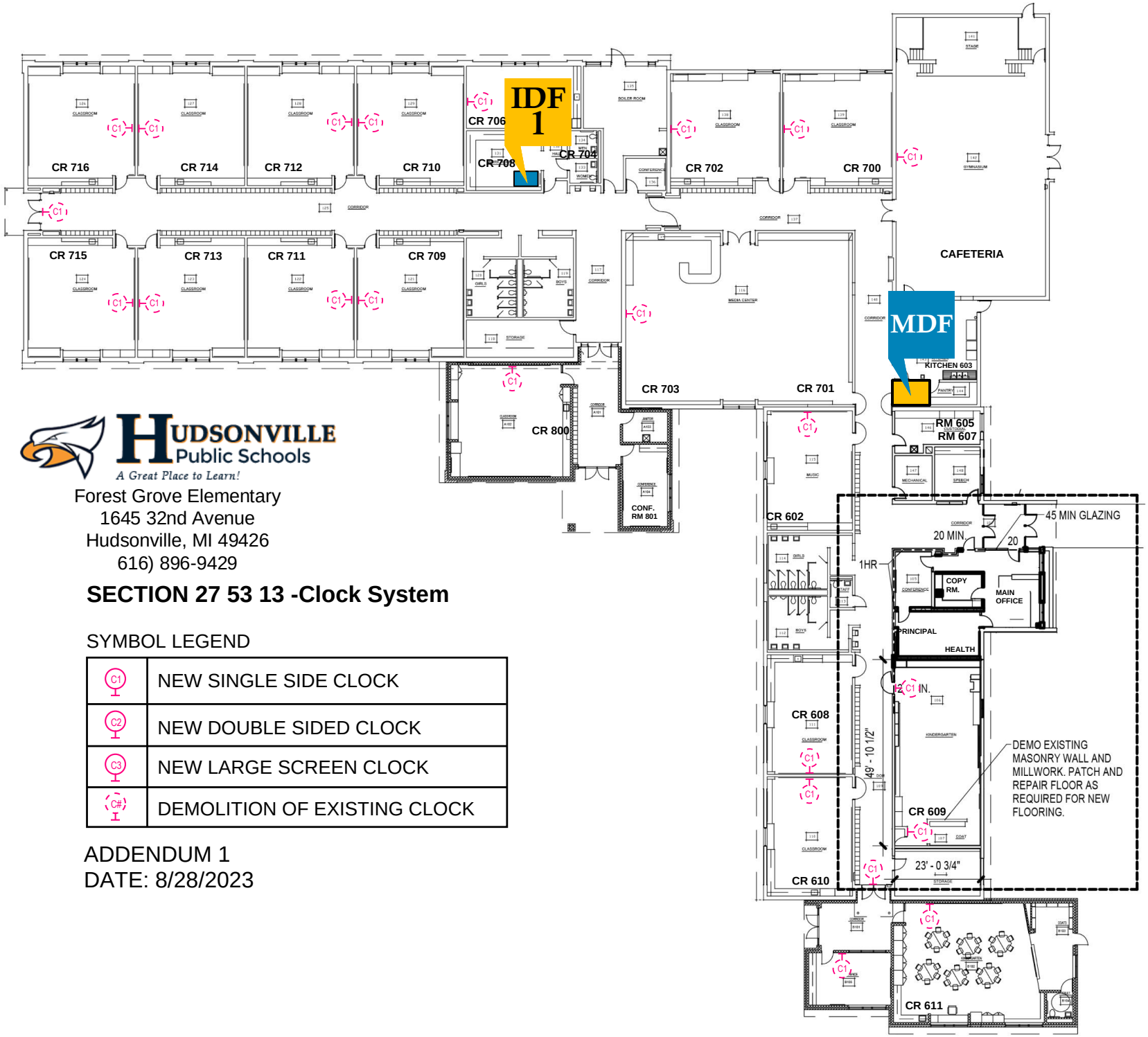
PARK ELEMENTARY ADDITIONS AND RENOVATIONS
HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

ISSUANCES
03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE
REVIEWED TGD
PROJECT NO. 5-5798

OVERALL FIRST FLOOR PLAN

A0.01



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Hudsonville, MI 49426
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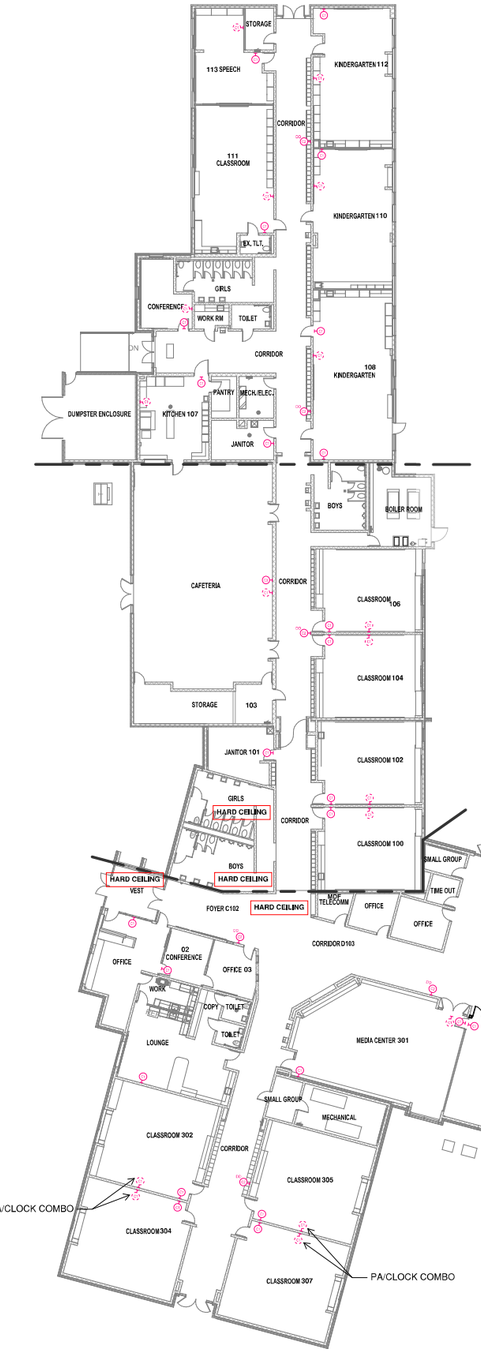
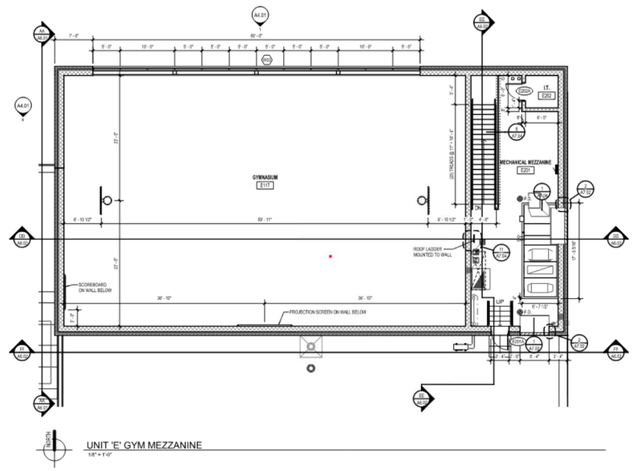
SECTION 27 53 13 -Clock System

SYMBOL LEGEND

C1	NEW SINGLE SIDE CLOCK
C2	NEW DOUBLE SIDED CLOCK
C3	NEW LARGE SCREEN CLOCK
C#	DEMOLITION OF EXISTING CLOCK

ADDENDUM 1
DATE: 8/28/2023





NORTH

OVERALL FLOOR PLAN

1/16" = 1'-0"

SECTION 27 53 13 -Clock System

SYMBOL LEGEND

C1	NEW SINGLE SIDE CLOCK
C2	NEW DOUBLE SIDED CLOCK
C3	NEW LARGE SCREEN CLOCK
CR	DEMOLITION OF EXISTING CLOCK

ADDENDUM 1
DATE: 8/28/2023

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HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

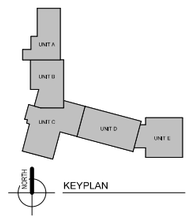
10.04.2022 BIDS AND CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5769

OVERALL FLOOR PLAN

A0.01



KEYPLAN

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769A 2019.rvt
10/4/2022 6:16:14 PM

SECTION 27 53 13 -Clock System

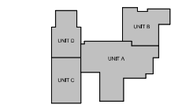
SYMBOL LEGEND

C1	NEW SINGLE SIDE CLOCK
C2	NEW DOUBLE SIDED CLOCK
C3	NEW LARGE SCREEN CLOCK
CD	DEMOLITION OF EXISTING CLOCK

ADDENDUM 1
DATE: 8/28/2023

NORTH

OVERALL FIRST FLOOR PLAN
1/16" = 1'-0"



NORTH

KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

OVERALL FIRST FLOOR PLAN

A0.01

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2016.rvt
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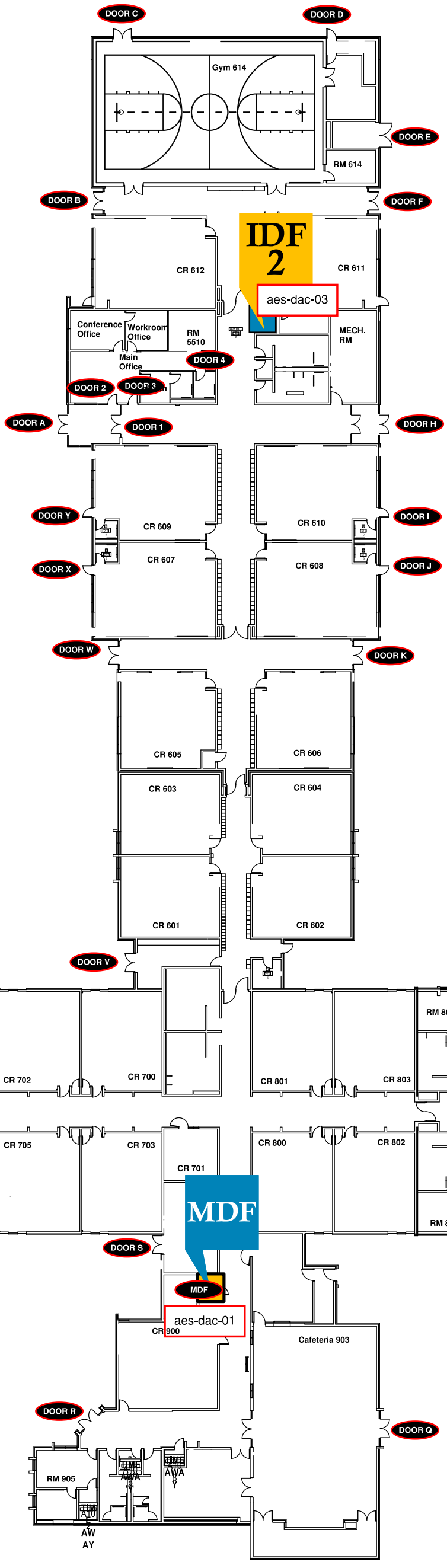

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3811 Port Sheldon St
Hudsonville, MI 49426
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SECTION 28 13 00 - Building Access System

SYMBOL LEGEND

CR	NEW CARD READER
DC	NEW DOOR CONTACT
RX	NEW MOTION REQUEST TO EXIT DEVICE
EL	ELECTRIC or POE LATCH RETRACTION
E###A	NEW DOOR - SEE DOOR HARDWARE SCHEDULE
DOOR #	EXISTING DOOR - PULL CABLE ONLY

ADDENDUM 1
DATE: 8/28/2023

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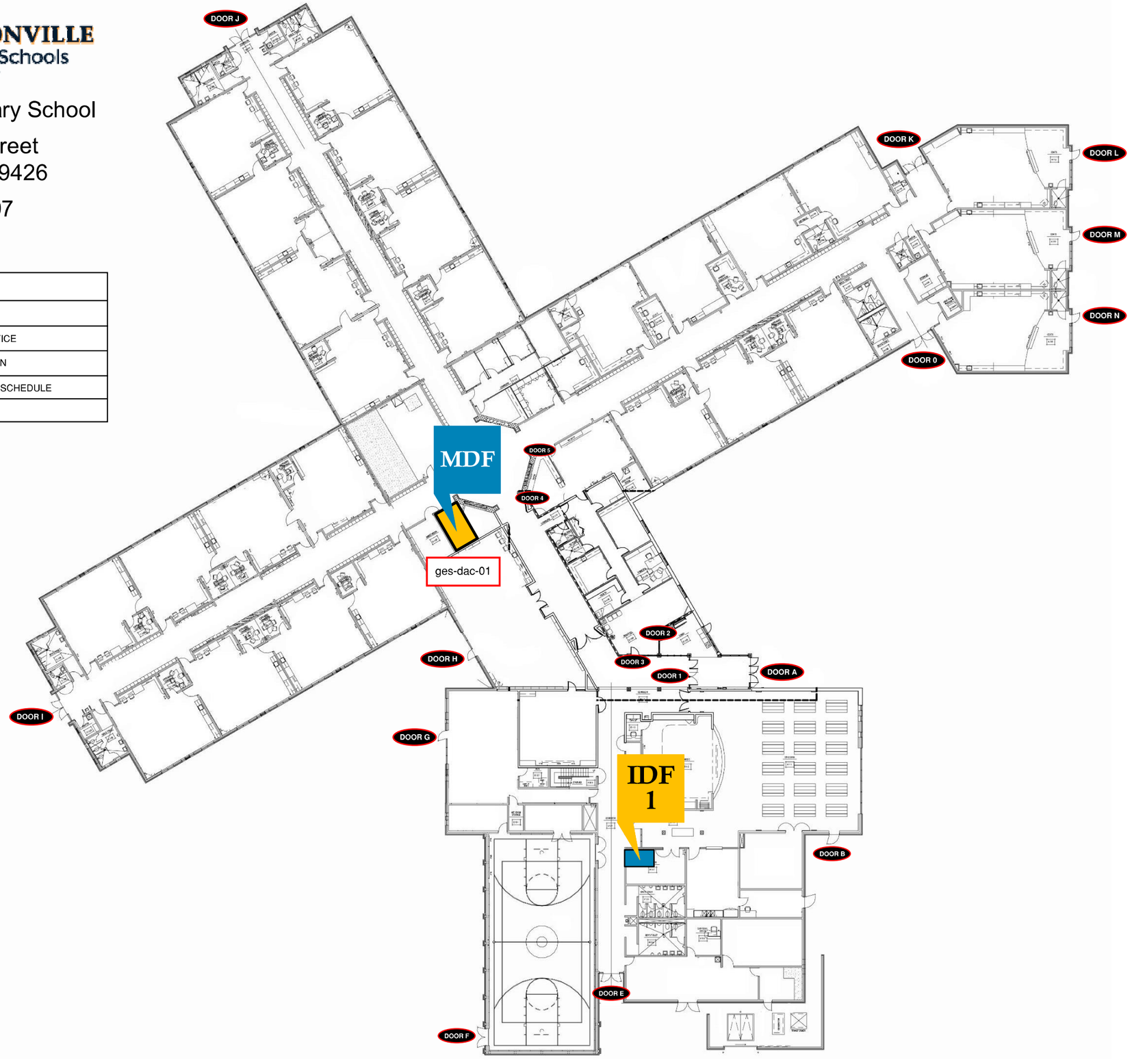
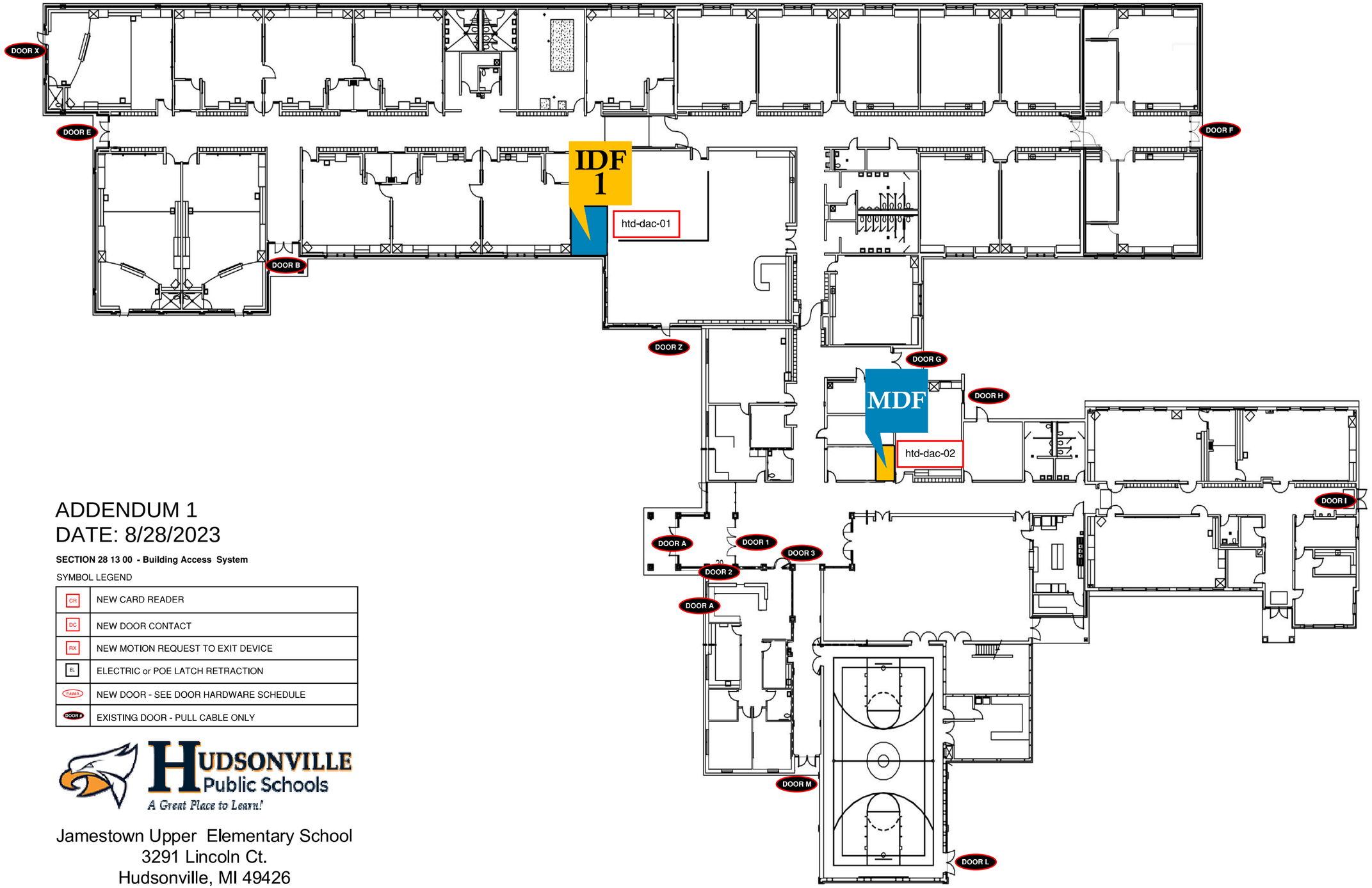
SECTION 28 13 00 - Building Access System

SYMBOL LEGEND

CR	NEW CARD READER
DC	NEW DOOR CONTACT
RX	NEW MOTION REQUEST TO EXIT DEVICE
EL	ELECTRIC or POE LATCH RETRACTION
DOOR#	NEW DOOR - SEE DOOR HARDWARE SCHEDULE
DOOR #	EXISTING DOOR - PULL CABLE ONLY

ADDENDUM 1
DATE: 8/28/2023





ADDENDUM 1
DATE: 8/28/2023

SECTION 28 13 00 - Building Access System

SYMBOL LEGEND

CR	NEW CARD READER
DC	NEW DOOR CONTACT
RX	NEW MOTION REQUEST TO EXIT DEVICE
EL	ELECTRIC or POE LATCH RETRACTION
CAMERA	NEW DOOR - SEE DOOR HARDWARE SCHEDULE
DOOR X	EXISTING DOOR - PULL CABLE ONLY

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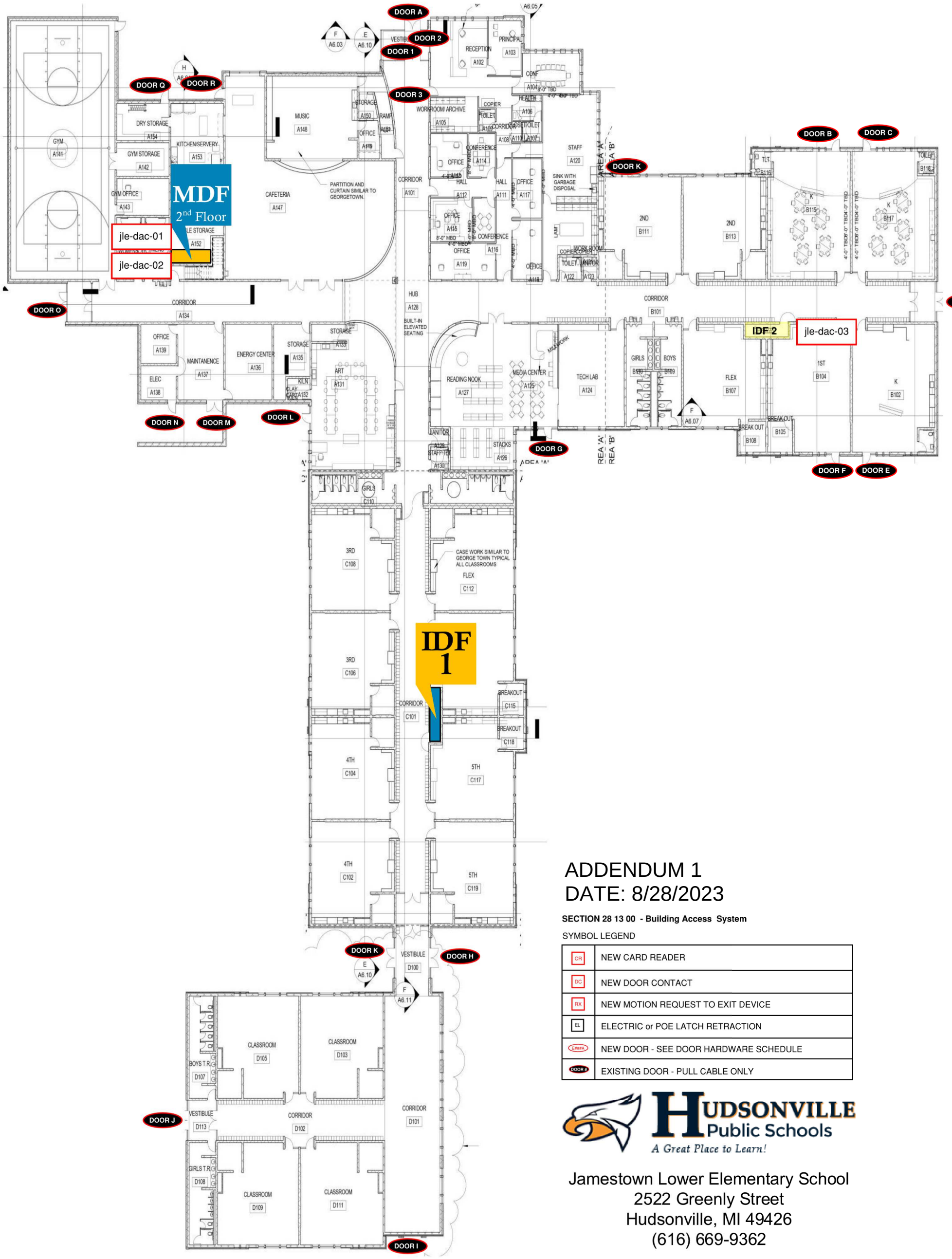

ADDENDUM 1
DATE: 8/28/2023

SECTION 28 13 00 - Building Access System

SYMBOL LEGEND

CR	NEW CARD READER
DC	NEW DOOR CONTACT
RX	NEW MOTION REQUEST TO EXIT DEVICE
EL	ELECTRIC or POE LATCH RETRACTION
E###A	NEW DOOR - SEE DOOR HARDWARE SCHEDULE
DOOR #	EXISTING DOOR - PULL CABLE ONLY

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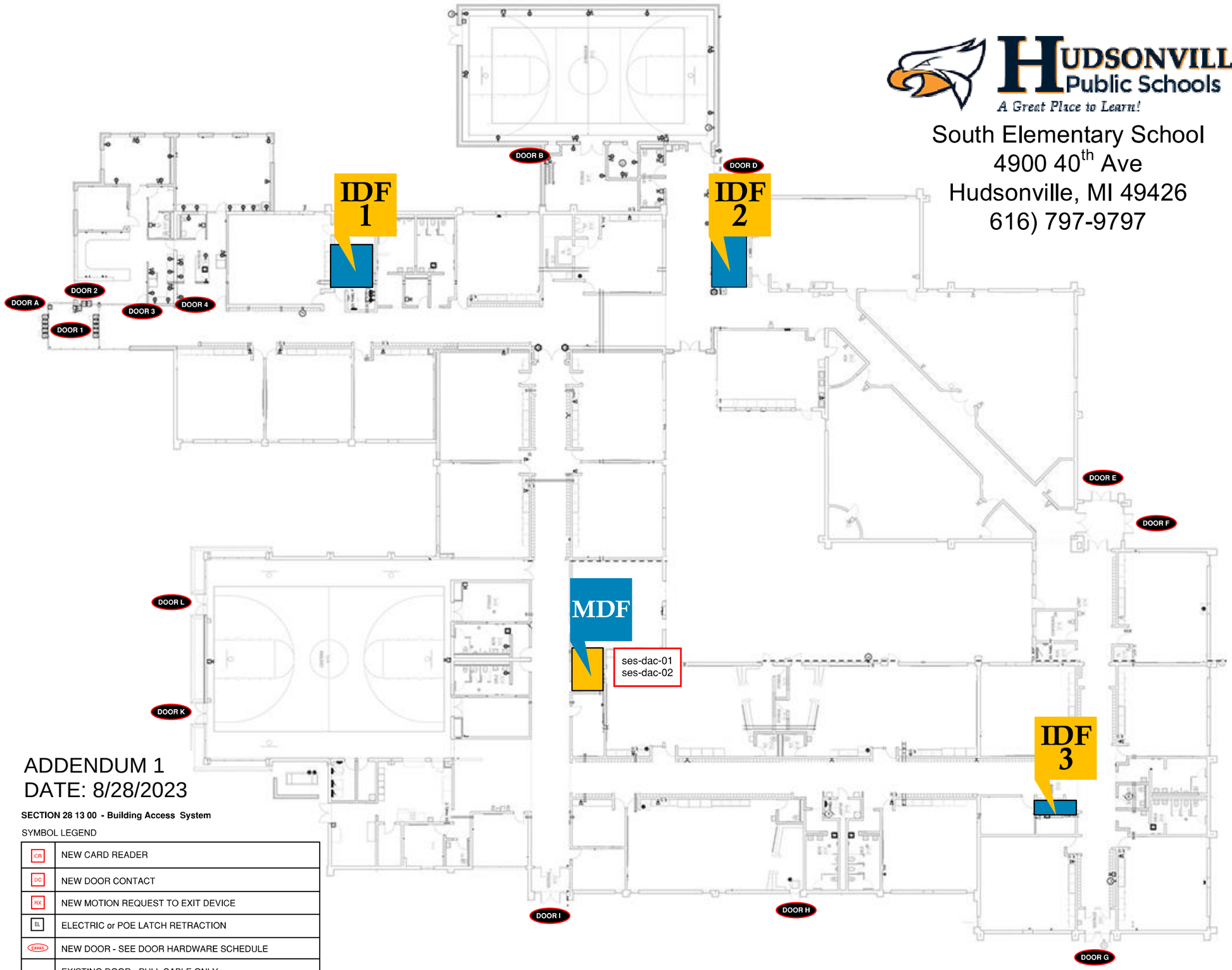

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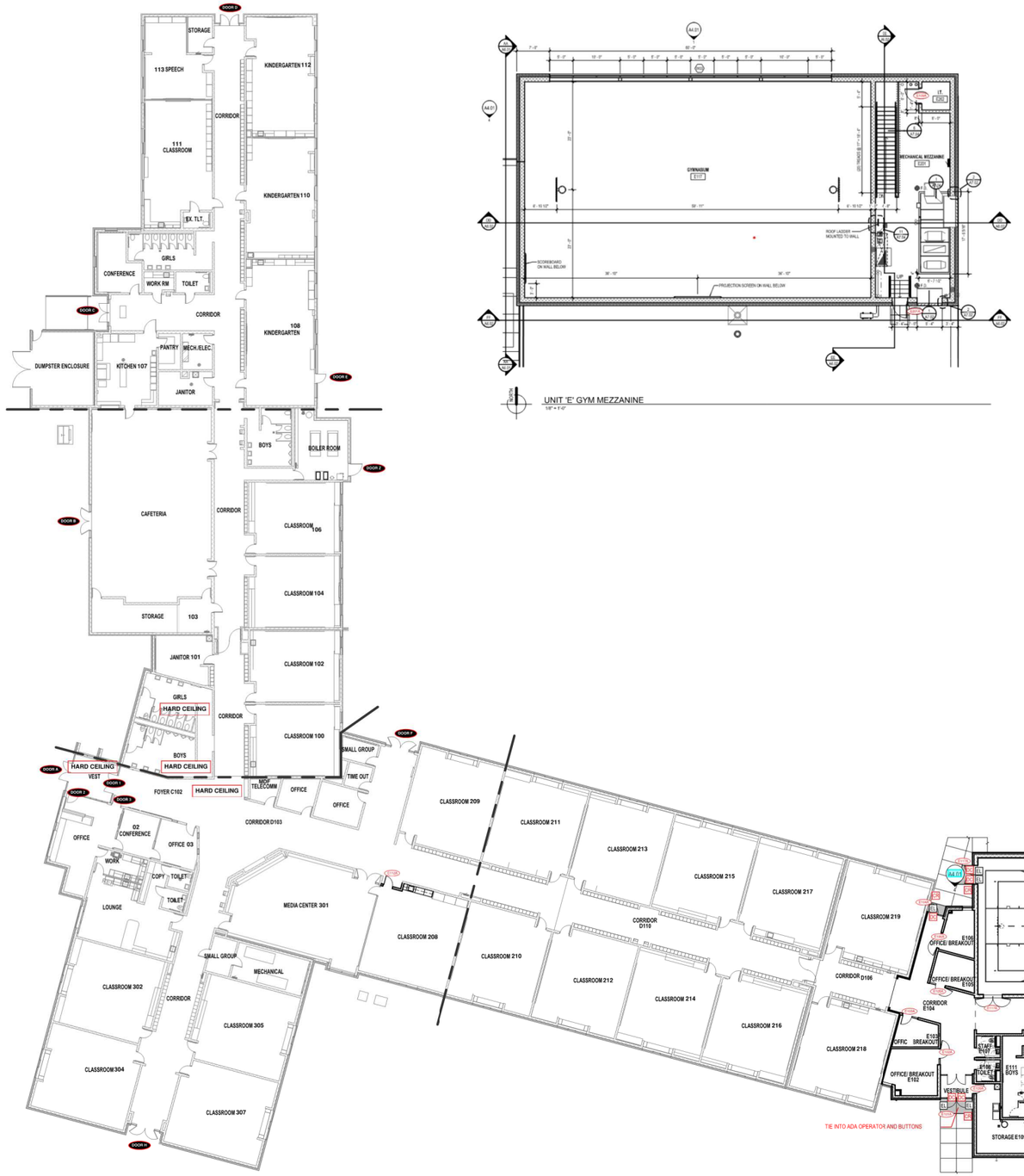
ADDENDUM 1
DATE: 8/28/2023

SECTION 28 13 00 - Building Access System

SYMBOL LEGEND

CR	NEW CARD READER
DC	NEW DOOR CONTACT
RX	NEW MOTION REQUEST TO EXIT DEVICE
EL	ELECTRIC or POE LATCH RETRACTION
EH#A	NEW DOOR - SEE DOOR HARDWARE SCHEDULE
	EXISTING DOOR - PULL CABLE ONLY



NORTH

OVERALL FLOOR PLAN

1/16" = 1'-0"

UNIT 'E' GYM MEZZANINE

1/8" = 1'-0"

SECTION 28 13 00 - Building Access System

SYMBOL LEGEND

CR	NEW CARD READER
DC	NEW DOOR CONTACT
RE	NEW MOTION REQUEST TO EXIT DEVICE
EL	ELECTRIC or POE LATCH RETRACTION
DOOR #	NEW DOOR - SEE DOOR HARDWARE SCHEDULE
DOOR #	EXISTING DOOR - PULL CABLE ONLY

ADDENDUM 1

DATE: 8/28/2023

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HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

DRAWN MEE

REVIEWED TGD

PROJECT NO. 5-5769

OVERALL FLOOR PLAN

A0.01

KEYPLAN

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition\5-5769A 2019.rvt
10/4/2022 6:16:14 PM

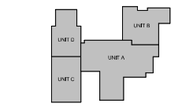
SECTION 28 13 00 - Building Access System

SYMBOL LEGEND

CR	NEW CARD READER
DC	NEW DOOR CONTACT
RE	NEW MOTION REQUEST TO EXIT DEVICE
EL	ELECTRIC or POE LATCH RETRACTION
DOOR X	NEW DOOR - SEE DOOR HARDWARE SCHEDULE
DOOR X	EXISTING DOOR - PULL CABLE ONLY

ADDENDUM 1
DATE: 8/28/2023

OVERALL FIRST FLOOR PLAN
1/16" = 1'-0"



KEYPLAN

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HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

ISSUANCES
03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

OVERALL FIRST FLOOR PLAN

A0.01

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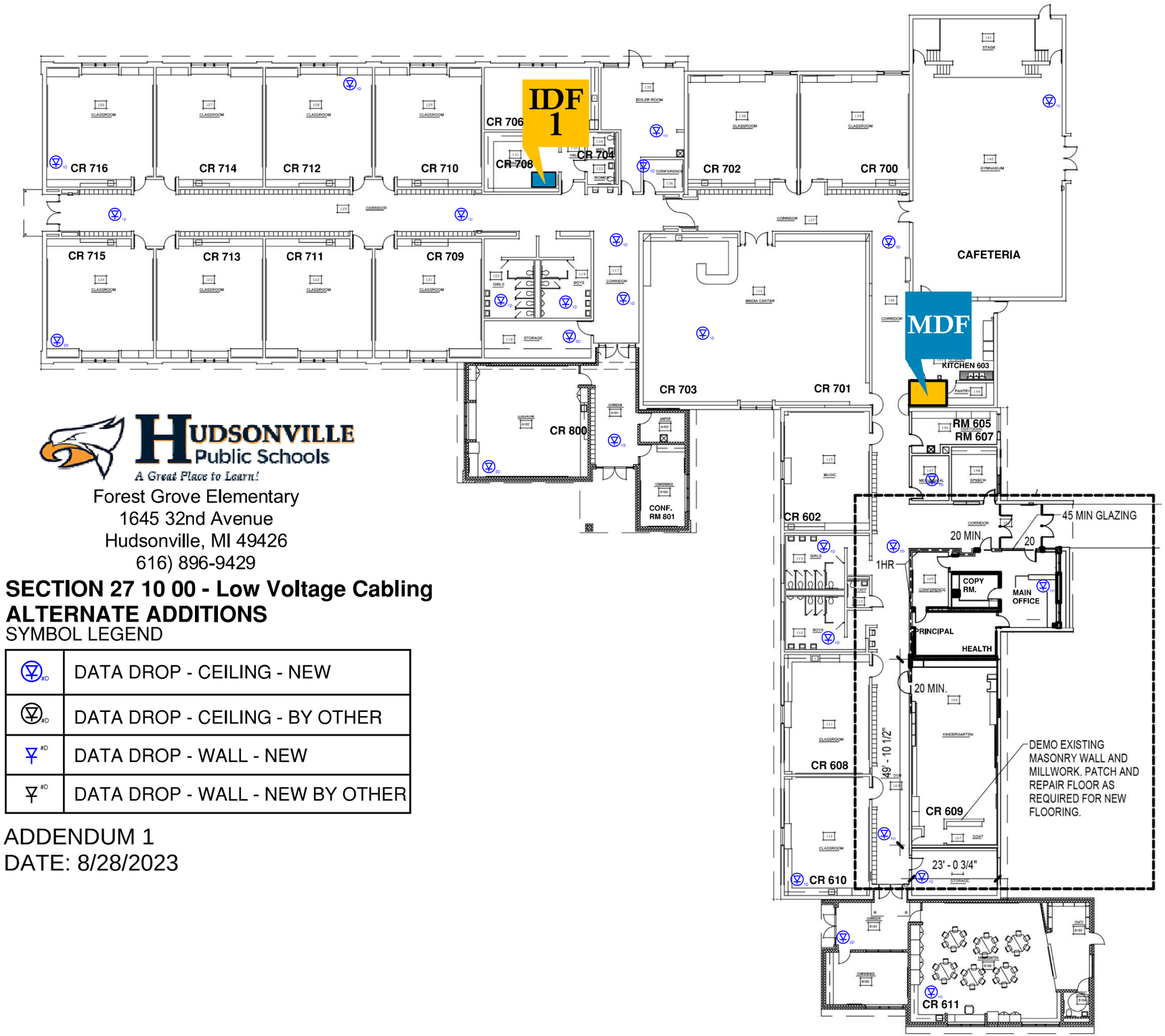

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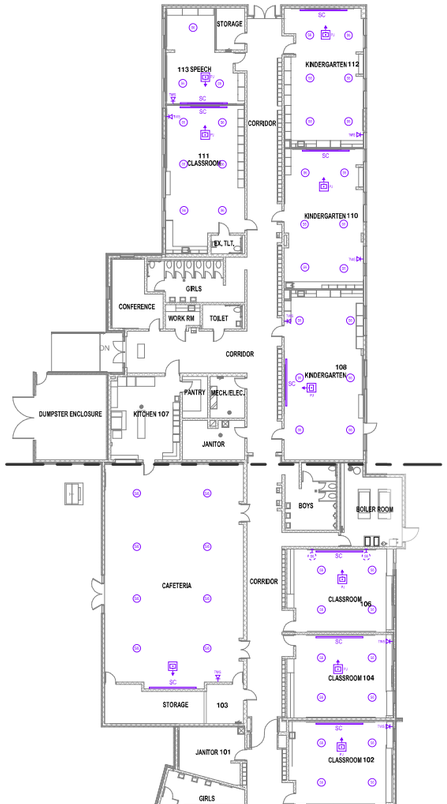
SECTION 27 10 00 - Low Voltage Cabling
ALTERNATE ADDITIONS

SYMBOL LEGEND

#D	DATA DROP - CEILING - NEW
#D	DATA DROP - CEILING - BY OTHER
#D	DATA DROP - WALL - NEW
#D	DATA DROP - WALL - NEW BY OTHER

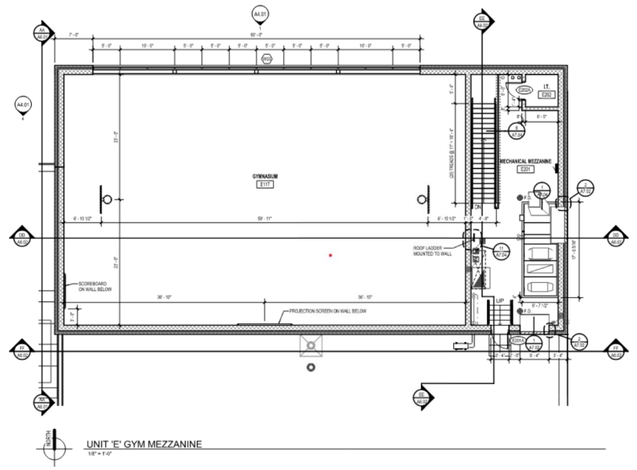
ADDENDUM 1
DATE: 8/28/2023



NORTH

OVERALL FLOOR PLAN

1/16" = 1'-0"



UNIT 'E' GYM MEZZANINE

1/8" = 1'-0"

SECTION 27 41 16 - Multimedia System ALTERNATE ADDITIONS

SYMBOL LEGEND

NEW PROJECTOR	
M	CLASSROOM SPEAKER
TWD	TEACHER WORK STATION
SC	PROJECTION SCREEN

ADDENDUM 1
DATE: 8/28/2023

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HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

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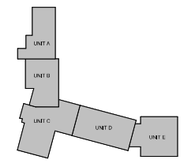
PROJECT NO. 5-5769

OVERALL FLOOR PLAN

A0.01



KEYPLAN

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769A 2019.rvt
10/4/2022 6:16:14 PM

SECTION 27 41 16 - Multimedia System
ALTERNATE ADDITIONS

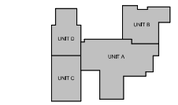
SYMBOL LEGEND

NP	NEW PROJECTOR
CS	CLASSROOM SPEAKER
TWS	TEACHER WORK STATION
SC	PROJECTION SCREEN

ADDENDUM 1
DATE: 8/28/2023

NORTH

OVERALL FIRST FLOOR PLAN
1/16" = 1'-0"



NORTH

KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS
HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

OVERALL FIRST FLOOR PLAN

A0.01

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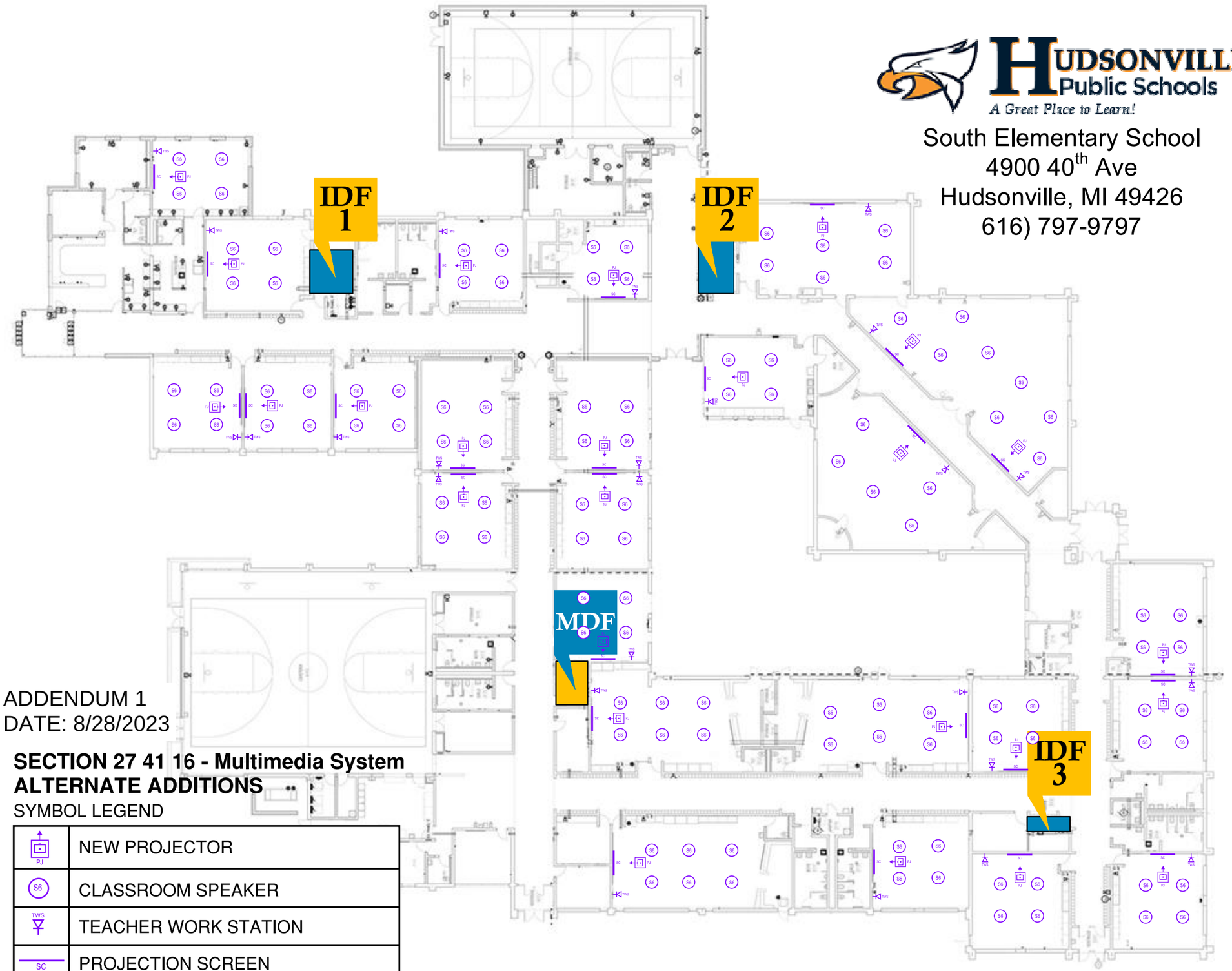
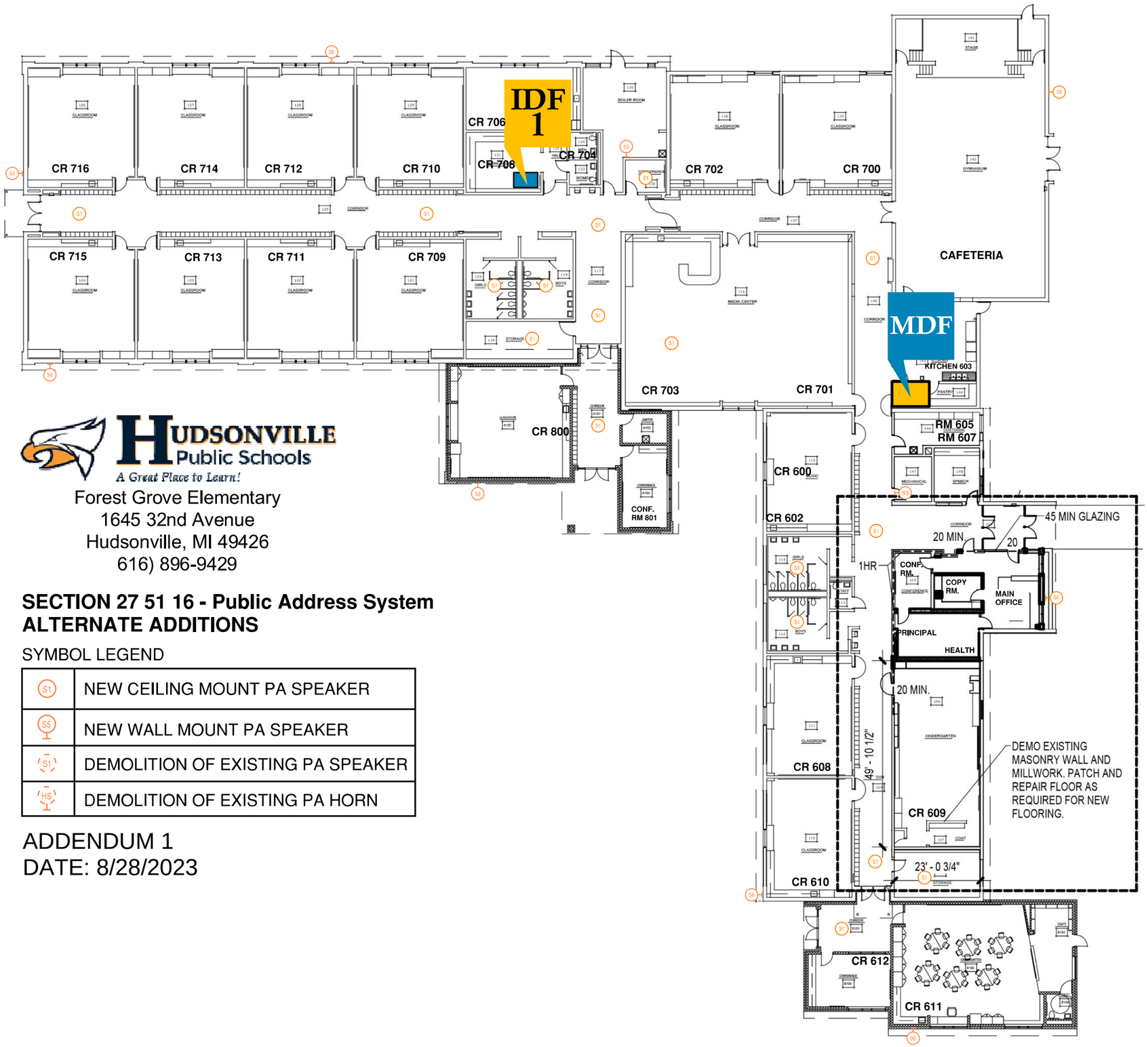


ADDENDUM 1
DATE: 8/28/2023

SECTION 27 41 16 - Multimedia System
ALTERNATE ADDITIONS

SYMBOL LEGEND

PJ	NEW PROJECTOR
S6	CLASSROOM SPEAKER
TWS	TEACHER WORK STATION
SC	PROJECTION SCREEN



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SECTION 27 51 16 - Public Address System ALTERNATE ADDITIONS

SYMBOL LEGEND

S1	NEW CEILING MOUNT PA SPEAKER
S5	NEW WALL MOUNT PA SPEAKER
S1	DEMOLITION OF EXISTING PA SPEAKER
HS	DEMOLITION OF EXISTING PA HORN

ADDENDUM 1
DATE: 8/28/2023

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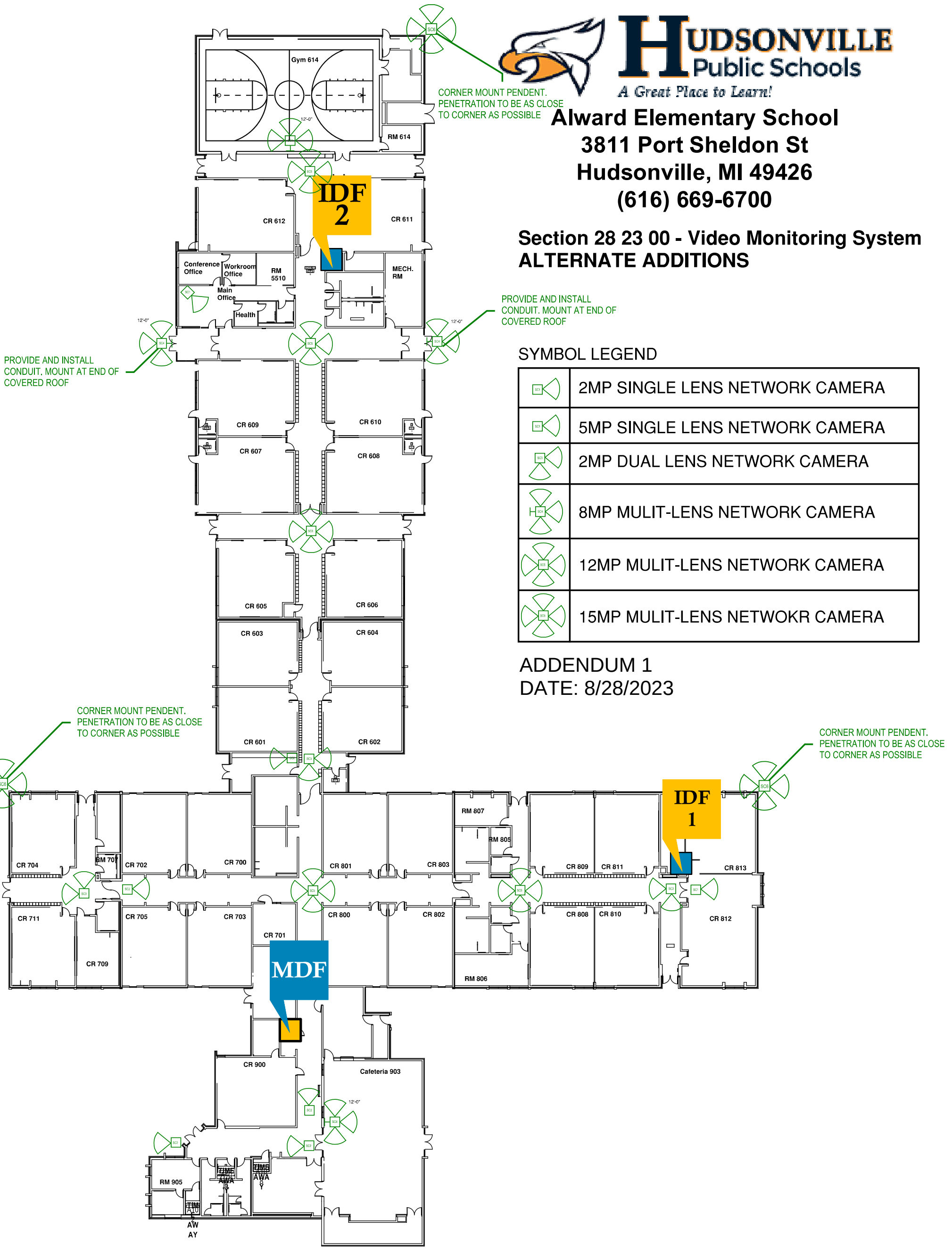
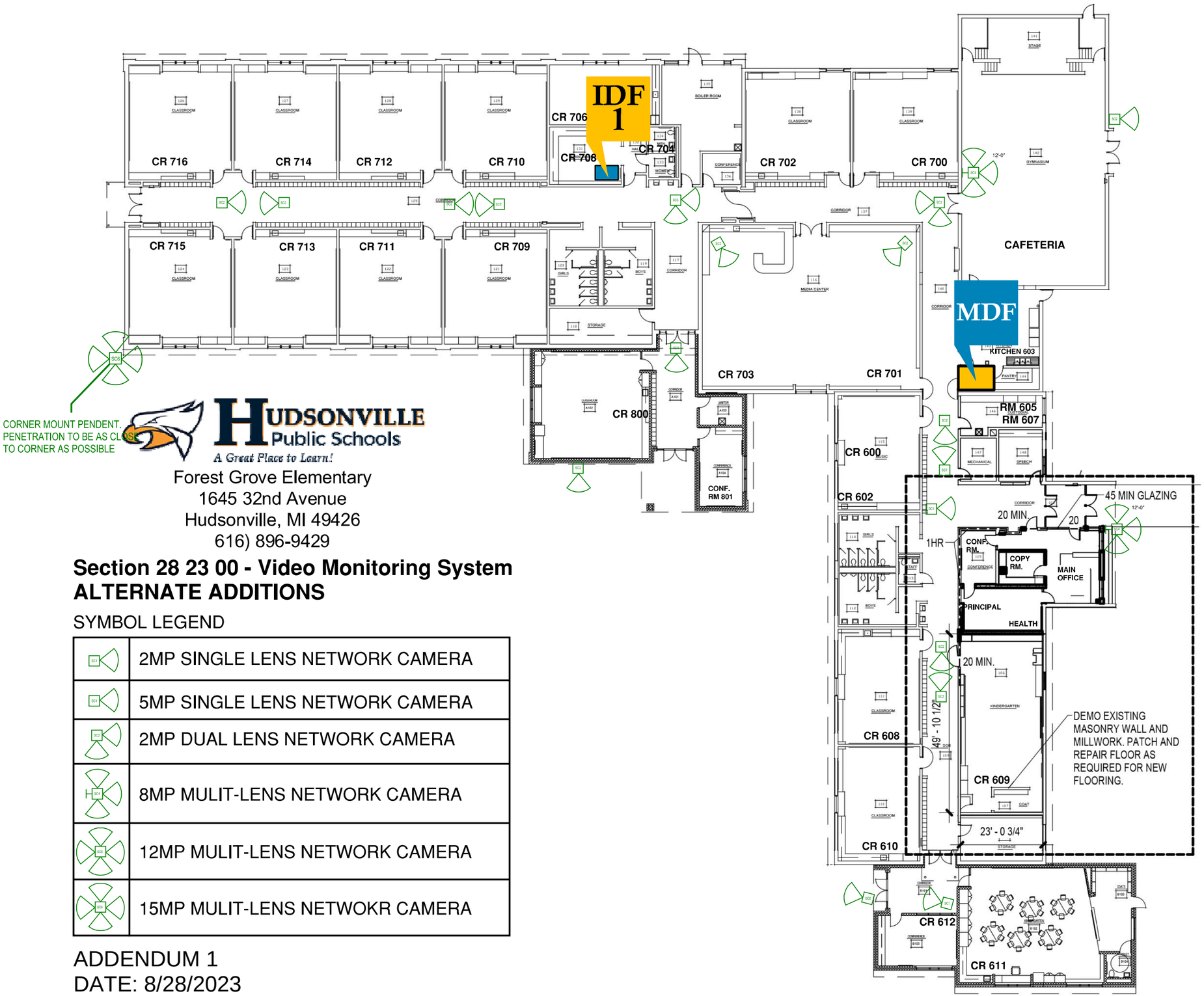
Section 28 23 00 - Video Monitoring System
ALTERNATE ADDITIONS



SYMBOL LEGEND

SC1	2MP SINGLE LENS NETWORK CAMERA
SC1	5MP SINGLE LENS NETWORK CAMERA
SC3	2MP DUAL LENS NETWORK CAMERA
SC4	8MP MULIT-LENS NETWORK CAMERA
SC5	12MP MULIT-LENS NETWORK CAMERA
SC6	15MP MULIT-LENS NETWOKR CAMERA

ADDENDUM 1
DATE: 8/28/2023



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Section 28 23 00 - Video Monitoring System
ALTERNATE ADDITIONS

SYMBOL LEGEND

	2MP SINGLE LENS NETWORK CAMERA
	5MP SINGLE LENS NETWORK CAMERA
	2MP DUAL LENS NETWORK CAMERA
	8MP MULIT-LENS NETWORK CAMERA
	12MP MULIT-LENS NETWORK CAMERA
	15MP MULIT-LENS NETWOKR CAMERA

ADDENDUM 1
DATE: 8/28/2023

HUDSONVILLE Public Schools
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Georgetown Elementary School

3909 Baldwin Street
Hudsonville, MI 49426

(616) 797-9797

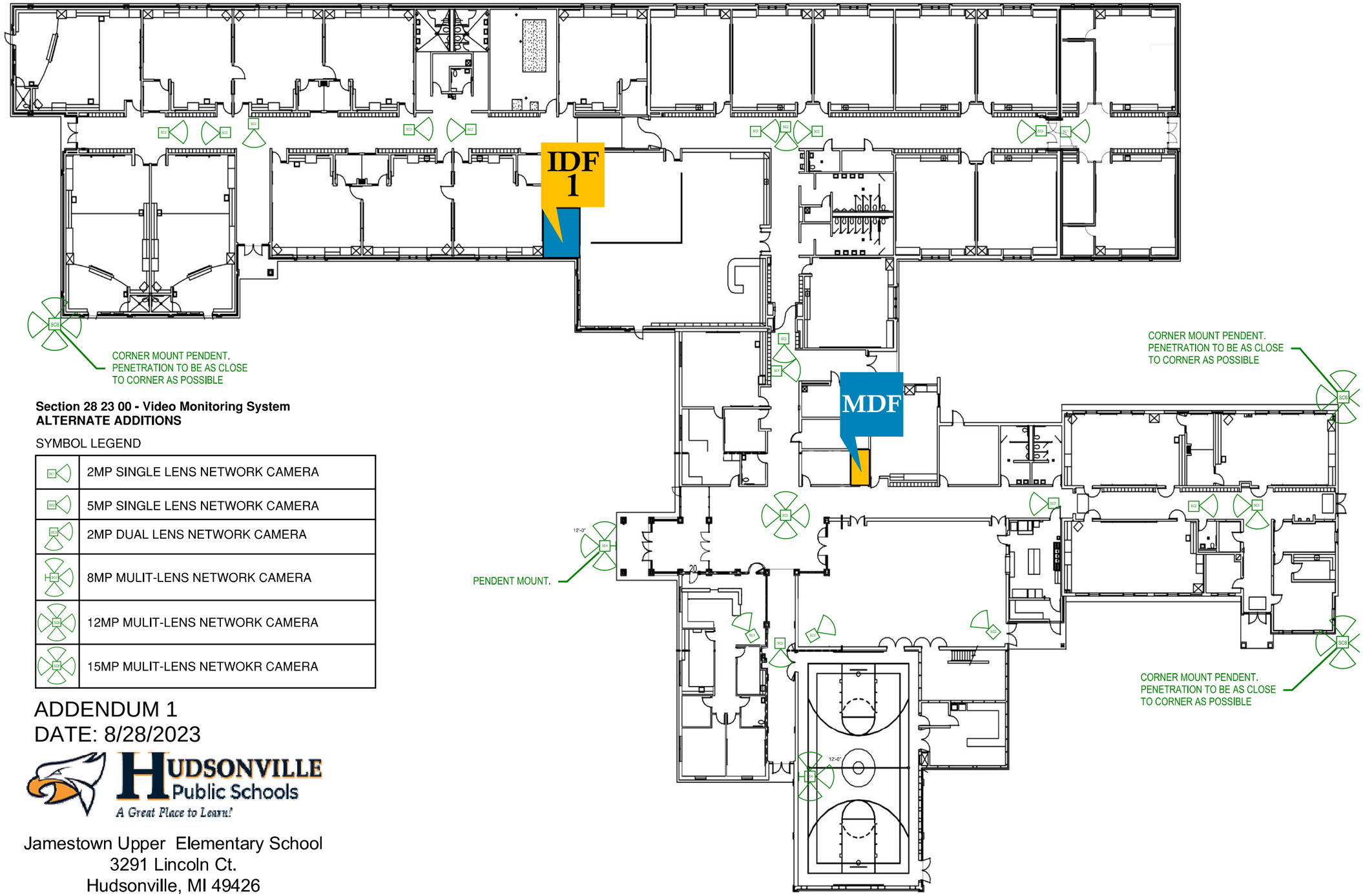
ADDENDUM 1
DATE: 8/25/2023

Section 28 23 00 - Video Monitoring System
ALTERNATE ADDITIONS

SYMBOL LEGEND

SC2	2MP SINGLE LENS NETWORK CAMERA
SC5	5MP SINGLE LENS NETWORK CAMERA
SC2	2MP DUAL LENS NETWORK CAMERA
HC8	8MP MULIT-LENS NETWORK CAMERA
SC12	12MP MULIT-LENS NETWORK CAMERA
SC15	15MP MULIT-LENS NETWOKR CAMERA

ADDENDUM 1
DATE: 8/28/2023



Section 28 23 00 - Video Monitoring System
ALTERNATE ADDITIONS

SYMBOL LEGEND

	2MP SINGLE LENS NETWORK CAMERA
	5MP SINGLE LENS NETWORK CAMERA
	2MP DUAL LENS NETWORK CAMERA
	8MP MULIT-LENS NETWORK CAMERA
	12MP MULIT-LENS NETWORK CAMERA
	15MP MULIT-LENS NETWOKR CAMERA

ADDENDUM 1
DATE: 8/28/2023

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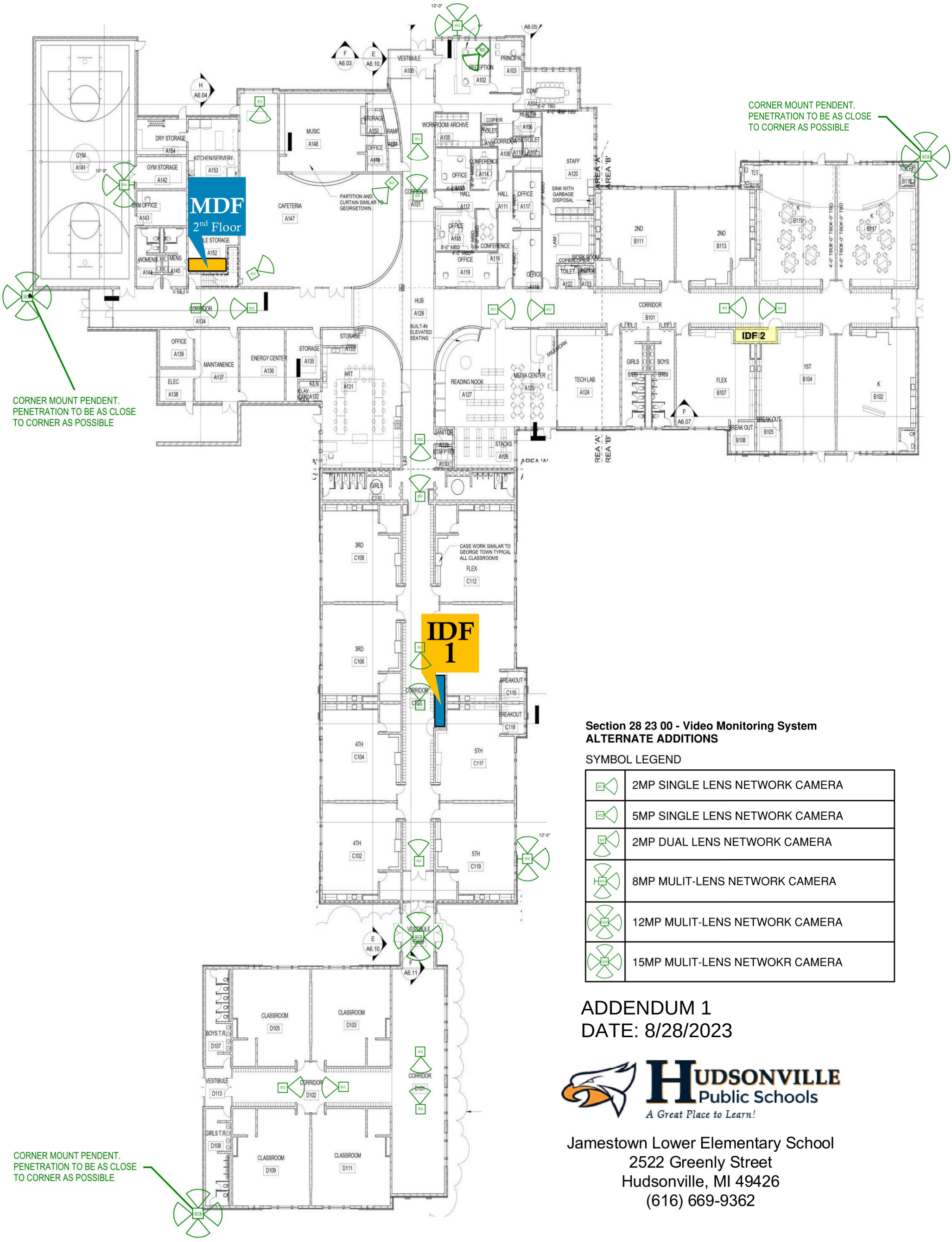

Section 28 23 00 - Video Monitoring System
ALTERNATE ADDITIONS

SYMBOL LEGEND

SC1	2MP SINGLE LENS NETWORK CAMERA
SC2	5MP SINGLE LENS NETWORK CAMERA
SC3	2MP DUAL LENS NETWORK CAMERA
SC4	8MP MULIT-LENS NETWORK CAMERA
SC5	12MP MULIT-LENS NETWORK CAMERA
SC6	15MP MULIT-LENS NETWOKR CAMERA

ADDENDUM 1
DATE: 8/28/2023

HUDSONVILLE Public Schools
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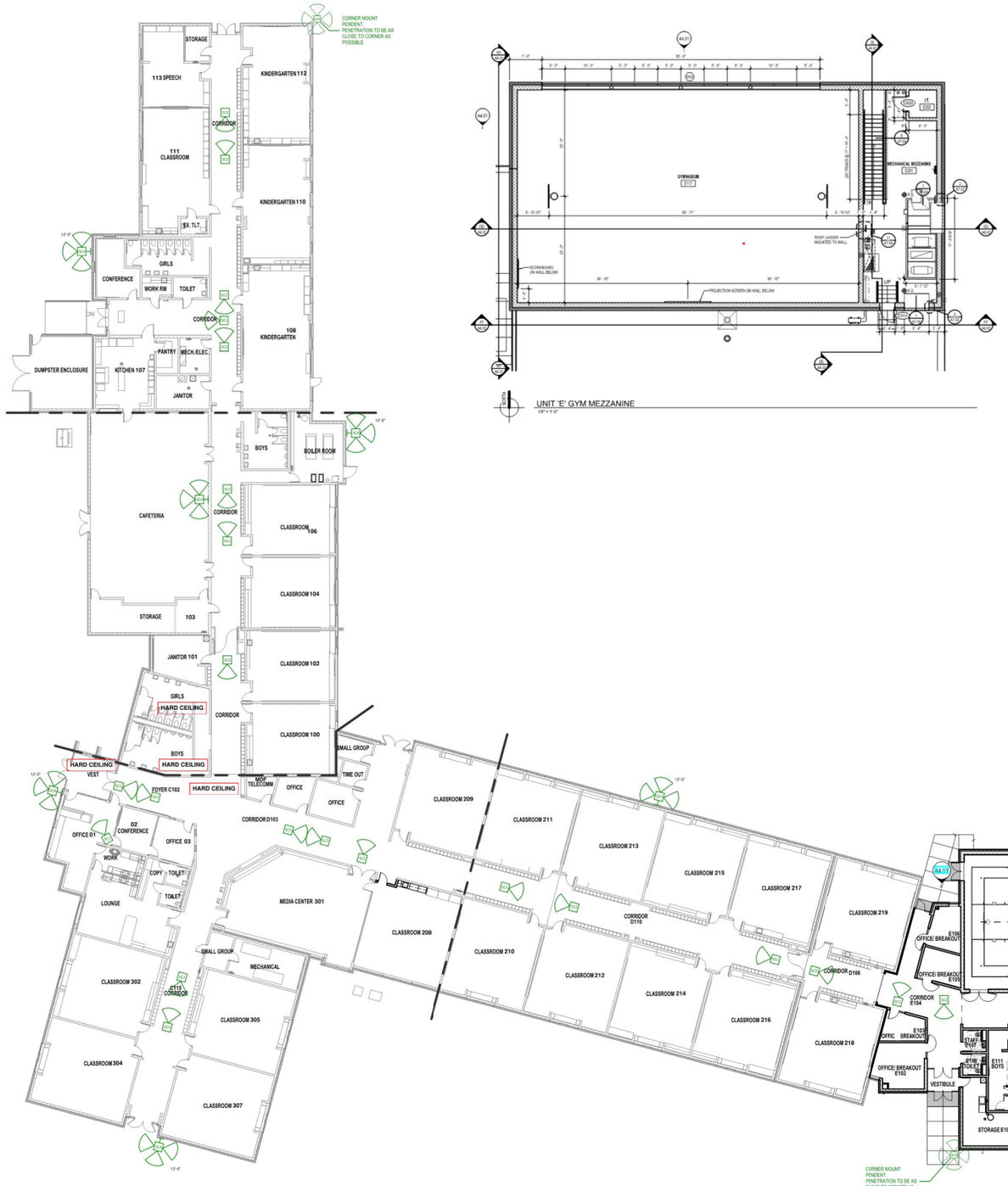
Hudsonville, MI 49426
(616) 669-9362



NORTH

OVERALL FLOOR PLAN

1/16" = 1'-0"

UNIT 'E' GYM MEZZANINE

1/8" = 1'-0"

Section 28 23 00 - Video Monitoring System
ALTERNATE ADDITIONS

SYMBOL LEGEND

	2MP SINGLE LENS NETWORK CAMERA
	5MP SINGLE LENS NETWORK CAMERA
	2MP DUAL LENS NETWORK CAMERA
	8MP MULIT-LENS NETWORK CAMERA
	12MP MULIT-LENS NETWORK CAMERA
	15MP MULIT-LENS NETWOKR CAMERA

ADDENDUM 1
DATE: 8/28/2023

KEYPLAN

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS
HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5769

OVERALL FLOOR PLAN

A0.01

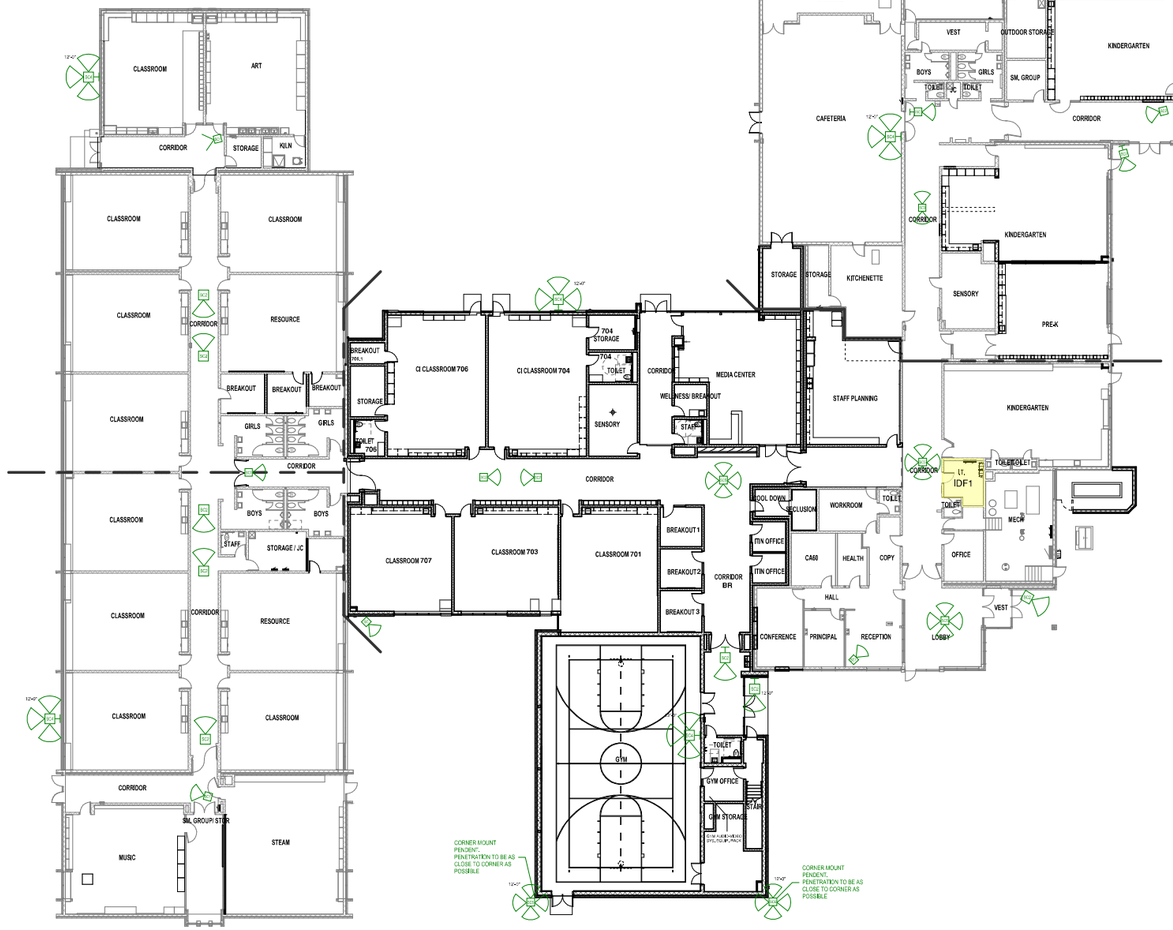
BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769A 2019.rvt
10/4/2022 6:16:14 PM

Section 28 23 00 - Video Monitoring System
ALTERNATE ADDITIONS

SYMBOL LEGEND

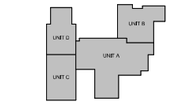
	2MP SINGLE LENS NETWORK CAMERA
	5MP SINGLE LENS NETWORK CAMERA
	2MP DUAL LENS NETWORK CAMERA
	8MP MULIT-LENS NETWORK CAMERA
	12MP MULIT-LENS NETWORK CAMERA
	15MP MULIT-LENS NETWOKR CAMERA

ADDENDUM 1
DATE: 8/28/2023



NORTH

OVERALL FIRST FLOOR PLAN
1/16" = 1'-0"



NORTH

KEYPLAN

GMB
616.796.0700
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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

OVERALL FIRST FLOOR PLAN

A0.01

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2019.rvt
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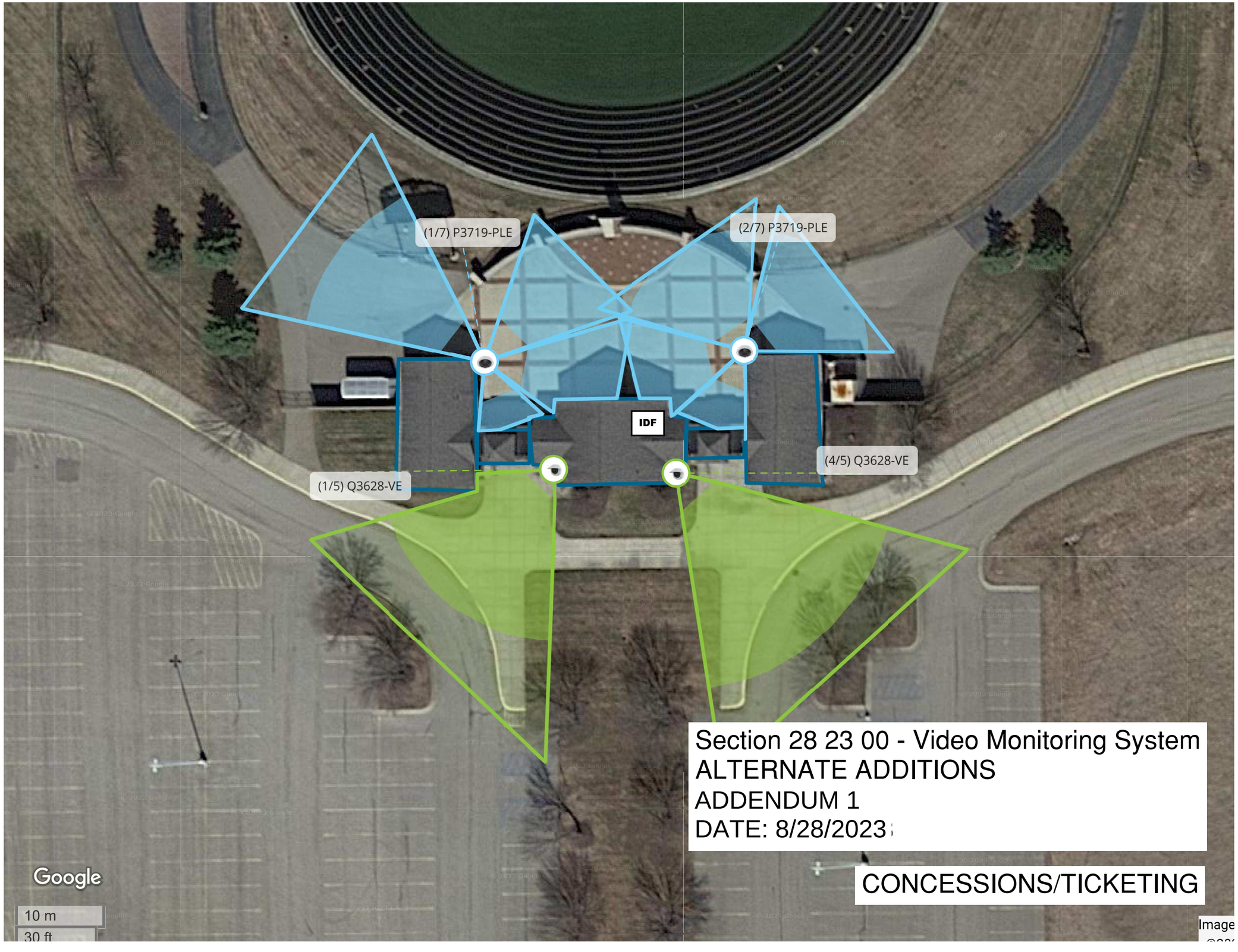
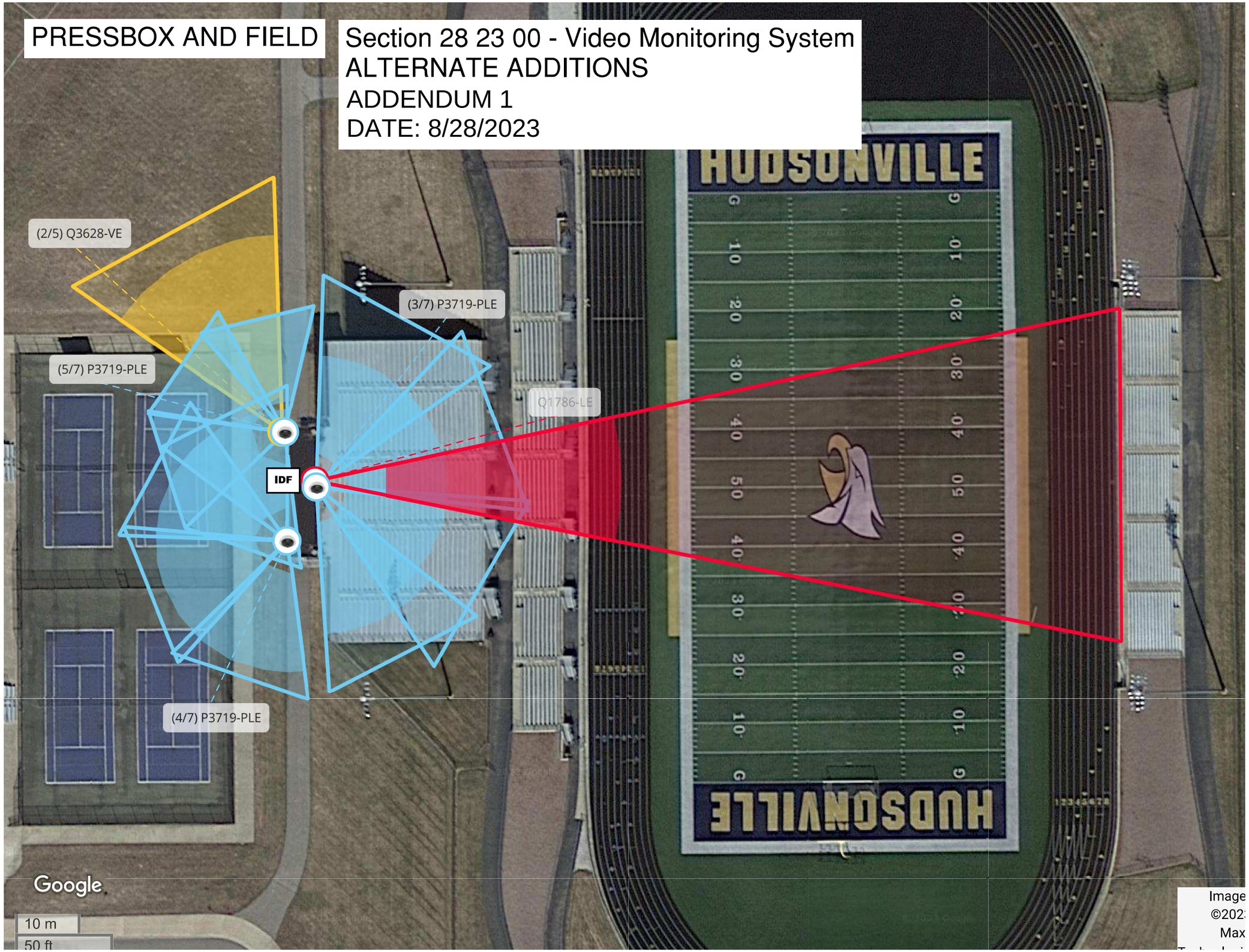
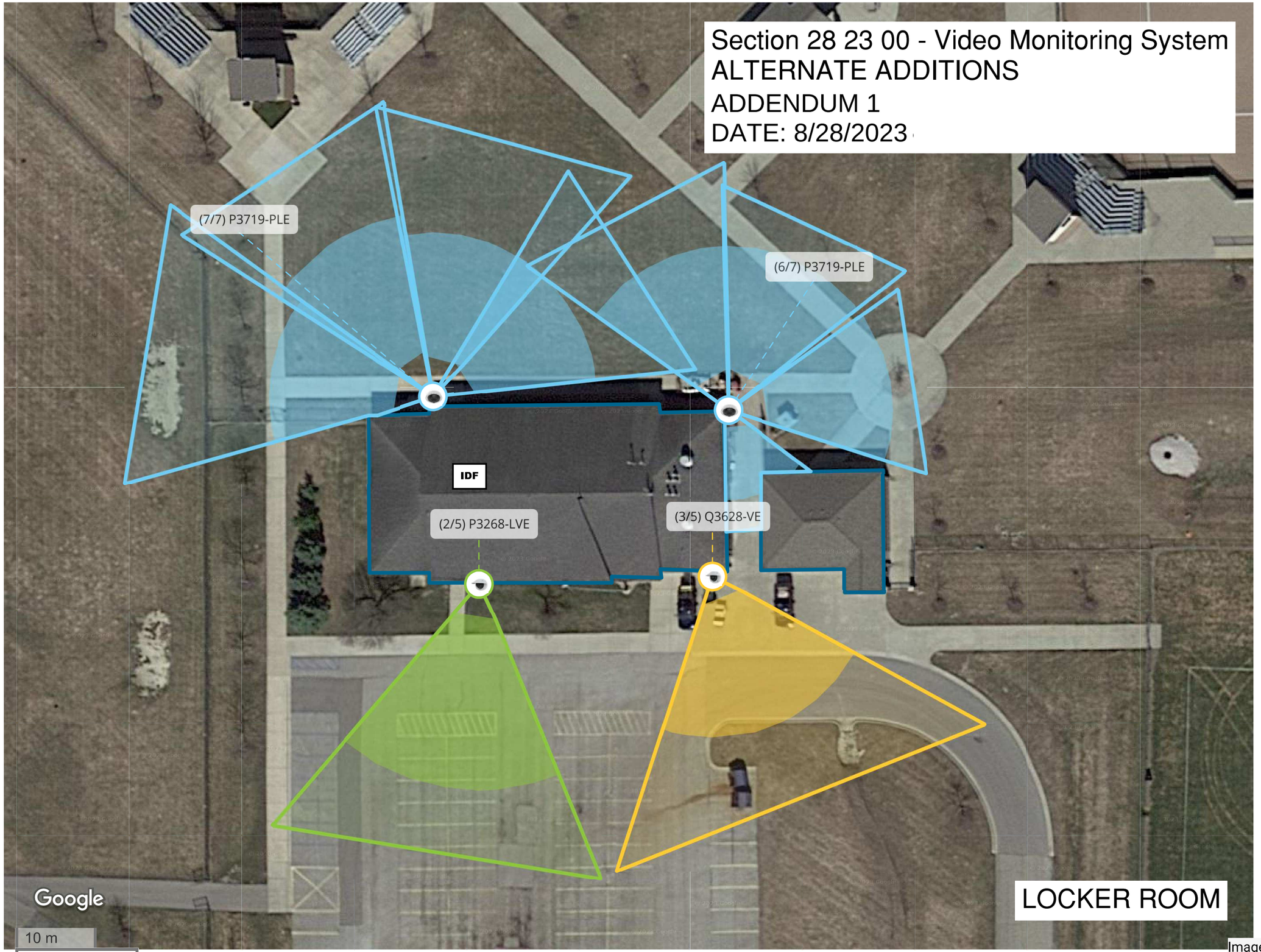

(1/7) P3719-PLE
(2/7) P3719-PLE
IDF
(4/5) Q3628-VE
(1/5) Q3628-VE
Section 28 23 00 - Video Monitoring System
ALTERNATE ADDITIONS
ADDENDUM 1
DATE: 8/28/2023
CONCESSIONS/TICKETING
Google
10 m
30 ft

PRESSBOX AND FIELD

Section 28 23 00 - Video Monitoring System
ALTERNATE ADDITIONS
ADDENDUM 1
DATE: 8/28/2023



Section 28 23 00 - Video Monitoring System
ALTERNATE ADDITIONS
ADDENDUM 1
DATE: 8/28/2023



BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

8136 48TH. AVENUE
HUDSONVILLE, MICHIGAN

BIDS AND CONSTRUCTION
10.04.2022
GMB PROJECT # 5-5769

GENERAL INFORMATION

CIVIL

STRUCTURAL

ARCHITECTURAL

FIRE PROTECTION

PLUMBING

MECHANICAL

ELECTRICAL

VICINITY MAP

MAP BY GOOGLE

ALTERNATES

M-1: ADD ALTERNATE TO REPLACE CAFETERIA MECHANICAL UNIT.

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ELECTRICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
ACC	ACCESSORY
ADO	AUTOMATIC DOOR OPERATOR
AHU	AIR HANDLING UNIT
ATS	AUTOMATIC TRANSFER SWITCH
BKR	BREAKER
BOB	BOTTOM OF BOX
BOD	BOTTOM OF DECK
BOS	BOTTOM OF STRUCTURE
BP	BREAKER PANEL
BLDG	BUILDING
CAP	CAPACITY
CLG	CEILING
CKT	CIRCUIT
CB	CIRCUIT BREAKER
C	CONDUIT
COMM	COMMUNICATIONS
CONN	CONNECTION
CONST	CONSTRUCTION
CONTR	CONTRACT (OR)
CLL	CONTRACT LIMIT LINE
CT	CURRENT TRANSFORMER
E.C.	ELECTRICAL CONTRACTOR
EGC	EQUIPMENT GROUNDING CONDUCTOR
EHD	ELECTRIC HAND DRYER
ELEC	ELECTRIC (AL)
EWC	ELECTRIC WATER COOLER
EM	EMERGENCY
ENT	ENTRANCE
EQ	EQUAL
EQUIP	EQUIPMENT
EST	ESTIMATE
EF	EXHAUST FAN
ETR	EXISTING TO REMAIN
EX	EXISTING
F	FLUSH
FA	FIRE ALARM
FSE	FOOD SERVICE EQUIPMENT
FP	FIRE PROOF / FIRE PROTECTION
FLR	FLOOR
FLUOR	FLUORESCENT
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GRD	GROUND
HORIZ	HORIZONTAL
HTR	HEATER
HTG	HEATING
HV	HEATING / VENTILATING
HVAC	HEATING, VENTILATING, AIR CONDITIONING
HOA	HAND - OFF - AUTOMATIC
HP	HEAT PUMP
INTLK	INTERLOCK
JCT	JUNCTION
JB	JUNCTION BOX
KW	KILOWATT
KWH	KILOWATT HOUR
KO	KNOCK OUT
LBL	LABEL
LT	LIGHT
LC	LIGHTING CONTROL
LCM	LIGHTING CONTROL MODULE
LCN	LIGHTING CONTROL NARRATIVE
LTG	LIGHTING
MAX	MAXIMUM
MBJ	MAIN BONDING JUMPER
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
MTS	MANUAL TRANSFER SWITCH
NEC	NATIONAL ELECTRICAL CODE
NEG	NEGATIVE (-)
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
OCPD	OVERCURRENT PROTECTIVE DEVICE
PC	PHOTOCELL / PHOTOCONTROL
POS	POSITIVE (+)
PWR	POWER
P & L	POWER & LIGHTING
S	SURFACE
SBJ	SYSTEM BONDING JUMPER
S.B.O.	SUPPLIED BY OTHERS
SP	SINGLE POLE
SPD	SURGE PROTECTION DEVICE
SPKR	SPEAKER
SPEC	SPECIFICATION
SSBJ	SUPPLY-SIDE BONDING JUMPER
SUB	SUBSTITUTE
SWBD	SWITCHBOARD
TEL	TELEPHONE
TSTAT	THERMOSTAT
XFMR	TRANSFORMER
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WG	WIRE GUARD
WL	WET LOCATION
WP	WEATHER PROOF

MAXIMUM CONDUCTOR LENGTHS FOR TYPICAL BRANCH CIRCUITS

FEET ONE-WAY BASED ON SINGLE PHASE, 20A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG
120	60	100	150	245	385
208	100	170	265	425	670
277	135	230	355	565	890
480	240	400	615	980	

FEET ONE-WAY BASED ON SINGLE PHASE, 30A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#10 AWG	#8 AWG	#6 AWG	#4 AWG	
120	60	100	150	245	
208	100	170	265	425	
277	135	230	355	565	
480	240	400	615	980	

FEET ONE-WAY BASED ON THREE PHASE, 20A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG
208	120	200	305	490	775
480	275	460	710	1,130	

FEET ONE-WAY BASED ON THREE PHASE, 30A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#10 AWG	#8 AWG	#6 AWG	#4 AWG	
208	120	200	305	490	
480	275	460	710	1,130	

COMMUNICATIONS SYMBOL LEGEND

- COMMUNICATIONS OUTLET ROUGH-IN
- COMMUNICATIONS OUTLET, CEILING-MOUNTED
- COMMUNICATIONS OUTLET, FLOOR-MOUNTED
- CEILING-MOUNTED VIDEO PROJECTOR
- COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED 2-POST
- COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED 4-POST
- COMMUNICATIONS EQUIPMENT RACK, WALL-MOUNTED
- CONDUIT SLEEVE FOR COMMUNICATIONS CABLING, 2" DIA. OR EQUIV. FREE AREA TYP. UNLESS NOTED OTHERWISE. IN FIRE-RATED OR SMOKE-TIGHT WALLS, PROVIDE CABLE PATHWAY PENETRATION DEVICE(S) PER SECTION 27 05 28.
- LOUDSPEAKER, CEILING-MOUNTED, TYPE 1
- LOUDSPEAKER, WALL-MOUNTED, TYPE 1
- INTERCOM SYSTEM CALL STATION BUTTON
- VOLUME CONTROL FOR AUDIO SYSTEM, PAGING, OR INTERCOM LOUDSPEAKERS
- SECONDARY CLOCK, CEILING-MOUNTED, TYPE 1
- SECONDARY CLOCK, WALL-MOUNTED, TYPE 1
- SIGNALING BELL

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

POWER SYMBOL LEGEND

- THREE PHASE MOTOR CONNECTION, 5 HORSEPOWER (EXAMPLE)
- SINGLE PHASE MOTOR CONNECTION, 1/2 HORSEPOWER (EXAMPLE)
- HVAC CONTROL DAMPER ACTUATOR CONNECTION
- HVAC SMOKE DAMPER ACTUATOR CONNECTION
- HVAC COMBINATION FIRE/SMOKE DAMPER ACTUATOR CONNECTION
- SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE
- SAFETY SWITCH DISCONNECTING MEANS, FUSIBLE
- COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS
- VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS
- MOTOR STARTER
- BOX-COVER FUSIBLE DISCONNECT SWITCH
- MANUAL MOTOR CONTROLLER
- POWER SWITCH, REFER TO LIGHTING SYMBOL LEGEND FOR SIMILAR SWITCH TYPES
- DIRECT ELECTRICAL CONNECTION
- SINGLE NEMA 5-20R RECEPTACLE
- SINGLE NEMA 5-20R RECEPTACLE, CEILING-MOUNTED
- SINGLE NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED
- DUPLEX NEMA 5-20R RECEPTACLE
- "E" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX
- "GFCI" NOTATION: GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE
- "S" NOTATION: SURFACE-MOUNTED
- "WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER
- DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED
- DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED
- DUPLEX NEMA 5-20R RECEPTACLE, CONNECTED TO STANDBY POWER BRANCH CIRCUIT
- DUPLEX NEMA 5-20R RECEPTACLE, SPLIT-WIRED
- QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE
- QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED
- QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED
- RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE
- RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE, FLOOR-MOUNTED
- SURFACE RACEWAY SYSTEM
- AUTOMATIC TRANSFER SWITCH
- SWITCHBOARD / SWITCHGEAR
- PANELBOARD
- TRANSFORMER
- MOTOR CONTROL CENTER
- EMERGENCY STOP STATION. REFER TO DETAIL FOR REQUIREMENTS.
- AUTOMATIC DOOR OPERATOR PUSH BUTTON
- ON/OFF PUSH BUTTON
- THREE-FUNCTION PUSH BUTTON
- FLOORBOX, TYPE 1
- JUNCTION BOX
- METER
- THERMOSTAT ROUGH-IN
- RELAY
- ENCLOSED CONTROL CONTACTOR

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

LIGHTING SYMBOL LEGEND

- SINGLE POLE TOGGLE SWITCH
- DOUBLE POLE TOGGLE SWITCH
- THREE-WAY TOGGLE SWITCH
- FOUR-WAY TOGGLE SWITCH
- SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR
- SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR AND DIMMER
- WALL-BOX DIMMER SWITCH
- THREE-WAY WALL-BOX DIMMER SWITCH
- ELECTRONIC INTERVAL TIMER SWITCH
- LIGHT SWITCH WITH PILOT LIGHT
- LIGHTING CONTROL SWITCH, REFER TO LIGHTING CONTROL SWITCH SCHEDULE AND SPECIFICATIONS FOR DETAILS.
- DOUBLE-THROW (MAINTAINED) LIGHT SWITCH
- KEY-OPERATED SWITCH (SUFFIX DESIGNATION – NONE: SINGLE POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY)
- LOCKING SWITCH (SUFFIX DESIGNATION – NONE: SINGLE-POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY)
- TOUCHSCREEN PANEL
- CIRCUIT NUMBER FOR LIGHT FIXTURES WITHIN INDICATED SPACE
- WALL-MOUNTED LIGHTING FIXTURE, TYPE 'A'
- RECESSED LIGHTING FIXTURE, TYPE 'A'
- SURFACE-MOUNTED LIGHTING FIXTURE, TYPE 'A'
- TRACK LIGHTING
- SINGLE FACE EXIT SIGN, TYPE "X1" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION
- DOUBLE FACE EXIT SIGN, TYPE "X2" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION
- WALL-MOUNTED EXIT SIGN, SHADING INDICATES FACE ORIENTATION
- EMERGENCY LIGHT FIXTURE DESIGNATION
- EMERGENCY LIGHTING AUTOMATIC LOAD CONTROL RELAY
- LIGHTING CONTROL RELAY
- LIGHTING CONTROL ENCLOSED CONTACTOR
- TIME SWITCH
- LIGHTING CONTROL MODULE
- LIGHTING CONTROL PANEL
- EMERGENCY LIGHTING INVERTER, TYPE 1
- WALL-MOUNTED OCCUPANCY SENSOR
- CEILING-MOUNTED OCCUPANCY SENSOR
- WALL-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
- CEILING-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
- WALL-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
- CEILING-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
- POLE-MOUNTED SITE/AREA FIXTURE
- SELF-CONTAINED EMERGENCY LIGHTING UNIT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

FIRE ALARM SYMBOL LEGEND

- MANUAL PULL STATION
- AUDIBLE NOTIFICATION APPLIANCE, WALL-MOUNTED
- VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
- AUDIBLE/VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
- AUDIBLE NOTIFICATION APPLIANCE, CEILING-MOUNTED
- AUDIBLE/VISUAL NOTIFICATION APPLIANCE, CEILING-MOUNTED
- VISUAL NOTIFICATION APPLIANCE, CEILING-MOUNTED
- WG/PC — WHERE "WG/PC" IS NOTED, PROVIDE LISTED WIRE GUARD OR PROTECTIVE POLYCARBONATE COVER FOR NOTIFICATION DEVICE.
- WL — WHERE "WL" IS NOTED, PROVIDE LISTED WET-LOCATION NOTIFICATION DEVICE, SUITABLE FOR INDOOR OR OUTDOOR USE.
- SMOKE DETECTOR
- HEAT DETECTOR
- DUCT SMOKE DETECTOR
- FIRE PROTECTION FLOW SWITCH
- FIRE PROTECTION TAMPER SWITCH
- ELECTROMAGNETIC DOOR HOLD-OPEN DEVICE
- ADDRESSABLE RELAY FOR FIRE ALARM CONTROL
- PRESSURE SWITCH
- CARBON MONOXIDE DETECTOR
- NAC — NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY
- FAA — FIRE ALARM REMOTE ANNUNCIATOR
- FACP — FIRE ALARM CONTROL PANEL
- KTS — KEYED TEST SWITCH AND REMOTE INDICATOR FOR DUCT SMOKE DETECTOR
- FIRE PROTECTION OR ALARM BELL

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

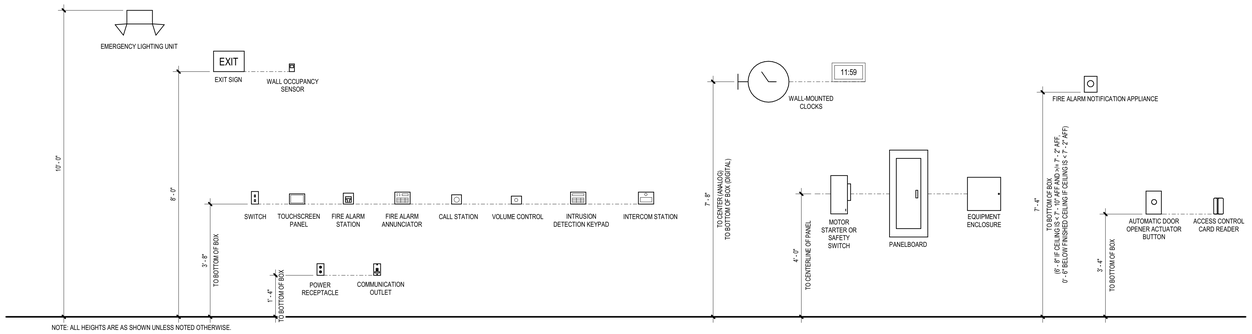
ELECTRONIC SAFETY / SECURITY SYMBOL LEGEND

- DC — DOOR CONTACT
- EL — ELECTRONIC LATCH
- ES — ELECTRONIC STRIKE
- K — INTRUSION DETECTION KEYPAD
- IC — INTERCOM STATION
- WALL-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH-IN
- SC — CEILING-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH IN
- WALL-MOUNTED SURVEILLANCE CAMERA, TYPE 1
- SC1 — CEILING-MOUNTED SURVEILLANCE CAMERA, TYPE 1
- ID — WALL-MOUNTED INFRARED MOTION DETECTOR
- IR — CEILING-MOUNTED INFRARED MOTION DETECTOR
- UD — WALL-MOUNTED ULTRASONIC MOTION DETECTOR
- US — CEILING-MOUNTED ULTRASONIC MOTION DETECTOR
- CR — CARD READER
- CR_M — CARD READER, MULLION-MOUNTED
- XXXXX — ACCESS CONTROL DOOR TAG, REFER TO HARDWARE SCHEDULE(S) IN SECTION 08 71 00 AND/OR SECTION 28 10 00 FOR FURTHER DETAILED REQUIREMENTS
- ACS — ACCESS CONTROL SYSTEM EQUIPMENT
- IDS — INTRUSION DETECTION SYSTEM EQUIPMENT
- PSU — POWER SUPPLY UNIT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

ELECTRICAL GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AS AMENDED AND ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION WHERE THE WORK IS PERFORMED.
2. ALL "LOW-VOLTAGE" CONTROLS, COMMUNICATIONS, AND SAFETY/SECURITY CABLING MAY BE INSTALLED WITHOUT CONDUIT, RACEWAY, OR CABLE TRAY ONLY WHERE CONCEALED ABOVE A SUSPENDED CEILING SYSTEM AND ACCESSIBLE FOR FUTURE MAINTENANCE. OTHERWISE, ALL CABLING (INCLUDING BUT NOT LIMITED TO CABLES ASSOCIATED WITH SYSTEMS SUCH AS ARCHITECTURAL EQUIPMENT, BUILDING ENERGY MANAGEMENT, TEMPERATURE CONTROLS, LIGHTING CONTROLS, COMMUNICATIONS NETWORKS, TELEPHONE, AUDIO-VIDEO, INTERCOM, PAGING, CLOCK, SURVEILLANCE, ACCESS CONTROL, FIRE ALARM, ETC.) SHALL BE INSTALLED IN AN APPROVED CONDUIT, RACEWAY SYSTEM, AND/OR CABLE TRAY UNLESS OTHERWISE NOTED. IN EXPOSED STRUCTURE CEILING AREAS, CONCEALED INSTALLATION OF CABLES IN RACEWAYS SHALL BE REQUIRED FOR AESTHETIC REASONS. REFER TO REFLECTED CEILING PLANS FOR LOCATION(S). THIS APPLIES TO ALL TRADES AND WORK CATEGORIES. EXCEPTIONS:
   A. DEDICATED MECHANICAL AND/OR ELECTRICAL ROOMS ABOVE 8'-0" AFF
   B. DEDICATED TELECOMMUNICATIONS ROOMS
3. ALL DEVICES SHOWN TO BE INSTALLED ON EXISTING WALLS SHALL BE INSTALLED FLUSH; CUT IN BOXES AND FISH WALLS WITH FLEXIBLE CONDUIT AS REQUIRED. DOCUMENT AND COORDINATE EXCEPTIONS WITH ARCHITECTENGINEER IN WRITING FOR REVIEW IN FIELD. IF WALL IS PROVEN NOT ABLE TO BE FISHED, PROVIDE SURFACE RACEWAY SYSTEMS PER SECTION 26 05 33.23. SHALL BE PROVIDED BY THE CONTRACTOR; SUCH COSTS SHALL BE INCLUDED IN BID. SURFACE-MOUNTED CONDUIT IS NOT ACCEPTABLE WHERE EXPOSED TO VIEW IN SPACES OTHER THAN DEDICATED MECHANICAL/ELECTRICAL ROOMS.
4. "LOW-VOLTAGE" CONTROLS, COMMUNICATIONS, AND SAFETY/SECURITY CABLING SHALL NOT BE PAINTED. CONTRACTORS INSTALLING CABLING WHERE APPROVED FOR EXPOSED INSTALLATION SHALL INSTALL CABLES AFTER PAINTING HAS BEEN COMPLETED OR PROVIDE TEMPORARY PROTECTION OF CABLES UNTIL PAINTING HAS BEEN COMPLETED. PROVIDE TEMPORARY PROTECTION OF ANY EXISTING CABLING PRIOR TO PAINTING EXISTING AREAS. PAINTED CABLES SHALL BE REPLACED AT THE EXPENSE OF THE NEGLIGENT CONTRACTOR.
5. METAL CLAD CABLE MAY BE USED FOR FIXTURE WHIPS IN LENGTHS OF 6 FEET OR LESS ABOVE AN ACCESSIBLE SUSPENDED CEILING SYSTEM ONLY. OTHERWISE, METAL CLAD OR OTHER FLEXIBLE CABLE TYPES SHALL NOT BE USED UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEER. IT IS THE INTENT OF THESE CONTRACT DOCUMENTS THAT ALL INSTALLED BRANCH CIRCUITS CONSIST OF SEPARATE RACEWAY AND CONDUCTORS ALLOWING REMOVAL AND REPLACEMENT OF WIRING AS REQUIRED FOR FUTURE UPGRADES. REFER TO SPECIFICATIONS FOR EXCEPTIONS.
6. CIRCUIT WIRING FOR ARTICLE 700 EMERGENCY SYSTEMS AND ARTICLE 708 CRITICAL OPERATIONS POWER SYSTEMS SHALL BE INSTALLED IN SEPARATE CONDUITS/RACEWAYS AND BE KEPT ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT PER NEC REQUIREMENTS.
7. ALL FEEDERS AND BRANCH CIRCUITS SHALL CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR SIZED ACCORING TO THE NEC RACEWAYS INCLUDING CONDUITS, BOXES, WIREWAYS, ETC. SHALL NOT BE CONSIDERED AN ACCEPTABLE GROUND.
8. CONDUITS AND CABLING SHALL NOT BE INSTALLED WITHIN 4" OF ROOF DECK, EXCEPT AS NECESSARY TO SERVE ROOF-MOUNTED ITEMS AND ONLY WHEN THE CONDUIT OR CABLE IS ROUTED VERTICALLY TO SUCH EQUIPMENT FROM BELOW. CLEARANCE SHALL BE PERMITTED TO BE REDUCED TO 1 1/2" WHERE SUPPLEMENTAL METAL FRAMING MEMBERS PROVIDE AN EFFECTIVE BARRIER BETWEEN THE ROOF DECK AND ANY CONDUIT/CABLING.
9. SUPPLEMENTAL METAL FRAMING SHALL BE PROVIDED FOR SUSPENSION POINTS OF ALL ITEMS LOCATED BETWEEN STRUCTURAL MEMBERS (JOISTS, TRUSSES, BEAMS, ETC.) IN OPEN/VISIBLE STRUCTURE CEILING OR SUPPORT COLUMN AREAS. METAL FRAMING SHALL SPAN ACROSS THE TOP CHORD OR FLANGE OF OVERHEAD STRUCTURAL MEMBERS FOR BOTH STRUCTURAL AND AESTHETIC PURPOSES. SPECIFIC EXCEPTIONS SHALL BE COORDINATED IN WRITING WITH THE ARCHITECTENGINEER.
10. CONDUIT INSTALLED WITHIN INACCESSIBLE CONSTRUCTION SHALL BE 3/4" MINIMUM SIZE.
11. FEEDERS SHOWN ON DRAWINGS ARE SCHEMATIC ONLY. CONDUIT RUNS SHALL COMPLY WITH CONDUIT SPECIFICATIONS AND CONTAIN BENDS THAT ARE NO GREATER THAN 90 DEGREES. CONDUITS INSTALLED ABOVE GRADE SHALL BE RUN PARALLEL TO, OR PERPENDICULAR WITH, BUILDING STEEL AND/OR ARCHITECTURAL LINES.
12. CONTRACTOR(S) SHALL VERIFY COLOR/FINISH OF WIRING DEVICES, DEVICE FACEPLATES, SURFACE RACEWAY SYSTEMS, AND/OR MULTI-OUTLET ASSEMBLIES WITH ARCHITECTENGINEER IF NOT EXPLICITLY SPECIFIED.
13. ELECTRICAL CONTRACTOR SHALL REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ADDITIONAL INFORMATION REGARDING LIGHTING FIXTURE MOUNTING LOCATIONS, ARRANGEMENTS, AND CEILING FINISHES.
14. ELECTRICAL CONTRACTOR SHALL ADJUST LIGHTING FIXTURE LOCATIONS IN MECHANICAL ROOMS TO ACCOMMODATE MECHANICAL EQUIPMENT, DUCTWORK, AND RELATED FIELD CONDITIONS.
15. CONTRACTOR(S) SHALL BE RESPONSIBLE TO REVIEW INTERIOR ELEVATION SHEETS FOR PLACEMENT OF DEVICE BOXES. COORDINATE LOCATIONS SO THAT NO DEVICES ARE INSTALLED BEHIND CASEWORK, MILLWORK, VISUAL DISPLAY BOARDS, MIRRORS, CUSTOM GRAPHICS, SIGNAGE, ETC.
16. ELECTRICAL CONTRACTOR SHALL REVIEW TOILET EQUIPMENT SHOP DRAWINGS AND ARCHITECTURAL DETAILS/ELEVATIONS FOR CORRECT DEVICE BOX ROUGH-IN LOCATION OF HAND DRYERS.
17. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH PLUMBING CONTRACTOR AND THE ELECTRIC WATER COOLER / BOTTLE FILLER SHOP DRAWINGS FOR MOUNTING HEIGHT AND CONNECTION METHOD OF PLUMBING EQUIPMENT POWER CONNECTIONS. READILY ACCESSIBLE GFCI PROTECTION SHALL BE PROVIDED FOR THE BRANCH CIRCUIT(S) SUPPLYING ALL SUCH UNITS PER NEC REQUIREMENTS.
18. REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR DETAILED INFORMATION REGARDING EQUIPMENT AND CONTROL. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING AND PROVIDING ITEMS AS SPECIFICALLY LISTED AND ASSIGNED ON MECHANICAL EQUIPMENT SCHEDULE SUCH AS DISCONNECT SWITCHES, VARIABLE FREQUENCY DRIVES, STARTERS, TIMERS, SWITCHES, ETC.
19. ELECTRICAL CONTRACTOR SHALL CONFIRM THE LOCATION OF THE EXHAUST FANS LISTED IN THE MECHANICAL EQUIPMENT SCHEDULES BY REFERRING TO MECHANICAL/HVAC PLANS.
20. REFER TO ROOF PLANS FOR EXACT LOCATIONS OF ROOF-TOP MECHANICAL EQUIPMENT.
21. PROVIDE FLUSH SINGLE-GANG BOXES IN WALLS FOR HVAC / TEMPERATURE CONTROL DEVICES, AT LEAST ONE PER OCCUPIABLE ROOM OR SPACE. INSTALL 1/2" CONDUIT RACEWAY FROM BOX TO CORRESPONDING TEMPERATURE CONTROL SYSTEM DEVICE OR CONTROLLED UNIT. REFER TO MECHANICAL DRAWINGS FOR PROPOSED LOCATIONS AND COORDINATE WITH MECHANICAL / TEMPERATURE CONTROLS CONTRACTOR'S SHOP DRAWINGS.
22. CABINET UNIT HEATERS MAY HAVE LINE-VOLTAGE THERMOSTATS SUPPLIED BY MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. REFER TO MECHANICAL EQUIPMENT SCHEDULE.
23. DIVISION 26 CONTRACTOR SHALL PROVIDE CONDUIT SLEEVES WITH APPROPRIATE BUSHINGS FOR CONTROLS AND ELECTRONIC SAFETY/SECURITY CABLING THROUGH WALLS AND FLOORS. SLEEVE SIZES SHALL BE COORDINATED WITH CABLING REQUIREMENTS.
24. SECTION 27 05 28 CONTRACTOR SHALL PROVIDE DEDICATED CONDUIT SLEEVES WITH APPROPRIATE BUSHINGS THROUGH WALLS AND FLOORS FOR DIV. 27 COMMUNICATIONS AND DIV. 28 SAFETY/SECURITY CABLING. SLEEVE SIZE SHALL BE MINIMUM 2" DIA. OR EQUIVALENT FREE AREA UNLESS NOTED OTHERWISE. SPECIFIED CABLE PATHWAY PENETRATION DEVICES SHALL BE SUBSTITUTED FOR CONDUIT SLEEVES WHERE THERE IS A REQUIRED RATING IN THE CONSTRUCTED ASSEMBLY.
25. BUILDING SYSTEMS CABLING SHALL BE SLEEVED WHERE CABLES PASS THROUGH WALLS. NO CABLING SHALL PASS THROUGH OR OVER THE TOP OF WALL CONSTRUCTION WITHOUT THE USE OF A SLEEVE. DIVISION 26 CONTRACTOR SHALL PROVIDE SLEEVES (UNLESS OTHERWISE ASSIGNED) AND COORDINATE WITH ARCHITECTURAL TRADES DURING THE WALL CONSTRUCTION PROCESS. THIS REQUIREMENT APPLIES TO EXISTING CABLING IN FOOTPRINT OF ANY NEW WALLS; PROVIDE SPLIT SLEEVES IF CABLING CANNOT BE DISCONNECTED. FIELD-VERIFY QUANTITIES AND LOCATIONS, OR COORDINATE USE OF ALLOWANCES FOR SLEEVES WITH PROJECT ADMINISTRATIVE REQUIREMENTS.
26. PROVIDE DIRECT CONNECTIONS FROM DEDICATED LOCAL BRANCH CIRCUIT(S) TO ACCESS CONTROL SYSTEM AND DOOR HARDWARE POWER SUPPLIES WHERE REQUIRED FOR DOOR LOCK DEVICES, CONTROLLERS, ETC. REFER TO DOOR HARDWARE SCHEDULE AND ACCESS CONTROL SYSTEM SCHEDULE IN RESPECTIVE SPECIFICATIONS FOR QUANTITIES AND LOCATIONS.



NOTE: ALL HEIGHTS ARE AS SHOWN UNLESS NOTED OTHERWISE.

TYPICAL MOUNTING HEIGHTS FOR WALL DEVICES, EQUIPMENT, & FIXTURES

NOT TO SCALE

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS & CONSTRUCTION

DRAWN KSS

REVIEWED LCT

PROJECT NO. 5-5769

ELECTRICAL SYMBOL LEGENDS & GENERAL NOTES

E0.01

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769E 2019.rvt
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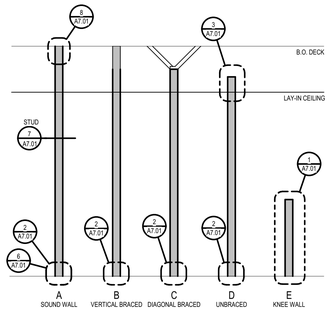


WALL HEIGHT DIAGRAM

WALL TAG & HEIGHT DIAGRAM

3/8" = 1'-0"

GENERAL FLOOR PLAN NOTES:

1. DIMENSIONS GIVEN ARE TO THE FACE OF MASONRY UNITS OR TO THE FINISHED FACE OF METAL STUD PARTITION WALLS.
2. REFERENCE STRUCTURAL DRAWINGS FOR CONCRETE SLAB SIZES AND SLAB RELATED INFORMATION.
3. INTERIOR STUD WALLS ARE TO USE 3 5/8" METAL STUD FRAMING UNLESS OTHERWISE NOTED.
4. TURN UP VAPOR RETARDER MATERIAL AT JOINTS BETWEEN FLOOR SLAB AND FOUNDATION WALL UNLESS NOTED OTHERWISE.
5. SEE FOUNDATION PLANS FOR FLOOR SLAB RECESSES FOR TILE, WOOD FLOOR, ETC. (VERIFY RECESS REQUIRED BY MFR.)
6. EXTEND ALL INTERIOR WALL PARTITIONS (MASONRY OR STUDS) TO BOTTOM OF DECK ABOVE UNLESS NOTED OTHERWISE.
7. REFERENCE STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL FOR ITEMS NOT SHOWN. COORDINATE AS REQUIRED INCLUDING NECESSARY FRAMING, BLOCKING, ETC.
8. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF ANY CABINETRY, FRAMES, STRUCTURAL ITEMS, ETC.
9. PROVIDE PAINTED ACCESS PANELS IN WALLS AND CEILINGS TO PROVIDE ACCESS TO CONCEALED ITEMS INCLUDING BUT NOT LIMITED TO VALVES, CONTROLS, MECH. EQUIPMENT, ETC. ACCESS PANELS MAY NOT ALWAYS BE SHOWN ON PLANS. IT IS THE SUB CONTRACTOR RESPONSIBILITY TO DETERMINE LOCATIONS. COORDINATE LOCATIONS WITH OTHER GENERAL CONTRACTOR / SITE SUPERVISOR.
10. COORDINATE WALLS WITH COLUMNS AND OTHER ENCASED ITEMS. COLUMNS ARE TO BE CONTAINED WITHIN WALLS. THE FRAMING CONTRACTOR SHALL INCREASE FRAMING SIZE TO ACCOMMODATE COLUMNS, DRAIN LEADERS, PIPING, ELECTRICAL PANELS, ETC. WHERE WALLS REQUIRE EXTRA WIDTH THE ENTIRE WALL SHALL BE WIDENED UNLESS APPROVED BY ARCHITECT.
11. ALL GUARDRAILS AND HANDRAILS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE 2015 M.B.C., ANSI ICC A117.1-2009 & AMERICANS WITH DISABILITIES ACT GUIDELINES. THE MOST STRINGENT SHALL PREVAIL.
12. PROVIDE MINIMUM CLEARANCES AT ALL DOORS PER DETAILS. SEE G0.01 FOR REQUIREMENTS.
13. FOR ALL CABINETRY, SEE INTERIOR ELEVATIONS FOR LAYOUTS. FIELD VERIFY CLEAR WIDTHS PRIOR TO FABRICATION.
14. ALL EXTERIOR BLOCK CORNERS ARE TO BE BULLNOSE BLOCK EXCEPT CONCRETE BLOCK COLUMNS, PIERS AND WALLS TO RECEIVE TILE - UNLESS NOTED OTHERWISE.
15. CONTRACTOR TO MAINTAIN / REPAIR RATING OF EXISTING PARTITIONS AS AFFECTED BY DEMOLITION / NEW CONSTRUCTION. TYPICAL THROUGHOUT.
16. SEAL ALL PENETRATIONS IN FIRE RATED FLOORS AND WALLS WITH APPROVED FIRESTOPPING.
17. WHERE SPECIALTY BLOCK IS REQUIRED AT THE SAME HEIGHT ON BOTH SIDES OF A WALL USE (2) SPECIALTY BLOCKS BACK TO BACK TO MAINTAIN THE FINISHED APPEARANCE BOTH SIDES OF THE WALL. COORDINATE WITH STRUCTURE FOR LINTELS CONDITIONS PER SPECIFICATIONS.
18. WALLS TO BE PATCHED WITH LIKE MATERIALS WHERE EXISTING WALLS HAVE BEEN COMPROMISED FROM DEMOLITION. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO REMOVAL AND REINSTALLATION OF CASEWORK AND WALL MOUNTED EQUIPMENT IN ORDER TO ACHIEVE SAID PATCH. IN AREAS WHERE BLOCK OR BRICK HAVE BEEN USED, NEW MASONRY TO BE TOOTHED IN AND MATCH EXISTING. AREAS AND FINISHES IN QUESTION SHALL BE COORDINATED WITH ARCHITECT.
19. SEE STRUCTURAL FRAMING PLANS FOR ADDITIONAL WALL REINFORCING REQUIREMENTS. MINIMUM REINFORCING (FOR ALL WALLS NOT OTHERWISE NOTED ON STRUCTURAL PLANS):
    A. ALL BEARING WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.
    B. ALL EXTERIOR WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.
    C. ALL INTERIOR NON-BEARING WALLS OVER 16'-0" HIGH SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.

GENERAL PROJECT NOTES:

1. FINISH FLOOR ELEVATION = 665.04 = 100'-0"
2. DRAWINGS ARE NOT TO BE SCALED WHEN A DIMENSION IS IN QUESTION, VERIFY W/ ARCHITECT.
3. DETAILS SHOWN BUT NOT CALLED OUT STILL APPLY, UNLESS OTHERWISE NOTED.
4. GENERAL TRADES CONTRACTOR SHALL COORDINATE ALL TRADES INCLUDING OWNER FURNISHED EQUIPMENT, INCLUDING DIMENSIONS OF SUCH AS THEY RELATE TO HIS/HER OWN WORK.
5. ALL EXPOSED SURFACES SHALL BE FINISHED. CONTACT ARCHITECT FOR DIRECTION IF FINISH IS NOT LISTED.
6. NO UTILITIES INCLUDING BUT NOT LIMITED TO, PIPING AND CONDUIT SHALL BE EXPOSED UNLESS APPROVED BY ARCHITECT.
7. GYPSUM BOARD WALLS AND BULKHEADS SHALL HAVE CONTROL JOINTS AT A 20'-0" O.C. MAXIMUM AND AS SHOWN ON DRAWINGS.
8. ANY CONTRACTOR IS TO STOP WORK IMMEDIATELY IN AREA IF ABATEMENT MATERIAL(S) ARE ENCOUNTERED. NOTIFY GENERAL CONTRACTOR OF SUSPECTED AREA SO PROPER ABATEMENT CAN BE DONE. (UNDER A SEPARATE ABATEMENT CONTRACT AS NEGOTIATED BY OWNER.)
9. AT ALL AREAS OF WORK WHERE EXISTING MASONRY BLOCK AND BRICK WALLS ARE BEING MODIFIED OR CONNECTED TO NEW MASONRY AND/OR BRICK MUST BE TOOTHED, UNLESS NOTED OTHERWISE ON DRAWINGS.
10. CONTRACTOR SHALL VERIFY LOCATIONS OF UTILITIES PRIOR TO EXCAVATION, TRENCHING, ETC. AND SHALL REPAIR OR REPLACE ANY DAMAGED UTILITIES AS A RESULT OF CONSTRUCTION.
11. ALL TRADES ARE TO COORDINATE ANY DEMOLITION, CAPPING OR ABANDONMENT OF EXISTING MECHANICAL, ELECTRICAL, PLUMBING OR ARCHITECTURAL ITEMS.
12. ANY DEMOLITION OR CONSTRUCTION WHICH DAMAGES ADJACENT SURFACES IS TO BE REPAIRED TO MATCH THE EXISTING SURFACE DAMAGED (MATERIALS & FINISHES) AND ALL REPAIR WORK IS TO BE COORDINATED WITH NEW CONSTRUCTION.
13. CONTRACTOR IS TO PROVIDE TEMPORARY SHORING AND BRACING FOR EXISTING ROOF/FLOOR STRUCTURE AS REQUIRED UNTIL PERMANENT WALLS & LINTELS ARE INSTALLED.
14. SITE SECURITY AND SAFETY ARE THE CONTRACTORS RESPONSIBILITY. SITE SHALL BE SECURED (FENCED IF REQUIRED) BY CONTRACTOR.
15. ALL ITEMS TO BE SAVED AND/OR RELOCATED ARE TO BE STORED IN A PROPER MANNER SO NO DAMAGE WILL OCCUR TO THESE ITEMS DURING THEIR STORAGE PERIOD.
16. ALL CONSTRUCTION AND MATERIALS ARE TO BE INSTALLED BY THE MANUFACTURERS SPECIFICATIONS AND/OR RECOMMENDATIONS UNLESS DIRECTED OTHERWISE BY ARCHITECT.
17. SEE SPECIFICATIONS FOR STEEL LINTEL SIZES FOR WALL OPENINGS NOT DETAILED (e.g. HVAC DUCTS, ETC.).
18. REFER TO GENERAL INFORMATION SHEET G0.01 FOR TYPICAL BARRIER FREE AND ACCESSIBLE DIMENSIONS.
19. SEE FLOOR PLANS FOR WALL REINFORCING REQUIRED. (SEE WALL REINFORCING SCHEDULE)
20. FURNISH & INSTALL 2x12 HORIZONTAL WOOD BLOCKING BETWEEN STUDS WHERE REQUIRED FOR MOUNTING OF UPPER CABINETS, GRAB BARS OR OTHER EQUIPMENT AS REQUIRED FOR PROPER SUPPORT.
21. COORDINATE ALL CONSTRUCTION PRACTICE TOLERANCES WITH OTHER TRADES WHOSE WORK MAY BE AFFECTED, DIRECTLY OR INDIRECTLY, WITH YOUR SPECIFIC TRADE. IN ALL CASES, THE MOST STRINGENT TOLERANCE SHALL APPLY AND SHALL BE COORDINATED THRU THE GENERAL CONTRACTOR, JOB SUPERINTENDENT AND/OR CONSTRUCTION MANAGER AND FIELD OBSERVATION PERSON AS APPLICABLE.
22. REFER TO FLOOR PLANS, SCHEDULES AND EXTERIOR ELEVATIONS FOR WINDOW FRAME TYPES.
23. REFER TO FLOOR PLANS, SCHEDULES AND INTERIOR ELEVATIONS FOR BORROWED LITE FRAME TYPES.
24. AT MASONRY CAVITY WALL LOCATION, PROVIDE APPROPRIATE SEPARATION IN REGARDS TO INTERIOR AIR EXFILTRATION AND EXTERIOR AIR AND WATER INFILTRATION THRU WALL. PROVIDE NECESSARY AIR AND WATER BARRIERS REQUIRED, INCLUDING DAMS, TO PREVENT WALL LEAKAGE.

CODE NOTES:

1. FIRE DEPARTMENT ACCESS AND WATER SUPPLY SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF VERTICAL CONSTRUCTION.
2. FIRE STOP ALL INTERCONNECTIONS BETWEEN VERTICAL AND HORIZONTAL SPACES AND CONCEALED WALL SPACES AT THE CEILING, FLOOR, AND ROOF LEVELS.
3. INSTALL SOLID BLOCK BEHIND ALL RECESSED WALL UNITS AS REQUIRED TO MAINTAIN FIRE RATINGS.
4. ALL FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS, AND SMOKE PARTITIONS SHALL BE IDENTIFIED WITH STENCILING AT INTERVALS NOT TO EXCEED 30'. REFER TO CODE PLAN FOR WALLS REQUIRED TO BE PROTECTED.
5. ALL PENETRATIONS AT SMOKE AND FIRE RATED WALLS, FLOORS, CEILINGS, ETC. SHALL BE PROTECTED, SEALED OR DAMPERED USING ONLY U.L. AND / OR I.C.B.O. APPROVED METHODS, MATERIALS AND INSTALLATION.
6. SEE REFLECTED CEILING PLANS AND LIGHTING PLANS FOR EXIT SIGNAGE LOCATIONS.
7. ALL EXITS TO BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF KEY OR SPECIAL KNOWLEDGE.
8. PANIC HARDWARE TO BE PROVIDED AT EACH EXIT DOOR FROM ROOMS WITH AN OCCUPANT LOAD 50 OR MORE INCLUDING MAIN CORRIDOR EXIT DOORS.
9. ALL ELEVATORS SHALL COMPLY WITH A.D.A., A.D.A.G.G. AND A.N.S.I. REQUIREMENTS.
10. SPECIAL STRUCTURAL INSPECTIONS ARE REQUIRED. REVIEW GENERAL STRUCTURAL NOTES AND SPECIFICATIONS FOR REQUIREMENTS.
11. FIRE SPRINKLERS AND FIRE ALARM SYSTEM SHALL BE PROVIDED PER NFPA NO. 13, 70 & 72. SUBMIT ALL REQUIRED DRAWING AND INFORMATION TO THE AUTHORITY HAVING JURISDICTION FOR APPROVAL PRIOR TO COMMENCEMENT OF ANY RELATED WORK. OBTAIN APPROVAL OF COMPLETED SYSTEMS PRIOR TO FINAL ACCEPTANCE.

ACCESSIBILITY NOTES:

1. PUBLIC ENTRANCES: AT LEAST 60% SHALL BE ACCESSIBLE.
2. ACCESSIBLE ENTRANCES TO THE BUILDING SHALL BE IDENTIFIED BY THE INTERNATIONAL SIGN OF ACCESSIBILITY.
3. AN ACCESSIBLE ROUTE OF NOT LESS THAN 3 FT. WIDE MUST BE PROVIDED TO ALL PORTIONS OF THE BUILDING AND BETWEEN THE BUILDING AND THE PUBLIC WAY. ACCESSIBLE ROUTES SHALL HAVE A MAXIMUM SLOPE OF 1:20 AND A MAXIMUM CROSS SLOPE OF 1:50.
4. ACCESSIBLE ROUTE SHALL BE WITHOUT STEPS OR CHANGES IN LEVEL GREATER THAN 1/2" WITHOUT AN APPROVED RAMP.
5. ACCESSIBLE RAMPS THAT ARE REQUIRED BY ANSI A 117.1 SHALL NOT HAVE A SLOPE THAT EXCEEDS 1FT. IN 12 FEET. RAMPS AND GROUND SURFACES SHALL BE OF A SLIP RESISTANT SURFACE.
6. THRESHOLDS MUST BE 1/2" OR LESS IN HEIGHT.
7. ALL ACCESSIBLE PARKING SPACES MUST HAVE A SIGN THAT INCLUDES THE INTERNATIONAL SIGN OF ACCESSIBILITY. PARKING SPACE WILL BE OUTLINED IN A CONTRASTING COLOR WITH THE INTERNATIONAL SIGN OF ACCESSIBILITY PAINTED IN THE CENTER.
8. ALL ALARMS TO MEET ACCESSIBILITY REQUIREMENTS.

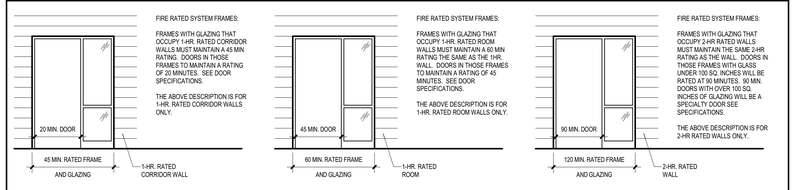
STRUCTURAL NOTES:

1. CONSTRUCTION AND/OR CONTROL JOINTS IN CONCRETE SHALL BE ON A 12'-0" SQUARE GRID (MAX.) UNLESS OTHERWISE NOTED. ALL CONSTRUCTION JOINTS SHALL BE DOWELED W/ 1/2" SMOOTH DOWELS AT 24" O.C. SEE DETAILS.
2. PROVIDE CONTINUOUS U-BLOCK BOND BEAMS AT THE LOCATIONS INDICATED ON WALL SECTIONS OR DETAILS. FILL U-BLOCKS WITH CONCRETE AND REINFORCE WITH (2) #5 BARS CONTINUOUS. UNLESS NOTED OTHERWISE ON DRAWINGS.

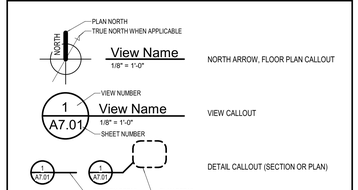
ABBREVIATIONS

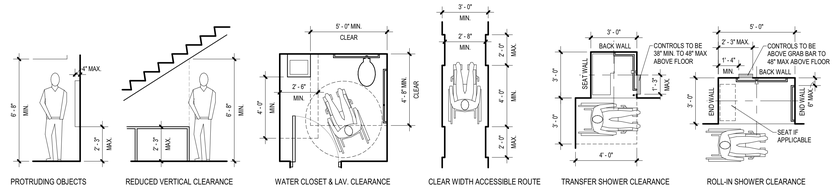
A.D.A.	=	AMERICANS WITH DISABILITY ACT	MFR.	=	MANUFACTURER
A.F.F.	=	ABOVE FINISHED FLOOR	MAX.	=	MAXIMUM
ALT.	=	ALTERNATE	M.B.	=	MARKER BOARD
ALUM.	=	ALUMINUM	M.B.C.	=	MICHIGAN BUILDING CODE
BD.	=	BOARD	MECH.	=	MECHANICAL
B.F.	=	BARRIER FREE	MIN.	=	MINIMUM
BATT.	=	BATTEN INSULATION	MISC.	=	MISCELLANEOUS
B.O.	=	BOTTOM OF	M.J.	=	MASONRY JOINT
BRG.	=	BEARING	M.O.	=	MASONRY OPENING
C.J.	=	CONTROL JOINT	MTL.	=	METAL
CLG.	=	CEILING	N.I.C.	=	NOT IN CONTRACT
CONC.	=	CONCRETE	NOM.	=	NOMINAL
CONT.	=	CONTINUOUS	O.C.	=	ON CENTER
CONF.	=	CONFERENCE	OPP.	=	OPPOSITE
CORR.	=	CORRIDOR	P.LAM	=	PLASTIC LAMINATE
DIA.	=	DIAMETER	P.T.	=	PRESSURE TREATED
DIM.	=	DIMENSION	REQ.	=	REQUIRED
DW.	=	DISHWASHER	REINF.	=	REINFORCING
D.F.	=	DRINKING FOUNTAIN	R.D.	=	ROOF DRAIN
DN.	=	DOWN	SIM.	=	SIMILAR TO
DS.	=	DOWNSPOUT	SPEC.	=	SPECIFICATION
EQ.	=	EQUAL	STD.	=	STANDARD
EL.	=	ELEVATION	STOR.	=	STORAGE
EX.	=	EXISTING	S.S.	=	STAINLESS STEEL
EXP.	=	EXPANSION	T.	=	TOILET
F.D.	=	FLOOR DRAIN	T.B.	=	TACK BOARD
F.E.	=	FIRE EXTINGUISHER	T&G	=	TONGUE AND GROOVE
F.E.C.	=	FIRE EXTINGUISHER CABINET	T.O.F.	=	TOP OF FOOTING
F.E.R.C.	=	FIRE EXT. RECESSED CABINET	T.O.M.	=	TOP OF MASONRY
F.E.S.C.	=	FIRE EXT. SEMI-RECESSED CABINET	T.O.W.	=	TOP OF WALL
FIN.	=	FINISHED	TYP.	=	TYPICAL
FLR.	=	FLOOR	U.N.O.	=	UNLESS NOTED OTHERWISE
GA.	=	GAUGE	V.I.F.	=	VERIFY IN FIELD
GYP.	=	GYPSUM BOARD	VERT.	=	VERTICAL
H.D.	=	HAND DRYER	VEST.	=	VESTIBULE
HORIZ.	=	HORIZONTAL	W/	=	WITH
H.S.S.	=	HOLLOW STRUCT. SECTION	W.W.F.	=	WELDED WIRE FABRIC
ISO.	=	ISOCYANURATE			
INSUL.	=	INSULATION			

FIRE RATED FRAMES



GENERAL ANNOTATION LEGEND





NON-LOAD BEARING COLD-FORMED METAL FRAMING SCHEDULE

	DEPTH	GAUGE (33 KSI)	FLANGE WIDTH	IDENTIFICATION AISI S100/S200	LOCATION / USE
STUDS & JOISTS	2 1/2"	20	1 1/4"	250S125-30	BULKHEADS & MISC. FRAMING
	3 5/8"	20	1 1/4"	362S125-30	INTERIOR WALLS & BULKHEADS
	6"	18	1 5/8"	600S162-43	
	3 5/8"	20	1 5/8"	362S162-33	INTERIOR JAMBS
	6"	18	1 5/8"	600S162-43	
	6"	16	1 5/8"	600S162-54	EXTERIOR WALLS
TRACK	2 1/2"	20	1 1/4"	250T125-30	BULKHEADS & MISC. FRAMING
	3 5/8"	20	1 1/4"	362T125-30	INTERIOR WALLS & BULKHEADS
	3 5/8"	20	2 1/2"	362T250-33	DEFLECTION TRACK
	6"	18	1 1/4"	600T125-43	INTERIOR WALLS & BULKHEADS
	6"	16	1 1/2"	600T150-54	EXTERIOR WALLS
FURRING (HAT)	7/8"	20	N/A	087F125-33	WHERE NOTED
	1 1/2"	20	N/A	150F125-33	WHERE NOTED

NOTE: ALL MEMBERS IN THIS SCHEDULE ARE SIZED FOR MAXIMUM 15' TALL WALLS, NOTE THAT 6" INTERIOR STUDS CAN SPAN A MAXIMUM HEIGHT OF 28'

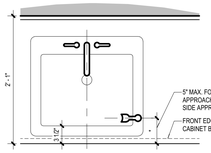
SEE COLD-FORMED METAL HEADER SCHEDULE FOR SPECIFIC JAMB & HEADER REQUIREMENTS

INTERIOR, NON-LOAD BEARING COLD-FORMED METAL HEADER SCHEDULE

ROUGH OPENING	MATERIAL	HEADER SHAPE
6'-0" MAX.	HEADER: (2) 362S162-33 JOISTS (2) 362T125-33 TRACKS JAMBS: (1) 362S162-33 STUD EACH END (1) 362T125-33 TRACK	
10'-0" MAX.	HEADER: (2) 600S162-33 JOISTS (2) 362T125-33 TRACKS JAMBS: (2) 362S162-33 STUDS EACH END (1) 362T125-33 TRACK	
12'-0" MAX.	HEADER: (2) 1000S162-43 JOISTS (1) 362S162-33 HORIZONTAL (3) 362T125-33 TRACKS JAMBS: (2) 362S162-33 STUDS EACH END (1) 362T125-33 TRACK	

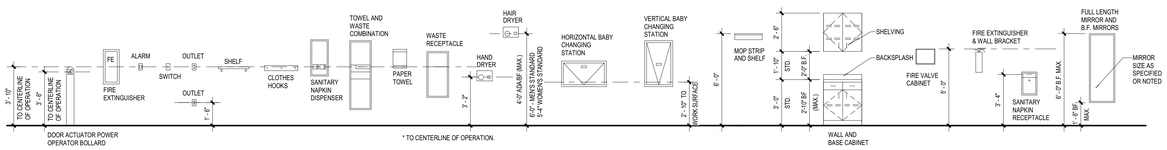
ALL HEADERS IN THIS SCHEDULE ARE SIZED FOR INTERIOR, NON-LOAD BEARING WALLS ONLY

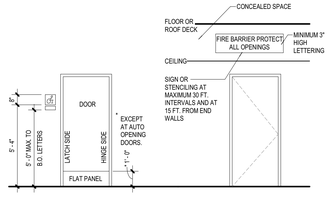
BASED ON 12' WALL HEIGHT / 5 psf INTERNAL LOAD / 50 plf VERTICAL DEAD LOAD

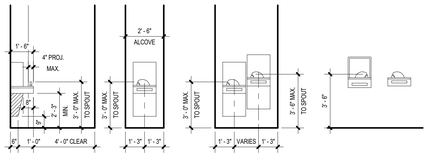


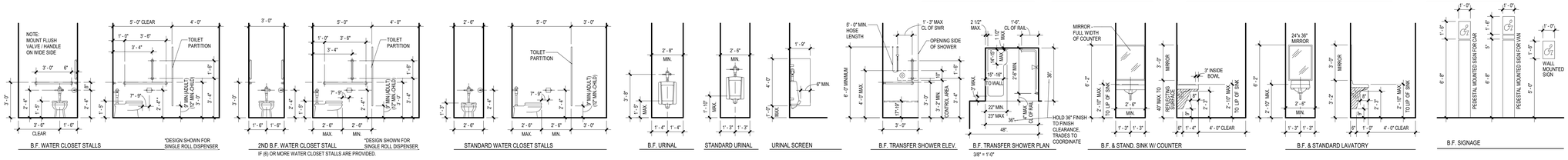
BUBBLER LOCATION

1" = 1'-0"



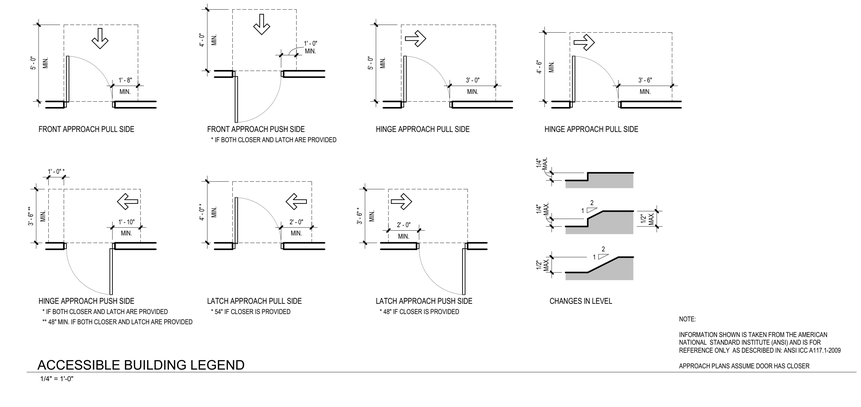






BARRIER FREE ADA DIMENSIONS

1/4" = 1'-0"



NOTE:

INFORMATION SHOWN IS TAKEN FROM THE AMERICAN NATIONAL STANDARD INSTITUTE (ANSI) AND IS FOR REFERENCE ONLY. AS DESCRIBED IN: ANSI ICC A117.1-2009

APPROACH PLANS ASSUME DOOR HAS CLOSER

ACCESSIBLE BUILDING LEGEND

1/4" = 1'-0"

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

DRAWN TGD

REVIEWED TGD

PROJECT NO. 5-5769

GENERAL NOTES DIMENSIONS AND LEGENDS

G0.01

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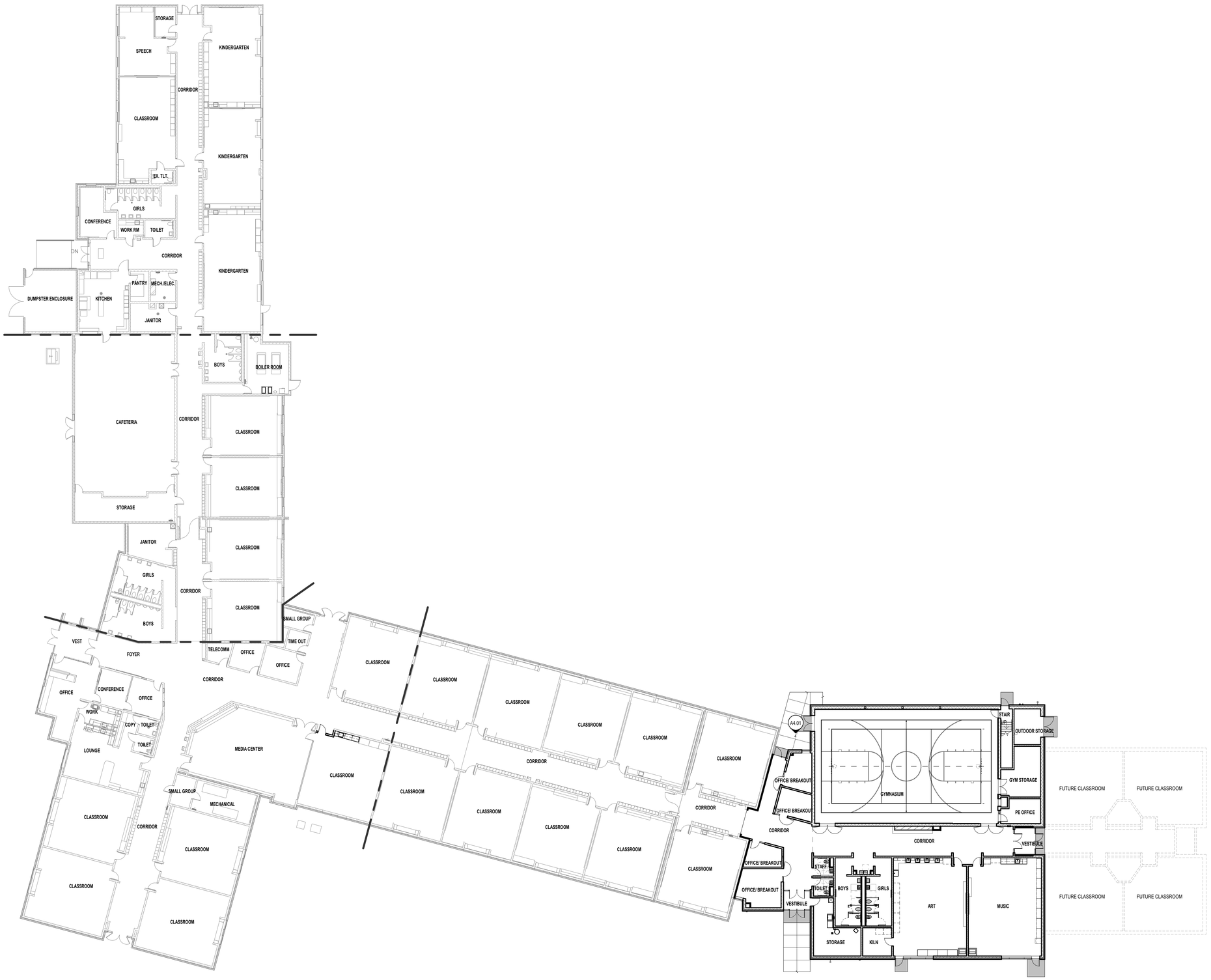
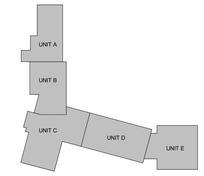


NORTH

OVERALL FLOOR PLAN

1/16" = 1'-0"



NORTH

KEYPLAN

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

DRAWN MEE

REVIEWED TGD

PROJECT NO. 5-5769

OVERALL FLOOR PLAN

A0.01

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769A 2019.rvt
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DEMOLITION LEGEND

- EXISTING WALL TO BE DEMOLISHED
- PORTION OF EXISTING WALL TO BE DEMOLISHED
- EXISTING OBJECT TO BE DEMOLISHED
- AREA OF FLOOR CUTTING
- EXISTING WALLS TO REMAIN
- EXISTING OBJECTS TO REMAIN
- XX — DEMOLITION TAG: SEE DEMOLITION NOTES
- ROOM NAME / FLOOR FINISH / CEILING FINISH — EXISTING ROOM FINISH INFORMATION: ROOM NAME, FLOORING TYPE, CEILING TYPE

DEMOLITION NOTES

- DEMOLITION CONTRACTOR IS TO STOP WORK IMMEDIATELY IN AREA IF ASBESTOS IS ENCOUNTERED. NOTIFY CONSTRUCTION MANAGER OF SUSPECTED AREA SO PROPER ABATEMENT CAN BE DONE. (UNDER A SEPARATE ASBESTOS ABATEMENT CONTRACT AS NEGOTIATED BY OWNER.)
- ALL MASONRY BLOCK AND BRICK WALLS TO BE REMOVED MUST BE TOOTHED TO RECEIVE NEW MASONRY, UNLESS NOTED OTHERWISE ON DRAWINGS.
- DEMOLITION CONTRACTOR IS TO PROVIDE TEMPORARY SHORING AND BRACING FOR EXISTING ROOF/FLOOR STRUCTURE AS REQUIRED UNTIL PERMANENT WALLS & LINTELS ARE INSTALLED. REFER TO STRUCT. & ARCH. DWGS. FOR BEARING CONDITIONS.
- ALL TRADES ARE TO COORDINATE ANY DEMOLITION, CAPPING OR ABANDONMENT OF EXISTING MECHANICAL, ELECTRICAL, PLUMBING OR ARCHITECTURAL ITEMS.
- ALL ITEMS TO BE SAVED AND/OR RELOCATED ARE TO BE STORED IN A PROPER MANNER SO NO DAMAGE WILL OCCUR TO THESE ITEMS DURING THEIR STORAGE PERIOD.
- ALL DEMOLITION WHICH DAMAGES ADJACENT SURFACES IS TO BE REPAIRED TO MATCH THE EXISTING SURFACE DAMAGED (MATERIALS & FINISHES) AND ALL REPAIR WORK IS TO BE COORDINATED WITH NEW CONSTRUCTION. FOR NEW OPENINGS IN EXISTING WALLS, COORDINATE NEW LINTELS W/ MASONRY CONTRACTOR.
- PATCH WALLS & ROOF TO MATCH EXISTING CONSTRUCTION BEHIND REMOVAL OF WALL LOUVERS, EXHAUST FANS, INTAKE HOODS & CABINET HEATERS. VERIFY SEQUENCE OF REMOVAL W/ CONSTRUCTION MANAGER. SEE MECHANICAL AND ELECTRICAL DEMO SHEETS FOR WALL, ROOF & FLOOR OPENINGS TO BE PATCHED.
- ALL TRADES ARE TO COORDINATE THE REMOVAL OF EXISTING LOOSE EQUIPMENT WITH ARCHITECT AND/OR OWNER. ADDITIONAL EQUIPMENT FOUND THAT IS NOT NOTED ON DEMOLITION PLAN SHALL BE REMOVED AS PART OF GENERAL DEMOLITION AFTER VERIFICATION WITH ARCHITECT/OWNER.

01 REMOVE EXISTING WALL INCLUDING DOORS, WINDOWS, BORROWED LITES, AND ANY EQUIPMENT OR FURNISHINGS ATTACHED TO WALL OR PORTION OF EXISTING WALL AS SHOWN ON FLOOR PLAN (MIN. 4" BELOW FLOOR SLAB) AND AS REQUIRED FOR NEW CONSTRUCTION. FLOOR SURFACE TO BE PATCHED AS REQUIRED TO RECEIVE NEW FLOOR MATERIAL. WALL SURFACE TO BE PATCHED AS REQUIRED TO RECEIVE NEW WALL FINISH. SEE MECHANICAL & ELECTRICAL DEMOLITION NOTES FOR RELATED ITEMS. SUPPORT UNBRACED SECTIONS OF WALL OR ROOF AS REQUIRED.

02 REMOVE EXISTING BORROWED LITE OR DOOR & DOOR FRAME. (DOOR LINTEL TO REMAIN UNLESS OTHERWISE NOTED ON PLAN -SEE STRUCTURAL FOR ADDITIONAL INFORMATION). WHERE DOOR FRAMES ARE TO REMAIN, PROTECT FRAMES FROM DAMAGE. SAND AND PREP FOR NEW PAINT FINISH UNDER SECTION 09 90 00. SEE DOOR SCHEDULE FOR REQUIRED NEW DOORS AND FRAMES OR ONLY NEW DOORS.

03 SAW CUT AND REMOVE FLOOR OR PORTION OF EXISTING FLOOR SLAB AS SHOWN OR DIMENSIONED ON FLOOR PLAN. EXCAVATE, FILL & COMPACT SOIL AS REQUIRED FOR NEW SLAB- COORDINATE WITH MECHANICAL/ ELECTRICAL DEMOLITION NOTES FOR RELATED ITEMS & LOCATIONS. INSTALL NEW SLAB TO MATCH EXIST. ELEVATION. SEE STRUCTURAL FOR ADDITIONAL INFORMATION REGARDING SLAB REMOVAL.

04 REMOVE EXISTING CASEWORK/MILLWORK, COUNTER TOPS & BACK SPLASH. SAVE ITEMS AT OWNER'S REQUEST.

05 REMOVE EXISTING SUSPENDED/PLASTER CEILING-INCLUDING ALL FRAMING, TILES, TEES, HANGERS & WIRES USED TO SUPPORT THAT CEILING. REPLACE PER REFL. CEILING PLANS.

06 SEE MECHANICAL DEMOLITION NOTES FOR REMOVAL OF EXIST. PLUMBING/MECHANICAL (i.e. LAVATORIES, SINKS, WATER CLOSETS, URINALS, PIN TUBE, MECH. DUCTWORK, UNIT VENTS, ETC.)

07 REMOVE EXISTING WINDOW, WINDOW WALL WITH ALUMINUM FRAMING WITH METAL PANELS BELOW WINDOW, FRAME, SILL & GLAZING INCLUDING ALL EXISTING WOOD BLOCKING AND FRAMING ABOVE WINDOWS TO ROOF AND/OR MASONRY TIES AT BRICK PIERS AND SIDE WALLS.

08 REMOVE EXISTING EQUIPMENT OR FURNISHINGS SECURED TO FLOOR, WALL OR CEILING AND STORE FOR REUSE BY OWNER.

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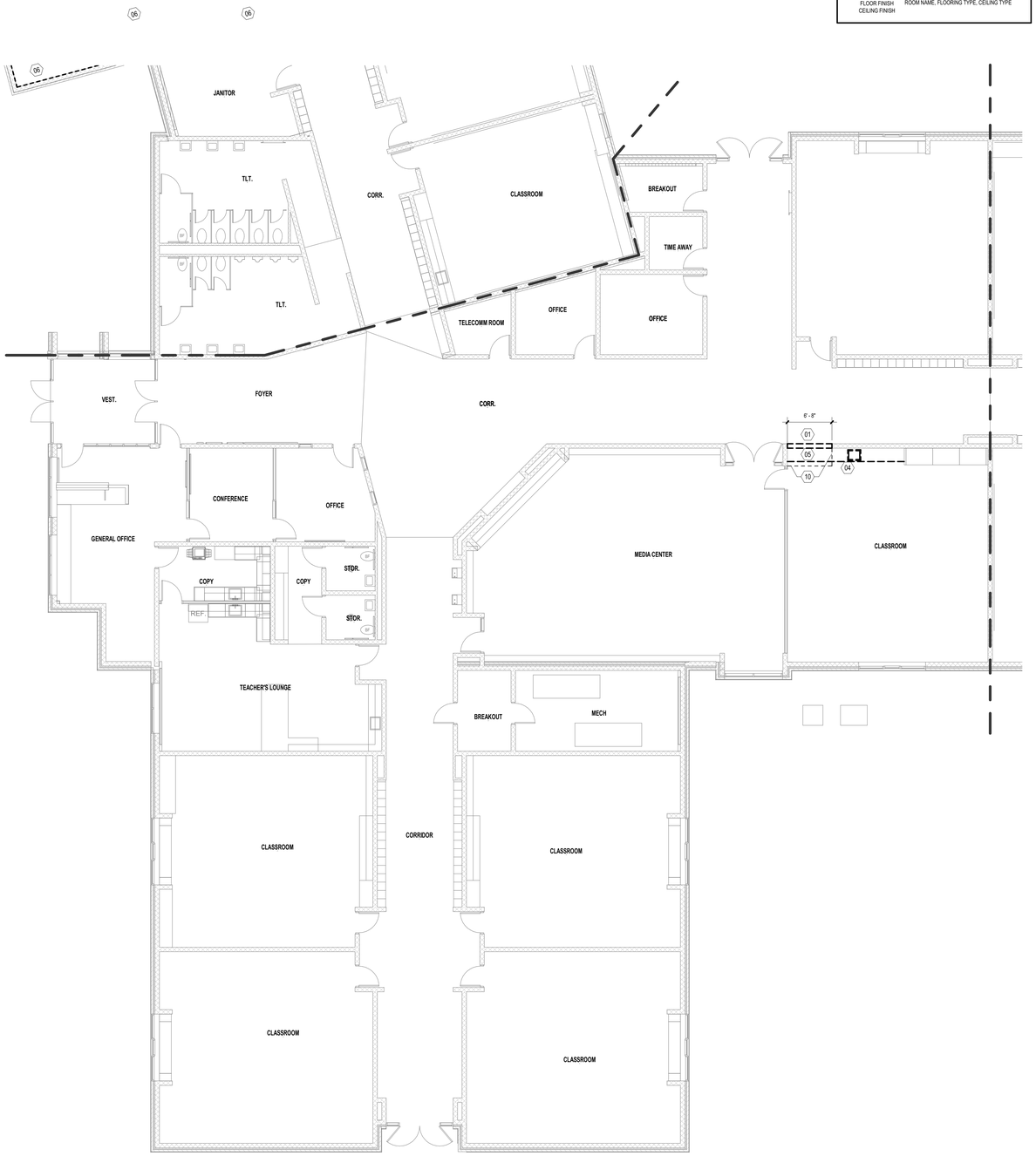

NORTH

UNIT 'C' DEMOLITION PLAN

1/8" = 1'-0"

NORTH

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

DRAWN MEE

REVIEWED TGD

PROJECT NO. 5-5769

UNIT 'C' DEMOLITION PLAN

A1.1C

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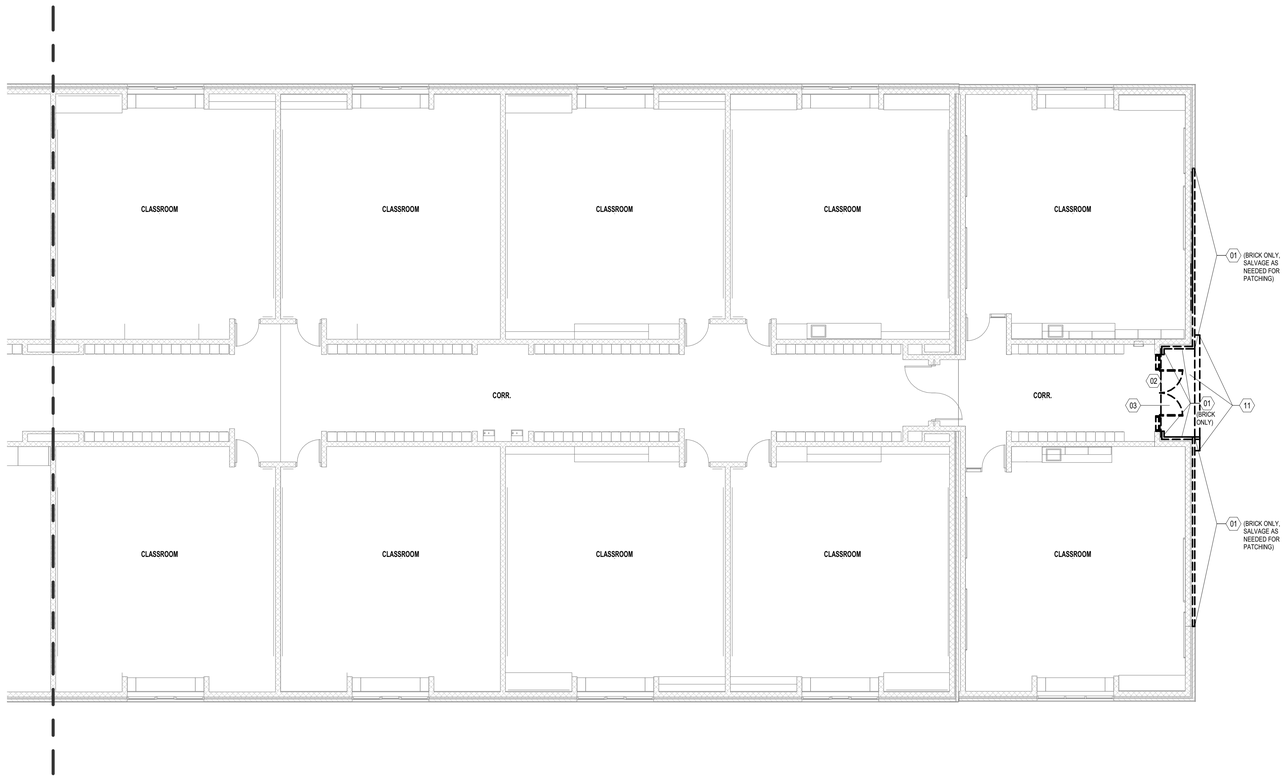
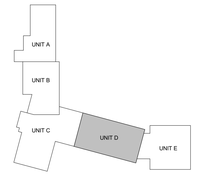


NORTH

UNIT 'D' FIRST FLOOR DEMOLITION PLAN

1/8" = 1'-0"



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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

DRAWN MEE

REVIEWED TGD

PROJECT NO. 5-5769

UNIT 'D' DEMOLITION PLAN

A1.1D

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769A 2019.rvt
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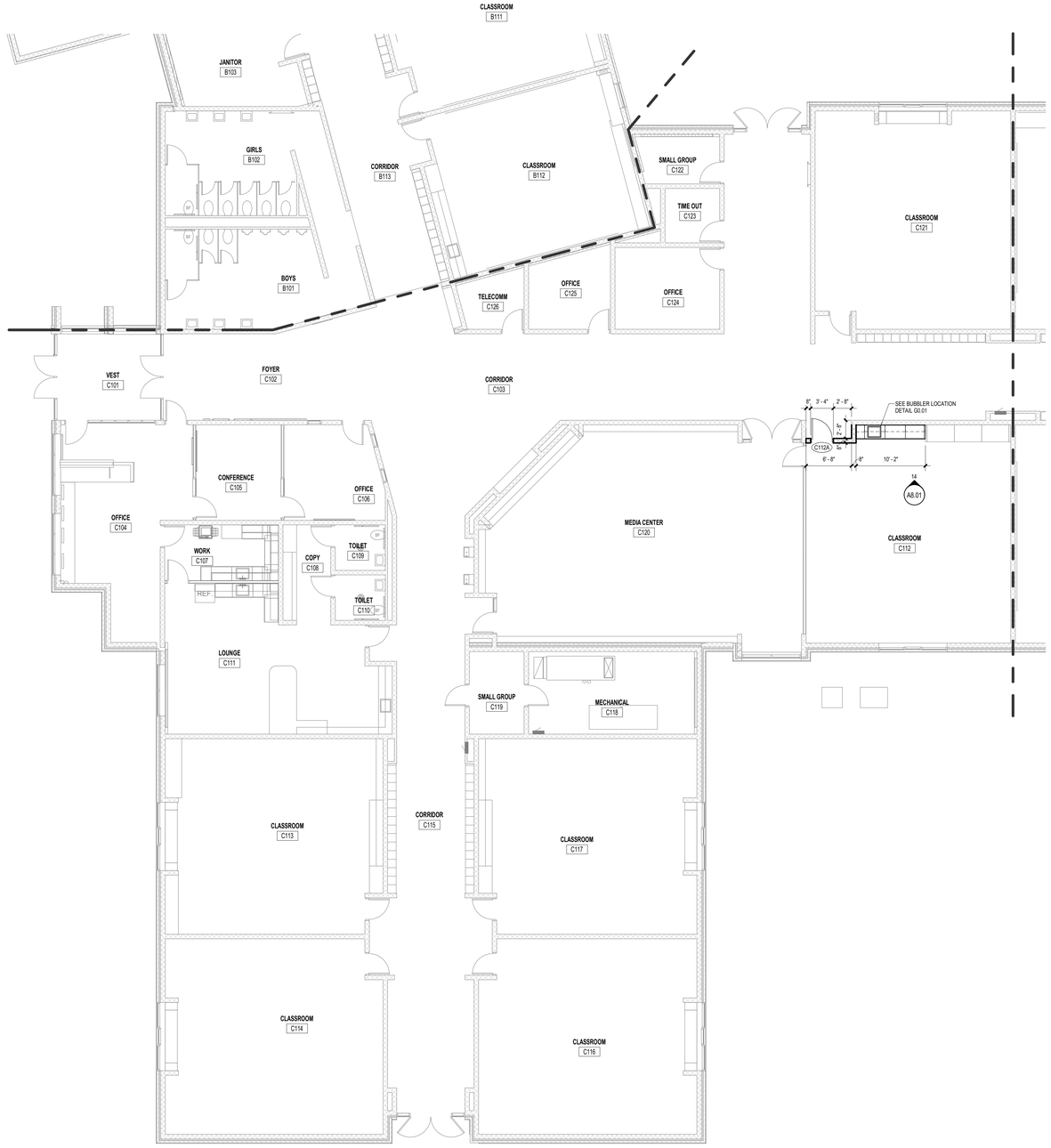


NORTH

UNIT 'C' FLOOR PLAN

1/8" = 1'-0"

WALL LEGEND

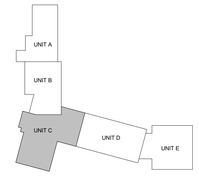
5 7/8"	5/8" GYP. BOARD BOTH SIDES 3 5/8" LIGHT GA. METAL FRAMING AT 16" O.C. SOUND BATT FULL HEIGHT OF WALL. WALLS TO BOTTOM OF DECK UNLESS NOTED OTHERWISE
7 1/4"	5/8" GYP. BOARD BOTH SIDES 6" LIGHT GA. METAL FRAMING AT 16" O.C. SOUND BATT FULL HEIGHT OF WALL. WALLS TO BOTTOM OF DECK UNLESS NOTED OTHERWISE
SEE PLAN	CMU WALL SEE FLOOR PLANS FOR REQUIRED WALL REINFORCING. NOMINAL DIMENSIONS GIVEN (8" TYPICAL U.N.O.)
SEE PLAN	BRICK AND CMU WALL W/ 2" SPRAY APPLIED INSULATION SEE FLOOR PLANS FOR REQUIRED WALL REINFORCING. NOMINAL DIMENSIONS GIVEN. SEE WALL SECTIONS FOR ADDITIONAL DETAILS, BANDING, ETC. (3 5/8" BRICK & 8" CMU TYPICAL U.N.O.)
SEE PLAN	CONCRETE WALL SEE STRUCTURAL PLANS FOR REQUIRED REINFORCING.

-FIRE RATINGS AS CALLED FOR ON CODE COMPLIANCE PLAN

-DIMENSIONS GIVEN ARE TO THE FINISHED FACE OF CMU OR GYPSUM WALL BOARD UNLESS NOTED OTHERWISE

GENERAL FLOOR PLAN NOTES:

1. DIMENSIONS GIVEN ARE TO THE FACE OF MASONRY UNITS OR TO THE FINISHED FACE OF METAL STUD PARTITION WALLS.
2. REFERENCE STRUCTURAL DRAWINGS FOR CONCRETE SLAB SIZES AND SLAB RELATED INFORMATION.
3. INTERIOR STUD WALLS ARE TO USE 3 5/8" METAL STUD FRAMING UNLESS OTHERWISE NOTED.
4. TURN UP VAPOR RETARDER MATERIAL AT JOINTS BETWEEN FLOOR SLAB AND FOUNDATION WALL UNLESS NOTED OTHERWISE.
5. SEE FOUNDATION PLANS FOR FLOOR SLAB RECESSES FOR TILE, WOOD FLOOR, ETC. (VERIFY RECESS REQUIRED BY MFR.)
6. EXTEND ALL INTERIOR WALL PARTITIONS (MASONRY OR STUDS) TO BOTTOM OF DECK ABOVE UNLESS NOTED OTHERWISE.
7. REFERENCE STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL FOR ITEMS NOT SHOWN. COORDINATE AS REQUIRED INCLUDING NECESSARY FRAMING, BLOCKING, ETC.
8. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF ANY CABINETRY, FRAMES, STRUCTURAL ITEMS, ETC.
9. PROVIDE PAINTED ACCESS PANELS IN WALLS AND CEILINGS TO PROVIDE ACCESS TO CONCEALED ITEMS INCLUDING BUT NOT LIMITED TO VALVES, CONTROLS, MECH. EQUIPMENT, ETC. ACCESS PANELS MAY NOT ALWAYS BE SHOWN ON PLANS. IT IS THE SUB CONTRACTOR RESPONSIBILITY TO DETERMINE LOCATIONS. COORDINATE LOCATIONS WITH OTHER GENERAL CONTRACTOR / SITE SUPERVISOR.
10. COORDINATE WALLS WITH COLUMNS AND OTHER ENCASED ITEMS. COLUMNS ARE TO BE CONTAINED WITHIN WALLS. THE FRAMING CONTRACTOR SHALL INCREASE FRAMING SIZE TO ACCOMMODATE COLUMNS, DRAIN LEADERS, PIPING, ELECTRICAL PANELS, ETC. WHERE WALLS REQUIRE EXTRA WIDTH THE ENTIRE WALL SHALL BE WIDENED UNLESS APPROVED BY ARCHITECT.
11. ALL GUARDRAILS AND HANDRAILS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE 2015 M.B.C., ANSI ICC A117.1-2009 & AMERICANS WITH DISABILITIES ACT GUIDELINES. THE MOST STRINGENT SHALL PREVAIL.
12. PROVIDE MINIMUM CLEARANCES AT ALL DOORS PER DETAILS. SEE G0.01 FOR REQUIREMENTS.
13. FOR ALL CABINETRY, SEE INTERIOR ELEVATIONS FOR LAYOUTS. FIELD VERIFY CLEAR WIDTHS PRIOR TO FABRICATION.
14. ALL EXTERIOR BLOCK CORNERS ARE TO BE BULLNOSE BLOCK EXCEPT CONCRETE BLOCK COLUMNS, PIERS AND WALLS TO RECEIVE TILE - UNLESS NOTED OTHERWISE.
15. CONTRACTOR TO MAINTAIN / REPAIR RATING OF EXISTING PARTITIONS AS AFFECTED BY DEMOLITION / NEW CONSTRUCTION. TYPICAL THROUGHOUT.
16. SEAL ALL PENETRATIONS IN FIRE RATED FLOORS AND WALLS WITH APPROVED FIRESTOPPING.
17. WHERE SPECIALTY BLOCK IS REQUIRED AT THE SAME HEIGHT ON BOTH SIDES OF A WALL USE (2) SPECIALTY BLOCKS BACK TO BACK TO MAINTAIN THE FINISHED WALL APPEARANCE BOTH SIDES OF THE WALL. COORDINATE WITH STRUCTURE FOR LINTELS CONDITIONS PER SPECIFICATIONS.
18. WALLS TO BE PATCHED WITH LIKE MATERIALS WHERE EXISTING WALLS HAVE BEEN COMPROMISED FROM DEMOLITION. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO REMOVAL AND REINSTALLATION OF CASEWORK AND WALL MOUNTED EQUIPMENT IN ORDER TO ACHIEVE SAID PATCH. IN AREAS WHERE BLOCK OR BRICK HAVE BEEN USED, NEW MASONRY TO BE TOOTHED IN AND MATCH EXISTING. AREAS AND FINISHES IN QUESTION SHALL BE COORDINATED WITH ARCHITECT.
19. SEE STRUCTURAL FRAMING PLANS FOR ADDITIONAL WALL REINFORCING REQUIREMENTS. MINIMUM REINFORCING (FOR ALL WALLS NOT OTHERWISE NOTED ON STRUCTURAL PLANS):
    A. ALL BEARING WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.
    B. ALL EXTERIOR WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.
    C. ALL INTERIOR NON-BEARING WALLS OVER 16'-0" HIGH SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.



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ISSUANCES

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UNIT 'C' FLOOR PLAN

A2.1C

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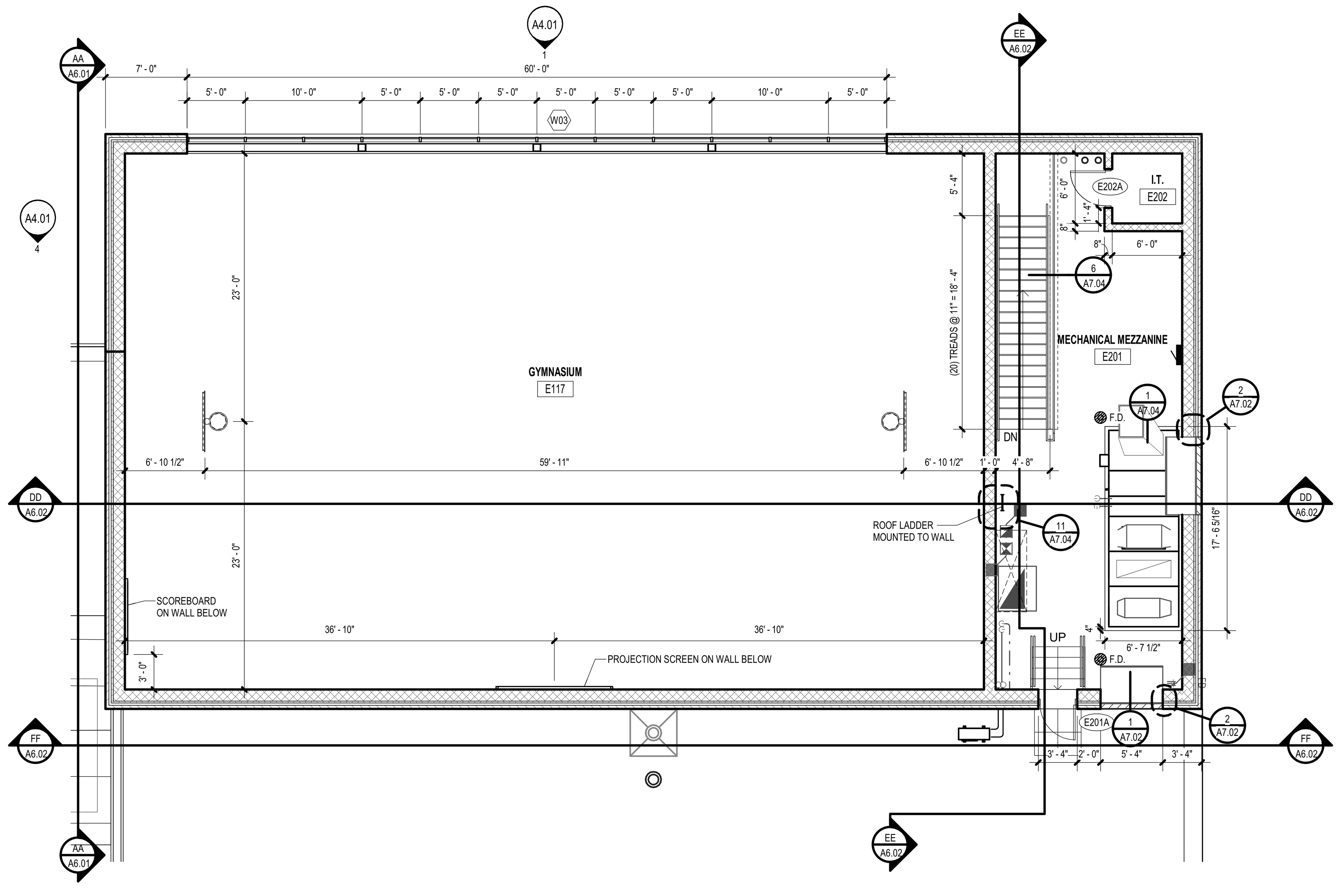
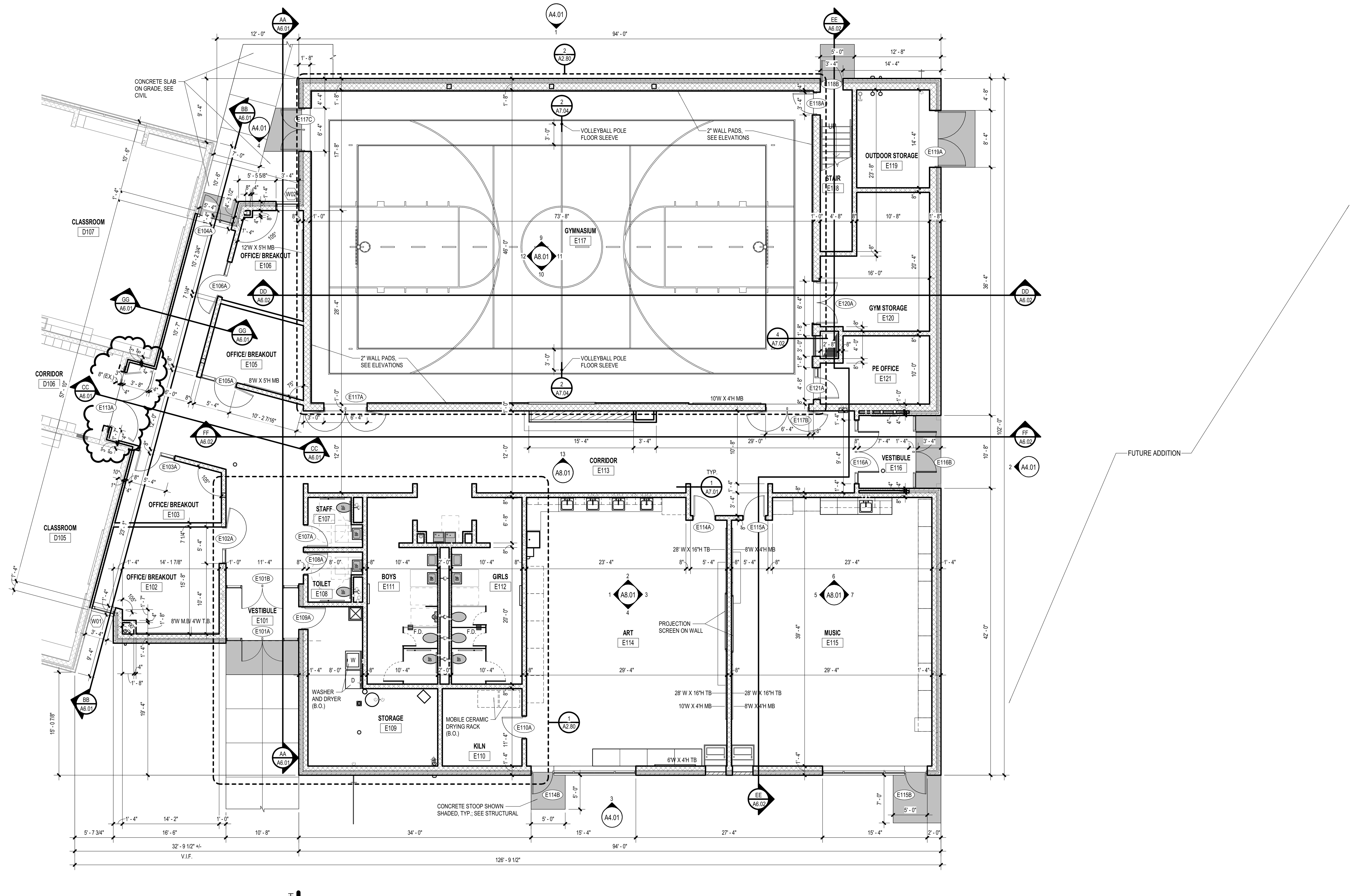


UNIT 'E' GYM MEZZANINE

1/8" = 1'-0"



UNIT 'E' FLOOR PLAN

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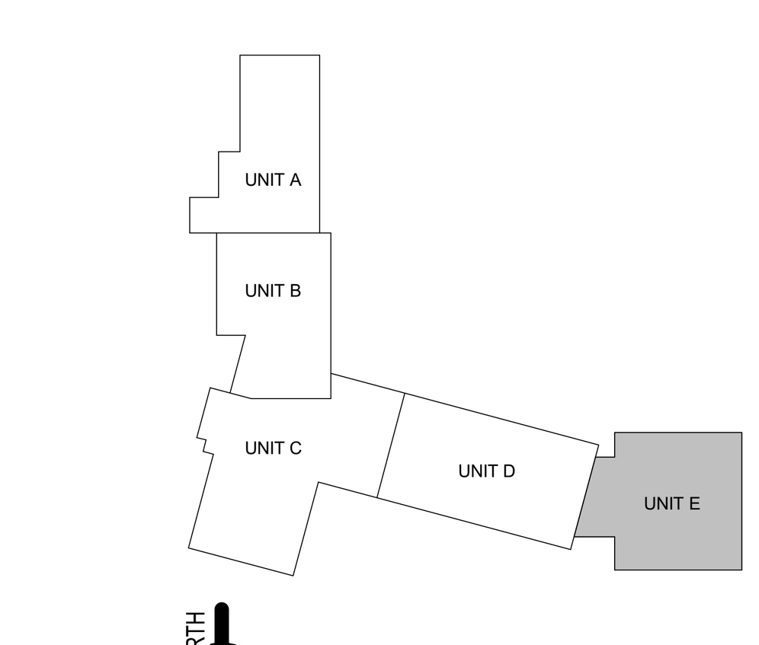

KEYPLAN

WALL LEGEND

Wall type	Description
4 7/8"	5/8" GYP. BOARD BOTH SIDES 3 5/8" LIGHT GA. METAL FRAMING AT 16" O.C. SOUND BATT FULL HEIGHT OF WALL. WALLS TO BOTTOM OF DECK UNLESS NOTED OTHERWISE
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6. EXTEND ALL INTERIOR WALL PARTITIONS (MASONRY OR STUDS) TO BOTTOM OF DECK ABOVE UNLESS NOTED OTHERWISE.
7. REFERENCE STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL FOR ITEMS NOT SHOWN. COORDINATE AS REQUIRED INCLUDING NECESSARY FRAMING, BLOCKING, ETC.
8. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF ANY CABINETRY, FRAMES, STRUCTURAL ITEMS, ETC.
9. PROVIDE PAINTED ACCESS PANELS IN WALLS AND CEILINGS TO PROVIDE ACCESS TO CONCEALED ITEMS INCLUDING BUT NOT LIMITED TO VALVES, CONTROLS, MECH. EQUIPMENT, ETC. ACCESS PANELS MAY NOT ALWAYS BE SHOWN ON PLANS. IT IS THE SUB CONTRACTOR RESPONSIBILITY TO DETERMINE LOCATIONS. COORDINATE LOCATIONS WITH OTHER GENERAL CONTRACTOR / SITE SUPERVISOR.
10. COORDINATE WALLS WITH COLUMNS AND OTHER ENCASED ITEMS. COLUMNS ARE TO BE CONTAINED WITHIN WALLS. THE FRAMING CONTRACTOR SHALL INCREASE FRAMING SIZE TO ACCOMMODATE COLUMNS, DRAIN LEADERS, PIPING, ELECTRICAL PANELS, ETC. WHERE WALLS REQUIRE EXTRA WIDTH THE ENTIRE WALL SHALL BE WIDENED UNLESS APPROVED BY ARCHITECT.
11. ALL GUARDRAILS AND HANDRAILS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE 2015 M.B.C., ANSI ICC A117.1-2009 & AMERICANS WITH DISABILITIES ACT GUIDELINES. THE MOST STRINGENT SHALL PREVAIL.
12. PROVIDE MINIMUM CLEARANCES AT ALL DOORS PER DETAILS. SEE G0.01 FOR REQUIREMENTS.
13. FOR ALL CABINETRY, SEE INTERIOR ELEVATIONS FOR LAYOUTS. FIELD VERIFY CLEAR WIDTHS PRIOR TO FABRICATION.
14. ALL EXTERIOR BLOCK CORNERS ARE TO BE BULLNOSE BLOCK EXCEPT CONCRETE BLOCK COLUMNS, PIERS AND WALLS TO RECEIVE TILE - UNLESS NOTED OTHERWISE.
15. CONTRACTOR TO MAINTAIN / REPAIR RATING OF EXISTING PARTITIONS AS AFFECTED BY DEMOLITION / NEW CONSTRUCTION. TYPICAL THROUGHOUT.
16. SEAL ALL PENETRATIONS IN FIRE RATED FLOORS AND WALLS WITH APPROVED FIRESTOPPING.
17. WHERE SPECIALTY BLOCK IS REQUIRED AT THE SAME HEIGHT ON BOTH SIDES OF A WALL USE (2) SPECIALTY BLOCKS BACK TO BACK TO MAINTAIN THE FINISHED WALL APPEARANCE BOTH SIDES OF THE WALL. COORDINATE WITH STRUCTURE FOR LINTELS CONDITIONS PER SPECIFICATIONS.
18. WALLS TO BE PATCHED WITH LIKE MATERIALS WHERE EXISTING WALLS HAVE BEEN COMPROMISED FROM DEMOLITION. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO REMOVAL AND REINSTALLATION OF CASEWORK AND WALL MOUNTED EQUIPMENT IN ORDER TO ACHIEVE SAID PATCH. IN AREAS WHERE BLOCK OR BRICK HAVE BEEN USED, NEW MASONRY TO BE TOOTHED IN AND MATCH EXISTING. AREAS AND FINISHES IN QUESTION SHALL BE COORDINATED WITH ARCHITECT.
19. SEE STRUCTURAL FRAMING PLANS FOR ADDITIONAL WALL REINFORCING REQUIREMENTS. MINIMUM REINFORCING (FOR ALL WALLS NOT OTHERWISE NOTED ON STRUCTURAL PLANS):
    A. ALL BEARING WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.
    B. ALL EXTERIOR WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.
    C. ALL INTERIOR NON-BEARING WALLS OVER 16'-0" HIGH SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES	
10.04.2022	BIDS AND CONSTRUCTION
02.16.2023	BULLETIN 003

DRAWN	MEE
REVIEWED	TGD
PROJECT NO.	5-5769

UNIT 'E' FLOOR PLAN AND GYM MEZZANINE PLAN

A2.1E

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769A 2019.rvt
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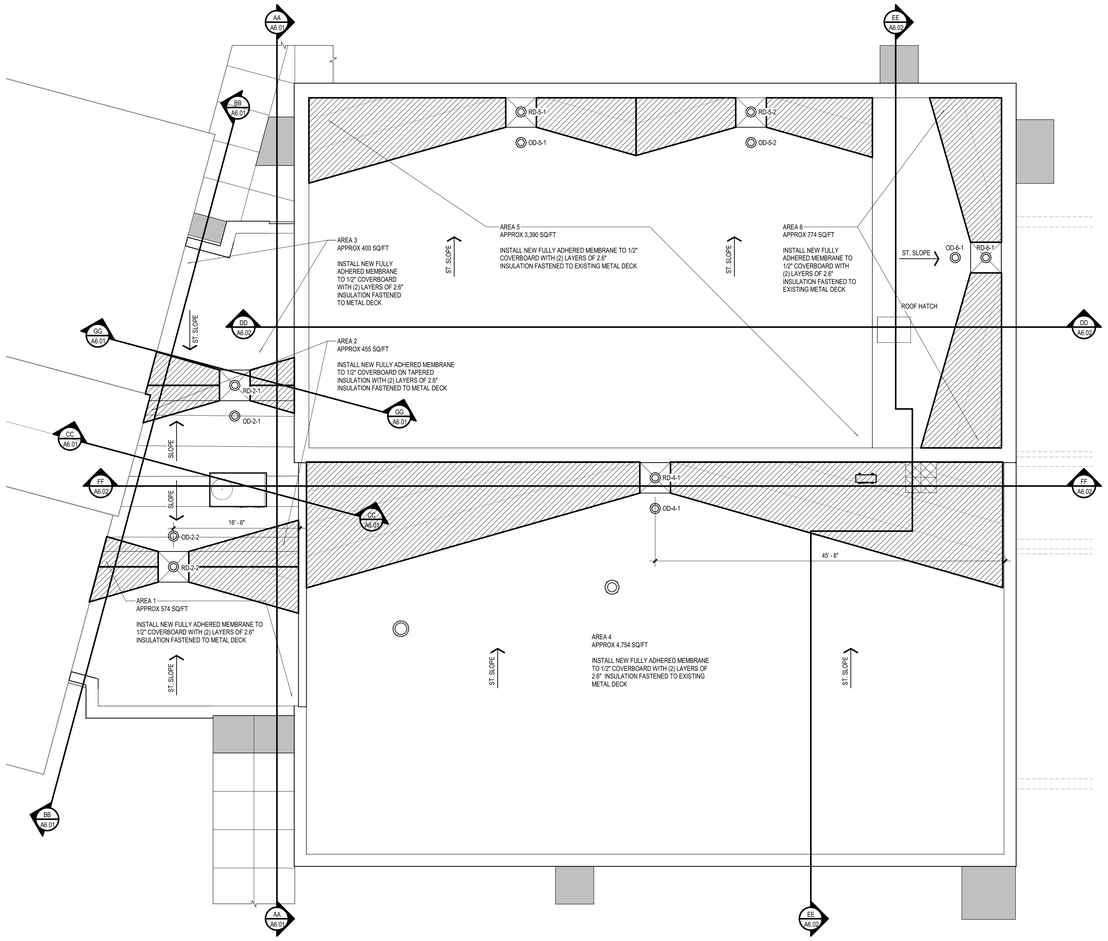
GENERAL NOTES

1. ROOF DETAILS - LOCATED ON SHEET A7.01
   - ROOF DRAIN - 9/A7.01
   - ROOF OVERFLOW DRAIN - 10/A7.01
   - FASTENING ENHANCEMENT AT CORNER - SEE SPEC AND DETAIL 11/A7.01
   - PLUMBING VENT - 12/A7.01
   - STACK FLASHING - 13/A7.01
   - METAL COPING SPLICE DETAIL - 14/A7.01
   - ROOF CURB DETAIL - 15/A7.01
2. RE-ROOFING EXISTING NAILERS / BLOCKING TO REMAIN: CONTRACTOR TO FIELD VERIFY THE EXISTING NAILERS / BLOCKING WILL COMPLY TO MEET THE WIND UP LIFT CRITERIA. REMOVE ALL DAMAGED NAILERS / BLOCKING AND / OR INSTALL ADDITIONAL FASTENER AS REQUIRED TO COMPLY.
3. REFER TO PLUMBING DRAWINGS FOR LOCATION AND NUMBER OF PLUMBING VENTS THRU ROOF.
4. REFER TO MECHANICAL DRAWINGS TO COORDINATE ALL ROOF PENETRATIONS & LOCATIONS.
5. PROVIDE 1/2" TAPERED CRICKETS AT ALL ROOF HATCHES AND MECHANICAL ROOF PENETRATIONS UNLESS OTHERWISE NOTED. TAPER SHALL PROVIDE DRAINAGE AROUND HATCH AND EQUIPMENT.
6. SEE SPECIFICATION FOR ROOFING SYSTEM TO BE USED AND ROOF PLAN FOR LOCATIONS OF TAPERED INSULATION AND OR SLOPE CHANGES OF ROOF.
7. CONTRACTOR RESPONSIBLE TO FIELD VERIFY ALL SQUARE FOOTAGE VALUES NOTED ON PLANS
8. IN AREAS WHERE EXISTING ROOF DRAINS ARE BEING REPLACED WITH NEW ROOF DRAIN TO BE INSTALLED IN THE EXACT LOCATION OF EXISTING AND WILL BE CONNECTED TO EXISTING PIPING AS REQUIRED.
9. SCUPPER LOCATIONS TO BE COORDINATED SO THAT THEY DO NOT APPEAR OVER DOORS, WINDOWS OR MECHANICAL LOUVERS
10. STANDARD ROOF ABBREVIATIONS
    RD = ROOF DRAIN
    ORD = OVERFLOW ROOF DRAIN
    EF = EXHAUST FAN
    IV = INTAKE VENT
    RTU = ROOF TOP UNIT
    RV = RELIEF VENT

LEGEND

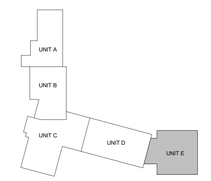
- TAPERED RIGID INSULATION (4' SECTIONS) 1/4" PER FOOT SLOPE UNLESS OTHERWISE NOTED
- TAPERED RIGID INSULATION (4' SECTIONS @ 1/2" SLOPE PER FOOT AT CRICKETS) CRICKETS SLOPE TO ROOF DRAINS.
- ST. SLOPE — DIRECTION OF STRUCTURAL ROOF SLOPE. (SEE STRUCTURAL PLANS FOR ROOF FRAMING SLOPES)
- SLOPE — DIRECTION OF ROOF SLOPE. WITH TAPERED INSULATION
- STANDARD ROOF DRAIN
- RD-5-1 — ROOF DRAIN LABEL
  - ROOF DRAIN NUMBER
  - ROOF AREA (SEE ROOF KEYPLAN)
  - RD OR ORD
- + 7 1/4" — THICKNESS OF TAPERED INSULATION AT PERIMETER OR DRAIN (NOT INCLUDING BASE INSULATION THICKNESS)
- ROOF HATCH
- ROOF WALKWAY PAD (SEE SPEC. FOR MATERIAL)



NORTH

UNIT 'E' ROOF PLAN

1/8" = 1'-0"



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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

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UNIT 'E' ROOF PLAN

A2.3E

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TOILET ACCESSORIES LEGEND

(SEE SHEET G0.01 FOR MOUNTING HEIGHTS)
(SEE SPECS)

- (A) PAPER TOWEL DISPENSER (BY OWNER)
- (B) TOILET PAPER DISPENSER (BY OWNER)
- (C) SOAP DISPENSER (BY OWNER)
- (D) BARRIER FREE GRAB BARS
- (E) 24" x 36" FRAMED GLASS MIRROR
- (F) RECESSED NAPKIN DISPENSER
- (G) NAPKIN DISPOSAL (RECESSED)
- (H) NAPKIN DISPOSAL (WALL MOUNTED)
- (J) BABY CHANGING STATION
- (K) 24" x 60" FRAMED GLASS MIRROR
- (L) ELECTRIC HAND DRYER

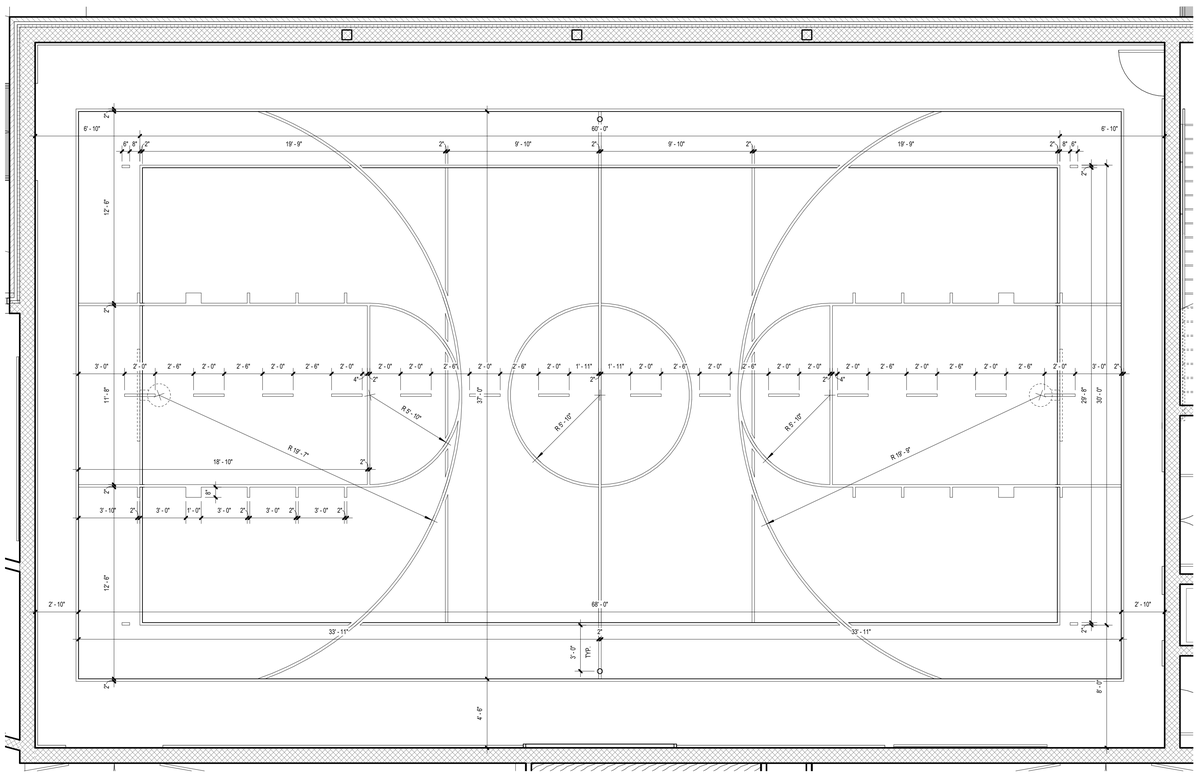
COURT STRIPING NOTES:

ACTIVITY	LINE WIDTH	PRIORITY
MAIN BASKETBALL	2"	1st
MAIN VOLLEYBALL	2"	2nd
CROSS COURT BASKETBALL	2"	3rd
CROSS COURT VOLLEYBALL	2"	4th

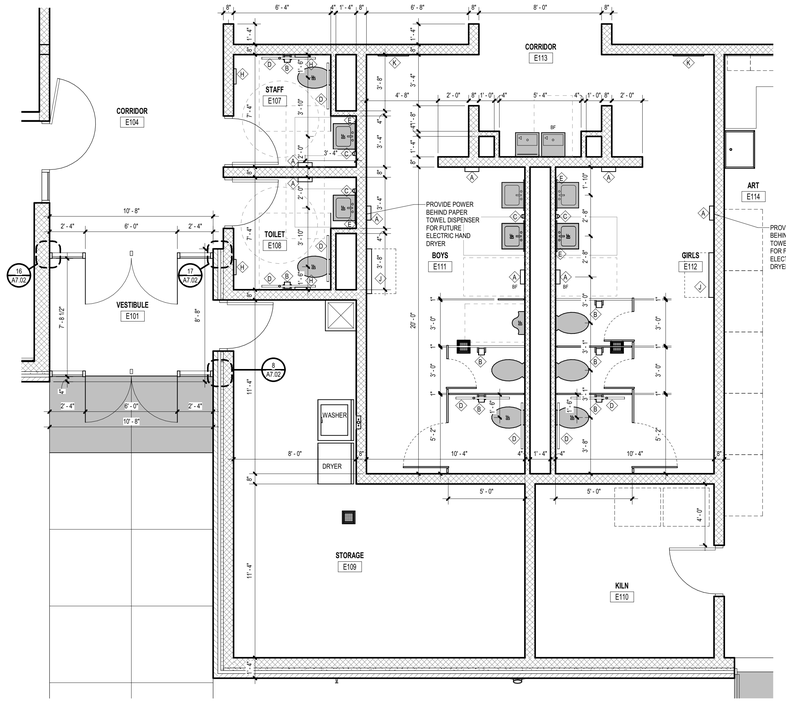
OVERALL COURT SIZES:	
MAIN BASKETBALL	50' x 94'
ALL VOLLEYBALL	30' x 60'
CROSS COURT BASKETBALL	50' x 74'

GENERAL NOTES:

1. VERIFY AND APPROVE ALL FLOOR STRIPING & PAINTING (INCLUDING COLORS) WITH OWNER BEFORE WORK IS TO PROCEED.
2. SEE SPECIFICATIONS FOR GYMNASIUM WOOD FLOORING SYSTEM.
3. DIMENSIONS FOR FLOOR LINES ARE TO THE COURT'S EDGE OF LINE UNLESS NOTED AS CENTERLINE.
4. SEE COURT STRIPING NOTES FOR TYP. COURT LINE WIDTHS OR AS NOTED ON PLAN.



2 A2.80 COURT STRIPING PLAN
1/4" = 1'-0"



1 A2.80 ENLARGED PLAN UNIT 'E' TOILET ROOMS
1/4" = 1'-0"

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

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PROJECT NO. 5-5769

ENLARGED PLANS

A2.80

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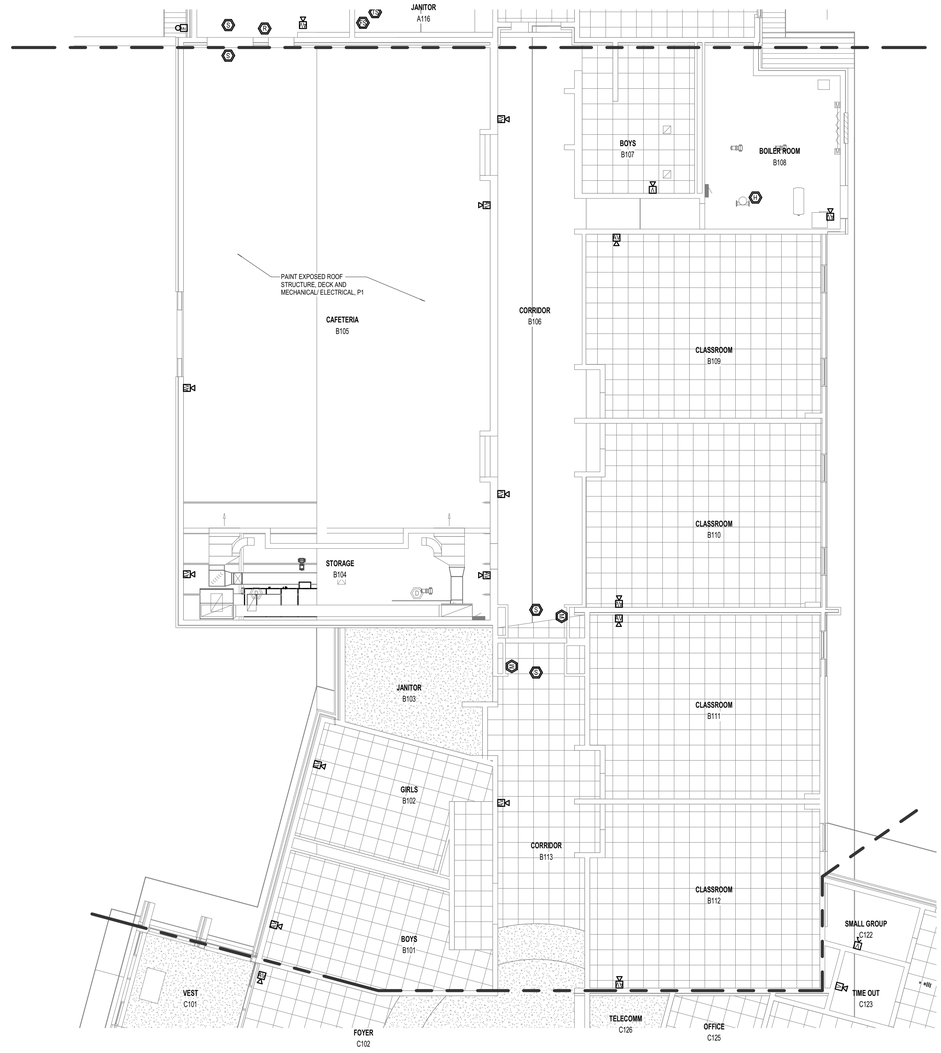
GENERAL CEILING NOTES:

1. CONTRACTOR SHALL FOLLOW GRID PATTERN ESTABLISHED ON THE REFLECTED CEILING PLAN. ANY VARIATIONS SHALL BE APPROVED BY THE ARCHITECT.
2. CEILING TILE TYPE AS SPECIFIED- CEILING HEIGHTS NOTED ON REFLECTED CEILING PLANS. CEILING ELEVATIONS ARE FROM THAT ROOM'S FINISH FLOOR.
3. WIRE CEILING FROM STRUCTURE ABOVE AND WIRE FOR ADDITIONAL LOAD AT LIGHTS AND CEILING DIFFUSERS.
4. UNLESS OTHERWISE NOTED, CEILING TO BE SUSPENDED METAL TEE AND ACOUSTICAL TILE 2'-0"x 2'-0" OR 2'-0"x 4'-0" TYPICAL. SEE SPECIFICATIONS FOR MANUFACTURER AND STYLE.
5. PENDANT MOUNTED FIXTURES CENTERED ON GRID REQUIRE GRID TO BE CUT AND SUPPORTED ON EACH SIDE.
6. MOUNT SPEAKERS AND SUPPLY AIR DIFFUSERS IN THE CENTER OF WHOLE CEILING PANELS. ADHERE A RIGID PANEL BACKER TO PANELS AT LOCATIONS WHICH INDICATE SPEAKERS, DIFFUSERS, LIGHTS, SMOKE DETECTORS, EXIT LIGHTS AND FIRE PROTECTION SPRINKLERS.
7. PROVIDE 2'-0" CEILING GRID CROSS-TEE AT EACH RETURN AIR GRILLE.
8. PROVIDE AN ADDITIONAL CROSS-TEE AT EACH SLOT DIFFUSER.
9. REFER TO THE MECHANICAL DRAWINGS FOR LOUVERS REQUIRED TO BE FRAMED IN GYPSUM BOARD BULKHEADS.
10. ALL CEILING HEIGHTS ARE SUBJECT TO CHANGE TO ACCOMMODATE UNFORESEEN FIELD CONDITIONS - COORDINATE CHANGES WITH ARCHITECT & AFFECTED DISCIPLINES.
11. SOME CORRIDOR CEILING PANEL LAYOUTS HAVE BEEN ADJUSTED AT A CHANGE IN CORRIDOR DIRECTION TO ACCOMMODATE LIGHTING LAYOUT.

REFLECTED CEILING LEGEND

ACT1 — CEILING TYPE +10' - 0" — HEIGHT ABOVE FINISH FLOOR	CEILING TAG
ACT1	ACOUSTICAL CEILING TILE SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
ACT2	ACOUSTICAL CEILING TILE SYSTEM GRID SPACING: 48" X 24" SUPPORT: SUSPENSION SYSTEM
DAFS1	DIRECT-APPLIED FINISH SYSTEM C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE SUPPORT: SEE DETAILS
GYP1	GYPSUM BOARD CEILING OR BULKHEAD C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE SUPPORT: SUSPENSION SYSTEM OR METAL STUD FRAMING PAINT: 'P1' UNLESS NOTED OTHERWISE
C.J.	CONTROL JOINT
E.J.	EXPANSION JOINT
	CUT TILE
	RECESSED LIGHT FIXTURE
	SURFACE / PENDANT MOUNT LIGHT FIXTURE
	MECHANICAL SUPPLY DIFFUSER / RETURN GRILLE / EXHAUST GRILLE / LINEAR SLOT DIFFUSER
	EXIT SIGN (CEILING OR WALL-MOUNTED)
	ELECTRICAL DEVICES (CEILING OR WALL-MOUNTED)

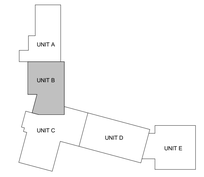
NOTE: REFER TO STRUCTURAL, PLUMBING/FIRE PROTECTION, MECHANICAL, AND ELECTRICAL/TECHNOLOGY FOR MORE DETAILED SYMBOL LEGENDS. SHOWN FOR GENERAL COORDINATION, NOT ALL SYMBOLS ARE INDICATED. NOTIFY ARCHITECT OF ANY/ALL DISCREPENCIES



NORTH

UNIT 'B' REFLECTED CEILING PLAN

1/8" = 1'-0"



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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

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PROJECT NO.	5-5769

UNIT 'B' REFLECTED CEILING PLAN

A3.1B

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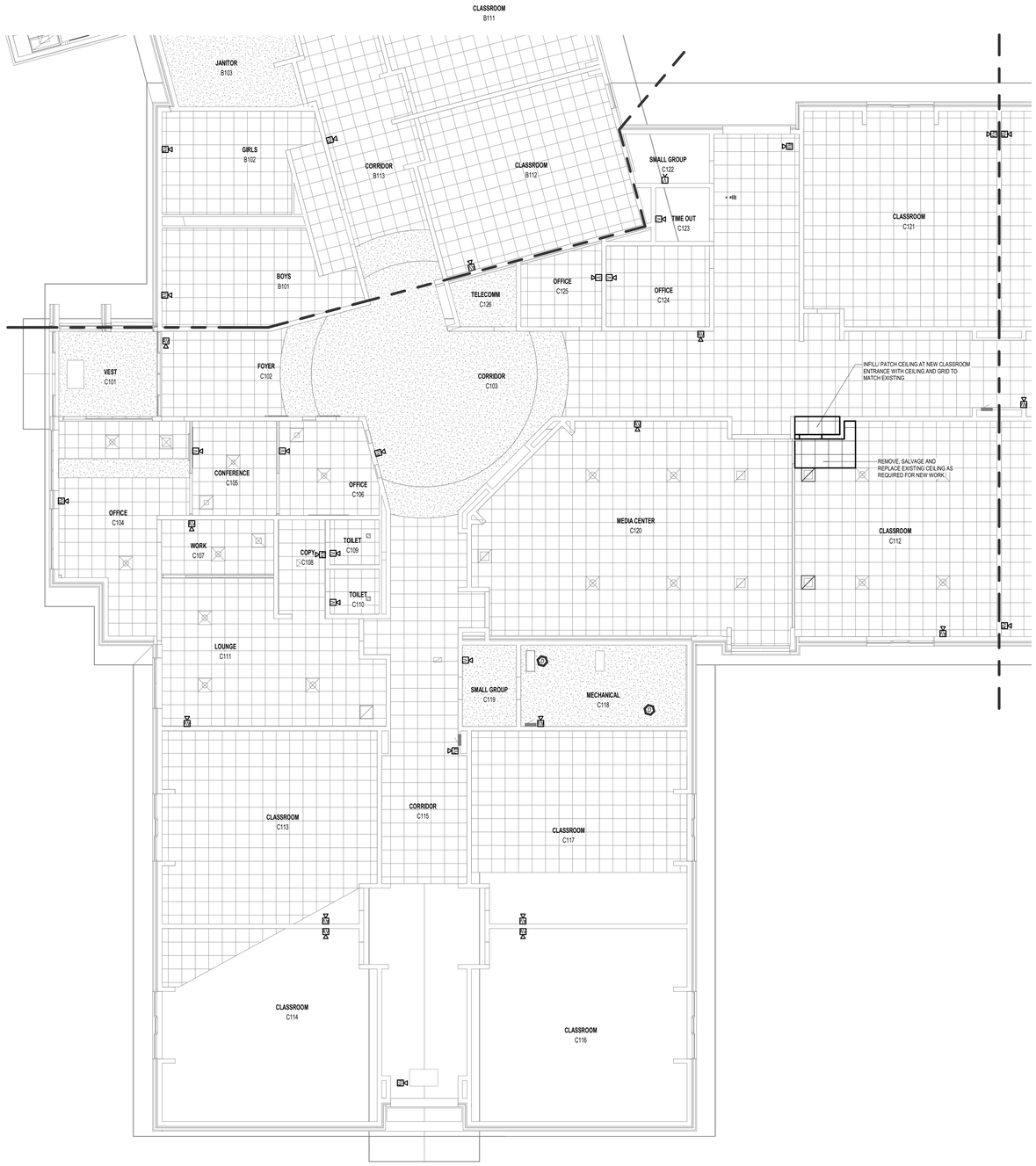
GENERAL CEILING NOTES:

1. CONTRACTOR SHALL FOLLOW GRID PATTERN ESTABLISHED ON THE REFLECTED CEILING PLAN. ANY VARIATIONS SHALL BE APPROVED BY THE ARCHITECT.
2. CEILING TILE TYPE AS SPECIFIED- CEILING HEIGHTS NOTED ON REFLECTED CEILING PLANS. CEILING ELEVATIONS ARE FROM THAT ROOM'S FINISH FLOOR.
3. WIRE CEILING FROM STRUCTURE ABOVE AND WIRE FOR ADDITIONAL LOAD AT LIGHTS AND CEILING DIFFUSERS.
4. UNLESS OTHERWISE NOTED, CEILING TO BE SUSPENDED METAL TEE AND ACOUSTICAL TILE 2'-0"x 2'-0" OR 2'-0"x 4'-0" TYPICAL. SEE SPECIFICATIONS FOR MANUFACTURER AND STYLE.
5. PENDANT MOUNTED FIXTURES CENTERED ON GRID REQUIRE GRID TO BE CUT AND SUPPORTED ON EACH SIDE.
6. MOUNT SPEAKERS AND SUPPLY AIR DIFFUSERS IN THE CENTER OF WHOLE CEILING PANELS. ADHERE A RIGID PANEL BACKER TO PANELS AT LOCATIONS WHICH INDICATE SPEAKERS, DIFFUSERS, LIGHTS, SMOKE DETECTORS, EXIT LIGHTS AND FIRE PROTECTION SPRINKLERS.
7. PROVIDE 2'-0" CEILING GRID CROSS-TEE AT EACH RETURN AIR GRILLE.
8. PROVIDE AN ADDITIONAL CROSS-TEE AT EACH SLOT DIFFUSER.
9. REFER TO THE MECHANICAL DRAWINGS FOR LOUVERS REQUIRED TO BE FRAMED IN GYPSUM BOARD BULKHEADS.
10. ALL CEILING HEIGHTS ARE SUBJECT TO CHANGE TO ACCOMMODATE UNFORESEEN FIELD CONDITIONS - COORDINATE CHANGES WITH ARCHITECT & AFFECTED DISCIPLINES.
11. SOME CORRIDOR CEILING PANEL LAYOUTS HAVE BEEN ADJUSTED AT A CHANGE IN CORRIDOR DIRECTION TO ACCOMMODATE LIGHTING LAYOUT.

REFLECTED CEILING LEGEND

- ACT1 — CEILING TYPE; +10' - 0" — HEIGHT ABOVE FINISH FLOOR — CEILING TAG
- ACT1 — ACOUSTICAL CEILING TILE SYSTEM; GRID SPACING: 24" X 24"; SUPPORT: SUSPENSION SYSTEM
- ACT2 — ACOUSTICAL CEILING TILE SYSTEM; GRID SPACING: 48" X 24"; SUPPORT: SUSPENSION SYSTEM
- DAFS1 — DIRECT APPLIED FINISH SYSTEM; C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE; SUPPORT: SEE DETAILS
- GYP1 — GYPSUM BOARD CEILING OR BULKHEAD; C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE; SUPPORT: SUSPENSION SYSTEM OR METAL STUD FRAMING; PAINT: P1" UNLESS NOTED OTHERWISE.
- C.J. — CONTROL JOINT
- E.J. — EXPANSION JOINT
- CUT TILE
- RECESSED LIGHT FIXTURE
- SURFACE / PENDANT MOUNT LIGHT FIXTURE
- MECHANICAL SUPPLY DIFFUSER / RETURN GRILLE / EXHAUST GRILLE / LINEAR SLOT DIFFUSER
- EXIT SIGN (CEILING OR WALL-MOUNTED)
- A01 6 — ELECTRICAL DEVICES (CEILING OR WALL-MOUNTED)

NOTE: REFER TO STRUCTURAL, PLUMBING/FIRE PROTECTION, MECHANICAL, AND ELECTRICAL/TECHNOLOGY FOR MORE DETAILED SYMBOL LEGENDS. SHOWN FOR GENERAL COORDINATION, NOT ALL SYMBOLS ARE INDICATED. NOTIFY ARCHITECT OF ANY/ALL DISCREPENCIES



NORTH

UNIT 'C' REFLECTED CEILING PLAN

1/8" = 1'-0"

NORTH

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

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UNIT 'C' REFLECTED CEILING PLAN

A3.1C

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GENERAL CEILING NOTES:

1. CONTRACTOR SHALL FOLLOW GRID PATTERN ESTABLISHED ON THE REFLECTED CEILING PLAN. ANY VARIATIONS SHALL BE APPROVED BY THE ARCHITECT.
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3. WIRE CEILING FROM STRUCTURE ABOVE AND WIRE FOR ADDITIONAL LOAD AT LIGHTS AND CEILING DIFFUSERS.
4. UNLESS OTHERWISE NOTED, CEILING TO BE SUSPENDED METAL TEE AND ACOUSTICAL TILE 2'-0"x 2'-0" OR 2'-0"x 4'-0" TYPICAL. SEE SPECIFICATIONS FOR MANUFACTURER AND STYLE.
5. PENDANT MOUNTED FIXTURES CENTERED ON GRID REQUIRE GRID TO BE CUT AND SUPPORTED ON EACH SIDE.
6. MOUNT SPEAKERS AND SUPPLY AIR DIFFUSERS IN THE CENTER OF WHOLE CEILING PANELS. ADHERE A RIGID PANEL BACKER TO PANELS AT LOCATIONS WHICH INDICATE SPEAKERS, DIFFUSERS, LIGHTS, SMOKE DETECTORS, EXIT LIGHTS AND FIRE PROTECTION SPRINKLERS.
7. PROVIDE 2'-0" CEILING GRID CROSS-TEE AT EACH RETURN AIR GRILLE.
8. PROVIDE AN ADDITIONAL CROSS-TEE AT EACH SLOT DIFFUSER.
9. REFER TO THE MECHANICAL DRAWINGS FOR LOUVERS REQUIRED TO BE FRAMED IN GYPSUM BOARD BULKHEADS.
10. ALL CEILING HEIGHTS ARE SUBJECT TO CHANGE TO ACCOMMODATE UNFORESEEN FIELD CONDITIONS - COORDINATE CHANGES WITH ARCHITECT & AFFECTED DISCIPLINES.
11. SOME CORRIDOR CEILING PANEL LAYOUTS HAVE BEEN ADJUSTED AT A CHANGE IN CORRIDOR DIRECTION TO ACCOMMODATE LIGHTING LAYOUT.

REFLECTED CEILING LEGEND

ACT1 — CEILING TYPE +10' - 0" — HEIGHT ABOVE FINISH FLOOR	CEILING TAG
ACT1	ACOUSTICAL CEILING TILE SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
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DAFS1	DIRECT-APPLIED FINISH SYSTEM C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE SUPPORT: SEE DETAILS
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C.J.	CONTROL JOINT
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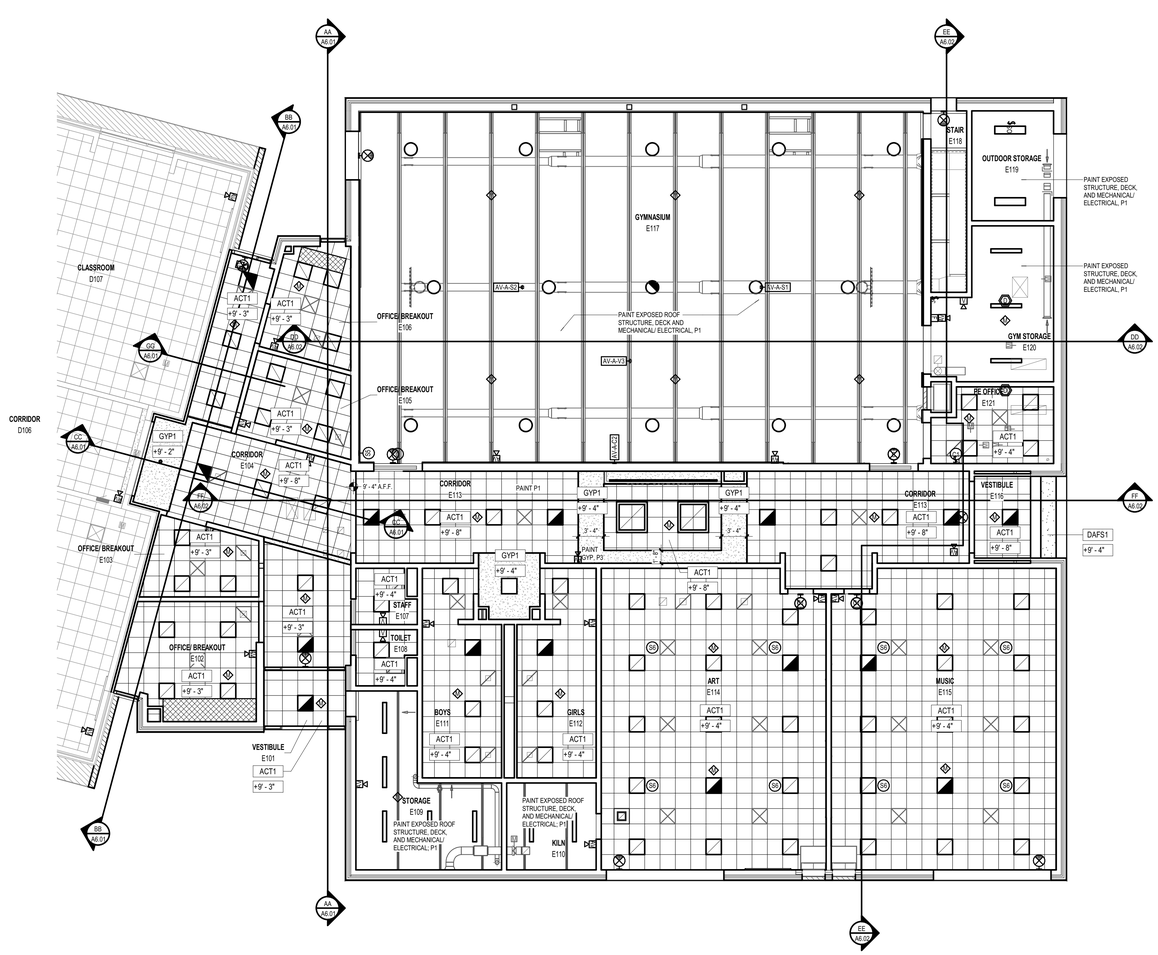
	CUT TILE
	RECESSED LIGHT FIXTURE
	SURFACE / PENDANT MOUNT LIGHT FIXTURE
	MECHANICAL SUPPLY DIFFUSER / RETURN GRILLE / EXHAUST GRILLE / LINEAR SLOT DIFFUSER
	EXIT SIGN (CEILING OR WALL-MOUNTED)
	ELECTRICAL DEVICES (CEILING OR WALL-MOUNTED)

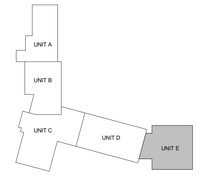
NOTE: REFER TO STRUCTURAL, PLUMBING/FIRE PROTECTION, MECHANICAL, AND ELECTRICAL/TECHNOLOGY FOR MORE DETAILED SYMBOL LEGENDS. SHOWN FOR GENERAL COORDINATION, NOT ALL SYMBOLS ARE INDICATED. NOTIFY ARCHITECT OF ANY/ALL DISCREPENCIES



NORTH

UNIT 'E' REFLECTED CEILING PLAN

1/8" = 1'-0"



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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5769

UNIT 'E' REFLECTED CEILING PLAN

A3.1E

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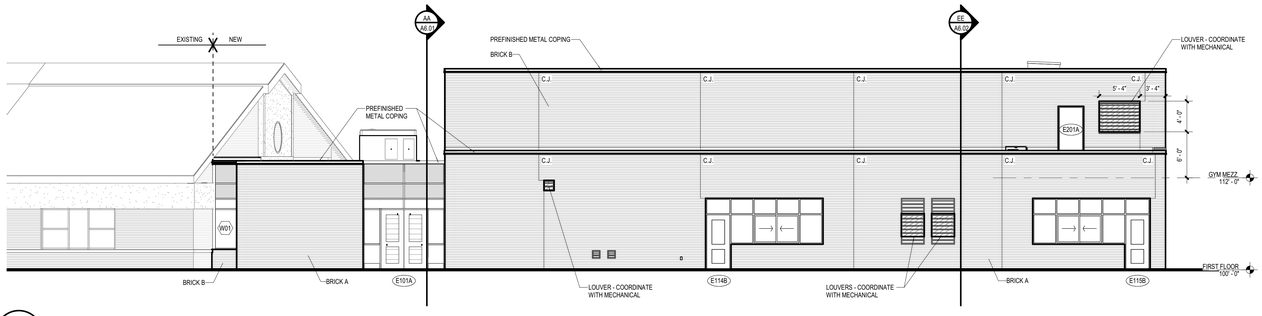
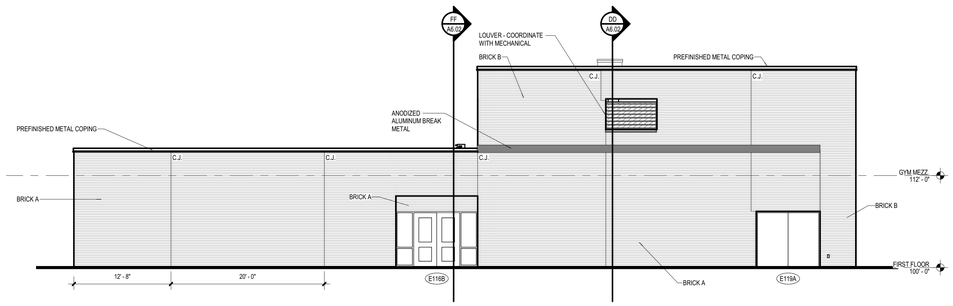
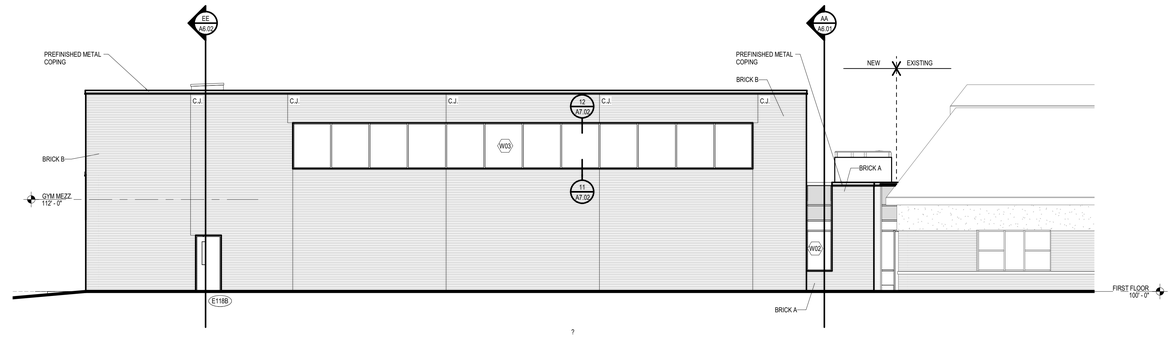
4 A4.01 UNIT 'E' PARTIAL NORTH ELEVATION
1/8" = 1'-0"



3 A4.01 UNIT 'E' SOUTH ELEVATION
1/8" = 1'-0"



2 A4.01 UNIT 'E' EAST ELEVATION
1/8" = 1'-0"



1 A4.01 UNIT 'E' NORTH ELEVATION
1/8" = 1'-0"

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

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PROJECT NO. 5-5769

EXTERIOR ELEVATION

A4.01

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769A 2019.rvt
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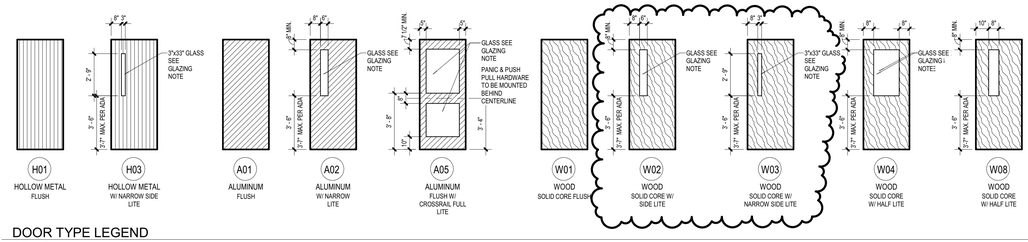
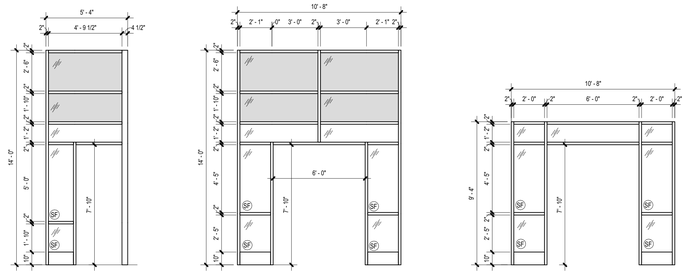
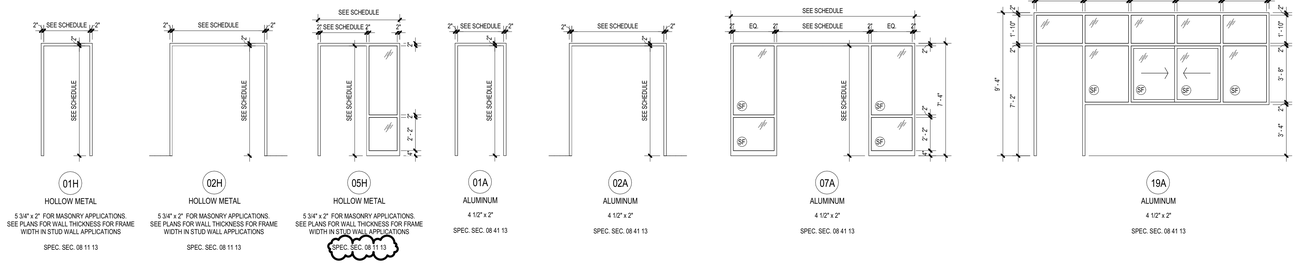


DOOR TYPE LEGEND

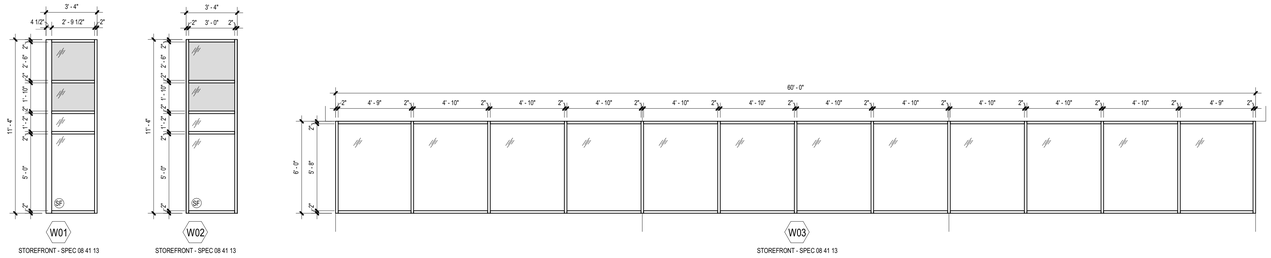
1/4" = 1'-0"





DOOR FRAME LEGEND

1/4" = 1'-0"



WINDOW LEGEND

1/4" = 1'-0"

GLAZING NOTES:

ALL EXTERIOR WINDOWS AND DOOR LITES:

1" INSULATED PER SPECIFICATIONS.

INTERIOR DOOR & BORROWED LITES:

1/4" CLEAR TYPICAL EXCEPT FIRE-RATED - SEE SPECIFICATIONS.

GLASS TO BE TEMPERED AS REQUIRED BY SPECIFICATIONS AND APPLICABLE CODES.

MAXIMUM GLASS AREA PER FIRE RATING:
- 180 MIN. LABEL = NO GLASS
- 90 MIN. LABEL = 100 SQ.IN.
- 45 MIN. LABEL = 1296 SQ.IN.
- 20 MIN. LABEL = AS TESTED

VERIFY COMPLIANCE TO ALL APPLICABLE CODES.

ADJUST LITE SIZE BASED ON SCHEDULED FIRE RATING AS NECESSARY.

NOTE: ALL SIDELITES AND TRANSOMS W/ 20 MIN. DOORS REQUIRE 45 MIN. RATED GLAZING

- (E) = EGRESS PANE
- (GF) = GRAPHIC FILM
- (SA) = SAFETY GLAZING
- (SF) = SECURITY FILM
- (SE) = SECURITY GLAZING
- (ST) = SELF TINTING GLAZING
- = SPANDREL PANEL
- = LOUVER PANEL

DOOR NUMBERING LEGEND

DOOR NUMBERING

A101A
- 'A' FIRST DOOR, 'B' SECOND DOOR
- ROOM NUMBER

DOOR NAME / SIZE
- 3'-0" x 7'-2" x 1 3/4" — DOOR SIZE
- (PR.) 3'-0" x 7'-2" x 1 3/4" — DOOR SIZE; PAIR OF DOORS, NO FIXED MULLION
- (2) 3'-0" x 7'-2" x 1 3/4" — DOOR SIZE; TWO DOORS, WITH FIXED MULLION BETWEEN THEM
- 3'-0" x 7'-2" x 1 3/4" (5'-4") — OVERALL FRAME WIDTH AND / OR HEIGHT SEE FRAME LEGEND; DOOR SIZE

NOTE:
STANDARD DOOR AND FRAME DIMENSIONS ARE GIVEN IN: WIDTH x HEIGHT X THICKNESS

DOOR & FRAME SCHEDULE UNIT 'E'

DOOR NUMBER	DOOR SIZE	DOOR TYPE	FRAME TYPE	FIRE RATING	HDWR SET NO.	ELEC. HARDWARE	REMOVABLE MULLION	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	REMARKS
E											
E101A	(PR) 3' 0" x 7' 10" x 1 3/4"	A05	21A (PR)		15		■	6/A7.02	8&10/A7.02	6/A7.02	
E101B	(PR) 3' 0" x 7' 10" x 1 3/4"	A05	22A (PR)		02		■	14/A7.02	16&17/A702		
E102A	3' 0" x 7' 2" x 1 3/4" (5'-4")	W04	05H	45	08			7/A7.02	7/A7.02		
E103A	3' 0" x 7' 2" x 1 3/4" (5'-4")	W04	05H	45	05			7/A7.02	7/A7.02		
E104A	3' 0" x 7' 10" x 1 3/4"	A05	20A		16			6/A7.02	17/A7.02	6/A7.02	
E105A	3' 0" x 7' 2" x 1 3/4" (5'-4")	W04	05H	45	08			7/A7.02	7/A7.02		
E106A	3' 0" x 7' 2" x 1 3/4" (5'-4")	W04	05H	45	08			7/A7.02	7/A7.02		
E107A	3' 0" x 7' 2" x 1 3/4"	W01	01H		03			7/A7.02	7/A7.02		
E108A	3' 0" x 7' 2" x 1 3/4"	W01	01H		03			7/A7.02	7/A7.02		
E109A	3' 0" x 7' 2" x 1 3/4"	W01	01H	45	05			6/A7.02	10/A7.02		
E110A	3' 0" x 7' 2" x 1 3/4"	W01	01H	45	06			7/A7.02	7/A7.02		
E113A	PR. 4' 0" x 7' 10" x 1 3/4"	H03	02H	90	18			22/A7.02	21/A7.02	-	
E114A	3' 0" x 7' 2" x 1 3/4"	W04	01H	20	11			7/A7.02	7/A7.02		
E114B	3' 0" x 7' 2" x 1 3/4" (15'-4")	A05	19A		17			6/A7.02	10/A7.02	6&15/A7.02	
E115A	3' 0" x 7' 2" x 1 3/4"	W04	01H	20	11			7/A7.02	7/A7.02		
E115B	3' 0" x 7' 2" x 1 3/4" (15'-4")	A05	19A		17			6/A7.02	10/A7.02	6&15/A7.02	
E116A	PR. 3' 0" x 7' 2" x 1 3/4" (9'-4")	A05	07A		01		■	7/A7.02	7/A7.02		
E116B	PR. 3' 0" x 7' 2" x 1 3/4" (10'-8")	A05	07A		13		■	6/A7.02	10/A7.02	6/A7.02	
E117A	PR. 3' 0" x 7' 2" x 1 3/4"	W02	02H	20	12		■	7/A7.02	7/A7.02		
E117B	PR. 3' 0" x 7' 2" x 1 3/4"	W02	02H	20	12		■	7/A7.02	7/A7.02		
E117C	PR. 3' 0" x 7' 2" x 1 3/4"	A01	02A		14		■	6/A7.02	10/A7.02	6/A7.02	
E118A	3' 0" x 7' 2" x 1 3/4"	W01	01H	45	08			7/A7.02	7/A7.02		
E118B	3' 0 x 7' 2" x 1 3/4"	A02	01A		17			6/A7.02	10/A7.02	6/A7.02	
E119A	PR. 4' 0" x 7' 2" x 1 3/4"	A01	02A		10			6/A7.02	10/A7.02	6/A7.02	
E120A	PR. 3' 0" x 7' 2" x 1 3/4"	W01	02H	45	07			7/A7.02	7/A7.02		ADHERE WALL PADS TO DOOR LEAF
E121A	3' 0" x 7' 2" x 1 3/4" (4'-8")	W01	05H	45	06			7/A7.02	7/A7.02		
E201A	3' 0 x 7' 2" x 1 3/4"	A01	01A		09			6/A7.02	10/A7.02	13/A7.02	
E202A	3' 0" x 7' 2" x 1 3/4"	H01	01H		04			7/A7.02	7/A7.02		

DOOR & FRAME SCHEDULE UNIT 'C'

DOOR NUMBER	DOOR SIZE	DOOR TYPE	FRAME TYPE	FIRE RATING	HDWR SET NO.	ELEC. HARDWARE	REMOVABLE MULLION	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	REMARKS
C											
C112A	3' 0" x 7' 2" x 1 3/4"	W01	01H	20	08			7/A7.02	7/A7.02		

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022	BIDS AND CONSTRUCTION
02.16.2023	BULLETIN 003
06.06.2023	BULLETIN 007

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PROJECT NO. 5-5769

DOOR & FRAME SCHEDULE

A5.01

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769A 2019.rvt
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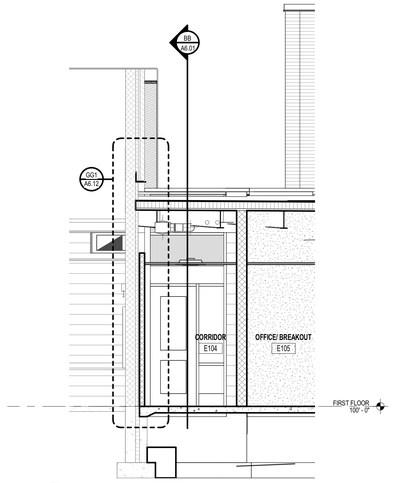
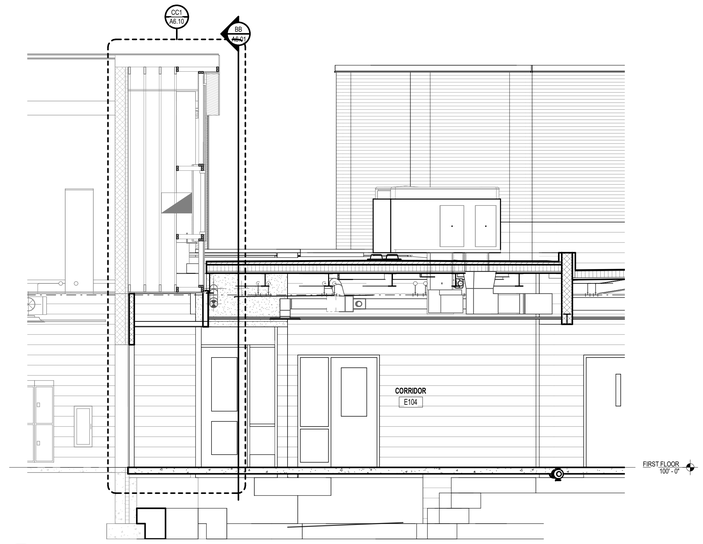
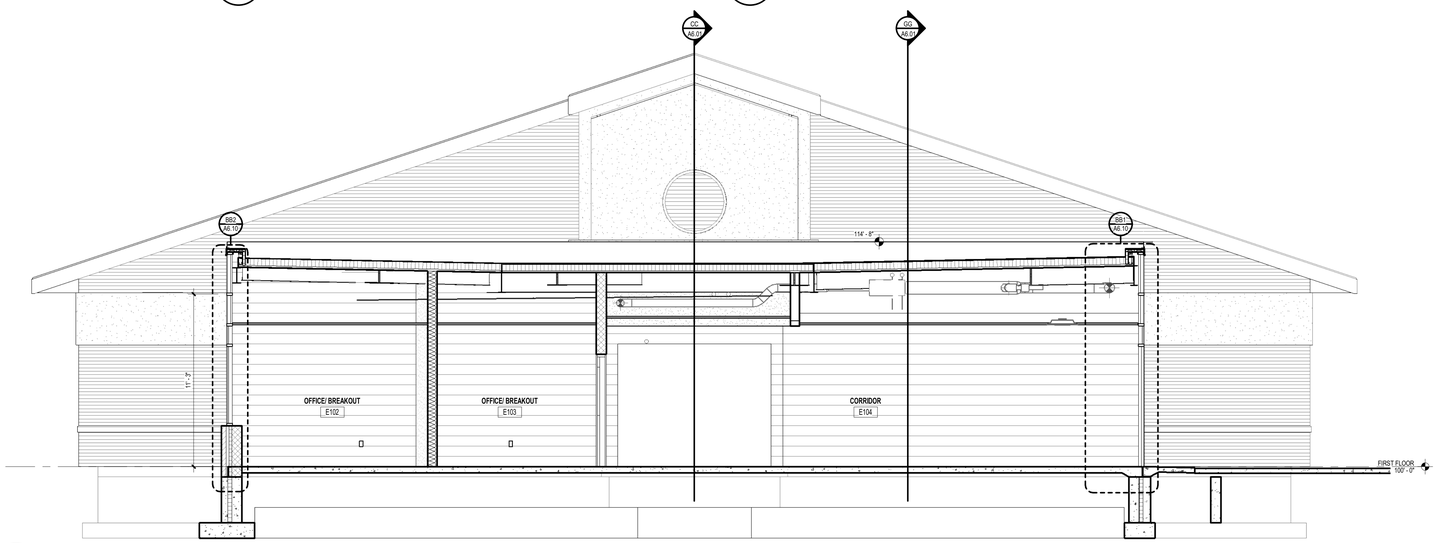


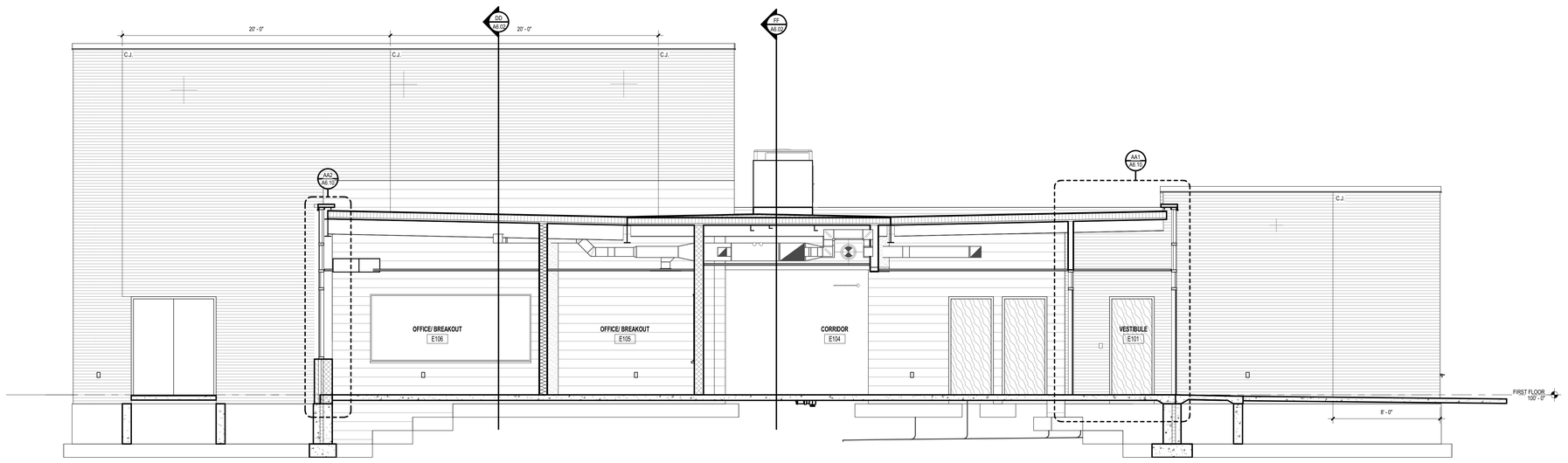
GG A6.01 BUILDING SECTION GG
1/4" = 1'-0"



CC A6.01 BUILDING SECTION CC
1/4" = 1'-0"



BB A6.01 BUILDING SECTION BB
1/4" = 1'-0"



AA A6.01 BUILDING SECTION AA
1/4" = 1'-0"

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769A 2019.rvt
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HUDSONVILLE PUBLIC SCHOOLS

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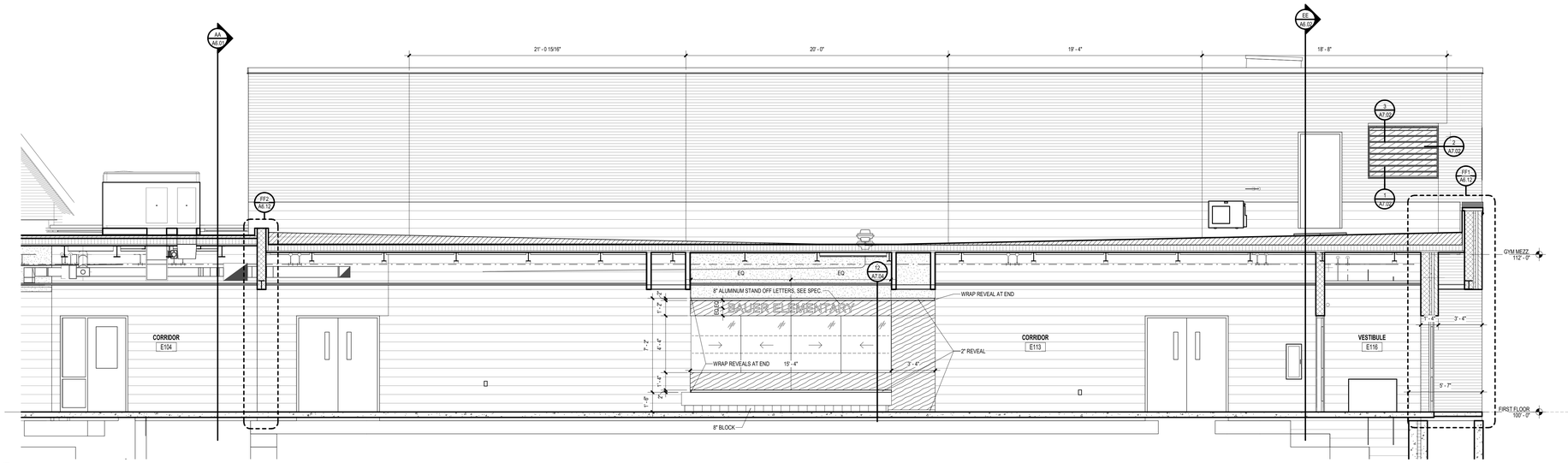
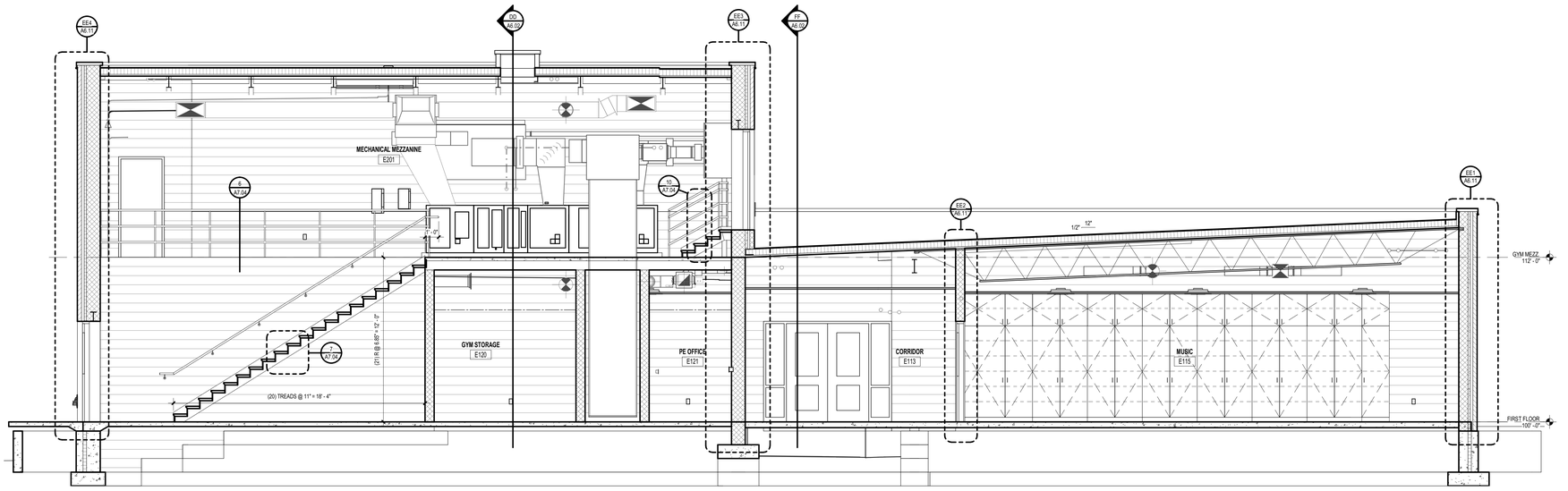
PROJECT NO. 5-5769

BUILDING SECTIONS

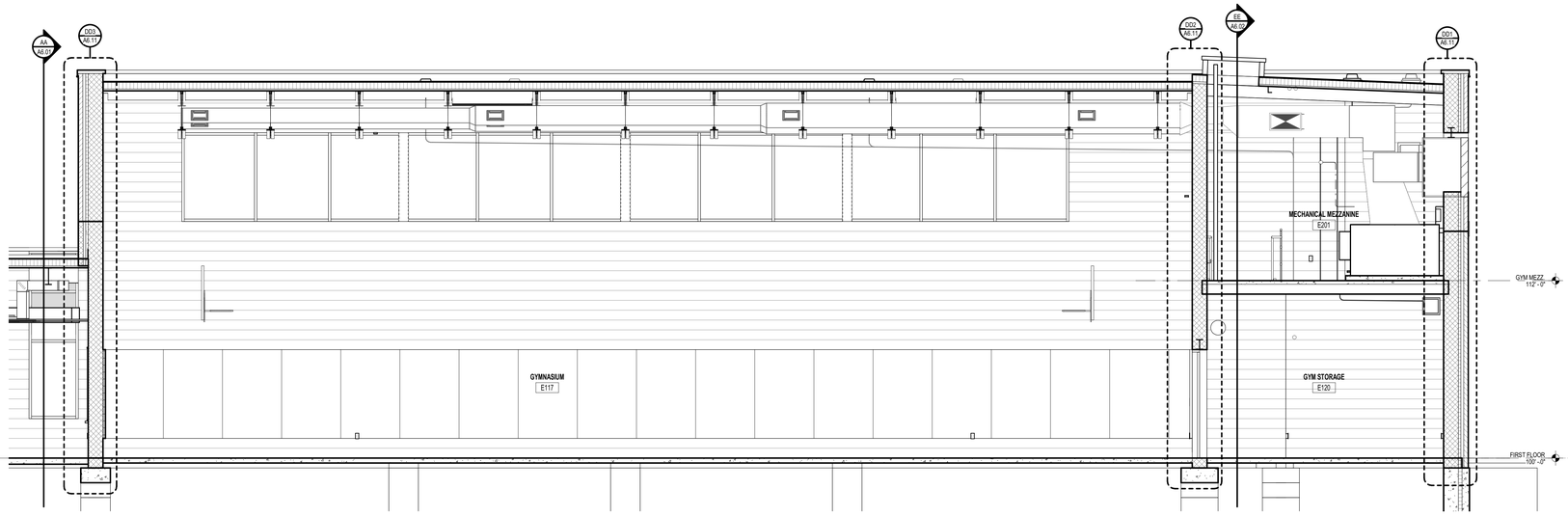
A6.01



FF A6.02 BUILDING SECTION FF
1/4" = 1'-0"



EE A6.02 BUILDING SECTION EE
1/4" = 1'-0"



DD A6.02 BUILDING SECTION DD
1/4" = 1'-0"

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

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PROJECT NO.	5-5769

BUILDING SECTIONS

A6.02

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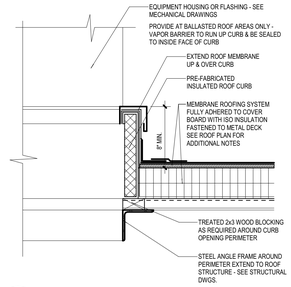
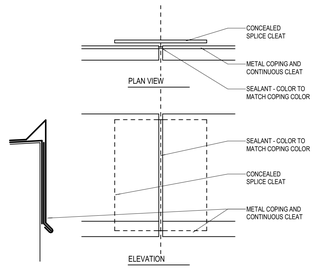
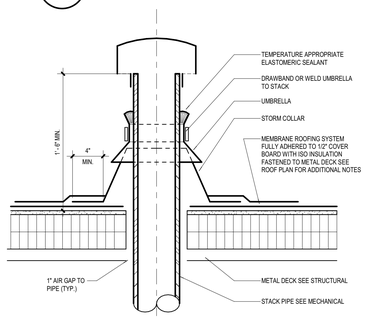


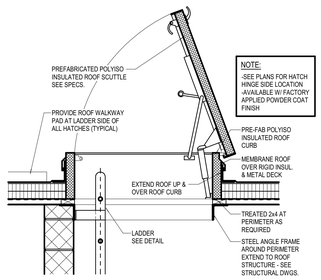
15 A7.01 TYPICAL ROOF CURB DETAIL
1 1/2" = 1'-0"



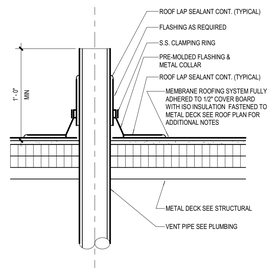
14 A7.01 METAL COPING SPLICE DETAIL
3" = 1'-0"



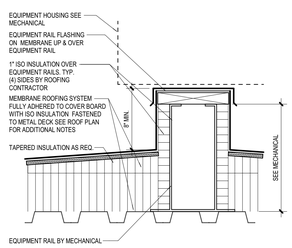
13 A7.01 STACK FLASHING DETAIL
1 1/2" = 1'-0"



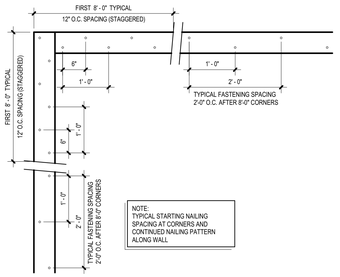
17 A7.01 THERMALLY BROKEN ROOF HATCH
3/4" = 1'-0"



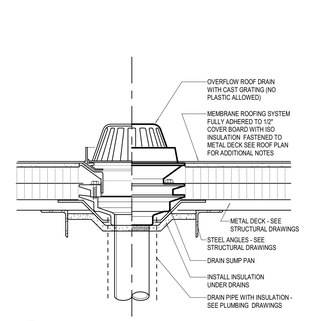
12 A7.01 TYPICAL ROOF VENT DETAIL
1 1/2" = 1'-0"



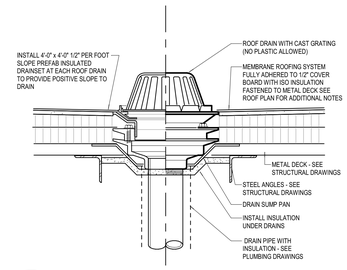
16 A7.01 EQUIPMENT RAIL DETAIL
1 1/2" = 1'-0"



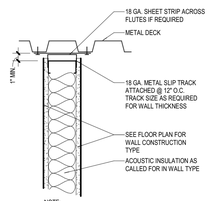
11 A7.01 WOOD NAILER SECUREMENT CRITERIA
3/4" = 1'-0"



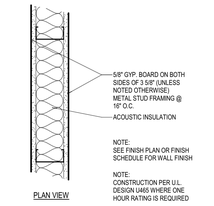
10 A7.01 ROOF DRAIN OVERFLOW DETAIL
1 1/2" = 1'-0"



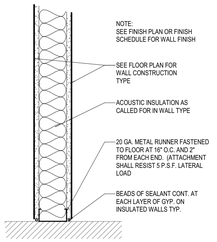
9 A7.01 SINGLE ROOF DRAIN DETAIL
1 1/2" = 1'-0"



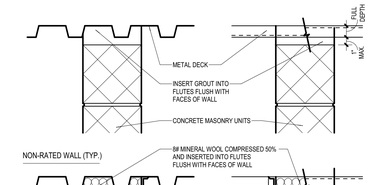
8 A7.01 TOP OF METAL STUD SOUND WALL
1 1/2" = 1'-0"



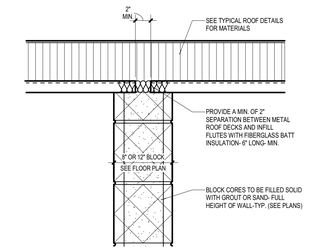
7 A7.01 METAL STUD SOUND PARTITION WALL
1 1/2" = 1'-0"



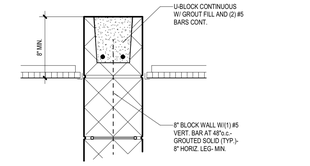
6 A7.01 METAL STUD SOUND WALL BASE
1 1/2" = 1'-0"



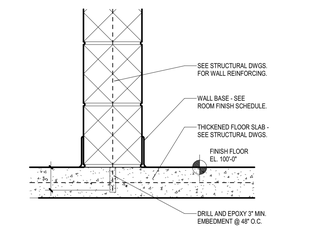
5 A7.01 TOP OF WALL DETAILS
1 1/2" = 1'-0"



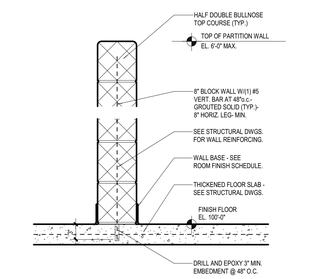
4 A7.01 DECK SOUND SEPARATION DETAIL
1 1/2" = 1'-0"



3 A7.01 MASONRY TOP OF WALL UNBRACED
1 1/2" = 1'-0"



2 A7.01 MASONRY NON-BEARING
1 1/2" = 1'-0"



1 A7.01 BLOCK PARTITION WALL DETAIL
1" = 1'-0"

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

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10.04.2022 BIDS AND CONSTRUCTION

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PROJECT NO. 5-5769

DETAILS

A7.01

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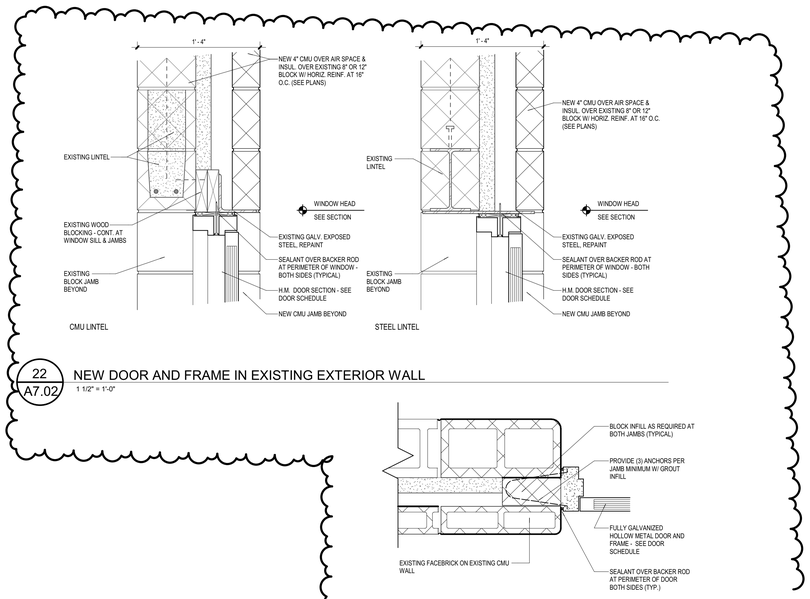
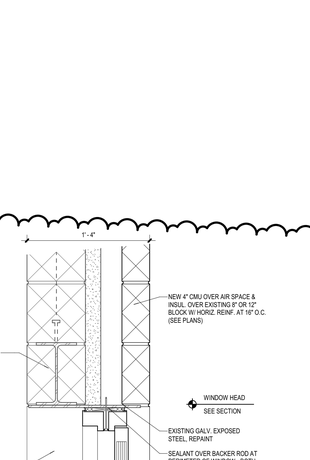
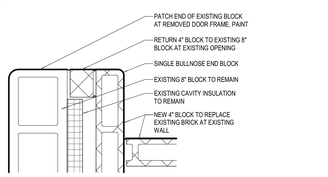


22 A7.02 NEW DOOR AND FRAME IN EXISTING EXTERIOR WALL
1 1/2" = 1'-0"

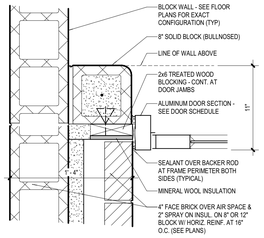
21 A7.02 NEW DOOR AND FRAME IN EXISTING EXTERIOR WALL
1 1/2" = 1'-0"



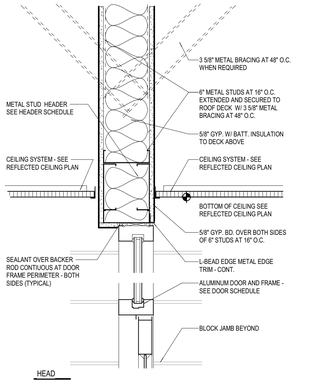
20 A7.02 NEW DOOR & FRAME IN EXISTING WALL
1 1/2" = 1'-0"



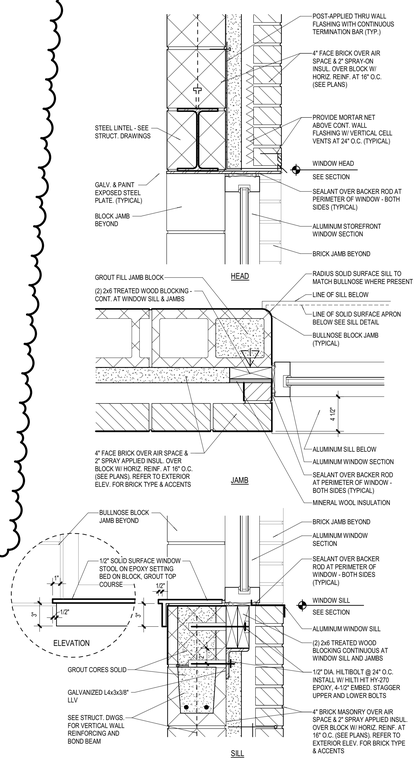
18 A7.02 UNIT 'E' ENLARGED PLAN
1 1/2" = 1'-0"



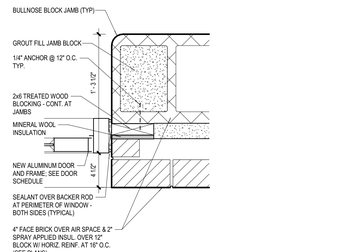
17 A7.02 ENTRY DOOR JAMB DETAIL
1 1/2" = 1'-0"



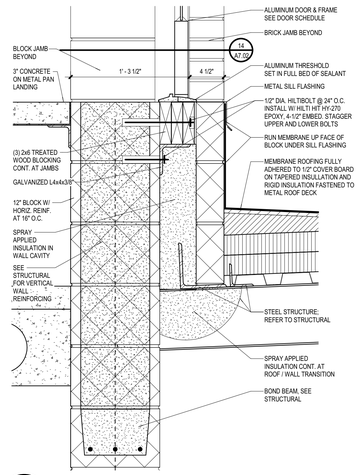
16 A7.02 VESTIBULE DOOR DETAIL
1 1/2" = 1'-0"



15 A7.02 WINDOW DETAIL
1 1/2" = 1'-0"

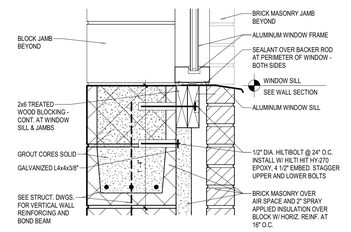


14 A7.02 EXTERIOR DOOR JAMB AT MEZZANINE
1 1/2" = 1'-0"

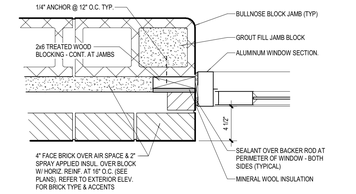


13 A7.02 DOOR E201A SILL DETAIL
1 1/2" = 1'-0"

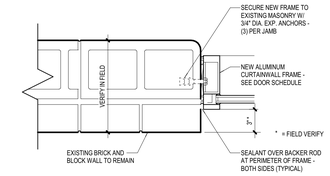
12 A7.02 WINDOW HEAD DETAIL
1 1/2" = 1'-0"



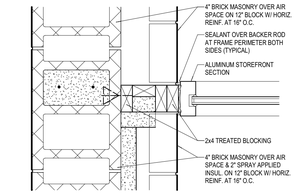
11 A7.02 WINDOW SILL DETAIL
1 1/2" = 1'-0"



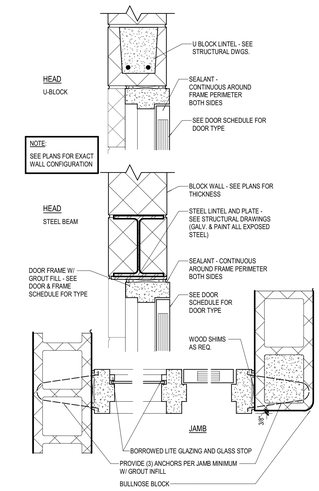
10 A7.02 EXTERIOR DOOR JAMB DETAIL
1 1/2" = 1'-0"



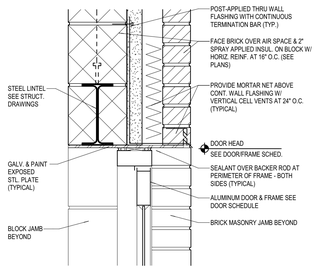
9 A7.02 EXTERIOR DOOR JAMB IN EX. OPENING
1 1/2" = 1'-0"



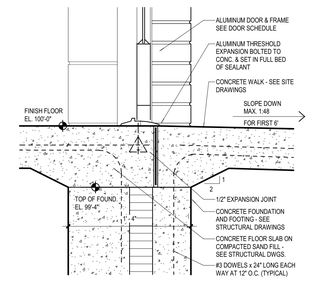
8 A7.02 ENTRY DOOR JAMB DETAIL
1 1/2" = 1'-0"

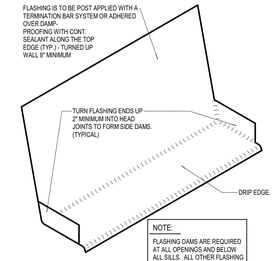


7 A7.02 H.M. DOOR BLOCK WALL DETAIL
1 1/2" = 1'-0"

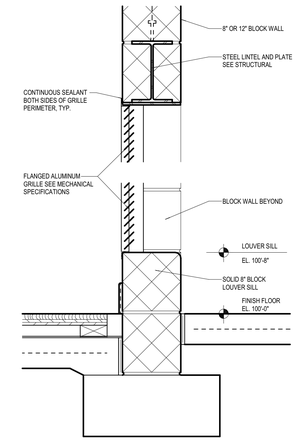


6 A7.02 EXTERIOR DOOR HEAD & SILL DETAIL
1 1/2" = 1'-0"



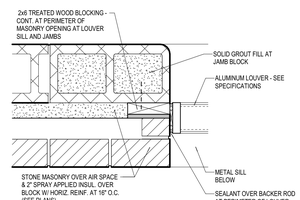


5 A7.02 TYPICAL FLASHING & DAM DETAIL
1 1/2" = 1'-0"

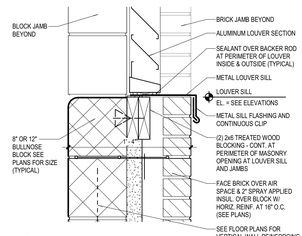


4 A7.02 MECHANICAL GRILLE DETAIL
1 1/2" = 1'-0"

3 A7.02 LOUVER HEAD DETAIL
1 1/2" = 1'-0"



2 A7.02 LOUVER JAMB DETAIL
1 1/2" = 1'-0"



1 A7.02 LOUVER SILL DETAIL
1 1/2" = 1'-0"

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES
10.04.2022 BIDS AND CONSTRUCTION
02.16.2023 BULLETIN 003

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5769

DOOR, WINDOW AND LOUVER DETAILS

A7.02

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769A 2019.rvt
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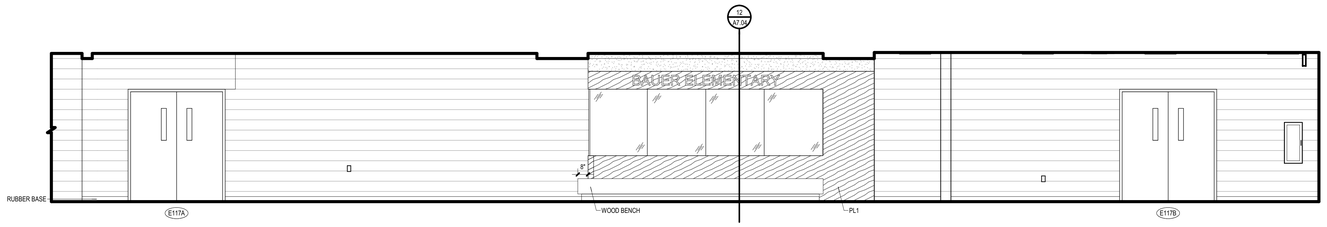


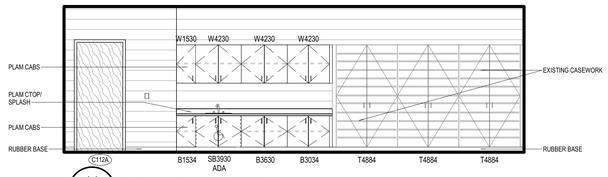
13 A8.01 E113 CORRIDOR NORTH
1/4" = 1'-0"

CASEWORK LEGEND
(SEE ELEVATIONS AND / OR PLANS FOR MORE INFORMATION)
(SEE SPECS)

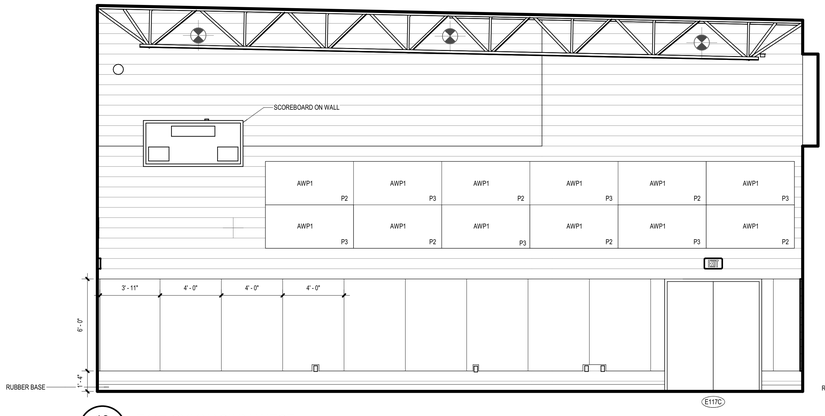
STYLE — T 42 84 — WIDTH
DEPTH* — 12 — HEIGHT

*DEPTH ONLY GIVEN IF OTHER THAN 24" DEEP FOR BASE / TALL CABINET OR 12" DEEP FOR WALL CABINET ARE USED, TYP.

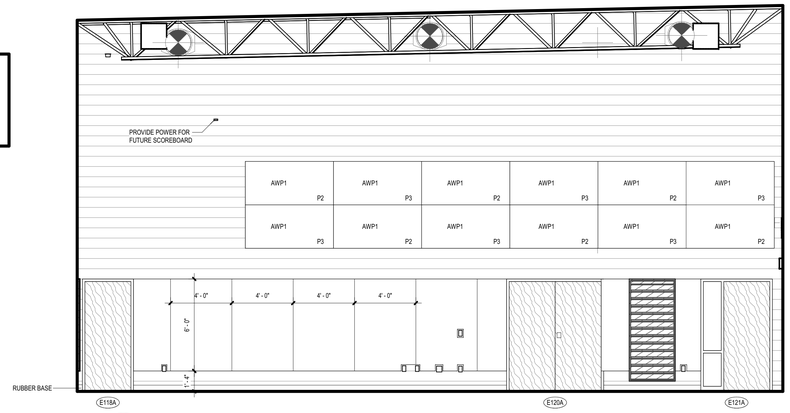
B	BASE CABINET
F	FILLER PANEL
M	MOBILE CABINET
T	TALL CABINET
W	WALL CABINET



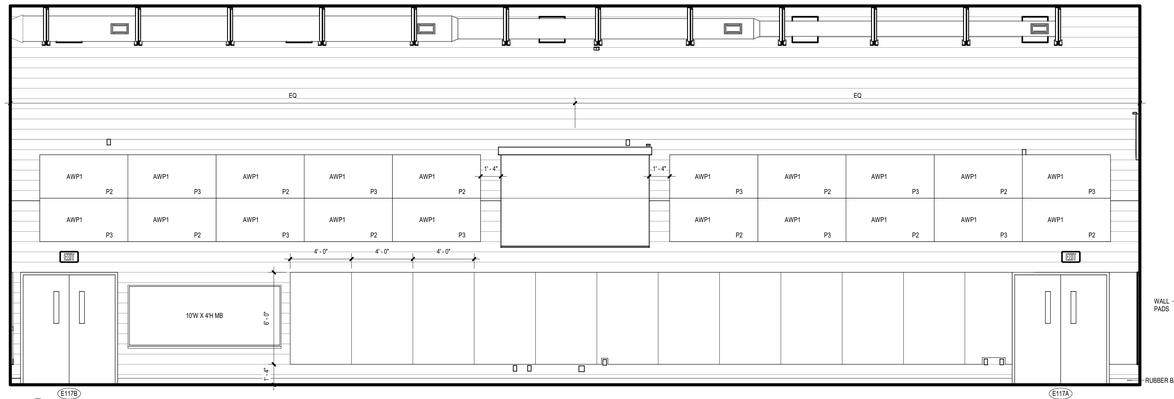
14 A8.01 C112 CLASSROOM NORTH
1/4" = 1'-0"



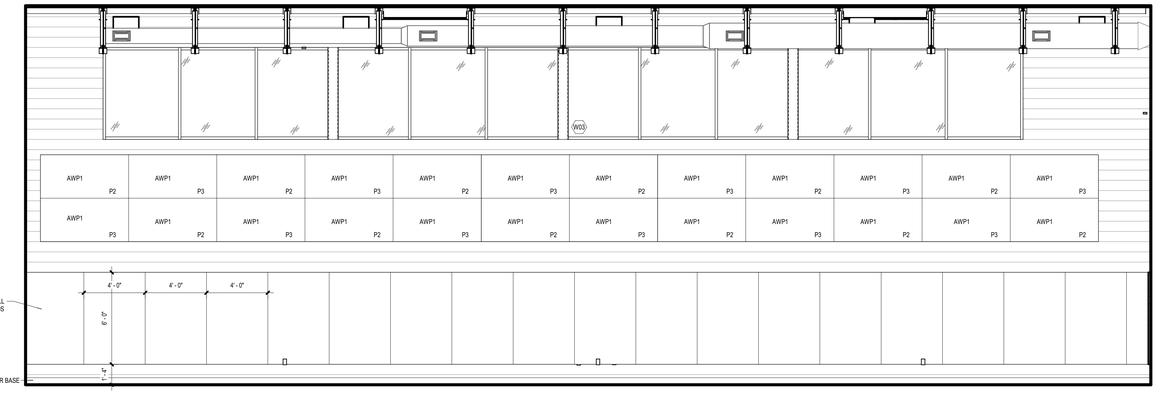
12 A8.01 E117 GYMNASIUM WEST
1/4" = 1'-0"



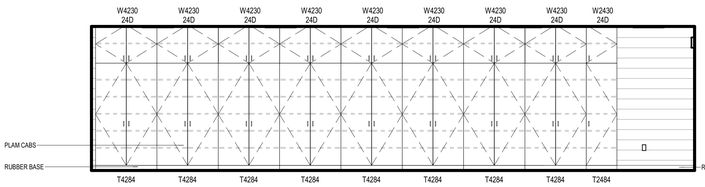
11 A8.01 E117 GYMNASIUM EAST
1/4" = 1'-0"



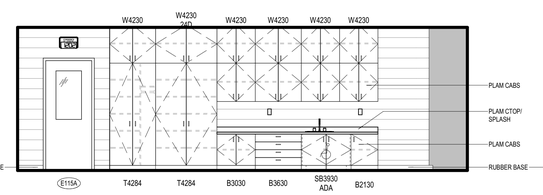
10 A8.01 E117 GYMNASIUM SOUTH
1/4" = 1'-0"



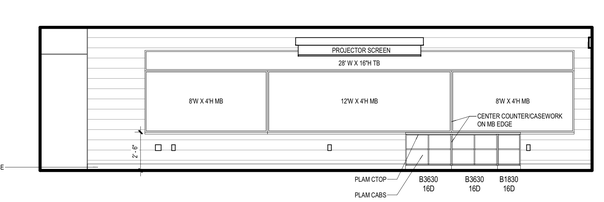
9 A8.01 E117 GYMNASIUM NORTH
1/4" = 1'-0"



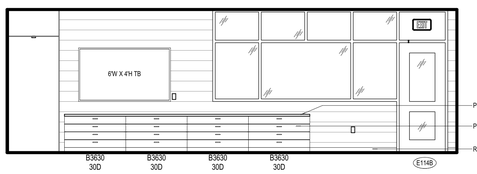
7 A8.01 E115 CLASSROOM EAST
1/4" = 1'-0"



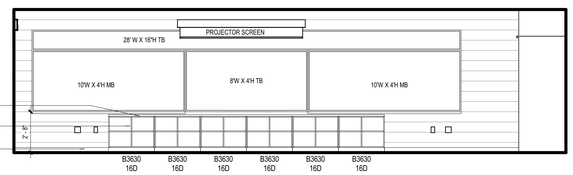
6 A8.01 E115 CLASSROOM NORTH
1/4" = 1'-0"



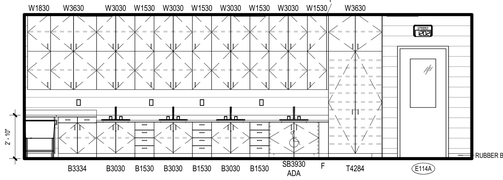
5 A8.01 E115 CLASSROOM WEST
1/4" = 1'-0"



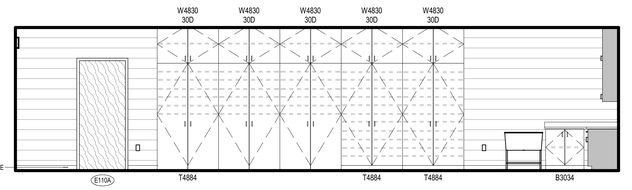
4 A8.01 E114 CLASSROOM SOUTH
1/4" = 1'-0"



3 A8.01 E114 CLASSROOM EAST
1/4" = 1'-0"



2 A8.01 E114 CLASSROOM NORTH
1/4" = 1'-0"



1 A8.01 E114 CLASSROOM WEST
1/4" = 1'-0"

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS
HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

ISSUANCES
10.04.2022 BIDS AND CONSTRUCTION

DRAWN MRJ
REVIEWED TGD

PROJECT NO. 5-5769

INTERIOR ELEVATIONS

A8.01

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Additions-5769A 2019.rvt
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FINISH SYMBOLS :

ROOM NAME
WALL FINISH
FLOOR FINISH
BASE FINISH

CPT1 / VCT1 — FLOORING TRANSITION

W.P.1 — WORK POINT

FINISH KEYNOTES :

01 MANUAL ROLLER SHADE LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION

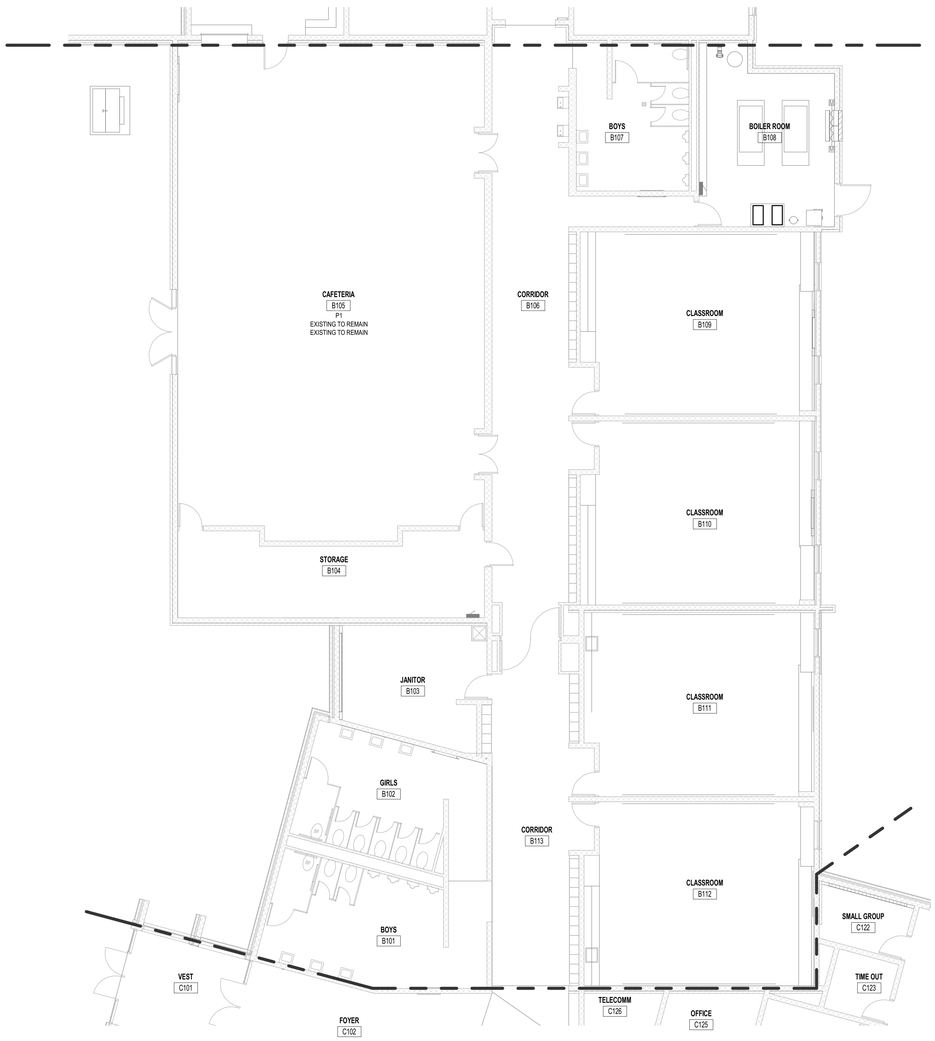
02 MOTORIZED ROLLER SHADES LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION

GENERAL FINISH NOTES :

1. ALL AREAS OF CARPET, LVT, SEALED CONCRETE, OR OTHER RESILIENT FLOORING TO RECEIVE RUBBER BASE; U.N.O. ON FINISH PLANS.
2. IT IS THE RESPONSIBILITY OF ALL TRADES TO COORDINATE PREPARATION OF SURFACES TO RECEIVE FINISH PRODUCT. CONSULT WITH MANUFACTURERS RECOMMENDED PRACTICES.
3. ALL REDUCERS TO COORDINATE APPROPRIATELY WITH ABUTTING MATERIAL HEIGHT.
4. INSTALL 4" H. RUBBER BASE (RB) AT CASEWORK TOE KICKS, INSIDE OF FLOORLESS CASEWORK, AND VERTICAL SUPPORTS.
5. SEE SPECIFICATIONS FOR RESILIENT ACCESSORY INFORMATION.
6. PAINT ALL EXPOSED MECHANICAL AND ELECTRICAL ITEMS INTENDED TO RECEIVE FIELD PAINT TO MATCH ADJACENT SURFACES; U.N.O.
7. DOOR AND WINDOW FRAMES TO BE PAINTED P4; U.N.O.
8. EXPOSED CEILINGS, DECK, DUCTWORK, STRUCTURE AND OTHER MISC. EXPOSED ITEMS TO BE PAINTED; U.N.O. ON INTERIOR ELEVATIONS, CEILING PLANS OR FINISH PLANS.
9. FACE & UNDERSIDE OF BULKHEADS TO BE PAINTED P1; U.N.O. ON FINISH PLANS OR NOTED ON INTERIOR ELEVATIONS.
10. REFER TO CEILING PLANS & CEILING SPECIFICATIONS FOR SPECIAL CEILING DESIGNATIONS AND ACT TYPES.
11. REFER TO INTERIOR ELEVATION SHEETS FOR MORE DETAILED PAINT AND INTERIOR FINISH INFORMATION.
12. ALL WALL TILE INSTALLATIONS SHOULD BE FULL HEIGHT; UNLESS NOTED OR SHOWN OTHERWISE ON INTERIOR ELEVATIONS.
13. ALIGN FLOOR TILE GROUT JOINTS WITH WALL TILE GROUT JOINTS WHERE APPLICABLE.
14. WHERE MATERIALS TRANSITION AT DOOR THRESHOLD, TRANSITION SHOULD OCCUR AT THE CENTER OF THE DOOR IN THE CLOSE POSITION.
15. FOR ALL TILE INSTALLATIONS; REFER TO SPECIFICATIONS FOR TRIM FINISH INFORMATION.
16. MECHANICAL & ELECTRICAL ROOM FINISHES: AS A TYPICAL; PAINT WALLS, DO NOT PAINT EXPOSED STRUCTURE, DO NOT PROVIDE WALL BASE. TYPICAL UNLESS NOTED OTHERWISE ON FINISH PLANS.
17. WHERE SEALED CONCRETE (SC). IS SPECIFIED, REFER TO SPECIFICATION SECTION 09 90 00 PAINTING, FOR SYSTEM TYPE.
18. REFER TO SPECIFICATIONS FOR ALL PAINT TYPES.
19. ALL PAINTED WALLS IN TOILET ROOMS, KITCHENS, LOCKER ROOMS, SCIENCE ROOMS, STEM AND MAKERSPACES SHALL RECEIVE EPOXY PAINT.
20. ALL STAIR AND GUARDRAIL RAILINGS, HANDRAILS, STRINGERS, RISERS, ETC ARE TO BE PAINTED P2; U.N.O.
21. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF OWNER FURNISHED EQUIPMENT, INCLUDED DIMENSIONS OF SUCH AS THEY RELATE TO THEIR OWN WORK.
22. REMOVE, SALVAGE AND RE-INSTALL EXISTING ROOM SIGNAGE PRIOR TO PAINTING WALLS IN AREAS OF WORK, TYP.
23. REMOVE AND SALVAGE ALL WALL MOUNTED FURNISHINGS AND ARTWORK PRIOR TO PAINTING. COORDINATE SALVAGE AND RE-INSTALLATION WITH OWNER.
24. DO NOT PAINT OVER EXISTING GLAZED FACE BLOCK OR EXPOSED BRICK, U.N.O.
25. PROTECT ALL FINISHES DURING CONSTRUCTION.

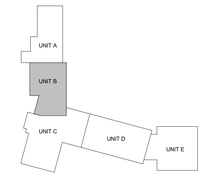
FINISH LEGEND :

ACT1	ACOUSTICAL CEILING TILE MFR: USG STYLE: RADAR CLIMA PLUS 2210 COLOR: WHITE SIZE: 24" 24" X 5/8" GRID: DONN DXDWL
AWP1	ACOUSTICAL WALL PANEL MFR: ARMSTRONG STYLE: TECTUM WALL PANEL COLOR: FIELD PAINTED SEE ELEVATIONS SIZE: 60"L X 24"W X 2"D
CG1	CORNER GUARD STAINLESS STEEL CORNER GUARD
CT1	CARPET TILE MFR: INTERFACE STYLE: AE312 COLOR: 105410 IRON/ ACCENT SIZE: 50CM X 50CM INSTALLATION: QUARTER TURN
CT2	CARPET TILE MFR: INTERFACE STYLE: ON LINE COLOR: 103795 OCEAN SIZE: 25CM X 1M INSTALLATION: QUARTER TURN
CT3	CARPET TILE MFR: INTERFACE STYLE: STEP REPEAT SR899 COLOR: 104941 ONYX SIZE: 50CM X 50CM INSTALLATION: MONOLITHIC
CTW1	CERAMIC TILE WALL MFR: DALTILE STYLE: COLOR WHEEL LINEAR COLOR: NAVY SIZE: 4 X 12 INCHES INSTALLATION: 1/3 BRICK OFFSET, FULL HEIGHT WALL
P1	PAINT (GENERAL) MFR: BENJAMIN MOORE COLOR: MATCH EXISTING GENERAL WALL WHITE
P2	PAINT (ACCENT) MFR: BENJAMIN MOORE COLOR: HC-10 STUART GOLD
P3	PAINT (ACCENT) MFR: BENJAMIN MOORE COLOR: HC-155 NEWBURY PORT BLUE
P4	PAINT (TRIM) MFR: SHERWIN WILLIAMS COLOR: SW7019 GAUNTLET GRAY
PC1	POLISHED CONCRETE COLOR: NATURAL LEVEL 3 POLISH, CLASS 3 AGGREGATE EXPOSURE
PL1	PLASTIC LAMINATE MFR: WILSONART COLOR: 10774-60 KENSINGTON MAPLE
PL2	PLASTIC LAMINATE MFR: WILSONART COLOR: 4942-38 CRISP LINEN
RAF1	RESILIENT ATHLETIC FLOORING MFR: GERFLOR STYLE: TARAFLEX SPORT M PLUS COLOR: MAPLE DESIGN
RB1	RUBBER BASE MRF: JOHNSONITE STYLE: 4"H, 120' ROLLS COLOR: MATCH EXT. BUILDING COLOR
SC1	SEALED CONCRETE MECHANICAL ROOM FLOOR COATING
SS1	STAINLESS STEEL



NORTH

UNIT 'B' FINISH PLAN
1/8" = 1'-0"



NORTH

KEYPLAN

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

DRAWN	MRJ
REVIEWED	TGD

PROJECT NO. 5-5769

UNIT 'B' FINISH PLAN

A9.1B

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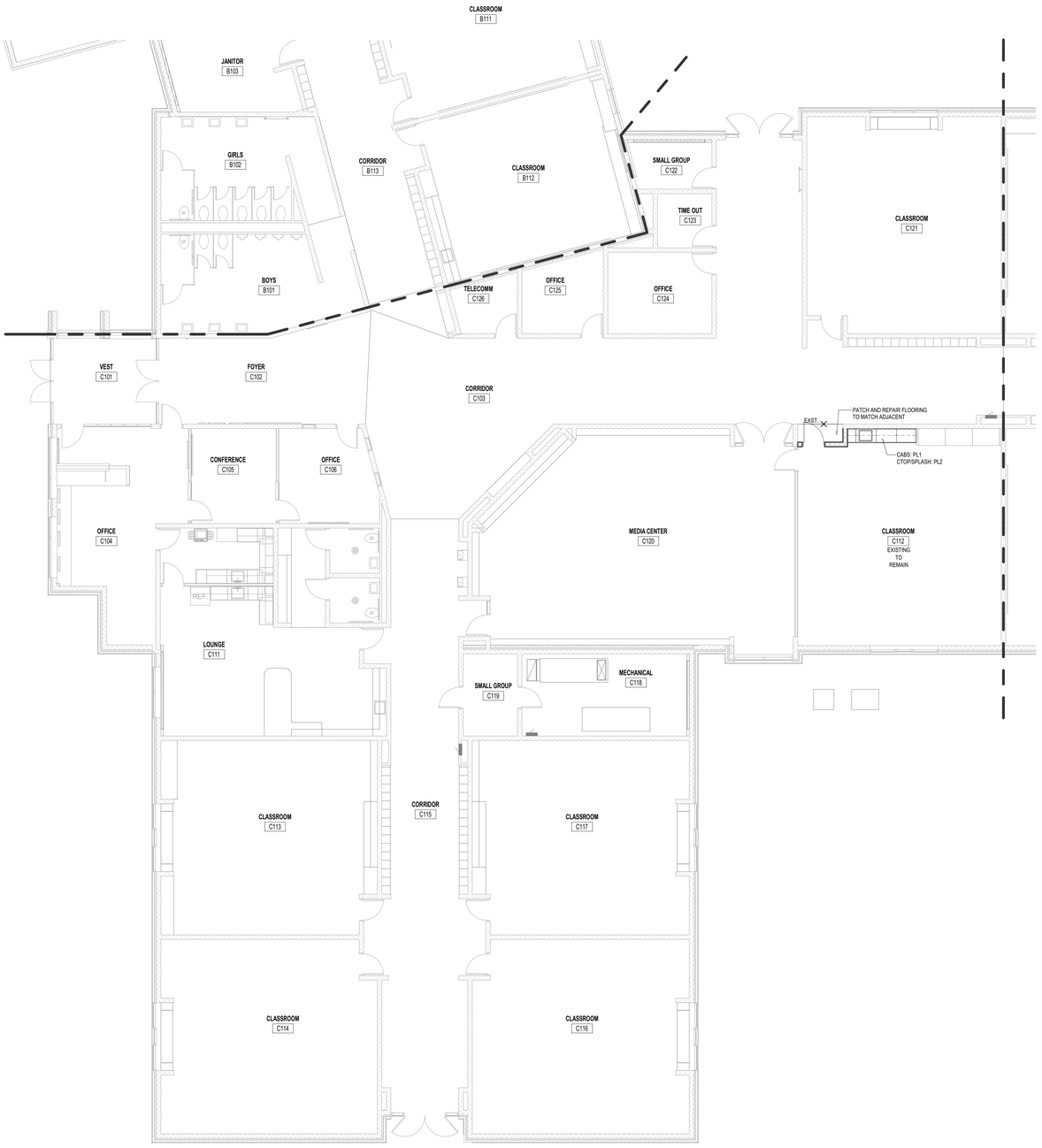

NORTH

UNIT 'C' FINISH PLAN

1/8" = 1'-0"

FINISH SYMBOLS :

ROOM NAME
WALL FINISH
FLOOR FINISH
BASE FINISH

CPT1 / VCT1 — FLOORING TRANSITION

W.P.1 — WORK POINT

FINISH KEYNOTES :

01 MANUAL ROLLER SHADE LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION

02 MOTORIZED ROLLER SHADES LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION

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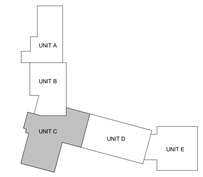
3. ALL REDUCERS TO COORDINATE APPROPRIATELY WITH ABUTTING MATERIAL HEIGHT.
4. INSTALL 4" H. RUBBER BASE (RB) AT CASEWORK TOE KICKS, INSIDE OF FLOORLESS CASEWORK, AND VERTICAL SUPPORTS.
5. SEE SPECIFICATIONS FOR RESILIENT ACCESSORY INFORMATION.
6. PAINT ALL EXPOSED MECHANICAL AND ELECTRICAL ITEMS INTENDED TO RECEIVE FIELD PAINT TO MATCH ADJACENT SURFACES; U.N.O.
7. DOOR AND WINDOW FRAMES TO BE PAINTED P4; U.N.O.
8. EXPOSED CEILINGS, DECK, DUCTWORK, STRUCTURE AND OTHER MISC. EXPOSED ITEMS TO BE PAINTED; U.N.O. ON INTERIOR ELEVATIONS, CEILING PLANS OR FINISH PLANS.
9. FACE & UNDERSIDE OF SILKHEADS TO BE PAINTED P1; U.N.O. ON FINISH PLANS OR NOTED ON INTERIOR ELEVATIONS.
10. REFER TO CEILING PLANS & CEILING SPECIFICATIONS FOR SPECIAL CEILING DESIGNATIONS AND ACT TYPES.
11. REFER TO INTERIOR ELEVATION SHEETS FOR MORE DETAILED PAINT AND INTERIOR FINISH INFORMATION.
12. ALL WALL TILE INSTALLATIONS SHOULD BE FULL HEIGHT; UNLESS NOTED OR SHOWN OTHERWISE ON INTERIOR ELEVATIONS.
13. ALIGN FLOOR TILE GROUT JOINTS WITH WALL TILE GROUT JOINTS WHERE APPLICABLE.
14. WHERE MATERIALS TRANSITION AT DOOR THRESHOLD, TRANSITION SHOULD OCCUR AT THE CENTER OF THE DOOR IN THE CLOSE POSITION.
15. FOR ALL TILE INSTALLATIONS: REFER TO SPECIFICATIONS FOR TRIM FINISH INFORMATION.
16. MECHANICAL & ELECTRICAL ROOM FINISHES: AS A TYPICAL: PAINT WALLS, DO NOT PAINT EXPOSED STRUCTURE, DO NOT PROVIDE WALL BASE. TYPICAL UNLESS NOTED OTHERWISE ON FINISH PLANS.
17. WHERE SEALED CONCRETE (SC), IS SPECIFIED, REFER TO SPECIFICATION SECTION 09 90 00 PAINTING, FOR SYSTEM TYPE.
18. REFER TO SPECIFICATIONS FOR ALL PAINT TYPES.
19. ALL PAINTED WALLS IN TOILET ROOMS, KITCHENS, LOCKER ROOMS, SCIENCE ROOMS, STEM AND MAKERSPACES SHALL RECEIVE EPOXY PAINT.
20. ALL STAIR AND GUARDRAIL RAILINGS, HANDRAILS, STRINGERS, RISERS, ETC ARE TO BE PAINTED P2; U.N.O.
21. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF OWNER FURNISHED EQUIPMENT, INCLUDED DIMENSIONS OF SUCH AS THEY RELATE TO THEIR OWN WORK.
22. REMOVE, SALVAGE AND RE-INSTALL EXISTING ROOM SIGNAGE PRIOR TO PAINTING WALLS IN AREAS OF WORK; TYP.
23. REMOVE AND SALVAGE ALL WALL MOUNTED FURNISHINGS AND ARTWORK PRIOR TO PAINTING. COORDINATE SALVAGE AND RE-INSTALLATION WITH OWNER.
24. DO NOT PAINT OVER EXISTING GLAZED FACE BLOCK OR EXPOSED BRICK, U.N.O.
25. PROTECT ALL FINISHES DURING CONSTRUCTION.

FINISH LEGEND :

ACT1	ACOUSTICAL CEILING TILE MFR: USG STYLE: RADAR CLIMA PLUS 2210 COLOR: WHITE SIZE: 24" X 24" X 5/8" GRID: DONN DX/DWL
AWP1	ACOUSTICAL WALL PANEL MFR: ARMSTRONG STYLE: TECTUM WALL PANEL COLOR: FIELD PAINTED SEE ELEVATIONS SIZE: 6'6"L X 34"W X 2"D
CG1	CORNER GUARD STAINLESS STEEL CORNER GUARD
CT1	CARPET TILE MFR: INTERFACE STYLE: AE312 COLOR: 105410 IRON/ ACCENT SIZE: 50CM X 50CM INSTALLATION: QUARTER TURN
CT2	CARPET TILE MFR: INTERFACE STYLE: ON LINE COLOR: 103795 OCEAN SIZE: 25CM X 1M INSTALLATION: QUARTER TURN
CT3	CARPET TILE MFR: INTERFACE STYLE: STEP REPEAT SR899 COLOR: 104941 ONYX SIZE: 50CM X 50CM INSTALLATION: MONOLITHIC
CTW1	CERAMIC TILE WALL MFR: DALTILE STYLE: COLOR WHEEL LINEAR COLOR: NAVY SIZE: 4 X 12 INCHES INSTALLATION: 1/3 BRICK OFFSET, FULL HEIGHT WALL
P1	PAINT (GENERAL) MFR: BENJAMIN MOORE COLOR: MATCH EXISTING GENERAL WALL WHITE
P2	PAINT (ACCENT) MFR: BENJAMIN MOORE COLOR: HC-10 STUART GOLD
P3	PAINT (ACCENT) MFR: BENJAMIN MOORE COLOR: HC-155 NEWBURY PORT BLUE
P4	PAINT (TRIM) MFR: SHERWIN WILLIAMS COLOR: SW7019 GAUNTLET GRAY
PC1	POLISHED CONCRETE COLOR: NATURAL LEVEL 3 POLISH, CLASS 3 AGGREGATE EXPOSURE
PL1	PLASTIC LAMINATE MFR: WILSONART COLOR: 10776-60 KENSINGTON MAPLE
PL2	PLASTIC LAMINATE MFR: WILSONART COLOR: 4942-38 CRISP LINEN
RAF1	RESILIENT ATHLETIC FLOORING MFR: GERFLOR STYLE: TARAFLEX SPORT M PLUS COLOR: MAPLE DESIGN
RB1	RUBBER BASE MRF: JOHNSONITE STYLE: 4"H, 120' ROLLS COLOR: MATCH EXT. BUILDING COLOR
SC1	SEALED CONCRETE MECHANICAL ROOM FLOOR COATING
SS1	STAINLESS STEEL



KEYPLAN

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS AND CONSTRUCTION

DRAWN MRJ

REVIEWED TGD

PROJECT NO. 5-5769

UNIT 'C' FINISH PLAN

A9.1C

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FINISH SYMBOLS :

ROOM NAME
WALL FINISH
FLOOR FINISH
BASE FINISH

CPT1 / VCT1 — FLOORING TRANSITION

W.P.1 — WORK POINT

FINISH KEYNOTES :

01 MANUAL ROLLER SHADE LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION

02 MOTORIZED ROLLER SHADES LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION

GENERAL FINISH NOTES :

1. ALL AREAS OF CARPET, LVT, SEALED CONCRETE, OR OTHER RESILIENT FLOORING TO RECEIVE RUBBER BASE; U.N.O. ON FINISH PLANS.
2. IT IS THE RESPONSIBILITY OF ALL TRADES TO COORDINATE PREPARATION OF SURFACES TO RECEIVE FINISH PRODUCT. CONSULT WITH MANUFACTURERS RECOMMENDED PRACTICES.
3. ALL REDUCERS TO COORDINATE APPROPRIATELY WITH ABUTTING MATERIAL HEIGHT.
4. INSTALL 4" H. RUBBER BASE (RB) AT CASEWORK TOE KICKS, INSIDE OF FLOORLESS CASEWORK, AND VERTICAL SUPPORTS.
5. SEE SPECIFICATIONS FOR RESILIENT ACCESSORY INFORMATION.
6. PAINT ALL EXPOSED MECHANICAL AND ELECTRICAL ITEMS INTENDED TO RECEIVE FIELD PAINT TO MATCH ADJACENT SURFACES; U.N.O.
7. DOOR AND WINDOW FRAMES TO BE PAINTED P4; U.N.O.
8. EXPOSED CEILINGS, DECK, DUCTWORK, STRUCTURE AND OTHER MISC. EXPOSED ITEMS TO BE PAINTED; U.N.O. ON INTERIOR ELEVATIONS, CEILING PLANS OR FINISH PLANS.
9. FACE & UNDERSIDE OF BULKHEADS TO BE PAINTED P1; U.N.O. ON FINISH PLANS OR NOTED ON INTERIOR ELEVATIONS.
10. REFER TO CEILING PLANS & CEILING SPECIFICATIONS FOR SPECIAL CEILING DESIGNATIONS AND ACT TYPES.
11. REFER TO INTERIOR ELEVATION SHEETS FOR MORE DETAILED PAINT AND INTERIOR FINISH INFORMATION.
12. ALL WALL TILE INSTALLATIONS SHOULD BE FULL HEIGHT; UNLESS NOTED OR SHOWN OTHERWISE ON INTERIOR ELEVATIONS.
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19. ALL PAINTED WALLS IN TOILET ROOMS, KITCHENS, LOCKER ROOMS, SCIENCE ROOMS, STEM AND MAKERSPACES SHALL RECEIVE EPOXY PAINT.
20. ALL STAIR AND GUARDRAIL RAILINGS, HANDRAILS, STRINGERS, RISERS, ETC ARE TO BE PAINTED P2; U.N.O.
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FINISH LEGEND :

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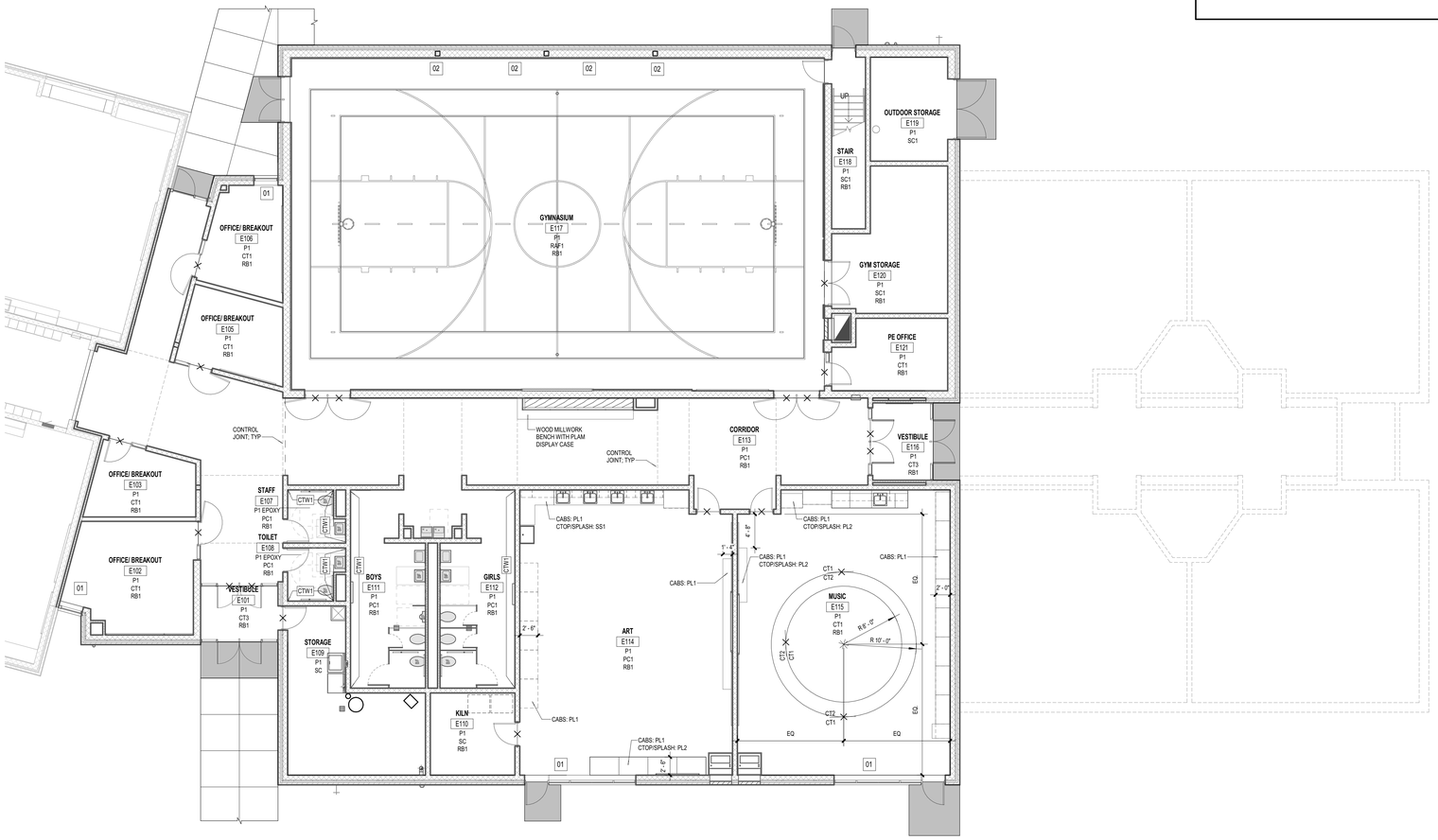
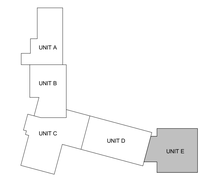
PC1	POLISHED CONCRETE COLOR: NATURAL LEVEL 3 POLISH, CLASS 3 AGGREGATE EXPOSURE
PL1	PLASTIC LAMINATE MFR: WILSONART COLOR: 10770-60 KENSINGTON MAPLE
PL2	PLASTIC LAMINATE MFR: WILSONART COLOR: 4942-38 CRISP LINEN
RAF1	RESILIENT ATHLETIC FLOORING MFR: GERFLOR STYLE: TARAFLEX SPORT M PLUS COLOR: MAPLE DESIGN
RB1	RUBBER BASE MRF: JOHNSONITE STYLE: 4"H, 120' ROLLS COLOR: MATCH EXT. BUILDING COLOR
SC1	SEALED CONCRETE MECHANICAL ROOM FLOOR COATING
SS1	STAINLESS STEEL





KEYPLAN

NORTH

UNIT 'E' FINISH PLAN
1/8" = 1'-0"

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769A 2019.rvt
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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

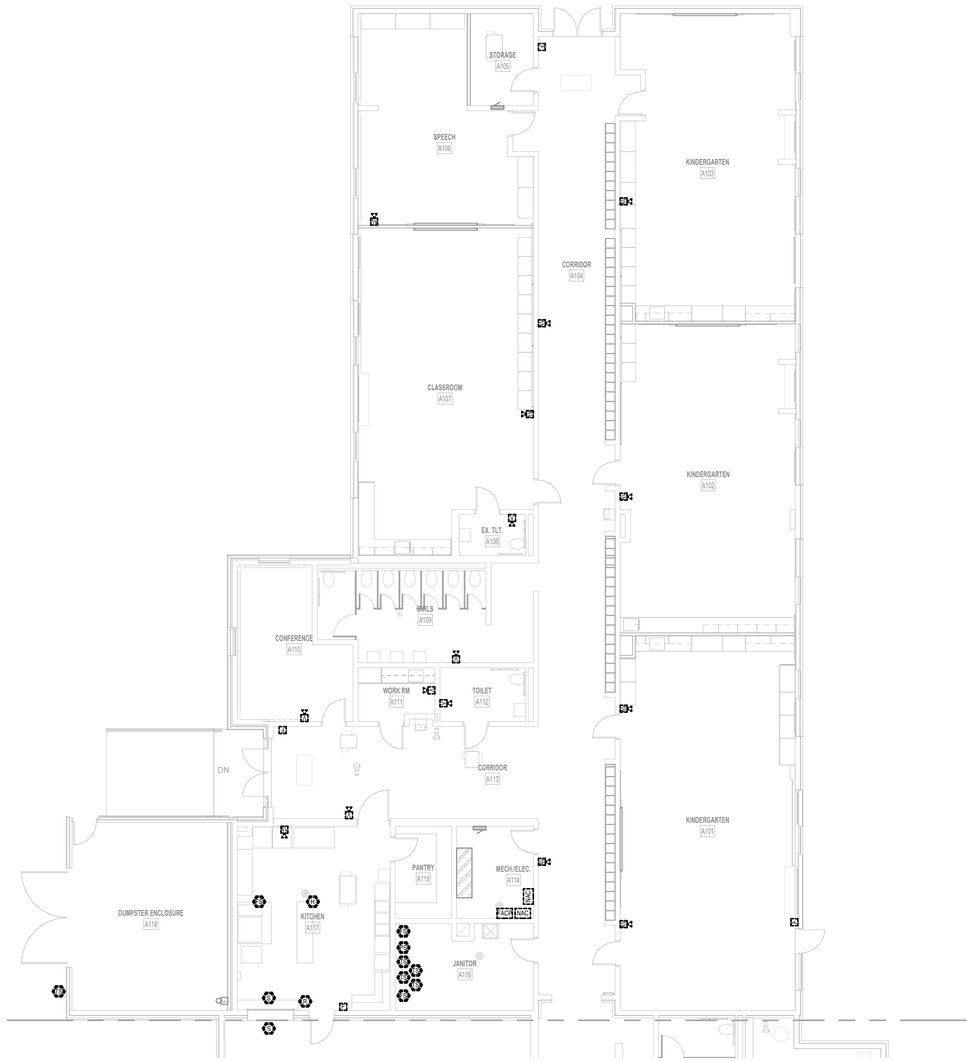
10.04.2022 BIDS AND CONSTRUCTION

DRAWN MRJ
REVIEWED TGD

PROJECT NO. 5-5769

UNIT 'E' FINISH PLAN

A9.1E



UNIT 'A' ELECTRICAL DEMOLITION PLAN

1/8" = 1'-0"

ELECTRICAL DEMOLITION GENERAL NOTES

1. REMOVE ALL ITEMS SHOWN ON DEMO PLAN, UNLESS OTHERWISE NOTED. REMOVE ALL UNUSED CONDUIT, RACEWAYS, WIRE, CABLE, CONTROLS, JUNCTION BOXES, DISCONNECTS, MOUNTS, AND RELATED ELECTRICAL ACCESSORIES COMPLETELY BACK TO SOURCE. REFER TO DEMOLITION SPECIFICATION.
2. MAKE PROVISIONS TO BACKFEED OR RE-CIRCUIT ANY ITEMS THAT ARE EXISTING TO REMAIN WHICH ARE AFFECTED BY THE DEMOLITIONS.
3. THE OWNER RESERVES THE RIGHT TO SALVAGE, WHOLE OR IN PART, ANY EQUIPMENT, SYSTEMS, AND/OR MATERIALS THAT ARE SCHEDULED FOR DEMOLITION PRIOR TO REMOVAL FROM THE BUILDING/SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTION AND GATHERING OF SUCH ITEMS TO A CENTRAL LOCATION AGREED UPON BY THE OWNER AND CONTRACTOR. ALL REMAINING EQUIPMENT AND/OR MATERIALS REMOVED AND NOT REUSED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE BUILDING/SITE.
4. ALL EQUIPMENT AND/OR MATERIALS SLATED FOR REUSE SHALL BE CAREFULLY REMOVED AND STORED TO PREVENT DAMAGE AND REINSTALLED AS WORK PROGRESSES.
5. ALL DEMOLITION SHOWN IS GATHERED FROM FIELD OBSERVATION AND/OR RECORD DRAWINGS. INVESTIGATION OF EXISTING SYSTEMS WILL BE REQUIRED BY THE CONTRACTOR AS PART OF THE BID PRICE, SO THAT THE EXACT EXTENT OF DEMOLITION CAN BE ACCURATELY DETERMINED. THE CONTRACTOR'S BID PRICE SHALL ALSO INCLUDE REMOVAL OF SOME PORTIONS OF SYSTEMS NOT EXPLICITLY SHOWN ON THIS DRAWING, BUT DISCOVERED DURING THE INVESTIGATION PROCESS. WHERE THE EXTENT OF DEMOLITION IS UNCLEAR, THE CONTRACTOR SHALL CONSULT WITH THE ARCHITECT/ENGINEER AND OWNER TO DETERMINE WHICH PORTIONS OF EXISTING SYSTEMS MUST REMAIN ACTIVE AND WHICH PORTIONS MUST BE DEMOLISHED.
6. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATION AND SIZES OF EXISTING CONDUIT, WIRING, AND EQUIPMENT.
7. IF ASBESTOS OR PCB MATERIAL IS ENCOUNTERED IT WILL BE REMOVED BY THE OWNER.
8. LAMPS CONTAINING MERCURY (FLUORESCENT, METAL HALIDE, SODIUM VAPOR, MERCURY VAPOR, ETC.) SHALL BE DISPOSED OF IN A PROPER HAZARDOUS WASTE RECYCLING FACILITY.
9. PATCH AND REPAIR ALL FLOOR, WALL AND CEILING OPENINGS DUE TO DEMOLITION WHICH ARE NOT TO BE RE-USED TO MATCH EXISTING CONSTRUCTION.
10. CONTRACTOR SHALL PROTECT ALL WALLS, CEILINGS, FLOORS, LIGHTS, AND OTHER FINISHED SURFACES THAT ARE NOT TO BE REMOVED. IF DAMAGED, CONTRACTOR SHALL REPAIR TO MATCH EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
11. BACKFILLING SHALL PROMPTLY FOLLOW UNDERGROUND DEMOLITION OR REMOVAL WORK AND SHALL CONTINUE AS THE DEMOLITION PROGRESSES.
12. EXISTING CONDUIT SYSTEMS MAY BE REUSED FOR THE INSTALLATION OF NEW CONDUCTORS IF THEY ARE DEEMED TO BE IN GOOD CONDITION AND OF ADEQUATE SIZE FOR CODE-COMPLIANT INSTALLATION OF THE NEW CONDUCTORS. REVISE / REROUTE CONDUIT AS NECESSARY TO PROVIDE FEEDS PER POWER AND/OR LIGHTING PLANS.
13. PROVIDE BLANK COVER OVER ANY ABANDONED AND REMAINING ROUGH-INS OR JUNCTION BOXES TO MATCH EXISTING.
14. DEMOLISH EXISTING FIRE ALARM SYSTEM AND ALL ASSOCIATED DEVICES (WHETHER INDICATED ON PLAN OR NOT), INCLUDING WIRING AND ACCESSIBLE ABANDONED CONDUIT. DEVICES THAT ARE AN INTEGRAL PART OF OTHER RELATED SYSTEMS, SUCH AS WATERFLOW SWITCHES, TAMPER SWITCHES, MONITORING EQUIPMENT, ETC., SHALL REMAIN FOR INTERCONNECTION WITH NEW FIRE ALARM SYSTEM. REFER TO SECTION 28 05 05 FOR FURTHER INFORMATION.

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS & CONSTRUCTION

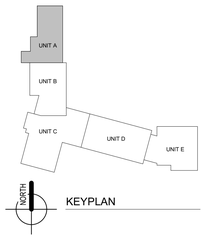
DRAWN KSS

REVIEWED LCT

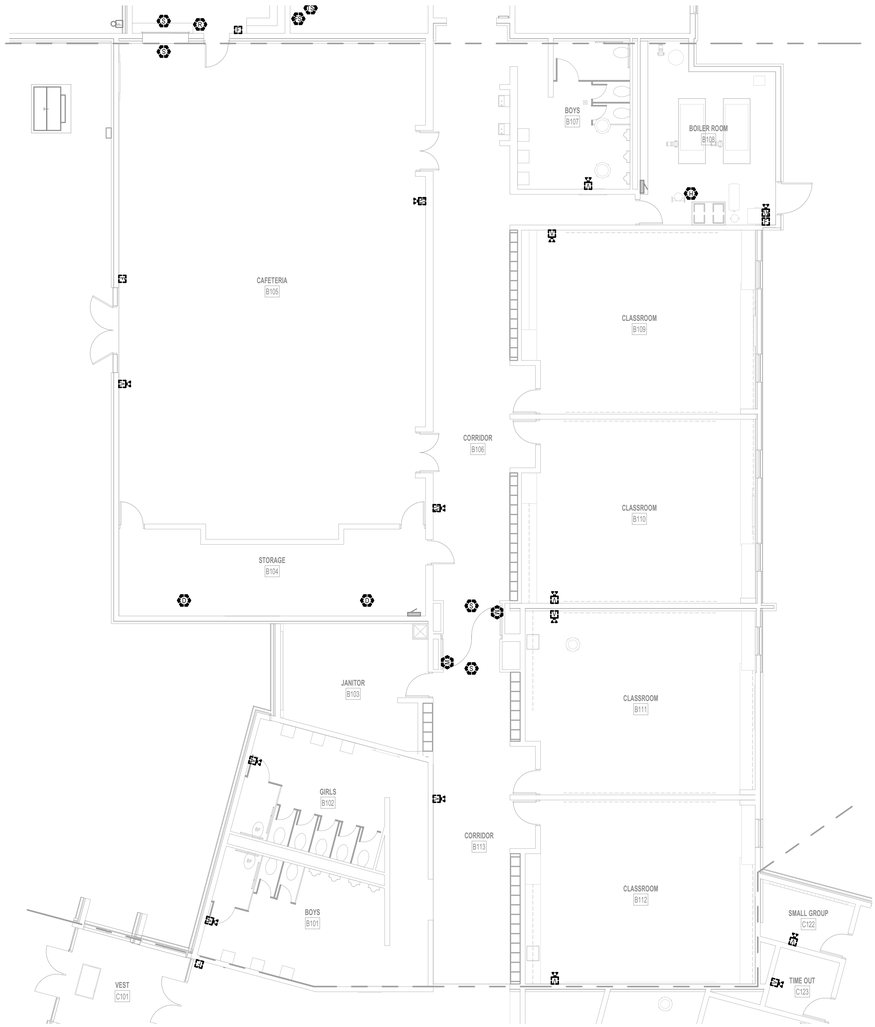
PROJECT NO. 5-5769

UNIT 'A' ELECTRICAL DEMOLITION PLAN

E1.1A



KEYPLAN



UNIT 'B' ELECTRICAL DEMOLITION PLAN

1/8" = 1'-0"

ELECTRICAL DEMOLITION GENERAL NOTES

1. REMOVE ALL ITEMS SHOWN ON DEMO PLAN, UNLESS OTHERWISE NOTED. REMOVE ALL UNUSED CONDUIT, RACEWAYS, WIRE, CABLE, CONTROLS, JUNCTION BOXES, DISCONNECTS, MOUNTS, AND RELATED ELECTRICAL ACCESSORIES COMPLETELY BACK TO SOURCE. REFER TO DEMOLITION SPECIFICATION.
2. MAKE PROVISIONS TO BACKFEED OR RE-CIRCUIT ANY ITEMS THAT ARE EXISTING TO REMAIN WHICH ARE AFFECTED BY THE DEMOLITIONS.
3. THE OWNER RESERVES THE RIGHT TO SALVAGE, WHOLE OR IN PART, ANY EQUIPMENT, SYSTEMS, AND/OR MATERIALS THAT ARE SCHEDULED FOR DEMOLITION PRIOR TO REMOVAL FROM THE BUILDING/SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTION AND GATHERING OF SUCH ITEMS TO A CENTRAL LOCATION AGREED UPON BY THE OWNER AND CONTRACTOR. ALL REMAINING EQUIPMENT AND/OR MATERIALS REMOVED AND NOT REUSED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE BUILDING/SITE.
4. ALL EQUIPMENT AND/OR MATERIALS SLATED FOR REUSE SHALL BE CAREFULLY REMOVED AND STORED TO PREVENT DAMAGE AND REINSTALLED AS WORK PROGRESSES.
5. ALL DEMOLITION SHOWN IS GATHERED FROM FIELD OBSERVATION AND/OR RECORD DRAWINGS. INVESTIGATION OF EXISTING SYSTEMS WILL BE REQUIRED BY THE CONTRACTOR AS PART OF THE BID PRICE, SO THAT THE EXACT EXTENT OF DEMOLITION CAN BE ACCURATELY DETERMINED. THE CONTRACTOR'S BID PRICE SHALL ALSO INCLUDE REMOVAL OF SOME PORTIONS OF SYSTEMS NOT EXPLICITLY SHOWN ON THIS DRAWING, BUT DISCOVERED DURING THE INVESTIGATION PROCESS. WHERE THE EXTENT OF DEMOLITION IS UNCLEAR, THE CONTRACTOR SHALL CONSULT WITH THE ARCHITECT/ENGINEER AND OWNER TO DETERMINE WHICH PORTIONS OF EXISTING SYSTEMS MUST REMAIN ACTIVE AND WHICH PORTIONS MUST BE DEMOLISHED.
6. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATION AND SIZES OF EXISTING CONDUIT, WIRING, AND EQUIPMENT.
7. IF ASBESTOS OR PCB MATERIAL IS ENCOUNTERED IT WILL BE REMOVED BY THE OWNER.
8. LAMPS CONTAINING MERCURY (FLUORESCENT, METAL HALIDE, SODIUM VAPOR, MERCURY VAPOR, ETC.) SHALL BE DISPOSED OF IN A PROPER HAZARDOUS WASTE RECYCLING FACILITY.
9. PATCH AND REPAIR ALL FLOOR, WALL AND CEILING OPENINGS DUE TO DEMOLITION WHICH ARE NOT TO BE RE-USED TO MATCH EXISTING CONSTRUCTION.
10. CONTRACTOR SHALL PROTECT ALL WALLS, CEILINGS, FLOORS, LIGHTS, AND OTHER FINISHED SURFACES THAT ARE NOT TO BE REMOVED. IF DAMAGED, CONTRACTOR SHALL REPAIR TO MATCH EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
11. BACKFILLING SHALL PROMPTLY FOLLOW UNDERGROUND DEMOLITION OR REMOVAL WORK AND SHALL CONTINUE AS THE DEMOLITION PROGRESSES.
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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS & CONSTRUCTION

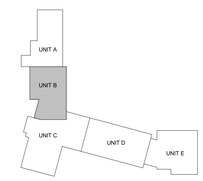
DRAWN KSS

REVIEWED LCT

PROJECT NO. 5-5769

UNIT 'B' ELECTRICAL DEMOLITION PLAN

E1.1B



KEYPLAN

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NORTH

UNIT 'C' ELECTRICAL DEMOLITION PLAN

1/8" = 1'-0"

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13. PROVIDE BLANK COVER OVER ANY ABANDONED AND REMAINING ROUGH-INS OR JUNCTION BOXES TO MATCH EXISTING.
14. DEMOLISH EXISTING FIRE ALARM SYSTEM AND ALL ASSOCIATED DEVICES (WHETHER INDICATED ON PLAN OR NOT), INCLUDING WIRING AND ACCESSIBLE ABANDONED CONDUIT. DEVICES THAT ARE AN INTEGRAL PART OF OTHER RELATED SYSTEMS, SUCH AS WATERFLOW SWITCHES, TAMPER SWITCHES, MONITORING EQUIPMENT, ETC., SHALL REMAIN FOR INTERCONNECTION WITH NEW FIRE ALARM SYSTEM. REFER TO SECTION 28 05 05 FOR FURTHER INFORMATION.

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS & CONSTRUCTION

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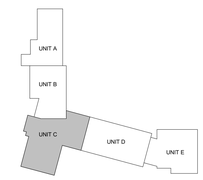
REVIEWED LCT

PROJECT NO. 5-5769

UNIT 'C' ELECTRICAL DEMOLITION PLAN

E1.1C



KEYPLAN

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769E 2019.rvt
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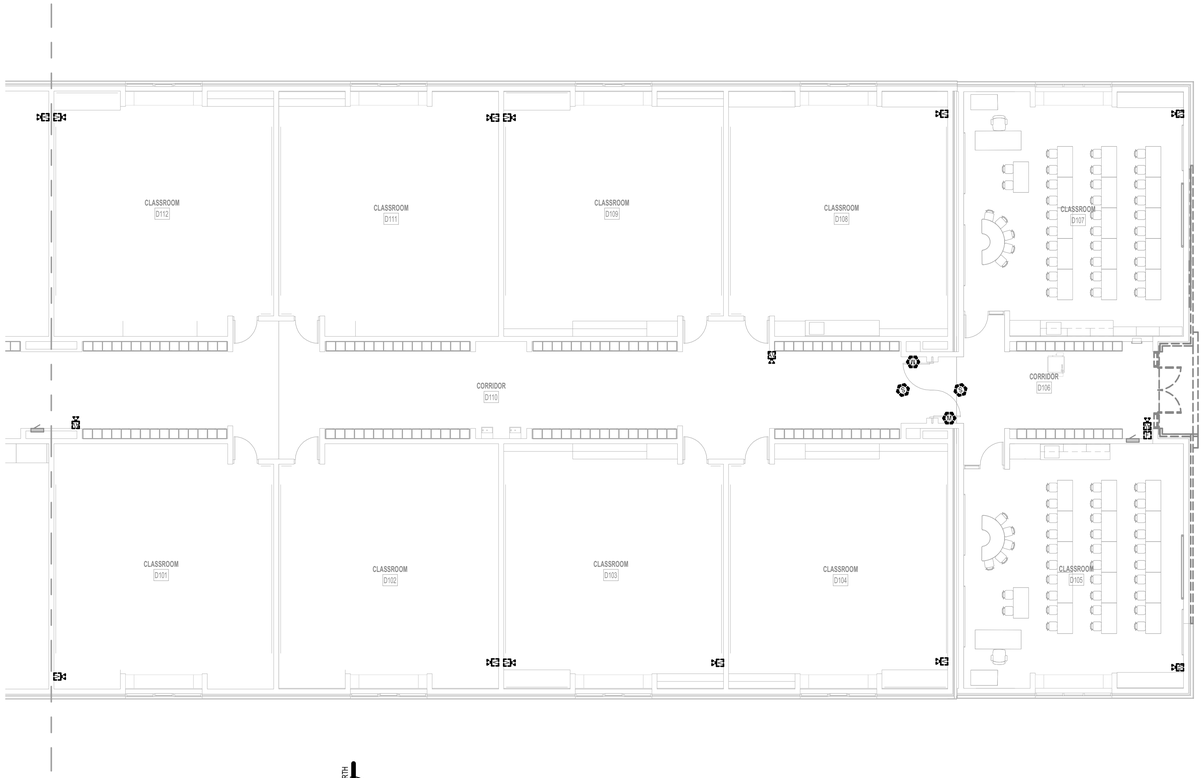
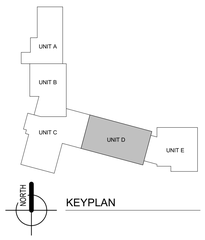
ELECTRICAL DEMOLITION GENERAL NOTES

1. REMOVE ALL ITEMS SHOWN ON DEMO PLAN, UNLESS OTHERWISE NOTED. REMOVE ALL UNUSED CONDUIT, RACEWAYS, WIRE, CABLE, CONTROLS, JUNCTION BOXES, DISCONNECTS, MOUNTS, AND RELATED ELECTRICAL ACCESSORIES COMPLETELY BACK TO SOURCE. REFER TO DEMOLITION SPECIFICATION.
2. MAKE PROVISIONS TO BACKFEED OR RE-CIRCUIT ANY ITEMS THAT ARE EXISTING TO REMAIN WHICH ARE AFFECTED BY THE DEMOLITIONS.
3. THE OWNER RESERVES THE RIGHT TO SALVAGE, WHOLE OR IN PART, ANY EQUIPMENT, SYSTEMS, AND/OR MATERIALS THAT ARE SCHEDULED FOR DEMOLITION PRIOR TO REMOVAL FROM THE BUILDING/SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTION AND GATHERING OF SUCH ITEMS TO A CENTRAL LOCATION AGREED UPON BY THE OWNER AND CONTRACTOR. ALL REMAINING EQUIPMENT AND/OR MATERIALS REMOVED AND NOT REUSED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE BUILDING/SITE.
4. ALL EQUIPMENT AND/OR MATERIALS SLATED FOR REUSE SHALL BE CAREFULLY REMOVED AND STORED TO PREVENT DAMAGE AND REINSTALLED AS WORK PROGRESSES.
5. ALL DEMOLITION SHOWN IS GATHERED FROM FIELD OBSERVATION AND/OR RECORD DRAWINGS. INVESTIGATION OF EXISTING SYSTEMS WILL BE REQUIRED BY THE CONTRACTOR AS PART OF THE BID PRICE, SO THAT THE EXACT EXTENT OF DEMOLITION CAN BE ACCURATELY DETERMINED. THE CONTRACTOR'S BID PRICE SHALL ALSO INCLUDE REMOVAL OF SOME PORTIONS OF SYSTEMS NOT EXPLICITLY SHOWN ON THIS DRAWING, BUT DISCOVERED DURING THE INVESTIGATION PROCESS. WHERE THE EXTENT OF DEMOLITION IS UNCLEAR, THE CONTRACTOR SHALL CONSULT WITH THE ARCHITECT/ENGINEER AND OWNER TO DETERMINE WHICH PORTIONS OF EXISTING SYSTEMS MUST REMAIN ACTIVE AND WHICH PORTIONS MUST BE DEMOLISHED.
6. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATION AND SIZES OF EXISTING CONDUIT, WIRING, AND EQUIPMENT.
7. IF ASBESTOS OR PCB MATERIAL IS ENCOUNTERED IT WILL BE REMOVED BY THE OWNER.
8. LAMPS CONTAINING MERCURY (FLUORESCENT, METAL HALIDE, SODIUM VAPOR, MERCURY VAPOR, ETC.) SHALL BE DISPOSED OF IN A PROPER HAZARDOUS WASTE RECYCLING FACILITY.
9. PATCH AND REPAIR ALL FLOOR, WALL AND CEILING OPENINGS DUE TO DEMOLITION WHICH ARE NOT TO BE RE-USED TO MATCH EXISTING CONSTRUCTION.
10. CONTRACTOR SHALL PROTECT ALL WALLS, CEILINGS, FLOORS, LIGHTS, AND OTHER FINISHED SURFACES THAT ARE NOT TO BE REMOVED. IF DAMAGED, CONTRACTOR SHALL REPAIR TO MATCH EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
11. BACKFILLING SHALL PROMPTLY FOLLOW UNDERGROUND DEMOLITION OR REMOVAL WORK AND SHALL CONTINUE AS THE DEMOLITION PROGRESSES.
12. EXISTING CONDUIT SYSTEMS MAY BE REUSED FOR THE INSTALLATION OF NEW CONDUCTORS IF THEY ARE DEEMED TO BE IN GOOD CONDITION AND OF ADEQUATE SIZE FOR CODE-COMPLIANT INSTALLATION OF THE NEW CONDUCTORS. REVISE / REROUTE CONDUIT AS NECESSARY TO PROVIDE FEEDS PER POWER AND/OR LIGHTING PLANS.
13. PROVIDE BLANK COVER OVER ANY ABANDONED AND REMAINING ROUGH-INS OR JUNCTION BOXES TO MATCH EXISTING.
14. DEMOLISH EXISTING FIRE ALARM SYSTEM AND ALL ASSOCIATED DEVICES (WHETHER INDICATED ON PLAN OR NOT), INCLUDING WIRING AND ACCESSIBLE ABANDONED CONDUIT. DEVICES THAT ARE AN INTEGRAL PART OF OTHER RELATED SYSTEMS, SUCH AS WATERFLOW SWITCHES, TAMPER SWITCHES, MONITORING EQUIPMENT, ETC., SHALL REMAIN FOR INTERCONNECTION WITH NEW FIRE ALARM SYSTEM. REFER TO SECTION 28 05 05 FOR FURTHER INFORMATION.



NORTH

UNIT 'D' ELECTRICAL DEMOLITION PLAN
1/8" = 1'-0"



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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

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PROJECT NO. 5-5769

UNIT 'D' ELECTRICAL DEMOLITION PLAN

E1.1D

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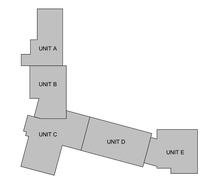
OVERALL ELECTRICAL PLAN

1/16" = 1'-0"

ELECTRICAL KEYNOTES	
P08	ROUTE FEED FOR PANEL "I" IN EXISTING ATTIC SPACE ALONG SAME PATH FOR EXISTING PANEL "G" AND EXTEND THROUGH NEW ADDITION.



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HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

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PROJECT NO. 5-5769

OVERALL ELECTRICAL PLAN

E1.11

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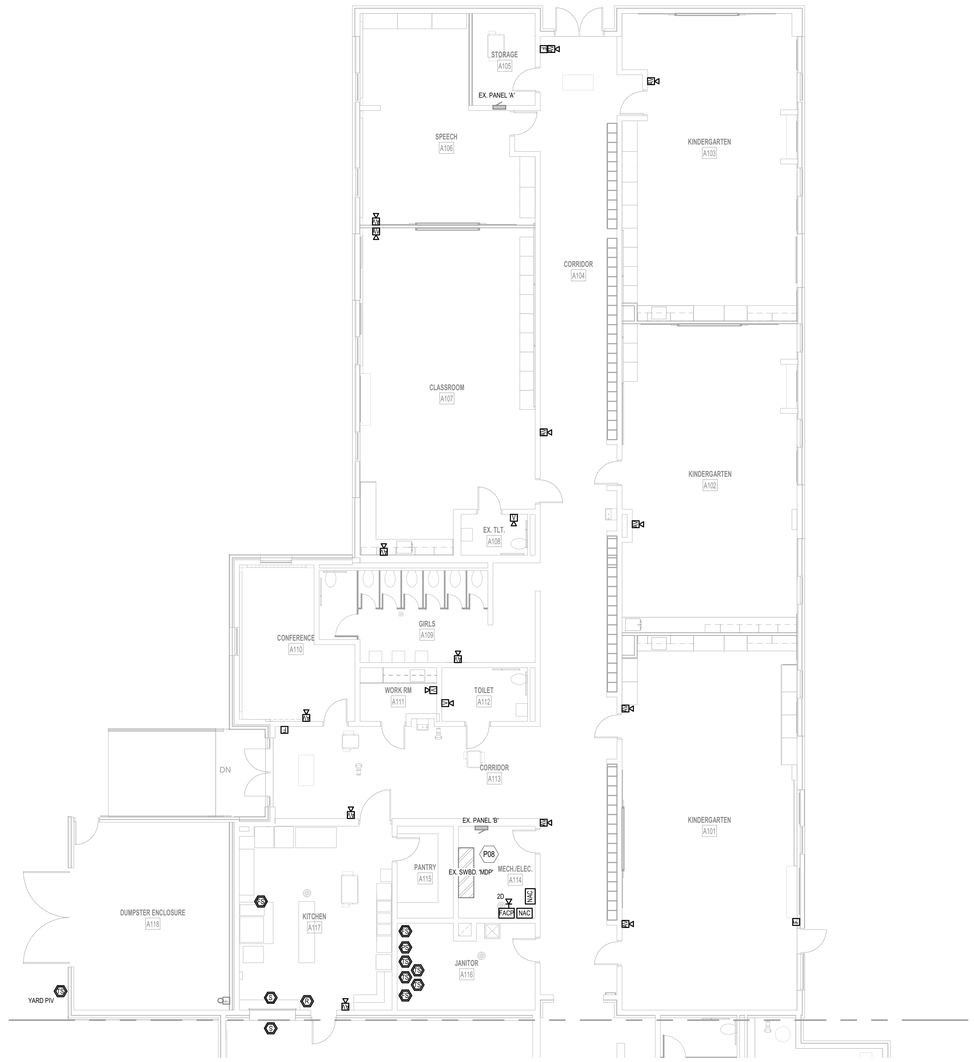


UNIT 'A' POWER & COMMUNICATIONS PLAN

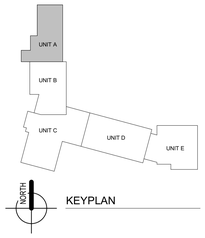
1/8" = 1'-0"

POWER & COMMUNICATION GENERAL NOTES

1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. REFER TO MECHANICAL/HVAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DAMPERS.
   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   C. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   D. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   E. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
5. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SMALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
6. DESIGNATED CABLING PATHWAYS (CONDUITS, CABLE TRAYS, PENETRATION SLEEVES, ETC.) SHALL BE RESERVED FOR DIV. 27 COMMUNICATIONS CABLING AND DIV. 28 SAFETY/SECURITY CABLING ONLY. OTHER CABLING TYPES, SUCH AS DIV. 23 CONTROLS, DIV. 26 CONTROLS, AND ARCHITECTURAL EQUIPMENT CABLING SHALL BE SUPPORTED AND SLEEVED BY OTHER INDEPENDENT PATHWAYS, HANGERS, AND SUPPORTS.
7. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED.

ELECTRICAL KEYNOTES

P08	ROUTE FEED FOR PANEL "I" IN EXISTING ATTIC SPACE ALONG SAME PATH FOR EXISTING PANEL "C" AND EXTEND THROUGH NEW ADDITION.



KEYPLAN

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

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PROJECT NO. 5-5769

UNIT 'A' POWER & COMMUNICATIONS PLAN

E2.1A

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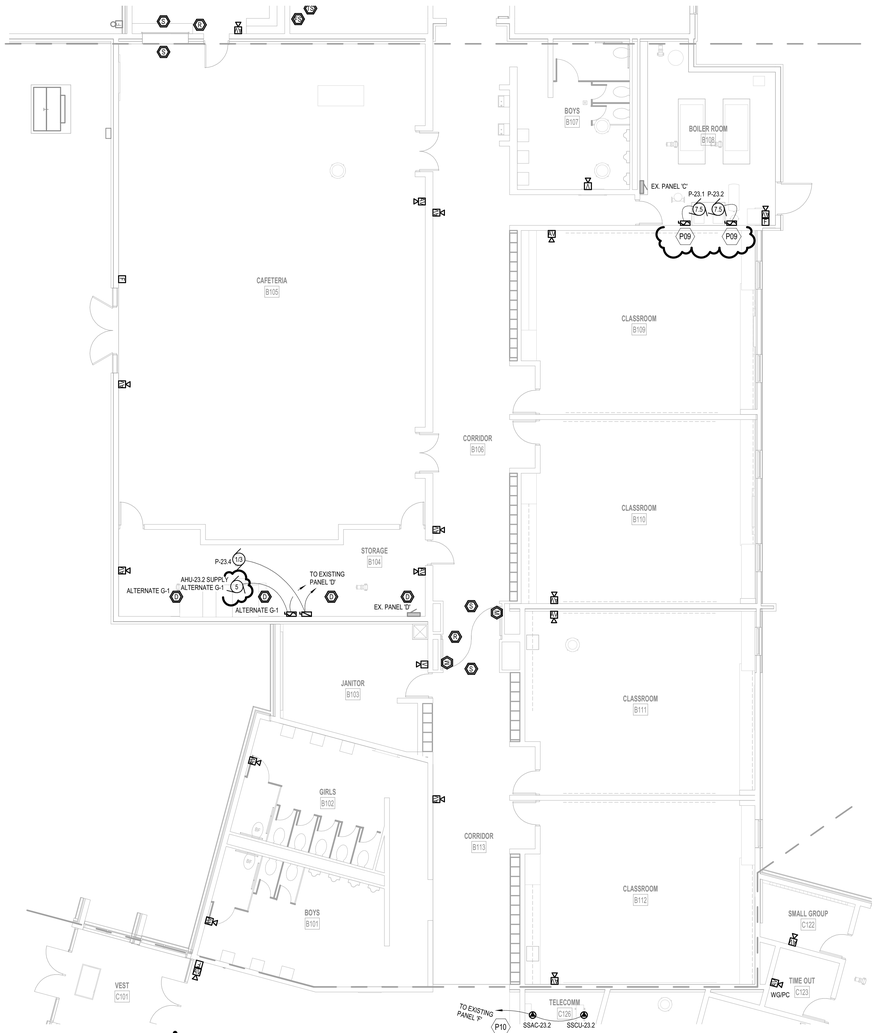
POWER & COMMUNICATION GENERAL NOTES

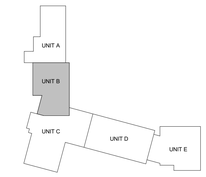
1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. REFER TO MECHANICAL/HVAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DAMPERS.
   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   C. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   D. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   E. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
5. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SMALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
6. DESIGNATED CABLING PATHWAYS (CONDUITS, CABLE TRAYS, PENETRATION SLEEVES, ETC.) SHALL BE RESERVED FOR DIV. 27 COMMUNICATIONS CABLING AND DIV. 28 SAFETY/SECURITY CABLING ONLY. OTHER CABLING TYPES, SUCH AS DIV. 23 CONTROLS, DIV. 26 CONTROLS, AND ARCHITECTURAL EQUIPMENT CABLING SHALL BE SUPPORTED AND SLEEVED BY OTHER INDEPENDENT PATHWAYS, HANGERS, AND SUPPORTS.
7. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED.
8. THE FOLLOWING DIV. 27 AND DIV. 28 SYSTEMS WILL BE DOCUMENTED AND BID SEPARATELY BY CONSULTANT IN ASSOCIATION WITH HUDSONVILLE P.S. TECHNOLOGY DEPT.:
   A. NETWORK ELECTRONICS (SWITCHES, ACCESS POINTS, ETC.)
   B. VOIP TELEPHONE SYSTEMS
   C. CLASSROOM AUDIO-VIDEO EQUIPMENT AND INSTRUCTIONAL TECHNOLOGY
   D. AUDIO-VIDEO SYSTEM FOR GYMNASIUM
   E. ACCESS CONTROL SYSTEM
   F. VIDEO SURVEILLANCE SYSTEM

ELECTRICAL KEYNOTES

P09	RECONNECT EQUIPMENT TO SAME BRANCH CIRCUIT AS SERVED REPLACED EQUIPMENT IN SIMILAR LOCATION. PROVIDE A TWO POLE 50 AMP BREAKER AND (3) #8 AWG THWN AND (1) #8 CU GND IN 3/4" CONDUIT FOR EACH PUMP.
P10	PROVIDE TWO POLE 20 AMP BREAKER IN PANEL 'F'. PROVIDE (3) #10 AWG THWN AND (1) #10 CU GND IN 3/4" CONDUIT.



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



KEYPLAN

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS & CONSTRUCTION
11.02.2022 ADDENDUM 002
12.05.2022 BULLETIN 001

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PROJECT NO. 5-5769

UNIT 'B' POWER & COMMUNICATIONS PLAN

E2.1B

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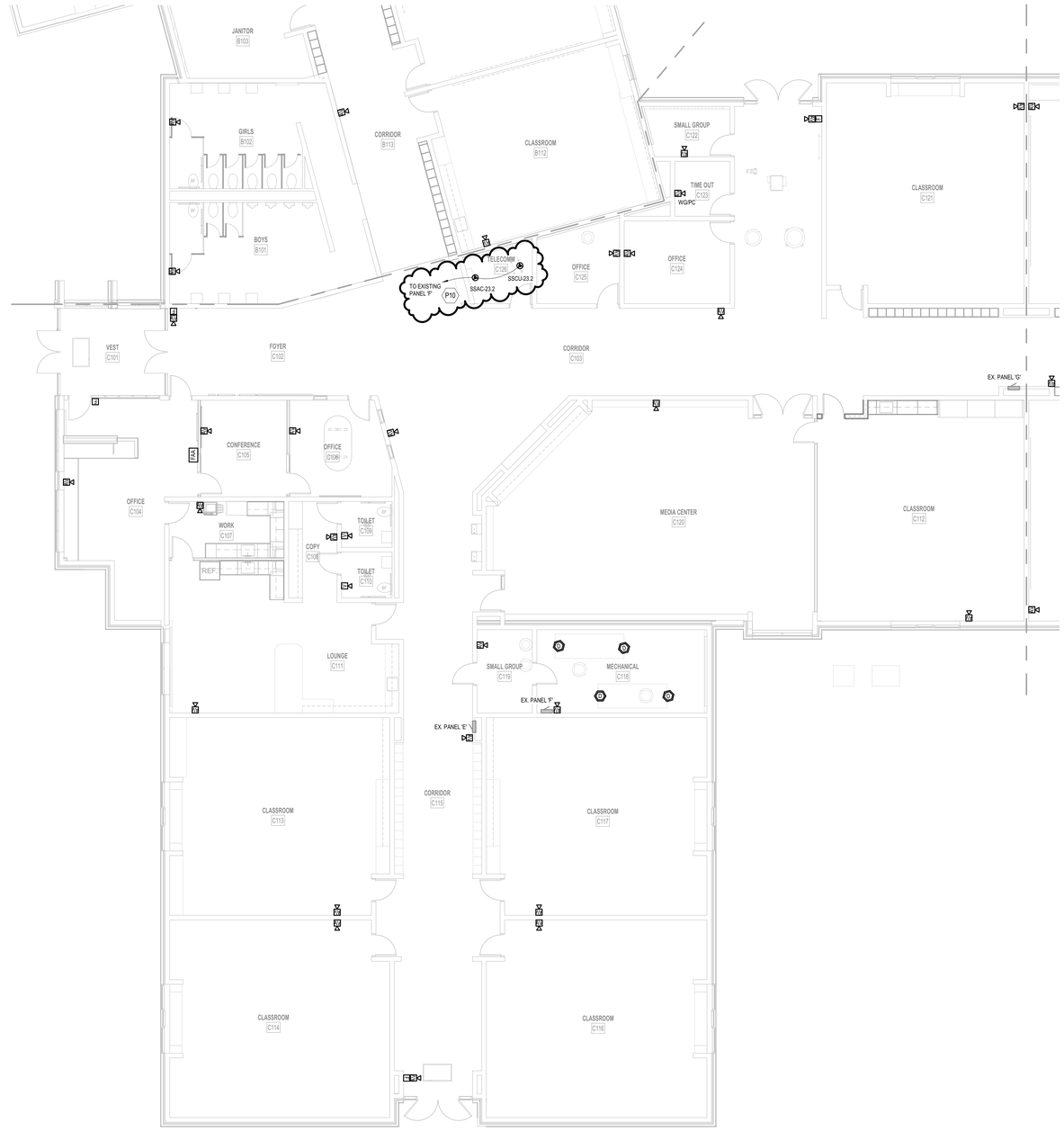

1 / E2.1C UNIT 'C' POWER & COMMUNICATIONS PLAN

1/8" = 1'-0"

POWER & COMMUNICATION GENERAL NOTES

1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. REFER TO MECHANICAL/HVAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DAMPERS.
   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   C. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   D. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   E. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
5. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SHALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
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7. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED.
8. THE FOLLOWING DIV. 27 AND DIV. 28 SYSTEMS WILL BE DOCUMENTED AND BID SEPARATELY BY CONSULTANT IN ASSOCIATION WITH HUDSONVILLE P.S. TECHNOLOGY DEPT.:
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   D. AUDIO-VIDEO SYSTEM FOR GYMNASIUM
   E. ACCESS CONTROL SYSTEM
   F. VIDEO SURVEILLANCE SYSTEM

ELECTRICAL KEYNOTES

P10	PROVIDE TWO POLE 20 AMP BREAKER IN PANEL 'F'. PROVIDE (3) #10 AWG THWN AND (1) #10 CU GND IN 3/4" CONDUIT.

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS & CONSTRUCTION
12.05.2022 BULLETIN 001

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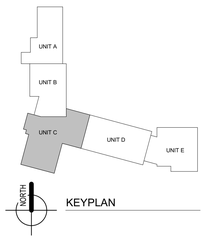
PROJECT NO. 5-5769

UNIT 'C' POWER & COMMUNICATIONS PLAN

E2.1C



KEYPLAN

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ELECTRICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
ACC	ACCESSORY
ADO	AUTOMATIC DOOR OPERATOR
AHU	AIR HANDLING UNIT
ATS	AUTOMATIC TRANSFER SWITCH
BKR	BREAKER
BOB	BOTTOM OF BOX
BOD	BOTTOM OF DECK
BOS	BOTTOM OF STRUCTURE
BP	BREAKER PANEL
BLDG	BUILDING
CAP	CAPACITY
CLG	CEILING
CKT	CIRCUIT
CB	CIRCUIT BREAKER
C	CONDUIT
COMM	COMMUNICATIONS
CONN	CONNECTION
CONST	CONSTRUCTION
CONTR	CONTRACT (OR)
CLL	CONTRACT LIMIT LINE
CT	CURRENT TRANSFORMER
E.C.	ELECTRICAL CONTRACTOR
EGC	EQUIPMENT GROUNDING CONDUCTOR
EHD	ELECTRIC HAND DRYER
ELEC	ELECTRIC (AL)
EWC	ELECTRIC WATER COOLER
EM	EMERGENCY
ENT	ENTRANCE
EQ	EQUAL
EQUIP	EQUIPMENT
EST	ESTIMATE
EF	EXHAUST FAN
ETR	EXISTING TO REMAIN
EX	EXISTING
F	FLUSH
FA	FIRE ALARM
FSE	FOOD SERVICE EQUIPMENT
FP	FIRE PROOF / FIRE PROTECTION
FLR	FLOOR
FLUOR	FLUORESCENT
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GRD	GROUND
HORIZ	HORIZONTAL
HTR	HEATER
HTG	HEATING
HV	HEATING / VENTILATING
HVAC	HEATING, VENTILATING, AIR CONDITIONING
HOA	HAND - OFF - AUTOMATIC
HP	HEAT PUMP
INTLK	INTERLOCK
JCT	JUNCTION
JB	JUNCTION BOX
KW	KILOWATT
KWH	KILOWATT HOUR
KO	KNOCK OUT
LBL	LABEL
LT	LIGHT
LC	LIGHTING CONTROL
LCM	LIGHTING CONTROL MODULE
LCN	LIGHTING CONTROL NARRATIVE
LTG	LIGHTING
MAX	MAXIMUM
MBJ	MAIN BONDING JUMPER
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
MTS	MANUAL TRANSFER SWITCH
NEC	NATIONAL ELECTRICAL CODE
NEG	NEGATIVE (-)
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
OCPD	OVERCURRENT PROTECTIVE DEVICE
PC	PHOTOCELL / PHOTOCONTROL
POS	POSITIVE (+)
PWR	POWER
P & L	POWER & LIGHTING
S	SURFACE
SBJ	SYSTEM BONDING JUMPER
S.B.O.	SUPPLIED BY OTHERS
SP	SINGLE POLE
SPD	SURGE PROTECTION DEVICE
SPKR	SPEAKER
SPEC	SPECIFICATION
SSBJ	SUPPLY-SIDE BONDING JUMPER
SUB	SUBSTITUTE
SWBD	SWITCHBOARD
TEL	TELEPHONE
TSTAT	THERMOSTAT
XFMR	TRANSFORMER
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WG	WIRE GUARD
WL	WET LOCATION
WP	WEATHER PROOF

MAXIMUM CONDUCTOR LENGTHS FOR TYPICAL BRANCH CIRCUITS

FEET ONE-WAY BASED ON SINGLE PHASE, 20A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG
120	60	100	150	245	385
208	100	170	265	425	670
277	135	230	355	565	890
480	240	400	615	980	

FEET ONE-WAY BASED ON SINGLE PHASE, 30A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#10 AWG	#8 AWG	#6 AWG	#4 AWG	
120	60	100	150	245	
208	100	170	265	425	
277	135	230	355	565	
480	240	400	615	980	

FEET ONE-WAY BASED ON THREE PHASE, 20A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG
208	120	200	305	490	775
480	275	460	710	1,130	

FEET ONE-WAY BASED ON THREE PHASE, 30A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#10 AWG	#8 AWG	#6 AWG	#4 AWG	
208	120	200	305	490	
480	275	460	710	1,130	

COMMUNICATIONS SYMBOL LEGEND

- COMMUNICATIONS OUTLET ROUGH-IN
- COMMUNICATIONS OUTLET, CEILING-MOUNTED
- COMMUNICATIONS OUTLET, FLOOR-MOUNTED
- CEILING-MOUNTED VIDEO PROJECTOR
- COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED 2-POST
- COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED 4-POST
- COMMUNICATIONS EQUIPMENT RACK, WALL-MOUNTED
- CONDUIT SLEEVE FOR COMMUNICATIONS CABLING, 2" DIA. OR EQUIV. FREE AREA TYP. UNLESS NOTED OTHERWISE. IN FIRE-RATED OR SMOKE-TIGHT WALLS, PROVIDE CABLE PATHWAY PENETRATION DEVICE(S) PER SECTION 27 05 28.
- LOUDSPEAKER, CEILING-MOUNTED, TYPE 1
- LOUDSPEAKER, WALL-MOUNTED, TYPE 1
- INTERCOM SYSTEM CALL STATION BUTTON
- VOLUME CONTROL FOR AUDIO SYSTEM, PAGING, OR INTERCOM LOUDSPEAKERS
- SECONDARY CLOCK, CEILING-MOUNTED, TYPE 1
- SECONDARY CLOCK, WALL-MOUNTED, TYPE 1
- SIGNALING BELL

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

POWER SYMBOL LEGEND

- THREE PHASE MOTOR CONNECTION, 5 HORSEPOWER (EXAMPLE)
- SINGLE PHASE MOTOR CONNECTION, 1/2 HORSEPOWER (EXAMPLE)
- HVAC CONTROL DAMPER ACTUATOR CONNECTION
- HVAC SMOKE DAMPER ACTUATOR CONNECTION
- HVAC COMBINATION FIRE/SMOKE DAMPER ACTUATOR CONNECTION
- SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE
- SAFETY SWITCH DISCONNECTING MEANS, FUSIBLE
- COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS
- VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS
- MOTOR STARTER
- BOX-COVER FUSIBLE DISCONNECT SWITCH
- MANUAL MOTOR CONTROLLER
- POWER SWITCH, REFER TO LIGHTING SYMBOL LEGEND FOR SIMILAR SWITCH TYPES
- DIRECT ELECTRICAL CONNECTION
- SINGLE NEMA 5-20R RECEPTACLE
- SINGLE NEMA 5-20R RECEPTACLE, CEILING-MOUNTED
- SINGLE NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED
- DUPLEX NEMA 5-20R RECEPTACLE
- "E" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX
- "GFCI" NOTATION: GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE
- "S" NOTATION: SURFACE-MOUNTED
- "WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER
- DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED
- DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED
- DUPLEX NEMA 5-20R RECEPTACLE, CONNECTED TO STANDBY POWER BRANCH CIRCUIT
- DUPLEX NEMA 5-20R RECEPTACLE, SPLIT-WIRED
- QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE
- QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED
- QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED
- RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE
- RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE, FLOOR-MOUNTED
- SURFACE RACEWAY SYSTEM
- AUTOMATIC TRANSFER SWITCH
- SWITCHBOARD / SWITCHGEAR
- PANELBOARD
- TRANSFORMER
- MOTOR CONTROL CENTER
- EMERGENCY STOP STATION. REFER TO DETAIL FOR REQUIREMENTS.
- AUTOMATIC DOOR OPERATOR PUSH BUTTON
- ON/OFF PUSH BUTTON
- THREE-FUNCTION PUSH BUTTON
- FLOORBOX, TYPE 1
- JUNCTION BOX
- METER
- THERMOSTAT ROUGH-IN
- RELAY
- ENCLOSED CONTROL CONTACTOR

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

LIGHTING SYMBOL LEGEND

- SINGLE POLE TOGGLE SWITCH
- DOUBLE POLE TOGGLE SWITCH
- THREE-WAY TOGGLE SWITCH
- FOUR-WAY TOGGLE SWITCH
- SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR
- SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR AND DIMMER
- WALL-BOX DIMMER SWITCH
- THREE-WAY WALL-BOX DIMMER SWITCH
- ELECTRONIC INTERVAL TIMER SWITCH
- LIGHT SWITCH WITH PILOT LIGHT
- LIGHTING CONTROL SWITCH, REFER TO LIGHTING CONTROL SWITCH SCHEDULE AND SPECIFICATIONS FOR DETAILS.
- DOUBLE-THROW (MAINTAINED) LIGHT SWITCH
- KEY-OPERATED SWITCH (SUFFIX DESIGNATION – NONE: SINGLE POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY)
- LOCKING SWITCH (SUFFIX DESIGNATION – NONE: SINGLE-POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY)
- TOUCHSCREEN PANEL
- CIRCUIT NUMBER FOR LIGHT FIXTURES WITHIN INDICATED SPACE
- WALL-MOUNTED LIGHTING FIXTURE, TYPE 'A'
- RECESSED LIGHTING FIXTURE, TYPE 'A'
- SURFACE-MOUNTED LIGHTING FIXTURE, TYPE 'A'
- TRACK LIGHTING
- SINGLE FACE EXIT SIGN, TYPE "X1" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION
- DOUBLE FACE EXIT SIGN, TYPE "X2" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION
- WALL-MOUNTED EXIT SIGN, SHADING INDICATES FACE ORIENTATION
- EMERGENCY LIGHT FIXTURE DESIGNATION
- EMERGENCY LIGHTING AUTOMATIC LOAD CONTROL RELAY
- LIGHTING CONTROL RELAY
- LIGHTING CONTROL ENCLOSED CONTACTOR
- TIME SWITCH
- LIGHTING CONTROL MODULE
- LIGHTING CONTROL PANEL
- EMERGENCY LIGHTING INVERTER, TYPE 1
- WALL-MOUNTED OCCUPANCY SENSOR
- CEILING-MOUNTED OCCUPANCY SENSOR
- WALL-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
- CEILING-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
- WALL-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
- CEILING-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
- POLE-MOUNTED SITE/AREA FIXTURE
- SELF-CONTAINED EMERGENCY LIGHTING UNIT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

FIRE ALARM SYMBOL LEGEND

- MANUAL PULL STATION
- AUDIBLE NOTIFICATION APPLIANCE, WALL-MOUNTED
- VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
- AUDIBLE/VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
- AUDIBLE NOTIFICATION APPLIANCE, CEILING-MOUNTED
- AUDIBLE/VISUAL NOTIFICATION APPLIANCE, CEILING-MOUNTED
- VISUAL NOTIFICATION APPLIANCE, CEILING-MOUNTED
- WG/PC — WHERE "WG/PC" IS NOTED, PROVIDE LISTED WIRE GUARD OR PROTECTIVE POLYCARBONATE COVER FOR NOTIFICATION DEVICE.
- WL — WHERE "WL" IS NOTED, PROVIDE LISTED WET-LOCATION NOTIFICATION DEVICE, SUITABLE FOR INDOOR OR OUTDOOR USE.
- SMOKE DETECTOR
- HEAT DETECTOR
- DUCT SMOKE DETECTOR
- FIRE PROTECTION FLOW SWITCH
- FIRE PROTECTION TAMPER SWITCH
- ELECTROMAGNETIC DOOR HOLD-OPEN DEVICE
- ADDRESSABLE RELAY FOR FIRE ALARM CONTROL
- PRESSURE SWITCH
- CARBON MONOXIDE DETECTOR
- NAC — NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY
- FAA — FIRE ALARM REMOTE ANNUNCIATOR
- FACP — FIRE ALARM CONTROL PANEL
- KTS — KEYED TEST SWITCH AND REMOTE INDICATOR FOR DUCT SMOKE DETECTOR
- FIRE PROTECTION OR ALARM BELL

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

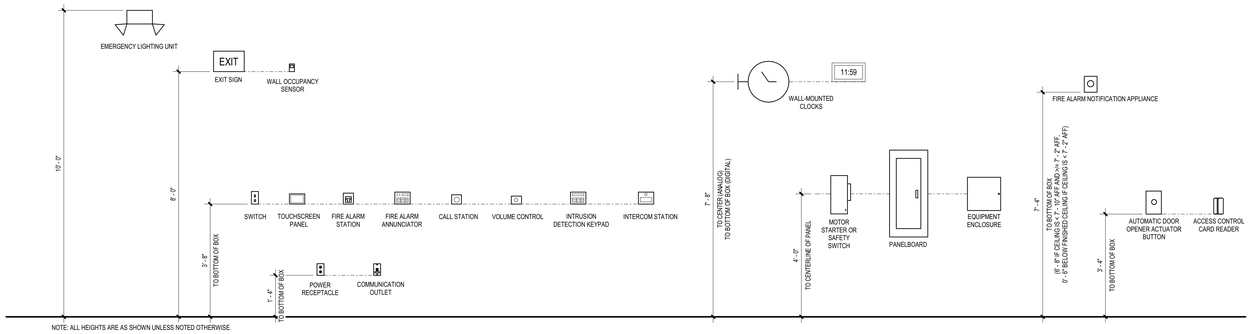
ELECTRONIC SAFETY / SECURITY SYMBOL LEGEND

- DC — DOOR CONTACT
- EL — ELECTRONIC LATCH
- ES — ELECTRONIC STRIKE
- K — INTRUSION DETECTION KEYPAD
- IC — INTERCOM STATION
- WALL-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH-IN
- SC — CEILING-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH IN
- WALL-MOUNTED SURVEILLANCE CAMERA, TYPE 1
- SC1 — CEILING-MOUNTED SURVEILLANCE CAMERA, TYPE 1
- ID — WALL-MOUNTED INFRARED MOTION DETECTOR
- IR — CEILING-MOUNTED INFRARED MOTION DETECTOR
- UD — WALL-MOUNTED ULTRASONIC MOTION DETECTOR
- US — CEILING-MOUNTED ULTRASONIC MOTION DETECTOR
- CR — CARD READER
- CR_M — CARD READER, MULLION-MOUNTED
- XXXXX — ACCESS CONTROL DOOR TAG, REFER TO HARDWARE SCHEDULE(S) IN SECTION 08 71 00 AND/OR SECTION 28 10 00 FOR FURTHER DETAILED REQUIREMENTS
- ACS — ACCESS CONTROL SYSTEM EQUIPMENT
- IDS — INTRUSION DETECTION SYSTEM EQUIPMENT
- PSU — POWER SUPPLY UNIT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

ELECTRICAL GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AS AMENDED AND ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION WHERE THE WORK IS PERFORMED.
2. ALL "LOW-VOLTAGE" CONTROLS, COMMUNICATIONS, AND SAFETY/SECURITY CABLING MAY BE INSTALLED WITHOUT CONDUIT, RACEWAY, OR CABLE TRAY ONLY WHERE CONCEALED ABOVE A SUSPENDED CEILING SYSTEM AND ACCESSIBLE FOR FUTURE MAINTENANCE. OTHERWISE, ALL CABLING (INCLUDING BUT NOT LIMITED TO CABLES ASSOCIATED WITH SYSTEMS SUCH AS ARCHITECTURAL EQUIPMENT, BUILDING ENERGY MANAGEMENT, TEMPERATURE CONTROLS, LIGHTING CONTROLS, COMMUNICATIONS NETWORKS, TELEPHONE, AUDIO-VIDEO, INTERCOM, PAGING, CLOCK, SURVEILLANCE, ACCESS CONTROL, FIRE ALARM, ETC.) SHALL BE INSTALLED IN AN APPROVED CONDUIT, RACEWAY SYSTEM, AND/OR CABLE TRAY UNLESS OTHERWISE NOTED. IN EXPOSED STRUCTURE CEILING AREAS, CONCEALED INSTALLATION OF CABLES IN RACEWAYS SHALL BE REQUIRED FOR AESTHETIC REASONS. REFER TO REFLECTED CEILING PLANS FOR LOCATION(S). THIS APPLIES TO ALL TRADES AND WORK CATEGORIES. EXCEPTIONS:
   A. DEDICATED MECHANICAL AND/OR ELECTRICAL ROOMS ABOVE 8'-0" AFF
   B. DEDICATED TELECOMMUNICATIONS ROOMS
3. ALL DEVICES SHOWN TO BE INSTALLED ON EXISTING WALLS SHALL BE INSTALLED FLUSH; CUT IN BOXES AND FISH WALLS WITH FLEXIBLE CONDUIT AS REQUIRED. DOCUMENT AND COORDINATE EXCEPTIONS WITH ARCHITECTENGINEER IN WRITING FOR REVIEW IN FIELD. IF WALL IS PROVEN NOT ABLE TO BE FISHED, PROVIDE SURFACE RACEWAY SYSTEMS PER SECTION 26 05 33.23. SHALL BE PROVIDED BY THE CONTRACTOR; SUCH COSTS SHALL BE INCLUDED IN BID. SURFACE-MOUNTED CONDUIT IS NOT ACCEPTABLE WHERE EXPOSED TO VIEW IN SPACES OTHER THAN DEDICATED MECHANICAL/ELECTRICAL ROOMS.
4. "LOW-VOLTAGE" CONTROLS, COMMUNICATIONS, AND SAFETY/SECURITY CABLING SHALL NOT BE PAINTED. CONTRACTORS INSTALLING CABLING WHERE APPROVED FOR EXPOSED INSTALLATION SHALL INSTALL CABLES AFTER PAINTING HAS BEEN COMPLETED OR PROVIDE TEMPORARY PROTECTION OF CABLES UNTIL PAINTING HAS BEEN COMPLETED. PROVIDE TEMPORARY PROTECTION OF ANY EXISTING CABLING PRIOR TO PAINTING EXISTING AREAS. PAINTED CABLES SHALL BE REPLACED AT THE EXPENSE OF THE NEGLIGENT CONTRACTOR.
5. METAL CLAD CABLE MAY BE USED FOR FIXTURE WHIPS IN LENGTHS OF 6 FEET OR LESS ABOVE AN ACCESSIBLE SUSPENDED CEILING SYSTEM ONLY. OTHERWISE, METAL CLAD OR OTHER FLEXIBLE CABLE TYPES SHALL NOT BE USED UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEER. IT IS THE INTENT OF THESE CONTRACT DOCUMENTS THAT ALL INSTALLED BRANCH CIRCUITS CONSIST OF SEPARATE RACEWAY AND CONDUCTORS ALLOWING REMOVAL AND REPLACEMENT OF WIRING AS REQUIRED FOR FUTURE UPGRADES. REFER TO SPECIFICATIONS FOR EXCEPTIONS.
6. CIRCUIT WIRING FOR ARTICLE 700 EMERGENCY SYSTEMS AND ARTICLE 708 CRITICAL OPERATIONS POWER SYSTEMS SHALL BE INSTALLED IN SEPARATE CONDUITS/RACEWAYS AND BE KEPT ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT PER NEC REQUIREMENTS.
7. ALL FEEDERS AND BRANCH CIRCUITS SHALL CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR SIZED ACCORING TO THE NEC RACEWAYS INCLUDING CONDUITS, BOXES, WIREWAYS, ETC. SHALL NOT BE CONSIDERED AN ACCEPTABLE GROUND.
8. CONDUITS AND CABLING SHALL NOT BE INSTALLED WITHIN 4" OF ROOF DECK, EXCEPT AS NECESSARY TO SERVE ROOF-MOUNTED ITEMS AND ONLY WHEN THE CONDUIT OR CABLE IS ROUTED VERTICALLY TO SUCH EQUIPMENT FROM BELOW. CLEARANCE SHALL BE PERMITTED TO BE REDUCED TO 1 1/2" WHERE SUPPLEMENTAL METAL FRAMING MEMBERS PROVIDE AN EFFECTIVE BARRIER BETWEEN THE ROOF DECK AND ANY CONDUIT/CABLING.
9. SUPPLEMENTAL METAL FRAMING SHALL BE PROVIDED FOR SUSPENSION POINTS OF ALL ITEMS LOCATED BETWEEN STRUCTURAL MEMBERS (JOISTS, TRUSSES, BEAMS, ETC.) IN OPEN/VISIBLE STRUCTURE CEILING OR SUPPORT COLUMN AREAS. METAL FRAMING SHALL SPAN ACROSS THE TOP CHORD OR FLANGE OF OVERHEAD STRUCTURAL MEMBERS FOR BOTH STRUCTURAL AND AESTHETIC PURPOSES. SPECIFIC EXCEPTIONS SHALL BE COORDINATED IN WRITING WITH THE ARCHITECTENGINEER.
10. CONDUIT INSTALLED WITHIN INACCESSIBLE CONSTRUCTION SHALL BE 3/4" MINIMUM SIZE.
11. FEEDERS SHOWN ON DRAWINGS ARE SCHEMATIC ONLY. CONDUIT RUNS SHALL COMPLY WITH CONDUIT SPECIFICATIONS AND CONTAIN BENDS THAT ARE NO GREATER THAN 90 DEGREES. CONDUITS INSTALLED ABOVE GRADE SHALL BE RUN PARALLEL TO, OR PERPENDICULAR WITH, BUILDING STEEL AND/OR ARCHITECTURAL LINES.
12. CONTRACTOR(S) SHALL VERIFY COLOR/FINISH OF WIRING DEVICES, DEVICE FACEPLATES, SURFACE RACEWAY SYSTEMS, AND/OR MULTI-OUTLET ASSEMBLIES WITH ARCHITECTENGINEER IF NOT EXPLICITLY SPECIFIED.
13. ELECTRICAL CONTRACTOR SHALL REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ADDITIONAL INFORMATION REGARDING LIGHTING FIXTURE MOUNTING LOCATIONS, ARRANGEMENTS, AND CEILING FINISHES.
14. ELECTRICAL CONTRACTOR SHALL ADJUST LIGHTING FIXTURE LOCATIONS IN MECHANICAL ROOMS TO ACCOMMODATE MECHANICAL EQUIPMENT, DUCTWORK, AND RELATED FIELD CONDITIONS.
15. CONTRACTOR(S) SHALL BE RESPONSIBLE TO REVIEW INTERIOR ELEVATION SHEETS FOR PLACEMENT OF DEVICE BOXES. COORDINATE LOCATIONS SO THAT NO DEVICES ARE INSTALLED BEHIND CASEWORK, MILLWORK, VISUAL DISPLAY BOARDS, MIRRORS, CUSTOM GRAPHICS, SIGNAGE, ETC.
16. ELECTRICAL CONTRACTOR SHALL REVIEW TOILET EQUIPMENT SHOP DRAWINGS AND ARCHITECTURAL DETAILS/ELEVATIONS FOR CORRECT DEVICE BOX ROUGH-IN LOCATION OF HAND DRYERS.
17. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH PLUMBING CONTRACTOR AND THE ELECTRIC WATER COOLER / BOTTLE FILLER SHOP DRAWINGS FOR MOUNTING HEIGHT AND CONNECTION METHOD OF PLUMBING EQUIPMENT POWER CONNECTIONS. READILY ACCESSIBLE GFCI PROTECTION SHALL BE PROVIDED FOR THE BRANCH CIRCUIT(S) SUPPLYING ALL SUCH UNITS PER NEC REQUIREMENTS.
18. REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR DETAILED INFORMATION REGARDING EQUIPMENT AND CONTROL. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING AND PROVIDING ITEMS AS SPECIFICALLY LISTED AND ASSIGNED ON MECHANICAL EQUIPMENT SCHEDULE SUCH AS DISCONNECT SWITCHES, VARIABLE FREQUENCY DRIVES, STARTERS, TIMERS, SWITCHES, ETC.
19. ELECTRICAL CONTRACTOR SHALL CONFIRM THE LOCATION OF THE EXHAUST FANS LISTED IN THE MECHANICAL EQUIPMENT SCHEDULES BY REFERRING TO MECHANICAL/HVAC PLANS.
20. REFER TO ROOF PLANS FOR EXACT LOCATIONS OF ROOF-TOP MECHANICAL EQUIPMENT.
21. PROVIDE FLUSH SINGLE-GANG BOXES IN WALLS FOR HVAC / TEMPERATURE CONTROL DEVICES, AT LEAST ONE PER OCCUPIABLE ROOM OR SPACE. INSTALL 1/2" CONDUIT RACEWAY FROM BOX TO CORRESPONDING TEMPERATURE CONTROL SYSTEM DEVICE OR CONTROLLED UNIT. REFER TO MECHANICAL DRAWINGS FOR PROPOSED LOCATIONS AND COORDINATE WITH MECHANICAL / TEMPERATURE CONTROLS CONTRACTOR'S SHOP DRAWINGS.
22. CABINET UNIT HEATERS MAY HAVE LINE-VOLTAGE THERMOSTATS SUPPLIED BY MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. REFER TO MECHANICAL EQUIPMENT SCHEDULE.
23. DIVISION 26 CONTRACTOR SHALL PROVIDE CONDUIT SLEEVES WITH APPROPRIATE BUSHINGS FOR CONTROLS AND ELECTRONIC SAFETY/SECURITY CABLING THROUGH WALLS AND FLOORS. SLEEVE SIZES SHALL BE COORDINATED WITH CABLING REQUIREMENTS.
24. SECTION 27 05 28 CONTRACTOR SHALL PROVIDE DEDICATED CONDUIT SLEEVES WITH APPROPRIATE BUSHINGS THROUGH WALLS AND FLOORS FOR DIV. 27 COMMUNICATIONS AND DIV. 28 SAFETY/SECURITY CABLING. SLEEVE SIZE SHALL BE MINIMUM 2" DIA. OR EQUIVALENT FREE AREA UNLESS NOTED OTHERWISE. SPECIFIED CABLE PATHWAY PENETRATION DEVICES SHALL BE SUBSTITUTED FOR CONDUIT SLEEVES WHERE THERE IS A REQUIRED RATING IN THE CONSTRUCTED ASSEMBLY.
25. BUILDING SYSTEMS CABLING SHALL BE SLEEVED WHERE CABLES PASS THROUGH WALLS. NO CABLING SHALL PASS THROUGH OR OVER THE TOP OF WALL CONSTRUCTION WITHOUT THE USE OF A SLEEVE. DIVISION 26 CONTRACTOR SHALL PROVIDE SLEEVES (UNLESS OTHERWISE ASSIGNED) AND COORDINATE WITH ARCHITECTURAL TRADES DURING THE WALL CONSTRUCTION PROCESS. THIS REQUIREMENT APPLIES TO EXISTING CABLING IN FOOTPRINT OF ANY NEW WALLS; PROVIDE SPLIT SLEEVES IF CABLING CANNOT BE DISCONNECTED. FIELD-VERIFY QUANTITIES AND LOCATIONS, OR COORDINATE USE OF ALLOWANCES FOR SLEEVES WITH PROJECT ADMINISTRATIVE REQUIREMENTS.
26. PROVIDE DIRECT CONNECTIONS FROM DEDICATED LOCAL BRANCH CIRCUIT(S) TO ACCESS CONTROL SYSTEM AND DOOR HARDWARE POWER SUPPLIES WHERE REQUIRED FOR DOOR LOCK DEVICES, CONTROLLERS, ETC. REFER TO DOOR HARDWARE SCHEDULE AND ACCESS CONTROL SYSTEM SCHEDULE IN RESPECTIVE SPECIFICATIONS FOR QUANTITIES AND LOCATIONS.



NOTE: ALL HEIGHTS ARE AS SHOWN UNLESS NOTED OTHERWISE.

TYPICAL MOUNTING HEIGHTS FOR WALL DEVICES, EQUIPMENT, & FIXTURES

NOT TO SCALE

GMB
616.796.0200
WWW.GMB.COM

BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS & CONSTRUCTION

DRAWN KSS

REVIEWED LCT

PROJECT NO. 5-5769

ELECTRICAL SYMBOL LEGENDS & GENERAL NOTES

E0.01

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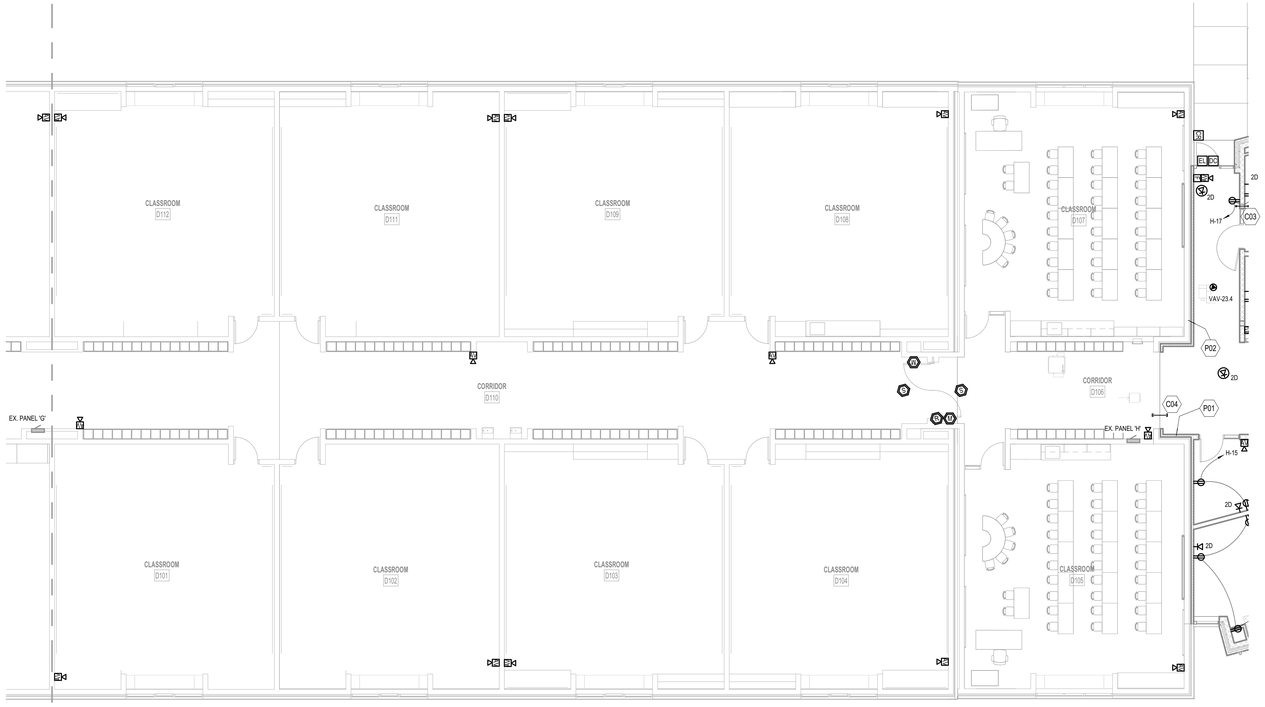
POWER & COMMUNICATION GENERAL NOTES

1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. REFER TO MECHANICAL/HVAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DAMPERS.
   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   C. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   D. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   E. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
5. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SHALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
6. DESIGNATED CABLING PATHWAYS (CONDUITS, CABLE TRAYS, PENETRATION SLEEVES, ETC.) SHALL BE RESERVED FOR DIV. 27 COMMUNICATIONS CABLING AND DIV. 28 SAFETY/SECURITY CABLING ONLY. OTHER CABLING TYPES, SUCH AS DIV. 23 CONTROLS, DIV. 26 CONTROLS, AND ARCHITECTURAL EQUIPMENT CABLING SHALL BE SUPPORTED AND SLEEVED BY OTHER INDEPENDENT PATHWAYS, HANGERS, AND SUPPORTS.
7. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED.

	ELECTRICAL KEYNOTES
C03	(1) 2" CONDUIT SLEEVES FOR DIV. 27 COMMUNICATIONS CABLING
C04	(1) 4" CONDUIT SLEEVES FOR DIV. 27 COMMUNICATIONS CABLING
P01	ESTABLISH NEW CONCRETE-ENCASED GROUNDING ELECTRODE IN FOOTING OF NEW ADDITION. INTERCONNECT WITH GROUNDING ELECTRODE SYSTEM AT SERVICE ENTRANCE OR NEAREST SEPARATELY-DERIVED SYSTEM PER NEC AND SPECIFICATION REQUIREMENTS.
P02	BOND METAL STRUCTURE OF ADDITION TO METAL STRUCTURE OF EXISTING BUILDING PER NEC REQUIREMENTS.



NORTH

UNIT 'D' POWER & COMMUNICATIONS PLAN

1/8" = 1'-0"

NORTH

KEYPLAN

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS & CONSTRUCTION

DRAWN KSS

REVIEWED LCT

PROJECT NO. 5-5769

UNIT 'D' POWER & COMMUNICATIONS PLAN

E2.1D

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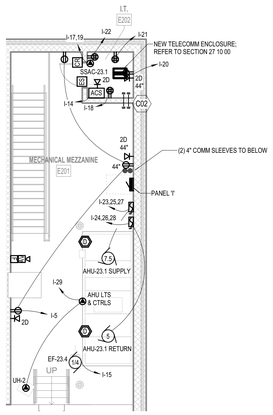


NORTH

MECH MEZZANINE POWER & COMMNICATIONS PLAN

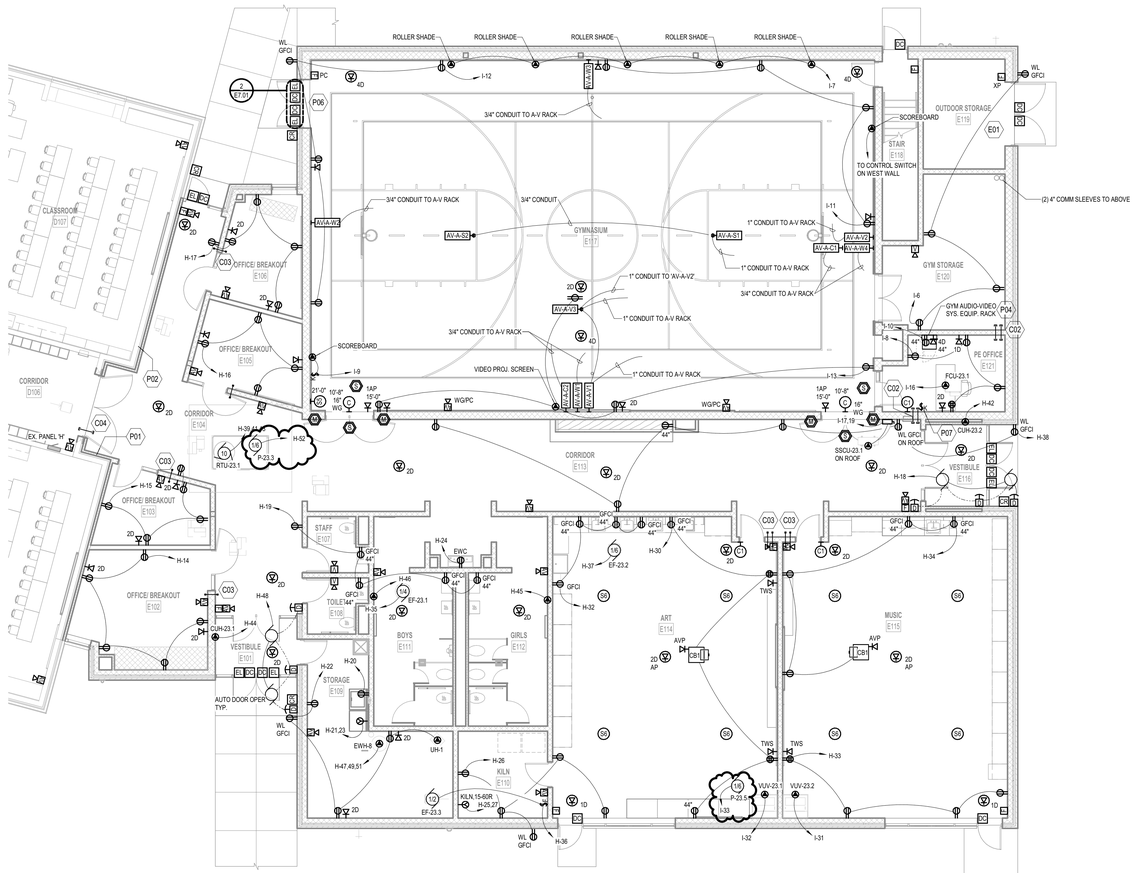
1/8" = 1'-0"

AUDIO-VIDEO SYSTEMS BOX & CONNECTOR PLATE SCHEDULE

ITEM I.D. / TAG	ROUGH-IN OR ITEM SIZE	MOUNTING	LOCATION (HEIGHT TO BOTTOM OF BOX)	BOX & CONDUIT PROVIDED BY	CONNECTOR PLATE & WIRE/CABLE PROVIDED BY	SPECIAL NOTES
AV-A-C1	TWO GANG x 3 1/2" DEEP	FLUSH	44" AFF	SECTION 27 05 28	N.I.C. (SEPARATE BID PACKAGE)	A-V SYSTEM CONTROL TOUCHPANEL
AV-A-C2	SINGLE GANG x 3 1/2" DEEP	FLUSH	15'-8" AFF (VERIFY; SEE DETAIL)	SECTION 27 05 28	N.I.C. (SEPARATE BID PACKAGE)	PROJECTION SCREEN CONTROL
AV-A-S1	4" SQ. x 2 1/8" DEEP	SURFACE	SIDE OF ROOF JOIST JUST ABOVE BOTTOM CHORD (APPROX. 22'-0" AFF)	SECTION 27 05 28	N.I.C. (SEPARATE BID PACKAGE)	SPEAKER JUNCTION BOX
AV-A-S2	4" SQ. x 2 1/8" DEEP	SURFACE	SIDE OF ROOF JOIST JUST ABOVE BOTTOM CHORD (APPROX. 22'-0" AFF)	SECTION 27 05 28	N.I.C. (SEPARATE BID PACKAGE)	SPEAKER JUNCTION BOX
AV-A-V1	4 11/16" SQ. x 2 1/8" DEEP, SINGLE GANG RING	FLUSH	16" AFF	SECTION 27 05 28	N.I.C. (SEPARATE BID PACKAGE)	VIDEO INPUT(S)
AV-A-V2	4 11/16" SQ. x 2 1/8" DEEP, SINGLE GANG RING	FLUSH	16" AFF	SECTION 27 05 28	N.I.C. (SEPARATE BID PACKAGE)	VIDEO INPUT(S)
AV-A-V3	4" SQ. x 2 1/8" DEEP	SURFACE	SIDE OF ROOF JOIST JUST ABOVE BOTTOM CHORD (APPROX. 22'-0" AFF)	SECTION 27 05 28	N.I.C. (SEPARATE BID PACKAGE)	VIDEO PROJECTOR OUTPUT/CONTROL. VERIFY EXACT LOCATION OF PROJ. W/ INSTALLERS
AV-A-W1	4 11/16" SQ. x 2 1/8" DEEP, SINGLE GANG RING	FLUSH	16" AFF	SECTION 27 05 28	N.I.C. (SEPARATE BID PACKAGE)	AUDIO-VIDEO INPUT(S)
AV-A-W2	4 11/16" SQ. x 2 1/8" DEEP, SINGLE GANG RING	FLUSH	16" AFF	SECTION 27 05 28	N.I.C. (SEPARATE BID PACKAGE)	AUDIO-VIDEO INPUT(S)
AV-A-W3	4 11/16" SQ. x 2 1/8" DEEP, SINGLE GANG RING	FLUSH	16" AFF	SECTION 27 05 28	N.I.C. (SEPARATE BID PACKAGE)	AUDIO-VIDEO INPUT(S)
AV-A-W4	4 11/16" SQ. x 2 1/8" DEEP, SINGLE GANG RING	FLUSH	16" AFF	SECTION 27 05 28	N.I.C. (SEPARATE BID PACKAGE)	AUDIO-VIDEO INPUT(S)

POWER & COMMUNICATION GENERAL NOTES

1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE, REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. REFER TO MECHANICAL/HVAC DRAWINGS FOR LOCATIONS AND QUANTITIES OF DAMPERS.
   B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   C. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   D. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   E. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
5. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SMALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
6. DESIGNATED CABLING PATHWAYS (CONDUITS, CABLE TRAYS, PENETRATION SLEEVES, ETC.) SHALL BE RESERVED FOR DIV. 27 COMMUNICATIONS CABLING AND DIV. 28 SAFETY/SECURITY CABLING ONLY. OTHER CABLING TYPES, SUCH AS DIV. 23 CONTROLS, DIV. 26 CONTROLS, AND ARCHITECTURAL EQUIPMENT CABLING SHALL BE SUPPORTED AND SLEEVED BY OTHER INDEPENDENT PATHWAYS, HANGERS, AND SUPPORTS.
7. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED.
8. THE FOLLOWING DIV. 27 AND DIV. 28 SYSTEMS WILL BE DOCUMENTED AND BID SEPARATELY BY CONSULTANT IN ASSOCIATION WITH HUDSONVILLE P.S. TECHNOLOGY DEPT.:
   A. NETWORK ELECTRONICS (SWITCHES, ACCESS POINTS, ETC.)
   B. VOIP TELEPHONE SYSTEMS
   C. CLASSROOM AUDIO-VIDEO EQUIPMENT AND INSTRUCTIONAL TECHNOLOGY
   D. AUDIO-VIDEO SYSTEM FOR GYMNASIUM
   E. ACCESS CONTROL SYSTEM
   F. VIDEO SURVEILLANCE SYSTEM



NORTH

UNIT 'E' POWER & COMMUNICATIONS PLAN

1/8" = 1'-0"

ELECTRICAL KEYNOTES

C02	(2) 4" CONDUIT SLEEVES FOR DIV. 27 COMMUNICATIONS CABLING
C03	(1) 2" CONDUIT SLEEVES FOR DIV. 27 COMMUNICATIONS CABLING
C04	(1) 4" CONDUIT SLEEVES FOR DIV. 27 COMMUNICATIONS CABLING
E01	ALL ELECTRICAL MATERIALS AND INSTALLATION IN THIS ROOM SHALL COMPLY WITH NEC ARTICLE 500 HAZARDOUS LOCATION REQUIREMENTS FOR CLASS 1, DIVISION 1, GROUP C & D
P01	ESTABLISH NEW CONCRETE-ENCASED GROUNDING ELECTRODE IN FOOTING OF NEW ADDITION, INTERCONNECT WITH GROUNDING ELECTRODE SYSTEM AT SERVICE ENTRANCE OR NEAREST SEPARATELY-DERIVED SYSTEM PER NEC AND SPECIFICATION REQUIREMENTS.
P02	BOND METAL STRUCTURE OF ADDITION TO METAL STRUCTURE OF EXISTING BUILDING PER NEC REQUIREMENTS.
P04	INSTALL 8'H X 6'W X 6"D JUNCTION BOX BEHIND AUDIO EQUIP. RACK FOR A-V CONDUITS TO ENTER RACK WHILE RECESSED IN WALL. SURFACE-MOUNTED CONDUITS ARE NOT ACCEPTABLE ABOVE, BELOW, OR ON SIDES RACK. STUB AN ADDITIONAL (2) 1" "CONDUITS OUT ABOVE ACCESSIBLE CEILING SPACE FROM BOX."
P06	ROUTE ACCESS CONTROL CONDUITS FROM DOOR FRAME THROUGH WALL OVER TO STAIRWELL AND STUB OUT ABOVE 9'-0" AFF.
P07	ROLLER SHADE CONTROL FOR GYMNASIUM, KEY-OPERATED SWITCH FURNISHED BY SECTION 12 24 13. WIRED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

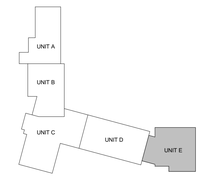
HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022	BIDS & CONSTRUCTION
10.27.2022	ADDENDUM 001
11.02.2022	ADDENDUM 002
12.05.2022	BULLETIN 001
02.16.2023	BULLETIN 003

DRAWN	KSS
REVIEWED	LCT
PROJECT NO.	5-5769



NORTH

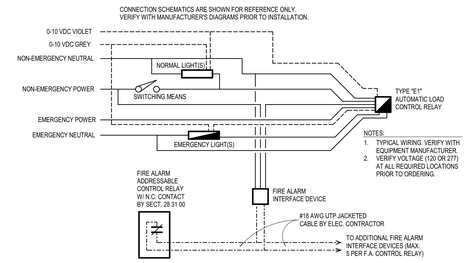
KEYPLAN

UNIT 'E' POWER & COMMUNICATIONS PLAN

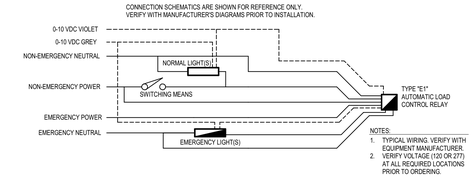
E2.1E

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769E 2019.rvt
2/16/2023 2:48:40 PM

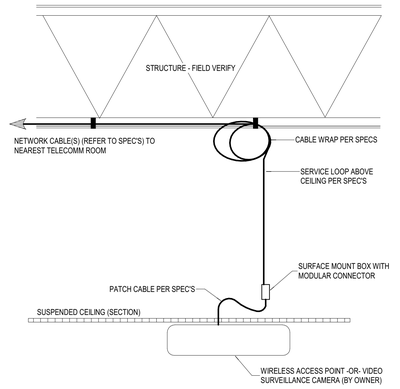
5 E7.01 COMMUNICATIONS CABLING BACKBONE RISER DIAGRAM
NOT TO SCALE



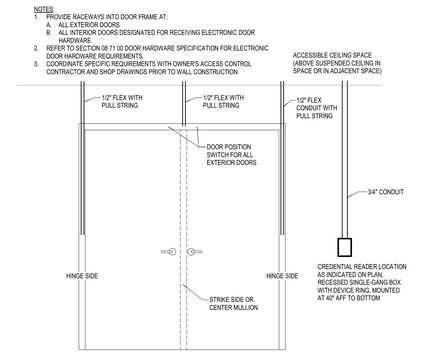
3 E7.01 EMERGENCY LIGHTING AUTOMATIC LOAD CONTROL RELAY WITH FIRE ALARM INTERFACE
1" = 1'-0"



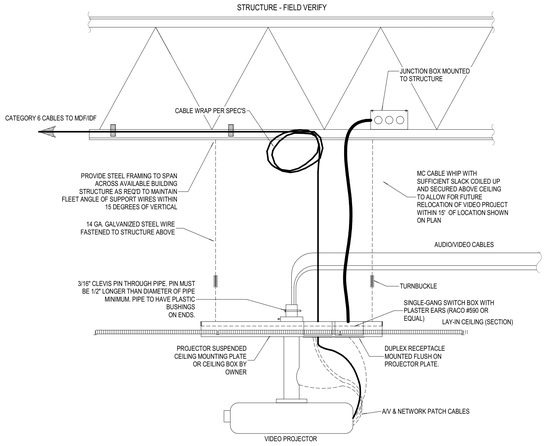
7 E7.01 EMERGENCY LIGHTING AUTOMATIC LOAD CONTROL RELAY
1" = 1'-0"



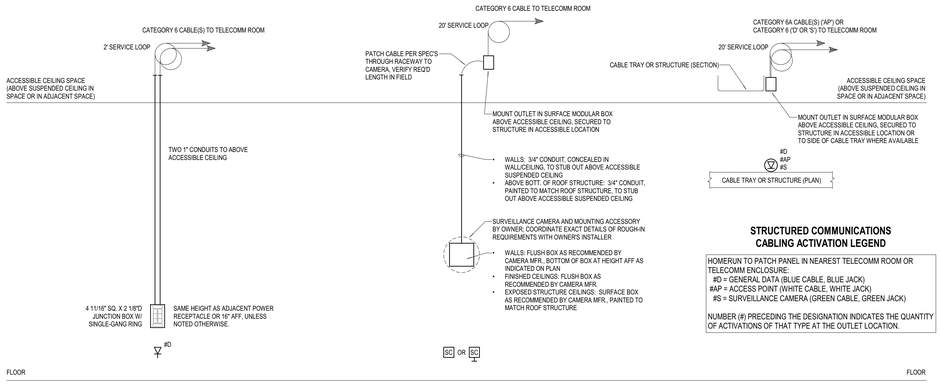
4 E7.01 CEILING MOUNTED COMMUNICATION DEVICE
NOT TO SCALE

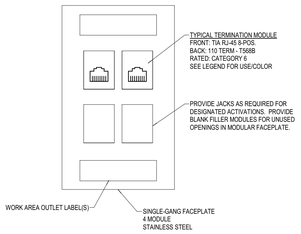


2 E7.01 TYPICAL ROUGH-IN FOR DOORS WITH ELECTRONIC ACCESS CONTROL/MONITORING
NOT TO SCALE

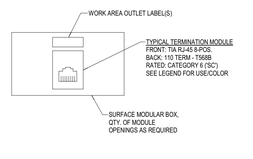


6 E7.01 TYPICAL CLASSROOM VIDEO PROJECTOR MOUNTING DETAIL
NOT TO SCALE

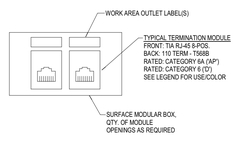




TYPICAL COMMUNICATIONS WALL OUTLET WITH '_D' OR '_AP' ACTIVATION



TYPICAL COMMUNICATIONS OUTLET FOR VIDEO SURVEILLANCE CAMERA



TYPICAL COMMUNICATIONS OUTLET ABOVE ACCESSIBLE CEILING (WIRELESS ACCESS POINT, AUDIO-VIDEO SYSTEM EQUIP., ETC.)

1 E7.01 TYPICAL COMMUNICATIONS OUTLET DETAILS
NOT TO SCALE

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BAUER ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

10.04.2022 BIDS & CONSTRUCTION

DRAWN KSS
REVIEWED LCT

PROJECT NO. 5-5769

ELECTRICAL DETAILS

E7.01

BIM 360://5-5769 Hudsonville Bauer Elementary Classroom & Gym Addition/5-5769E 2019.rvt
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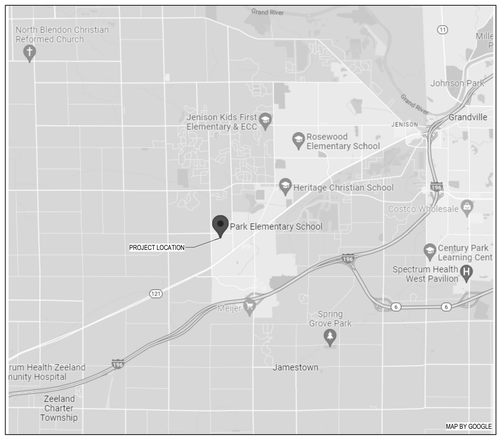
PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

5525 PARK AVENUE
HUDSONVILLE, MICHIGAN

BIDS & CONSTRUCTION
03.23.2023
GMB PROJECT # 5-5798

VICINITY MAP



ALTERNATES

C-1: ADD ALTERNATE FOR SOUTH PARKING LOT

C-2: POURED IN PLACE (PIP) SURFACING IN LIEU OF ENGINEERED WOOD FIBER (EWF)

C-3: CUSTOM NET PLAYGROUD STRUCTURE

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ELECTRICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	INTLK	INTERLOCK
ACC	ACCESSORY	JCT	JUNCTION
ADO	AUTOMATIC DOOR OPERATOR	JB	JUNCTION BOX
AHU	AIR HANDLING UNIT	KW	KILOWATT
ATS	AUTOMATIC TRANSFER SWITCH	KWH	KILOWATT HOUR
BKR	BREAKER	KO	KNOCK OUT
BOB	BOTTOM OF BOX	LBL	LABEL
BOD	BOTTOM OF DECK	LT	LIGHT
BOS	BOTTOM OF STRUCTURE	LC	LIGHTING CONTROL
BP	BREAKER PANEL	LCM	LIGHTING CONTROL MODULE
BLDG	BUILDING	LCN	LIGHTING CONTROL NARRATIVE
CAP	CAPACITY	LTG	LIGHTING
CLG	CEILING	MAX	MAXIMUM
CKT	CIRCUIT	MBJ	MAIN BONDING JUMPER
CB	CIRCUIT BREAKER	MCC	MOTOR CONTROL CENTER
C	CONDUIT	MIN	MINIMUM
COMM	COMMUNICATIONS	MTS	MANUAL TRANSFER SWITCH
CONN	CONNECTION	NEC	NATIONAL ELECTRICAL CODE
CONST	CONSTRUCTION	NEG	NEGATIVE (-)
CONTR	CONTRACT (OR)	NC	NORMALLY CLOSED
CLL	CONTRACT LIMIT LINE	NO	NORMALLY OPEN
CT	CURRENT TRANSFORMER	N/A	NOT APPLICABLE
E.C.	ELECTRICAL CONTRACTOR	NIC	NOT IN CONTRACT
EGC	EQUIPMENT GROUNDING CONDUCTOR	NL	NIGHT LIGHT
EHD	ELECTRIC HAND DRYER	OCPD	OVERCURRENT PROTECTIVE DEVICE
ELEC	ELECTRIC (AL)	PC	PHOTOCELL / PHOTOCONTROL
EWC	ELECTRIC WATER COOLER	POS	POSITIVE (+)
EM	EMERGENCY	PWR	POWER
ENT	ENTRANCE	P & L	POWER & LIGHTING
EQ	EQUAL	S	SURFACE
EQUIP	EQUIPMENT	SBJ	SYSTEM BONDING JUMPER
EST	ESTIMATE	S.B.O.	SUPPLIED BY OTHERS
EF	EXHAUST FAN	SP	SINGLE POLE
ETR	EXISTING TO REMAIN	SPD	SURGE PROTECTION DEVICE
EX	EXISTING	SPKR	SPEAKER
F	FLUSH	SPEC	SPECIFICATION
FA	FIRE ALARM	SSBJ	SUPPLY-SIDE BONDING JUMPER
FSE	FOOD SERVICE EQUIPMENT	SUB	SUBSTITUTE
FP	FIRE PROOF / FIRE PROTECTION	SWBD	SWITCHBOARD
FLR	FLOOR	TEL	TELEPHONE
FLUOR	FLUORESCENT	TSTAT	THERMOSTAT
GEC	GROUNDING ELECTRODE CONDUCTOR	XFMR	TRANSFORMER
GEN	GENERATOR	UG	UNDERGROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UL	UNDERWRITERS LABORATORIES
GRD	GROUND	UH	UNIT HEATER
HORIZ	HORIZONTAL	UNO	UNLESS NOTED OTHERWISE
HTR	HEATER	VERT	VERTICAL
HTG	HEATING	W/	WITH
HV	HEATING / VENTILATING	W/O	WITHOUT
HVAC	HEATING, VENTILATING, AIR CONDITIONING	WG	WIRE GUARD
HOA	HAND - OFF - AUTOMATIC	WL	WET LOCATION
HP	HEAT PUMP	WP	WEATHER PROOF

MAXIMUM CONDUCTOR LENGTHS FOR TYPICAL BRANCH CIRCUITS

FEET ONE-WAY BASED ON SINGLE PHASE, 20A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG
120	60	100	150	245	385
208	100	170	265	425	670
277	135	230	355	565	890
480	240	400	615	980	

FEET ONE-WAY BASED ON SINGLE PHASE, 30A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#10 AWG	#8 AWG	#6 AWG	#4 AWG	
120	60	100	150	245	
208	100	170	265	425	
277	135	230	355	565	
480	240	400	615	980	

FEET ONE-WAY BASED ON THREE PHASE, 20A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG
208	120	200	305	490	775
480	275	460	710	1,130	

FEET ONE-WAY BASED ON THREE PHASE, 30A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#10 AWG	#8 AWG	#6 AWG	#4 AWG	
208	120	200	305	490	
480	275	460	710	1,130	

COMMUNICATIONS SYMBOL LEGEND

- COMMUNICATIONS OUTLET ROUGH-IN
- COMMUNICATIONS OUTLET, CEILING-MOUNTED
- COMMUNICATIONS OUTLET, FLOOR-MOUNTED
- CEILING-MOUNTED VIDEO PROJECTOR
- COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED 2-POST
- COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED 4-POST
- COMMUNICATIONS EQUIPMENT RACK, WALL-MOUNTED
- CONDUIT SLEEVE FOR COMMUNICATIONS CABLING, 2" DIA. OR EQUIV. FREE AREA TYP. UNLESS NOTED OTHERWISE. IN FIRE-RATED AND/OR SMOKE BARRIER WALLS, REFER TO SPECIFICATIONS FOR ACCEPTABLE FIRESTOP AND SMOKE SEAL PRODUCTS.
- (S) LOUDSPEAKER, CEILING-MOUNTED, PROVIDE SINGLE-GANG FLUSH BOX WITH 3/4" CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINATE WITH OWNER'S COMMUNICATION CONTRACTOR
- (S) LOUDSPEAKER, WALL-MOUNTED, PROVIDE SINGLE-GANG FLUSH BOX WITH 3/4" CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINATE WITH OWNER'S COMMUNICATION CONTRACTOR
- CS INTERCOM SYSTEM CALL STATION BUTTON
- VC VOLUME CONTROL FOR AUDIO SYSTEM, PAGING, OR INTERCOM LOUDSPEAKERS
- (C) SECONDARY CLOCK, CEILING-MOUNTED, PROVIDE SINGLE-GANG FLUSH BOX WITH 3/4" CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINATE WITH OWNER'S COMMUNICATION CONTRACTOR
- (C) SECONDARY CLOCK, WALL-MOUNTED, PROVIDE SINGLE-GANG FLUSH BOX WITH 3/4" CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINATE WITH OWNER'S COMMUNICATION CONTRACTOR
- SIGNALING BELL

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

POWER SYMBOL LEGEND

- (5) THREE PHASE MOTOR CONNECTION, 5 HORSEPOWER (EXAMPLE)
- (1/2) SINGLE PHASE MOTOR CONNECTION, 1/2 HORSEPOWER (EXAMPLE)
- (D) HVAC CONTROL DAMPER ACTUATOR CONNECTION
- (D) SD HVAC SMOKE DAMPER ACTUATOR CONNECTION
- (D) F/S HVAC COMBINATION FIRE/SMOKE DAMPER ACTUATOR CONNECTION
- SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE
- SAFETY SWITCH DISCONNECTING MEANS, FUSIBLE
- COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS
- VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS
- MOTOR STARTER
- $_{BF}$ BOX-COVER FUSIBLE DISCONNECT SWITCH
- $_{M}$ MANUAL MOTOR CONTROLLER
- $ POWER SWITCH, REFER TO LIGHTING SYMBOL LEGEND FOR SIMILAR SWITCH TYPES
- DIRECT ELECTRICAL CONNECTION
- SINGLE NEMA 5-20R RECEPTACLE
- SINGLE NEMA 5-20R RECEPTACLE, CEILING-MOUNTED
- SINGLE NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED
- DUPLEX NEMA 5-20R RECEPTACLE
- E "E" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX
- GFCI "GFCI" NOTATION: GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE
- S "S" NOTATION: SURFACE-MOUNTED
- WL "WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER
- DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED
- DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED
- DUPLEX NEMA 5-20R RECEPTACLE, CONNECTED TO STANDBY POWER BRANCH CIRCUIT
- DUPLEX NEMA 5-20R RECEPTACLE, SPLIT-WIRED
- QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE
- QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED
- QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED
- RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE
- RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE, FLOOR-MOUNTED
- VERT HORIZ SURFACE RACEWAY SYSTEM
- ATS AUTOMATIC TRANSFER SWITCH
- MTS MANUAL TRANSFER SWITCH
- SWITCHBOARD / SWITCHGEAR
- PANELBOARD
- T TRANSFORMER
- MOTOR CONTROL CENTER
- EMERGENCY STOP STATION, REFER TO DETAIL FOR REQUIREMENTS.
- AUTOMATIC DOOR OPERATOR PUSH BUTTON
- ON/OFF PUSH BUTTON
- THREE-FUNCTION PUSH BUTTON
- FBT1 FLOORBOX, TYPE 1
- J JUNCTION BOX
- M METER
- T THERMOSTAT ROUGH-IN
- R RELAY
- C ENCLOSED CONTROL CONTACTOR

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

LIGHTING SYMBOL LEGEND

- $ SINGLE POLE TOGGLE SWITCH
- $_{2}$ DOUBLE POLE TOGGLE SWITCH
- $_{3}$ THREE-WAY TOGGLE SWITCH
- $_{4}$ FOUR-WAY TOGGLE SWITCH
- $_{OS}$ SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR
- $_{OSD}$ SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR AND DIMMER
- $_{D}$ WALL-BOX DIMMER SWITCH
- $_{D3}$ THREE-WAY WALL-BOX DIMMER SWITCH
- $_{T}$ ELECTRONIC INTERVAL TIMER SWITCH
- $_{IP}$ LIGHT SWITCH WITH PILOT LIGHT
- $_{C}$ LIGHTING CONTROL SWITCH, REFER TO LIGHTING CONTROL SWITCH SCHEDULE AND SPECIFICATIONS FOR DETAILS.
- $_{DT}$ DOUBLE-THROW (MAINTAINED) LIGHT SWITCH
- $_{K}$ KEY-OPERATED SWITCH (SUFFIX DESIGNATION – NONE: SINGLE POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY)
- $_{L}$ LOCKING SWITCH (SUFFIX DESIGNATION – NONE: SINGLE-POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY)
- TP TOUCHSCREEN PANEL
- LPA-X CIRCUIT NUMBER FOR LIGHT FIXTURES WITHIN INDICATED SPACE
- A WALL-MOUNTED LIGHTING FIXTURE, TYPE 'A'
- A RECESSED LIGHTING FIXTURE, TYPE 'A'
- A SURFACE-MOUNTED LIGHTING FIXTURE, TYPE 'A'
- TRACK LIGHTING
- SINGLE FACE EXIT SIGN, TYPE "X1" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION
- DOUBLE FACE EXIT SIGN, TYPE "X2" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION
- WALL-MOUNTED EXIT SIGN, SHADING INDICATES FACE ORIENTATION
- EMERGENCY LIGHT FIXTURE DESIGNATION
- EMERGENCY LIGHTING AUTOMATIC LOAD CONTROL RELAY
- R LIGHTING CONTROL RELAY
- C LIGHTING CONTROL ENCLOSED CONTACTOR
- TS TIME SWITCH
- LCM LIGHTING CONTROL MODULE
- LCP LIGHTING CONTROL PANEL
- INV-1 EMERGENCY LIGHTING INVERTER, TYPE 1
- WALL-MOUNTED OCCUPANCY SENSOR
- CEILING-MOUNTED OCCUPANCY SENSOR
- PC WALL-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
- PC CEILING-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
- PS WALL-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
- PS CEILING-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
- POLE-MOUNTED SITE/AREA FIXTURE
- SELF-CONTAINED EMERGENCY LIGHTING UNIT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

FIRE ALARM SYMBOL LEGEND

- MANUAL PULL STATION
- AUDIBLE NOTIFICATION APPLIANCE, WALL-MOUNTED
- VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
- AV AUDIBLE/VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
- A AUDIBLE NOTIFICATION APPLIANCE, CEILING-MOUNTED
- AV AUDIBLE/VISUAL NOTIFICATION APPLIANCE, CEILING-MOUNTED
- V VISUAL NOTIFICATION APPLIANCE, CEILING-MOUNTED
- WG/PC WHERE "WG/PC" IS NOTED, PROVIDE LISTED WIRE GUARD OR PROTECTIVE POLYCARBONATE COVER FOR NOTIFICATION DEVICE.
- WL WHERE "WL" IS NOTED, PROVIDE LISTED WET-LOCATION NOTIFICATION DEVICE, SUITABLE FOR INDOOR OR OUTDOOR USE.
- SD SMOKE DETECTOR
- HD HEAT DETECTOR
- DD DUCT SMOKE DETECTOR
- FP FIRE PROTECTION FLOW SWITCH
- TD FIRE PROTECTION TAMPER SWITCH
- EM ELECTROMAGNETIC DOOR HOLD-OPEN DEVICE
- AR ADDRESSABLE RELAY FOR FIRE ALARM CONTROL
- PS PRESSURE SWITCH
- CO CARBON MONOXIDE DETECTOR
- NAC NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY
- FAA FIRE ALARM REMOTE ANNUNCIATOR
- FACP FIRE ALARM CONTROL PANEL
- $_{KTS}$ KEYED TEST SWITCH AND REMOTE INDICATOR FOR DUCT SMOKE DETECTOR
- FP FIRE PROTECTION OR ALARM BELL

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

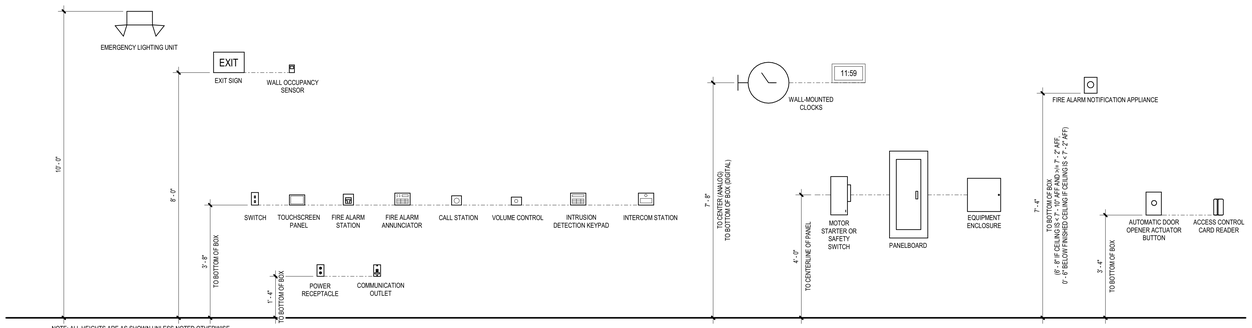
ELECTRONIC SAFETY / SECURITY SYMBOL LEGEND

- DC DOOR CONTACT
- EL ELECTRONIC LATCH
- ES ELECTRONIC STRIKE
- K INTRUSION DETECTION KEYPAD
- IC INTERCOM STATION
- SC WALL-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH-IN
- SC CEILING-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH IN
- SC WALL-MOUNTED SURVEILLANCE CAMERA, TYPE 1
- SC CEILING-MOUNTED SURVEILLANCE CAMERA, TYPE 1
- ID WALL-MOUNTED INFRARED MOTION DETECTOR
- ID CEILING-MOUNTED INFRARED MOTION DETECTOR
- UD WALL-MOUNTED ULTRASONIC MOTION DETECTOR
- UD CEILING-MOUNTED ULTRASONIC MOTION DETECTOR
- CR CARD READER
- CR M CARD READER, MULLION-MOUNTED
- XXXXX ACCESS CONTROL DOOR TAG, REFER TO HARDWARE SCHEDULE(S) IN SECTION 08 71 00 AND OWNER'S ACCESS CONTROL VENDOR FOR FURTHER DETAILED REQUIREMENTS
- ACS ACCESS CONTROL SYSTEM EQUIPMENT
- IDS INTRUSION DETECTION SYSTEM EQUIPMENT
- PSU POWER SUPPLY UNIT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

ELECTRICAL GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AS AMENDED AND ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION WHERE THE WORK IS PERFORMED.
2. ALL "LOW-VOLTAGE" CONTROLS, COMMUNICATIONS, AND SAFETY/SECURITY CABLING MAY BE INSTALLED WITHOUT CONDUIT, RACEWAY, OR CABLE TRAY ONLY WHERE CONCEALED ABOVE A SUSPENDED CEILING SYSTEM AND ACCESSIBLE FOR FUTURE MAINTENANCE. OTHERWISE, ALL CABLING (INCLUDING BUT NOT LIMITED TO CABLES ASSOCIATED WITH SYSTEMS SUCH AS ARCHITECTURAL EQUIPMENT, BUILDING ENERGY MANAGEMENT, TEMPERATURE CONTROLS, LIGHTING CONTROLS, COMMUNICATIONS NETWORKS, TELEPHONE, AUDIO-VIDEO, INTERCOM, PAGING, CLOCK, SURVEILLANCE, ACCESS CONTROL, FIRE ALARM, ETC.) SHALL BE INSTALLED IN AN APPROVED CONDUIT, RACEWAY SYSTEM, AND/OR CABLE TRAY UNLESS OTHERWISE NOTED. IN EXPOSED STRUCTURE CEILING AREAS, CONCEALED INSTALLATION OF CABLES IN RACEWAYS SHALL BE REQUIRED FOR AESTHETIC REASONS. REFER TO REFLECTED CEILING PLANS FOR LOCATION(S). THIS APPLIES TO ALL TRADES AND WORK CATEGORIES. EXCEPTIONS:
   A. DEDICATED MECHANICAL AND/OR ELECTRICAL ROOMS ABOVE 8'-0" AFF
   B. DEDICATED TELECOMMUNICATIONS ROOMS
3. ALL DEVICES SHOWN TO BE INSTALLED ON EXISTING WALLS SHALL BE INSTALLED FLUSH; CUT IN BOXES AND FISH WALLS WITH FLEXIBLE CONDUIT AS REQUIRED. DOCUMENT AND COORDINATE EXCEPTIONS WITH ARCHITECT/ENGINEER IN WRITING FOR REVIEW IN FIELD. IF WALL IS PROVEN NOT ABLE TO BE FISHED, PROVIDE SURFACE RACEWAY SYSTEMS PER SECTION 26 05 33.23. SHALL BE PROVIDED BY THE CONTRACTOR; SUCH COSTS SHALL BE INCLUDED IN BID. SURFACE-MOUNTED CONDUIT IS NOT ACCEPTABLE WHERE EXPOSED TO VIEW IN SPACES OTHER THAN DEDICATED MECHANICAL/ELECTRICAL ROOMS.
4. "LOW-VOLTAGE" CONTROLS, COMMUNICATIONS, AND SAFETY/SECURITY CABLING SHALL NOT BE PAINTED. CONTRACTORS INSTALLING CABLING WHERE APPROVED FOR EXPOSED INSTALLATION SHALL INSTALL CABLES AFTER PAINTING HAS BEEN COMPLETED OR PROVIDE TEMPORARY PROTECTION OF CABLES UNTIL PAINTING HAS BEEN COMPLETED. PROVIDE TEMPORARY PROTECTION OF ANY EXISTING CABLING PRIOR TO PAINTING EXISTING AREAS. PAINTED CABLES SHALL BE REPLACED AT THE EXPENSE OF THE NEGLIGENT CONTRACTOR.
5. METAL CLAD CABLE MAY BE USED FOR FIXTURE WHIPS IN LENGTHS OF 6 FEET OR LESS ABOVE AN ACCESSIBLE SUSPENDED CEILING SYSTEM ONLY. OTHERWISE, METAL CLAD OR OTHER FLEXIBLE CABLE TYPES SHALL NOT BE USED UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEER. IT IS THE INTENT OF THESE CONTRACT DOCUMENTS THAT ALL INSTALLED BRANCH CIRCUITS CONSIST OF SEPARATE RACEWAY AND CONDUCTORS ALLOWING REMOVAL AND REPLACEMENT OF WIRING AS REQUIRED FOR FUTURE UPGRADES. REFER TO SPECIFICATIONS FOR EXCEPTIONS.
6. CIRCUIT WIRING FOR ARTICLE 700 EMERGENCY SYSTEMS AND ARTICLE 708 CRITICAL OPERATIONS POWER SYSTEMS SHALL BE INSTALLED IN SEPARATE CONDUITS/RACEWAYS AND BE KEPT ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT PER NEC REQUIREMENTS.
7. ALL FEEDERS AND BRANCH CIRCUITS SHALL CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR SIZED ACCORING TO THE NEC RACEWAYS INCLUDING CONDUITS, BOXES, WIREWAYS, ETC. SHALL NOT BE CONSIDERED AN ACCEPTABLE GROUND.
8. CONDUITS AND CABLING SHALL NOT BE INSTALLED WITHIN 4" OF ROOF DECK, EXCEPT AS NECESSARY TO SERVE ROOF-MOUNTED ITEMS AND ONLY WHEN THE CONDUIT OR CABLE IS ROUTED VERTICALLY TO SUCH EQUIPMENT FROM BELOW. CLEARANCE SHALL BE PERMITTED TO BE REDUCED TO 1 1/2" WHERE SUPPLEMENTAL METAL FRAMING MEMBERS PROVIDE AN EFFECTIVE BARRIER BETWEEN THE ROOF DECK AND ANY CONDUIT/CABLING.
9. SUPPLEMENTAL METAL FRAMING SHALL BE PROVIDED FOR SUSPENSION POINTS OF ALL ITEMS LOCATED BETWEEN STRUCTURAL MEMBERS (JOISTS, TRUSSES, BEAMS, ETC.) IN OPEN/VISIBLE STRUCTURE CEILING OR SUPPORT COLUMN AREAS. METAL FRAMING SHALL SPAN ACROSS THE TOP CHORD OR FLANGE OF OVERHEAD STRUCTURAL MEMBERS FOR BOTH STRUCTURAL AND AESTHETIC PURPOSES. SPECIFIC EXCEPTIONS SHALL BE COORDINATED IN WRITING WITH THE ARCHITECT/ENGINEER.
10. CONDUIT INSTALLED WITHIN INACCESSIBLE CONSTRUCTION SHALL BE 3/4" MINIMUM SIZE.
11. FEEDERS SHOWN ON DRAWINGS ARE SCHEMATIC ONLY. CONDUIT RUNS SHALL COMPLY WITH CONDUIT SPECIFICATIONS AND CONTAIN BENDS THAT ARE NO GREATER THAN 90 DEGREES. CONDUITS INSTALLED ABOVE GRADE SHALL BE RUN PARALLEL TO, OR PERPENDICULAR WITH, BUILDING STEEL AND/OR ARCHITECTURAL LINES.
12. CONTRACTOR(S) SHALL VERIFY COLOR/FINISH OF WIRING DEVICES, DEVICE FACEPLATES, SURFACE RACEWAY SYSTEMS, AND/OR MULTI-OUTLET ASSEMBLIES WITH ARCHITECT/ENGINEER IF NOT EXPLICITLY SPECIFIED.
13. ELECTRICAL CONTRACTOR SHALL REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ADDITIONAL INFORMATION REGARDING LIGHTING FIXTURE MOUNTING LOCATIONS, ARRANGEMENTS, AND CEILING FINISHES.
14. ELECTRICAL CONTRACTOR SHALL ADJUST LIGHTING FIXTURE LOCATIONS IN MECHANICAL ROOMS TO ACCOMMODATE MECHANICAL EQUIPMENT, DUCTWORK, AND RELATED FIELD CONDITIONS.
15. CONTRACTOR(S) SHALL BE RESPONSIBLE TO REVIEW INTERIOR ELEVATION SHEETS FOR PLACEMENT OF DEVICE BOXES. COORDINATE LOCATIONS SO THAT NO DEVICES ARE INSTALLED BEHIND CASEWORK, MILLWORK, VISUAL DISPLAY BOARDS, MIRRORS, CUSTOM GRAPHICS, SIGNAGE, ETC.
16. ELECTRICAL CONTRACTOR SHALL REVIEW TOILET EQUIPMENT SHOP DRAWINGS AND ARCHITECTURAL DETAILS/ELEVATIONS FOR CORRECT DEVICE BOX ROUGH-IN LOCATION OF HAND DRYERS.
17. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH PLUMBING CONTRACTOR AND THE ELECTRIC WATER COOLER / BOTTLE FILLER SHOP DRAWINGS FOR MOUNTING HEIGHT AND CONNECTION METHOD OF PLUMBING EQUIPMENT POWER CONNECTIONS. READILY ACCESSIBLE GFCI PROTECTION SHALL BE PROVIDED FOR THE BRANCH CIRCUIT(S) SUPPLYING ALL SUCH UNITS PER NEC REQUIREMENTS.
18. REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR DETAILED INFORMATION REGARDING EQUIPMENT AND CONTROL. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING AND PROVIDING ITEMS AS SPECIFICALLY LISTED AND ASSIGNED ON MECHANICAL EQUIPMENT SCHEDULE SUCH AS DISCONNECT SWITCHES, VARIABLE FREQUENCY DRIVES, STARTERS, TIMERS, SWITCHES, ETC.
19. ELECTRICAL CONTRACTOR SHALL CONFIRM THE LOCATION OF THE EXHAUST FANS LISTED IN THE MECHANICAL EQUIPMENT SCHEDULES BY REFERRING TO MECHANICAL/HVAC PLANS.
20. REFER TO ROOF PLANS FOR EXACT LOCATIONS OF ROOF-TOP MECHANICAL EQUIPMENT.
21. PROVIDE FLUSH SINGLE-GANG BOXES IN WALLS FOR HVAC / TEMPERATURE CONTROL DEVICES, AT LEAST ONE PER OCCUPIABLE ROOM OR SPACE. INSTALL 3/4" CONDUIT RACEWAY FROM BOX TO CORRESPONDING TEMPERATURE CONTROL SYSTEM DEVICE OR CONTROLLED UNIT. REFER TO MECHANICAL DRAWINGS FOR PROPOSED LOCATIONS AND COORDINATE WITH MECHANICAL / TEMPERATURE CONTROLS CONTRACTOR'S SHOP DRAWINGS.
22. CABINET UNIT HEATERS MAY HAVE LINE-VOLTAGE THERMOSTATS SUPPLIED BY MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. REFER TO MECHANICAL EQUIPMENT SCHEDULE.
23. DIVISION 26 CONTRACTOR SHALL PROVIDE CONDUIT SLEEVES WITH APPROPRIATE BUSHINGS FOR CONTROLS AND ELECTRONIC SAFETY/SECURITY CABLING THROUGH WALLS AND FLOORS. SLEEVE SIZES SHALL BE COORDINATED WITH CABLING REQUIREMENTS.
24. SECTION 27 05 28 CONTRACTOR SHALL PROVIDE DEDICATED CONDUIT SLEEVES WITH APPROPRIATE BUSHINGS THROUGH WALLS AND FLOORS FOR DIV. 27 COMMUNICATIONS AND DIV. 28 SAFETY/SECURITY CABLING. SLEEVE SIZE SHALL BE MINIMUM 2" DIA. OR EQUIVALENT FREE AREA UNLESS NOTED OTHERWISE. SPECIFIED CABLE PATHWAY PENETRATION DEVICES SHALL BE SUBSTITUTED FOR CONDUIT SLEEVES WHERE THERE IS A REQUIRED RATING IN THE CONSTRUCTED ASSEMBLY.
25. BUILDING SYSTEMS CABLING SHALL BE SLEEVED WHERE CABLES PASS THROUGH WALLS. NO CABLING SHALL PASS THROUGH OR OVER THE TOP OF WALL CONSTRUCTION WITHOUT THE USE OF A SLEEVE. DIVISION 26 CONTRACTOR SHALL PROVIDE SLEEVES (UNLESS OTHERWISE ASSIGNED) AND COORDINATE WITH ARCHITECTURAL TRADES DURING THE WALL CONSTRUCTION PROCESS. THIS REQUIREMENT APPLIES TO EXISTING CABLING IN FOOTPRINT OF ANY NEW WALLS; PROVIDE SPLIT SLEEVES IF CABLING CANNOT BE DISCONNECTED. FIELD-VERIFY QUANTITIES AND LOCATIONS, OR COORDINATE USE OF ALLOWANCES FOR SLEEVES WITH PROJECT ADMINISTRATIVE REQUIREMENTS.
26. PROVIDE DIRECT CONNECTIONS FROM DEDICATED LOCAL BRANCH CIRCUIT(S) TO ACCESS CONTROL SYSTEM AND DOOR HARDWARE POWER SUPPLIES WHERE REQUIRED FOR DOOR LOCK DEVICES, CONTROLLERS, ETC. REFER TO DOOR HARDWARE SCHEDULE AND ACCESS CONTROL SYSTEM SCHEDULE IN RESPECTIVE SPECIFICATIONS FOR QUANTITIES AND LOCATIONS.



NOTE: ALL HEIGHTS ARE AS SHOWN UNLESS NOTED OTHERWISE.

TYPICAL MOUNTING HEIGHTS FOR WALL DEVICES, EQUIPMENT, & FIXTURES

NOT TO SCALE

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN KSS

REVIEWED MCK

PROJECT NO. 5-5798

ELECTRICAL SYMBOL LEGENDS & GENERAL NOTES

E0.01

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798E 2019.rvt
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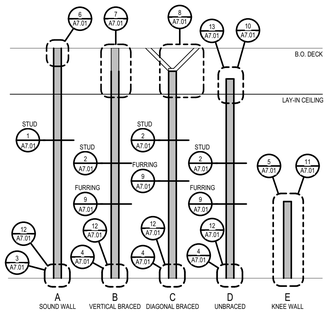
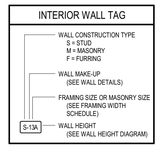


WALL HEIGHT DIAGRAM

INTERIOR WALL TAG



FRAMING WIDTH SCHEDULE

CALLOUT	FRAMING SIZE	AISI IDENTIFICATION
.5	7/8"	SEE COLD FORMED METAL FRAMING SCHEDULE
1	1 1/2"	
2	2 1/2"	
3	3 5/8"	
4	4"	
6	6"	
8	8"	

NOTE:
MASONRY SIZES TO BE LABELED NOMINALLY
8 = 8" = 7 5/8" CMU

WALL TAG & HEIGHT DIAGRAM

3/8" = 1'-0"

GENERAL FLOOR PLAN NOTES:

1. DIMENSIONS GIVEN ARE TO THE FACE OF MASONRY UNITS OR TO THE FINISHED FACE OF METAL STUD PARTITION WALLS.
2. REFERENCE STRUCTURAL DRAWINGS FOR CONCRETE SLAB SIZES AND SLAB RELATED INFORMATION.
3. INTERIOR STUD WALLS ARE TO USE 3 5/8" METAL STUD FRAMING UNLESS OTHERWISE NOTED.
4. TURN UP VAPOR RETARDER MATERIAL AT JOINTS BETWEEN FLOOR SLAB AND FOUNDATION WALL UNLESS NOTED OTHERWISE.
5. SEE FOUNDATION PLANS FOR FLOOR SLAB RECESSES FOR TILE, WOOD FLOOR, ETC. (VERIFY RECESS REQUIRED BY MFR.)
6. EXTEND ALL INTERIOR WALL PARTITIONS (MASONRY OR STUDS) TO BOTTOM OF DECK ABOVE UNLESS NOTED OTHERWISE.
7. REFERENCE STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL FOR ITEMS NOT SHOWN. COORDINATE AS REQUIRED INCLUDING NECESSARY FRAMING, BLOCKING, ETC.
8. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF ANY CABINETRY, FRAMES, STRUCTURAL ITEMS, ETC.
9. PROVIDE PAINTED ACCESS PANELS IN WALLS AND CEILINGS TO PROVIDE ACCESS TO CONCEALED ITEMS INCLUDING BUT NOT LIMITED TO VALVES, CONTROLS, MECH. EQUIPMENT, ETC. ACCESS PANELS MAY NOT ALWAYS BE SHOWN ON PLANS. IT IS THE SUB CONTRACTOR RESPONSIBILITY TO DETERMINE LOCATIONS. COORDINATE LOCATIONS WITH OTHER GENERAL CONTRACTOR / SITE SUPERVISOR.
10. COORDINATE WALLS WITH COLUMNS AND OTHER ENCASED ITEMS. COLUMNS ARE TO BE CONTAINED WITHIN WALLS. THE FRAMING CONTRACTOR SHALL INCREASE FRAMING SIZE TO ACCOMMODATE COLUMNS, DRAIN LEADERS, PIPING, ELECTRICAL PANELS, ETC. WHERE WALLS REQUIRE EXTRA WIDTH THE ENTIRE WALL SHALL BE WIDENED UNLESS APPROVED BY ARCHITECT.
11. ALL GUARDRAILS AND HANDRAILS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE 2015 M.B.C., ANSI ICC A117.1-2009 & AMERICANS WITH DISABILITIES ACT GUIDELINES. THE MOST STRINGENT SHALL PREVAIL.
12. PROVIDE MINIMUM CLEARANCES AT ALL DOORS PER DETAILS. SEE G0.01 FOR REQUIREMENTS.
13. FOR ALL CABINETRY, SEE INTERIOR ELEVATIONS FOR LAYOUTS. FIELD VERIFY CLEAR WIDTHS PRIOR TO FABRICATION.
14. ALL EXTERIOR BLOCK CORNERS ARE TO BE BULLNOSE BLOCK EXCEPT CONCRETE BLOCK COLUMNS, PIERS AND WALLS TO RECEIVE TILE - UNLESS NOTED OTHERWISE.
15. CONTRACTOR TO MAINTAIN / REPAIR RATING OF EXISTING PARTITIONS AS AFFECTED BY DEMOLITION / NEW CONSTRUCTION. TYPICAL THROUGHOUT.
16. SEAL ALL PENETRATIONS IN FIRE RATED FLOORS AND WALLS WITH APPROVED FIRESTOPPING.
17. WHERE SPECIALTY BLOCK IS REQUIRED AT THE SAME HEIGHT ON BOTH SIDES OF A WALL USE (2) SPECIALTY BLOCKS BACK TO BACK TO MAINTAIN THE FINISHED WALL APPEARANCE BOTH SIDES OF THE WALL. COORDINATE WITH STRUCTURE FOR LINTELS CONDITIONS PER SPECIFICATIONS.
18. WALLS TO BE PATCHED WITH LIKE MATERIALS WHERE EXISTING WALLS HAVE BEEN COMPROMISED FROM DEMOLITION. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO REMOVAL AND REINSTALLATION OF CASEWORK AND WALL MOUNTED EQUIPMENT IN ORDER TO ACHIEVE SAID PATCH. IN AREAS WHERE BLOCK OR BRICK HAVE BEEN USED, NEW MASONRY TO BE TOOTHED IN AND MATCH EXISTING. AREAS AND FINISHES IN QUESTION SHALL BE COORDINATED WITH ARCHITECT.
19. SEE STRUCTURAL FRAMING PLANS FOR ADDITIONAL WALL REINFORCING REQUIREMENTS. MINIMUM REINFORCING (FOR ALL WALLS NOT OTHERWISE NOTED ON STRUCTURAL PLANS):
    A. ALL BEARING WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.
    B. ALL EXTERIOR WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.
    C. ALL INTERIOR NON-BEARING WALLS OVER 16'-0" HIGH SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.

GENERAL PROJECT NOTES:

1. FINISH FLOOR ELEVATION = 634.02 = 100'-0"
2. DRAWINGS ARE NOT TO BE SCALED WHEN A DIMENSION IS IN QUESTION. VERIFY W/ ARCHITECT.
3. DETAILS SHOWN BUT NOT CALLED OUT STILL APPLY, UNLESS OTHERWISE NOTED.
4. GENERAL TRADES CONTRACTOR SHALL COORDINATE ALL TRADES INCLUDING OWNER FURNISHED EQUIPMENT, INCLUDING DIMENSIONS OF SUCH AS THEY RELATE TO HIS/HER OWN WORK.
5. ALL EXPOSED SURFACES SHALL BE FINISHED. CONTACT ARCHITECT FOR DIRECTION IF FINISH IS NOT LISTED.
6. NO UTILITIES INCLUDING BUT NOT LIMITED TO, PIPING AND CONDUIT SHALL BE EXPOSED UNLESS APPROVED BY ARCHITECT.
7. GYPSUM BOARD WALLS AND BULKHEADS SHALL HAVE CONTROL JOINTS AT A 20'-0" O.C. MAXIMUM AND AS SHOWN ON DRAWINGS.
8. ANY CONTRACTOR IS TO STOP WORK IMMEDIATELY IN AREA IF ABATEMENT MATERIAL(S) ARE ENCOUNTERED. NOTIFY GENERAL CONTRACTOR OF SUSPECTED AREA SO PROPER ABATEMENT CAN BE DONE. (UNDER A SEPARATE ABATEMENT CONTRACT AS NEGOTIATED BY OWNER.)
9. AT ALL AREAS OF WORK WHERE EXISTING MASONRY BLOCK AND BRICK WALLS ARE BEING MODIFIED OR CONNECTED TO NEW MASONRY AND/OR BRICK MUST BE TOOTHED, UNLESS NOTED OTHERWISE ON DRAWINGS.
10. CONTRACTOR SHALL VERIFY LOCATIONS OF UTILITIES PRIOR TO EXCAVATION, TRENCHING, ETC. AND SHALL REPAIR OR REPLACE ANY DAMAGED UTILITIES AS A RESULT OF CONSTRUCTION.
11. ALL TRADES ARE TO COORDINATE ANY DEMOLITION, CAPPING OR ABANDONMENT OF EXISTING MECHANICAL, ELECTRICAL, PLUMBING OR ARCHITECTURAL ITEMS.
12. ANY DEMOLITION OR CONSTRUCTION WHICH DAMAGES ADJACENT SURFACES IS TO BE REPAIRED TO MATCH THE EXISTING SURFACE DAMAGED (MATERIALS & FINISHES) AND ALL REPAIR WORK IS TO BE COORDINATED WITH NEW CONSTRUCTION.
13. CONTRACTOR IS TO PROVIDE TEMPORARY SHORING AND BRACING FOR EXISTING ROOF/FLOOR STRUCTURE AS REQUIRED UNTIL PERMANENT WALLS & LINTELS ARE INSTALLED.
14. SITE SECURITY AND SAFETY ARE THE CONTRACTORS RESPONSIBILITY. SITE SHALL BE SECURED (FENCED IF REQUIRED) BY CONTRACTOR.
15. ALL ITEMS TO BE SAVED AND/OR RELOCATED ARE TO BE STORED IN A PROPER MANNER SO NO DAMAGE WILL OCCUR TO THESE ITEMS DURING THEIR STORAGE PERIOD.
16. ALL CONSTRUCTION AND MATERIALS ARE TO BE INSTALLED BY THE MANUFACTURERS SPECIFICATIONS AND/OR RECOMMENDATIONS UNLESS DIRECTED OTHERWISE BY ARCHITECT.
17. SEE SPECIFICATIONS FOR STEEL LINTEL SIZES FOR WALL OPENINGS NOT DETAILED (e.g. HVAC DUCTS, ETC.).
18. REFER TO GENERAL INFORMATION SHEET G0.01 FOR TYPICAL BARRIER FREE AND ACCESSIBLE DIMENSIONS.
19. SEE FLOOR PLANS FOR WALL REINFORCING REQUIRED. (SEE WALL REINFORCING SCHEDULE)
20. FURNISH & INSTALL 2x12 HORIZONTAL WOOD BLOCKING BETWEEN STUDS WHERE REQUIRED FOR MOUNTING OF UPPER CABINETS, GRAB BARS OR OTHER EQUIPMENT AS REQUIRED FOR PROPER SUPPORT.
21. COORDINATE ALL CONSTRUCTION PRACTICE TOLERANCES WITH OTHER TRADES WHOSE WORK MAY BE AFFECTED, DIRECTLY OR INDIRECTLY, WITH YOUR SPECIFIC TRADE. IN ALL CASES, THE MOST STRINGENT TOLERANCE SHALL APPLY AND SHALL BE COORDINATED THRU THE GENERAL CONTRACTOR. JOB SUPERINTENDENT AND/OR CONSTRUCTION MANAGER AND FIELD OBSERVATION PERSON AS APPLICABLE.
22. REFER TO FLOOR PLANS, SCHEDULES AND EXTERIOR ELEVATIONS FOR WINDOW FRAME TYPES.
23. REFER TO FLOOR PLANS, SCHEDULES AND INTERIOR ELEVATIONS FOR BORROWED LITE FRAME TYPES.
24. AT MASONRY CAVITY WALL LOCATION, PROVIDE APPROPRIATE SEPARATION IN REGARDS TO INTERIOR AIR EXFILTRATION AND EXTERIOR AIR AND WATER INFILTRATION THRU WALL. PROVIDE NECESSARY AIR AND WATER BARRIERS REQUIRED, INCLUDING DAMS, TO PREVENT WALL LEAKAGE.

CODE NOTES:

1. FIRE DEPARTMENT ACCESS AND WATER SUPPLY SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF VERTICAL CONSTRUCTION.
2. FIRE STOP ALL INTERCONNECTIONS BETWEEN VERTICAL AND HORIZONTAL SPACES AND CONCEALED WALL SPACES AT THE CEILING, FLOOR, AND ROOF LEVELS.
3. INSTALL SOLID BLOCK BEHIND ALL RECESSED WALL UNITS AS REQUIRED TO MAINTAIN FIRE RATINGS.
4. ALL FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS, AND SMOKE PARTITIONS SHALL BE IDENTIFIED WITH STENCILING AT INTERVALS NOT TO EXCEED 30'. REFER TO CODE PLAN FOR WALLS REQUIRED TO BE PROTECTED.
5. ALL PENETRATIONS AT SMOKE AND FIRE RATED WALLS, FLOORS, CEILINGS, ETC. SHALL BE PROTECTED, SEALED OR DAMPERED USING ONLY U.L. AND / OR I.C.B.O. APPROVED METHODS, MATERIALS AND INSTALLATION.
6. SEE REFLECTED CEILING PLANS AND LIGHTING PLANS FOR EXIT SIGNAGE LOCATIONS.
7. ALL EXITS TO BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF KEY OR SPECIAL KNOWLEDGE.
8. PANIC HARDWARE TO BE PROVIDED AT EACH EXIT DOOR FROM ROOMS WITH AN OCCUPANT LOAD 50 OR MORE INCLUDING MAIN CORRIDOR EXIT DOORS.
9. ALL ELEVATORS SHALL COMPLY WITH A.D.A., A.D.A.G.G. AND A.N.S.I. REQUIREMENTS.
10. SPECIAL STRUCTURAL INSPECTIONS ARE REQUIRED. REVIEW GENERAL STRUCTURAL NOTES AND SPECIFICATIONS FOR REQUIREMENTS.
11. FIRE SPRINKLERS AND FIRE ALARM SYSTEM SHALL BE PROVIDED PER NFPA NO. 13, 70 & 72. SUBMIT ALL REQUIRED DRAWING AND INFORMATION TO THE AUTHORITY HAVING JURISDICTION FOR APPROVAL PRIOR TO COMMENCEMENT OF ANY RELATED WORK. OBTAIN APPROVAL OF COMPLETED SYSTEMS PRIOR TO FINAL ACCEPTANCE.

ACCESSIBILITY NOTES:

1. PUBLIC ENTRANCES: AT LEAST 60% SHALL BE ACCESSIBLE.
2. ACCESSIBLE ENTRANCES TO THE BUILDING SHALL BE IDENTIFIED BY THE INTERNATIONAL SIGN OF ACCESSIBILITY.
3. AN ACCESSIBLE ROUTE OF NOT LESS THAN 3 FT. WIDE MUST BE PROVIDED TO ALL PORTIONS OF THE BUILDING AND BETWEEN THE BUILDING AND THE PUBLIC WAY. ACCESSIBLE ROUTES SHALL HAVE A MAXIMUM SLOPE OF 1:20 AND A MAXIMUM CROSS SLOPE OF 1:50.
4. ACCESSIBLE ROUTE SHALL BE WITHOUT STEPS OR CHANGES IN LEVEL GREATER THAN 1/2" WITHOUT AN APPROVED RAMP.
5. ACCESSIBLE RAMPS THAT ARE REQUIRED BY ANSI A 117.1 SHALL NOT HAVE A SLOPE THAT EXCEEDS 1FT. IN 12 FEET. RAMPS AND GROUND SURFACES SHALL BE OF A SLIP RESISTANT SURFACE.
6. THRESHOLDS MUST BE 1/2" OR LESS IN HEIGHT.
7. ALL ACCESSIBLE PARKING SPACES MUST HAVE A SIGN THAT INCLUDES THE INTERNATIONAL SIGN OF ACCESSIBILITY. PARKING SPACE WILL BE OUTLINED IN A CONTRASTING COLOR WITH THE INTERNATIONAL SIGN OF ACCESSIBILITY PAINTED IN THE CENTER.
8. ALL ALARMS TO MEET ACCESSIBILITY REQUIREMENTS.

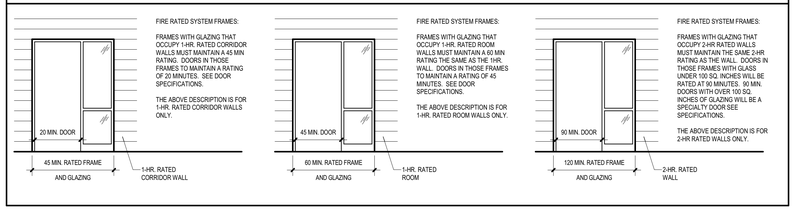
STRUCTURAL NOTES:

1. CONSTRUCTION AND/OR CONTROL JOINTS IN CONCRETE SHALL BE ON A 12'-0" SQUARE GRID (MAX.) UNLESS OTHERWISE NOTED. ALL CONSTRUCTION JOINTS SHALL BE DOWELED W/ 1/2" SMOOTH DOWELS AT 24" O.C. SEE DETAILS.
2. PROVIDE CONTINUOUS U-BLOCK BOND BEAMS AT THE LOCATIONS INDICATED ON WALL SECTIONS OR DETAILS. FILL U-BLOCKS WITH CONCRETE AND REINFORCE WITH (2) #5 BARS CONTINUOUS UNLESS NOTED OTHERWISE ON DRAWINGS.

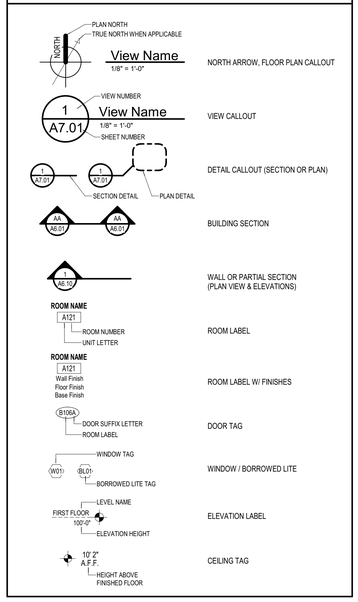
ABBREVIATIONS

A.D.A.	=	AMERICANS WITH DISABILITY ACT	MFR.	=	MANUFACTURER
A.F.F.	=	ABOVE FINISHED FLOOR	MAX.	=	MAXIMUM
ALT.	=	ALTERNATE	M.B.	=	MARKER BOARD
ALUM.	=	ALUMINUM	M.B.C.	=	MICHIGAN BUILDING CODE
BD.	=	BOARD	MECH.	=	MECHANICAL
B.F.	=	BARRIER FREE	MIN.	=	MINIMUM
BATT.	=	BATTEN INSULATION	MISC.	=	MISCELLANEOUS
B.O.	=	BOTTOM OF	M.J.	=	MASONRY JOINT
BRG.	=	BEARING	M.O.	=	MASONRY OPENING
C.J.	=	CONTROL JOINT	MTL.	=	METAL
CLG.	=	CEILING	N.I.C.	=	NOT IN CONTRACT
CONC.	=	CONCRETE	NOM.	=	NOMINAL
CONT.	=	CONTINUOUS	O.C.	=	ON CENTER
CONF.	=	CONFERENCE	OPP.	=	OPPOSITE
CORR.	=	CORRIDOR	P.LAM	=	PLASTIC LAMINATE
DIA.	=	DIAMETER	P.T.	=	PRESSURE TREATED
DIM.	=	DIMENSION	REQ.	=	REQUIRED
DW.	=	DISHWASHER	REINF.	=	REINFORCING
D.F.	=	DRINKING FOUNTAIN	R.D.	=	ROOF DRAIN
DN.	=	DOWN	SIM.	=	SIMILAR TO
DS.	=	DOWNSPOUT	SPEC.	=	SPECIFICATION
EQ.	=	EQUAL	STD.	=	STANDARD
EL.	=	ELEVATION	STOR.	=	STORAGE
EX.	=	EXISTING	S.S.	=	STAINLESS STEEL
EXP.	=	EXPANSION	T.	=	TOILET
F.D.	=	FLOOR DRAIN	T.B.	=	TACK BOARD
F.E.	=	FIRE EXTINGUISHER	T&G	=	TONGUE AND GROOVE
F.E.C.	=	FIRE EXTINGUISHER CABINET	T.O.F.	=	TOP OF FOOTING
F.E.R.C.	=	FIRE EXT. RECESSED CABINET	T.O.M.	=	TOP OF MASONRY
F.E.S.C.	=	FIRE EXT. SEMI-RECESSED CABINET	T.O.W.	=	TOP OF WALL
FIN.	=	FINISHED	TYP.	=	TYPICAL
FLR.	=	FLOOR	U.N.O.	=	UNLESS NOTED OTHERWISE
GA.	=	GAUGE	V.I.F.	=	VERIFY IN FIELD
GYP.	=	GYPSUM BOARD	VERT.	=	VERTICAL
H.D.	=	HAND DRYER	VEST.	=	VESTIBULE
HORIZ.	=	HORIZONTAL	W/	=	WITH
H.S.S.	=	HOLLOW STRUCT. SECTION	W.W.F.	=	WELDED WIRE FABRIC
ISO.	=	ISOCYANURATE			
INSUL.	=	INSULATION			

FIRE RATED FRAMES



GENERAL ANNOTATION LEGEND



NON-LOAD BEARING COLD-FORMED METAL FRAMING SCHEDULE

	DEPTH	GAUGE (33 KSI)	FLANGE WIDTH	IDENTIFICATION AISI S100/S200	LOCATION / USE
STUDS & JOISTS	2 1/2"	20	1 1/4"	250S125-30	BULKHEADS & MISC. FRAMING
	3 5/8"	20	1 1/4"	362S125-30	INTERIOR WALLS & BULKHEADS
	6"	18	1 5/8"	600S162-43	
	3 5/8"	20	1 5/8"	362S162-33	INTERIOR JAMBS
	6"	18	1 5/8"	600S162-43	
	6"	16	1 5/8"	600S162-54	EXTERIOR WALLS
TRACK	2 1/2"	20	1 1/4"	250T125-30	BULKHEADS & MISC. FRAMING
	3 5/8"	20	1 1/4"	362T125-30	INTERIOR WALLS & BULKHEADS
	3 5/8"	20	2 1/2"	362T250-33	DEFLECTION TRACK
	6"	18	1 1/4"	600T125-43	INTERIOR WALLS & BULKHEADS
	6"	16	1 1/2"	600T150-54	EXTERIOR WALLS
FURRING (HAT)	7/8"	20	N/A	087F125-33	WHERE NOTED
	1 1/2"	20	N/A	150F125-33	WHERE NOTED

NOTE: ALL MEMBERS IN THIS SCHEDULE ARE SIZED FOR MAXIMUM 15' TALL WALLS, NOTE THAT 6" INTERIOR STUDS CAN SPAN A MAXIMUM HEIGHT OF 28'
SEE COLD-FORMED METAL HEADER SCHEDULE FOR SPECIFIC JAMB & HEADER REQUIREMENTS

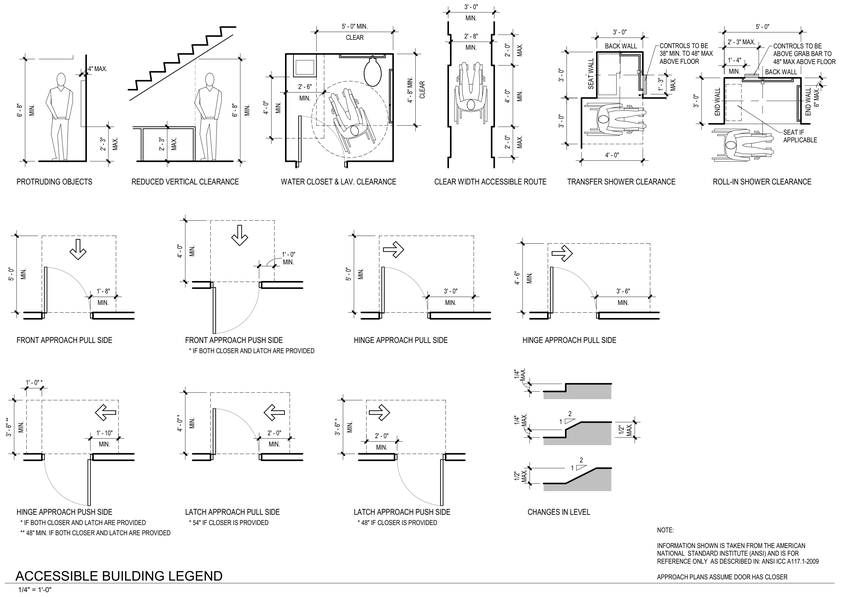
INTERIOR, NON-LOAD BEARING COLD-FORMED METAL HEADER SCHEDULE

ROUGH OPENING	MATERIAL	HEADER SHAPE
6'-0" MAX.	HEADER: (2) 362S162-33 JOISTS (2) 362T125-33 TRACKS JAMBS: (1) 362S162-33 STUD EACH END (1) 362T125-33 TRACK	
10'-0" MAX.	HEADER: (2) 600S162-33 JOISTS (2) 362T125-33 TRACKS JAMBS: (2) 362S162-33 STUDS EACH END (1) 362T125-33 TRACK	
12'-0" MAX.	HEADER: (2) 1000S162-43 JOISTS (1) 362S162-33 HORIZONTAL (3) 362T125-33 TRACKS JAMBS: (2) 362S162-33 STUDS EACH END (1) 362T125-33 TRACK	

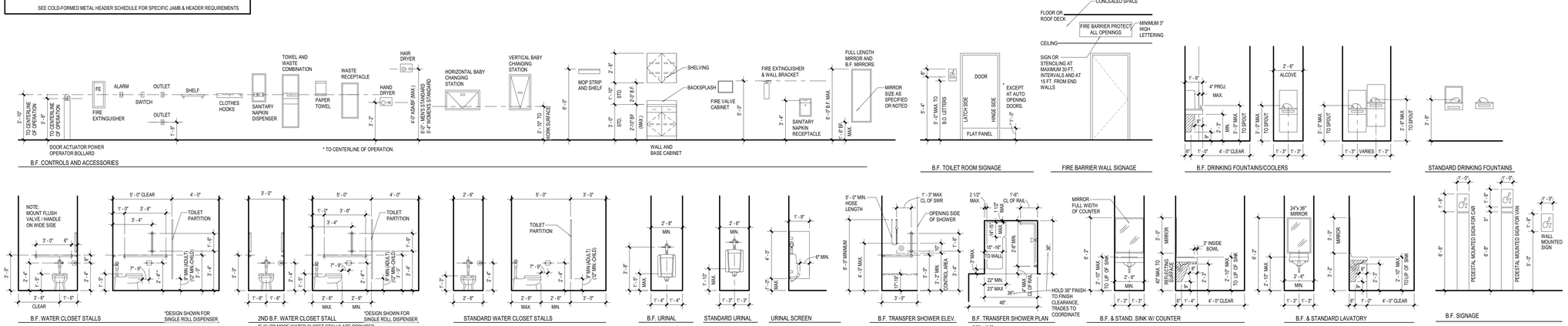
ALL HEADERS IN THIS SCHEDULE ARE SIZED FOR INTERIOR, NON-LOAD BEARING WALLS ONLY
BASED ON 12' WALL HEIGHT / 5 psf INTERNAL LOAD / 50 plf VERTICAL DEAD LOAD

ACCESSIBLE BUILDING LEGEND

1/4" = 1'-0"



NOTE:
INFORMATION SHOWN IS TAKEN FROM THE AMERICAN NATIONAL STANDARD INSTITUTE (ANSI) AND IS FOR REFERENCE ONLY AS DESCRIBED IN ANSI AND ICC A117.1-2009
APPROACH PLANS ASSUME DOOR HAS CLOSER



BARRIER FREE ADA DIMENSIONS

1/4" = 1'-0"

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HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

ISSUANCES
03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

GENERAL NOTES
DIMENSIONS AND LEGENDS

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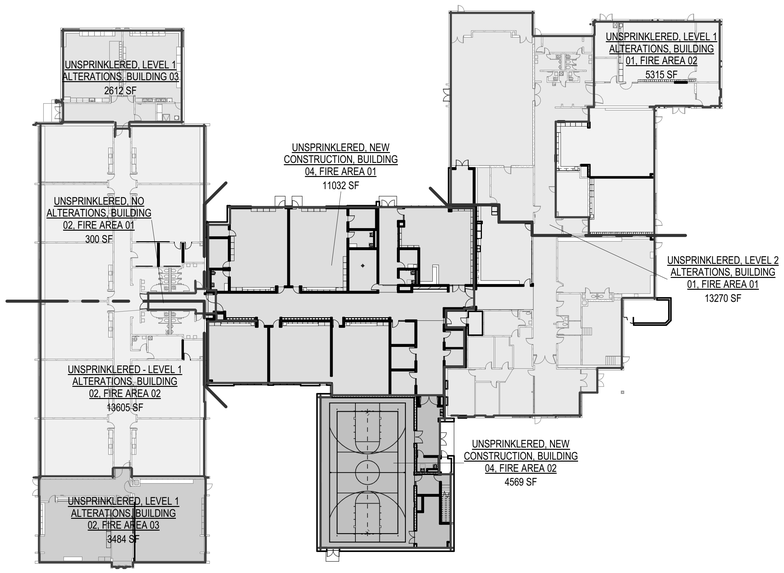


NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	WATER CLOSETS		LAVATORIES		BATHTUBS/ SHOWERS	DRINKING FOUNTAINS	OTHER
				MALE	FEMALE	MALE	FEMALE			
1	ASSEMBLY	A-2	CAFETERIA	1 PER 75	1 PER 75	1 PER 200	1 PER 200	N/A	1 PER 500	1 SERVICE SINK
	(170 OCCUPANTS)			REQUIRED 2	REQUIRED 2	REQUIRED 1	REQUIRED 1	N/A	REQUIRED 1	REQUIRED 1
1	ASSEMBLY	A-3	GYMNASIUM, MEDIA CENTER	1 PER 125	1 PER 65	1 PER 200	1 PER 150	N/A	1 PER 1000	1 SERVICE SINK
	(302 OCCUPANTS)			REQUIRED 2	REQUIRED 3	REQUIRED 1	REQUIRED 1	N/A	REQUIRED 1	REQUIRED 1
3	EDUCATIONAL	E	EDUCATIONAL FACILITIES	1 PER 50	1 PER 50	1 PER 50	1 PER 50	N/A	1 PER 100	1 SERVICE SINK
	(400 STUDENTS 90 STAFF)			REQUIRED 4	REQUIRED 4	REQUIRED 4	REQUIRED 4	N/A	REQUIRED 5	REQUIRED 1
	TOTAL			REQUIRED 8	REQUIRED 9	REQUIRED 6	REQUIRED 6		REQUIRED 5	REQUIRED 1
				ACTUAL 11	ACTUAL 11	ACTUAL 6	ACTUAL 6		ACTUAL 3	ACTUAL 2
				6 ADDITIONAL B.F. UNISEX		6 ADDITIONAL B.F. UNISEX				

GENERAL CODE NOTES:

A. FIRE DEPARTMENT ACCESS AND WATER SUPPLY SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF VERTICAL CONSTRUCTION.

B. FIRE STOP ALL INTERCONNECTIONS BETWEEN VERTICAL AND HORIZONTAL SPACES AND CONCEALED WALL SPACES AT THE CEILING, FLOOR, AND ROOF LEVELS.

C. INSTALL SOLID BLOCK BEHIND ALL RECESSED WALL UNITS AS REQUIRED TO MAINTAIN FIRE RATINGS.

D. ALL FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS, AND SMOKE PARTITIONS SHALL BE IDENTIFIED WITH STENCILING AT INTERVALS NOT TO EXCEED 30'. REFER TO CODE PLAN FOR WALLS REQUIRED TO BE PROTECTED.

E. ALL PENETRATIONS AT SMOKE AND FIRE RATED WALLS, FLOORS, CEILINGS, ETC. SHALL BE PROTECTED, SEALED OR DAMPERED USING ONLY U.L. AND / OR I.C.B.O. APPROVED METHODS, MATERIALS AND INSTALLATION.

F. SEE REFLECTED CEILING PLANS AND LIGHTING PLANS FOR EXIT SIGNAGE LOCATIONS.

G. ALL EXITS TO BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF KEY OR SPECIAL KNOWLEDGE.

H. ALL ELEVATORS SHALL COMPLY WITH A.D.A., A.D.A.G.G. AND A.N.S.I. REQUIREMENTS.

I. SPECIAL STRUCTURAL INSPECTIONS ARE REQUIRED. REVIEW GENERAL STRUCTURAL NOTES AND SPECIFICATIONS FOR REQUIREMENTS.

J. FIRE SPRINKLERS AND FIRE ALARM SYSTEM SHALL BE PROVIDED PER NFPA NO. 13, 70 & 72. SUBMIT ALL REQUIRED DRAWING AND INFORMATION TO THE AUTHORITY HAVING JURISDICTION FOR APPROVAL PRIOR TO COMMENCEMENT OF ANY RELATED WORK. OBTAIN APPROVAL OF COMPLETED SYSTEMS PRIOR TO FINAL ACCEPTANCE.

FIRE AREA / ALTERATION LEGEND

BUILDINGS SEPARATED BY 2-HR. FIRE WALLS PER MBC 706
BUILDINGS SEPARATED INTO SMOKE COMPARTMENTS PER NFPA 101 15.3.7

BUILDING #	NEW/ EXISTING	OCC. TYPE	FIRE SUPPRESSION	AREA	LEVEL OF ALTERATION & AREA	AREA OF NO WORK
BUILDING 1 - FIRE AREA 1	EXISTING	E	NOT PROTECTED	13,180 SF	LEVEL 2, 2,552 SF	10,628 SF
BUILDING 1 - FIRE AREA 2	EXISTING	E	NOT PROTECTED	5,315 SF	LEVEL 1, 3,936 SF	1,379 SF
BUILDING 2 - FIRE AREA 1	EXISTING	E	NOT PROTECTED	300 SF	LEVEL 1, 300 SF	
BUILDING 2 - FIRE AREA 2	EXISTING	E	NOT PROTECTED	13,605 SF	LEVEL 2, 2,776 SF	10,827 SF
BUILDING 2 - FIRE AREA 3	EXISTING	E	NOT PROTECTED	3,484 SF	LEVEL 1, 3,060 SF	424 SF
BUILDING 3	EXISTING	E	NOT PROTECTED	2,612 SF	LEVEL 1, 1,021 SF	1,591 SF
BUILDING 4 - FIRE AREA 1	NEW	E	NOT PROTECTED	11,036SF	NEW CONSTRUCTION	
BUILDING 4 - FIRE AREA 2	NEW	E	NOT PROTECTED	4,566	NEW CONSTRUCTION	
TOTALS:				**55,920 SF**	**13,647 SF**	

LEGEND - CODE COMPLIANCE PLAN

2-HR FW — **FIRE WALLS (IBC SECTION 706)**
CREATE SEPARATE BUILDINGS. 2-HOUR FIRE RESISTANCE RATING, STRUCTURALLY ENGINEERED. 90-MINUTE SELF-CLOSING DOORS. GLAZING ONLY ALLOWED IF DESIGNED AND TESTED AS A WALL. GLAZED OPENINGS ARE PERMITED IF RATED AS A WALL. PER ASTM E119 AND SECTION 716.2 (IBC) IN MAXIMUM SIZE TESTED.

2-HR FB — **2-HR FIRE BARRIER (IBC SECTION 707 / NFPA 101 - 8.3)**
FIRE BARRIER (2-HOUR FIRE RESISTANCE RATING REQUIRED). INSTALL FROM FLOOR SLAB TO UNDERSIDE OF ROOF DECK ABOVE. 90-MINUTE SELF-CLOSING DOORS (100 SQUARE INCHES MAXIMUM DOOR VISION PANEL). GLAZED OPENINGS ARE PERMITED IF 2-HOUR RATED. PER ASTM E119 AND TABLE 716.5 (IBC) AND TABLE 8.3.4.2 (NFPA 101). OPENING SHALL BE LESS THAN 25% OF THE COMMON CORRIDOR WALL PER ROOM.

1-HR FB — **1-HR FIRE BARRIER (IBC SECTION 707 / NFPA 101 - 8.3)**
FIRE BARRIER (1-HOUR FIRE RESISTANCE RATING REQUIRED). INSTALL FROM FLOOR SLAB TO UNDERSIDE OF ROOF DECK ABOVE. OPENING SHALL BE LESS THAN 25% OF THE WALL. OPENING PROTECTIVES DEPEND ON TYPE OF ASSEMBLY PER TABLE 716.5 (IBC) AND TABLE 8.3.4.2 (NFPA 101).

CORRIDOR — **(CORRIDOR) FIRE BARRIER (IBC SECTION 707 / NFPA 101 - 8.3)**
CORRIDOR FIRE BARRIER (1-HOUR FIRE RESISTANCE RATING REQUIRED). INSTALL FROM FLOOR SLAB TO UNDERSIDE OF ROOF DECK ABOVE. 20-MINUTE SELF-CLOSING DOORS. GLAZED OPENINGS ARE PERMITTED IF 3/4-HOUR RATED. PER ASTM E119 IN THE MAXIMUM SIZE TESTED. OPENING SHALL BE LESS THAN 25% OF THE COMMON CORRIDOR WALL PER ROOM.

1-HR SB — **SMOKE BARRIER (IBC SECTION 709 / NFPA 101 - 8.5)**
SMOKE BARRIER (1-HOUR FIRE RESISTANCE RATING REQUIRED). DIVIDE BUILDING INTO COMPARTMENTS TO RESTRICT MOVEMENT OF SMOKE. INSTALL FROM FOOR SLAB TO UNDERSIDE OF ROOF DECK ABOVE 20-MINUTE SELF-CLOSING OR SMOKE ACTIVATED LABEL DOORS. GLAZED OPENINGS ARE PERMITTED IF 3/4-HOUR RATED, PER ASTM E119 IN THE MAXIMUM SIZE TESTED. OPENING SHALL BE LESS THAN 25% OF THE COMMON CORRIDOR WALL PER ROOM.

SMOKE SP — **SMOKE PARTITION (IBC SECTION 710 / NFPA 101 - 8.4)**
SMOKE PARTITION (NO FIRE RESISTANCE RATING) FROM FLOOR SLAB TIGHT TO ROOF DECK OR SOLID CEILING ABOVE. GLAZED OPENINGS ARE PERMITTED (NO RATING REQUIRED) "PER NFPA 101 14.3.6(2)B) SELF-CLOSING DOORS PER 8.4.3.5 ARE NOT REQUIRED FOR NORMALLY OCCUPIED CLASSROOMS"

64" w. — BUILDING EXIT WITH EGRESS WIDTH

46 — OCCUPANT LOAD

20 — DENOTES FIRE RESISTANCE RATING OF OPENING PROTECTIVE (IN MINUTES)

P — DENOTES PANIC HARDWARE DEVICE ON EACH DOOR LEAF

FE — FIRE EXTINGUISHER

"ACCESSIBLE" ROUTE/ENTRANCE/EGRESS

E — EGRESS WINDOW LOCATION

LIFE SAFETY NOTES

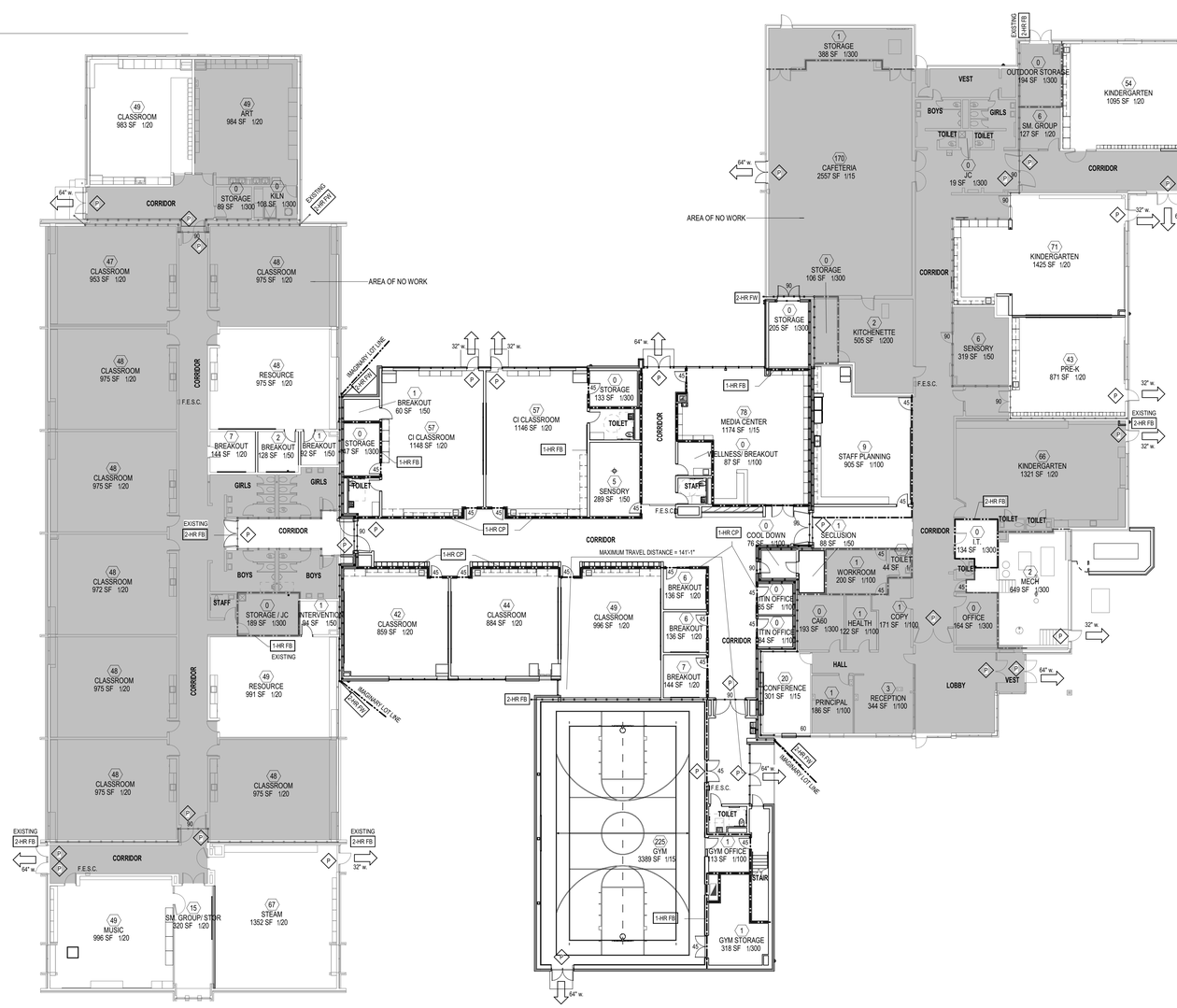
1. CODE: NFPA 101, 2012 LIFE SAFETY CODE, AS AMENDED BY STATE FIRE MARSHAL
   2015 MICHIGAN BUILDING CODE, MICHIGAN REHABILITATION CODE 2015
2. CONSTRUCTION TYPE: II (000)
   COMPLETELY UNPROTECTED
   HAZARD OF CONTENTS: ORDINARY HAZARD
3. OCCUPANCY: EDUCATIONAL OCCUPANCY (SPACES SUBJECT TO "ASSEMBLY" OCCUPANCY NOTED ON PLAN)
4. AREA & HEIGHT:
   ALLOWABLE AREA: 25,995 SQ. FT. (REFER TO CALCULATIONS ON SHEET)
   ALLOWABLE HEIGHT: 2 STORIES; 55 FEET; ACTUAL: 1 STORY, 33 FEET
   SMOKE COMPARTMENTS: MINIMUM OF 2 COMPARTMENTS, MAXIMUM OF 30,000 SQ. FT. EACH
5. SEPARATION & PROTECTION:
   CORRIDORS SHALL BE 1-HR RATED SEPARATION AND OPENING PROTECTIVES WHERE REQUIRED.
   FIRE AREAS: SEPARATED W/ 2-HR FIRE SEPARATION & 90-MIN. OPENING PROTECTIVES.
   BOILER & FURNACE ROOMS, STORAGE AREAS, AND CUSTODIAL CLOSETS: 1-HR RATED SEPARATION & OPENING PROTECTIVES WHERE REQUIRED.
6. OCCUPANT LOAD: (BASED ON FOLLOWING - SEE PLAN)
   ASSEMBLY (CONFERENCE, DINING, GYM/NASIUM): 1/15 SF NET
   BUSINESS: 1/100 SF GROSS
   CLASSROOMS: 1/20 SF NET
   KITCHENS: 1/100 SF GROSS
   LIBRARIES (READING AREAS): 1/50 SF NET
   LIBRARIES (STACK AREAS): 1/100 SF GROSS
   LOCKERS: 1/7 SF NET, OR 1/15 SF GROSS INCLUDING SHOWERS, TOILETS & DRYING
   MECHANICAL EQUIPMENT: 1/300 SF GROSS
   SHOPS, LABS, VOC. ROOMS: 1/50 SF NET
   STAGES: 1/15 SF NET
   STORAGE: 1/300 SF GROSS
7. EGRESS REQUIREMENTS:
   A. 6'-0" MINIMUM CORRIDOR WIDTH (CORRIDOR CAPACITY = OCCUPANT LOAD/REQUIRED NUMBER OF EXITS)
   B. EGRESS WIDTHS - 0.2" PER PERSON (LEVEL OR RAMPED)
   C. 200' MAXIMUM TRAVEL DISTANCE
   D. 20' DEAD-END MAXIMUM TRAVEL IN CORRIDOR
   E. 75' MAXIMUM COMMON PATH OF TRAVEL
   F. EXITS:
      (1) 2 REMOTE EXITS REQUIRED FOR EDUCATIONAL SPACES >50 PEOPLE OR >1,000 SQ. FT. IN AREA
      (2) MINIMUM NUMBER PER OCCUPANTS: 2 IF < 501, 3 IF < 1001, 4 IF > 1000
      (3) WINDOWS FOR RESCUE REQUIRED IN BUILDINGS NOT PROTECTED BY AUTOMATIC SPRINKLER SYSTEM
      (4) PANIC HARDWARE AT AREAS >100 OCCUPANT LOAD IF DOOR PROVIDED WITH LATCH OR LOCK
      (5) DISCHARGE: ALL EXITS SHALL TERMINATE AT A PUBLIC WAY OR AN EXTERIOR EXIT DISCHARGE
   G. HORIZONTAL EXITS:
      (1) SUBSTITUTED FOR NO MORE THAN ONE-HALF OF REQUIRED EXITS
      (2) FIRE BARRIERS SEPARATING BUILDING AREAS WITH HORIZ. EXITS BETWEEN SHALL BE 2-HOUR RATED
      (3) WHERE SERVING BOTH SIDES OF FIRE BARRIER ADJACENT OPENINGS REQUIRED WITH DOORS SWINGING IN OPPOSITE DIRECTIONS
   H. DOORS:
      (1) MINIMUM CLEAR WIDTH SHALL BE 32"
      (2) SIDE HINGED
      (3) SWING IN DIRECTION OF TRAVEL WHERE OCCUPANT LOAD IS > 50
      (4) SELF-CLOSING OR AUTOMATIC-CLOSING IN FIRE BARRIERS AND HORIZONTAL EXITS
8. INTERIOR FINISH:
   A. EXITS - CLASS A.
   B. ALL OTHER - CLASS A OR B.
   C. INTERIOR WALL & CEILING FINISH IF LESS THAN 10% OF AGGREGATE WALL & CEILING AREAS OF ANY ROOM MAY BE CLASS C.
9. OTHER PROVISIONS:
   BUILDING CONSTRUCTION - MICHIGAN BUILDING CODE 2015
   ELECTRICAL - 2017 NFPA 70 (NEC) AS AMENDED BY MICHIGAN PART 8 RULES
   MECHANICAL - MICHIGAN MECHANICAL CODE 2015
   PLUMBING - MICHIGAN PLUMBING CODE 2018
   FIRE ALARM SYSTEM - NFPA 70 & 72
   FIRE EXTINGUISHERS - NFPA 10
   FIRE SPRINKLERS - NFPA 13

FIRESTOPPING REQUIREMENT

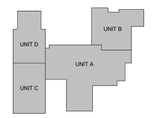
ALL OPENINGS AROUND MECHANICAL, PLUMBING, ELECTRICAL, AND STRUCTURAL PENETRATIONS THRU A FIRE RESISTIVE RATED ASSEMBLY (INCLUDING FLOORS) SHALL BE SEALED WITH FIRE RATED FIRESTOPPING IN COMPLIANCE WITH ASTM E814 AND EQUIVALENT TO FIRE RATING REQUIRED. PENETRATIONS THRU SMOKE RESISTIVE NON-FIRE RATED ROOM WALLS SHALL BE SEALED SMOKE TIGHT

AREA CALCULATION:
TABULAR AREA = 14,500
TABULAR AREA (NON SPRINKLERED) = 14,500
ALLOWABLE AREA PER STORY = A (TABULAR) + (A (ns) * rf) = 14,500 + (14,500 * 0.79) = 25,995 GSF

FIRST FLOOR AREA PLAN
1" = 30'-0"



CODE COMPLIANCE FIRST FLOOR PLAN
1/16" = 1'-0"



KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS
HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

ISSUANCES
03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

CODE COMPLIANCE FIRST FLOOR PLAN

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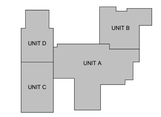
NORTH

OVERALL FIRST FLOOR PLAN

1/16" = 1'-0"



NORTH

KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE

REVIEWED TGD

PROJECT NO. 5-5798

OVERALL FIRST FLOOR PLAN

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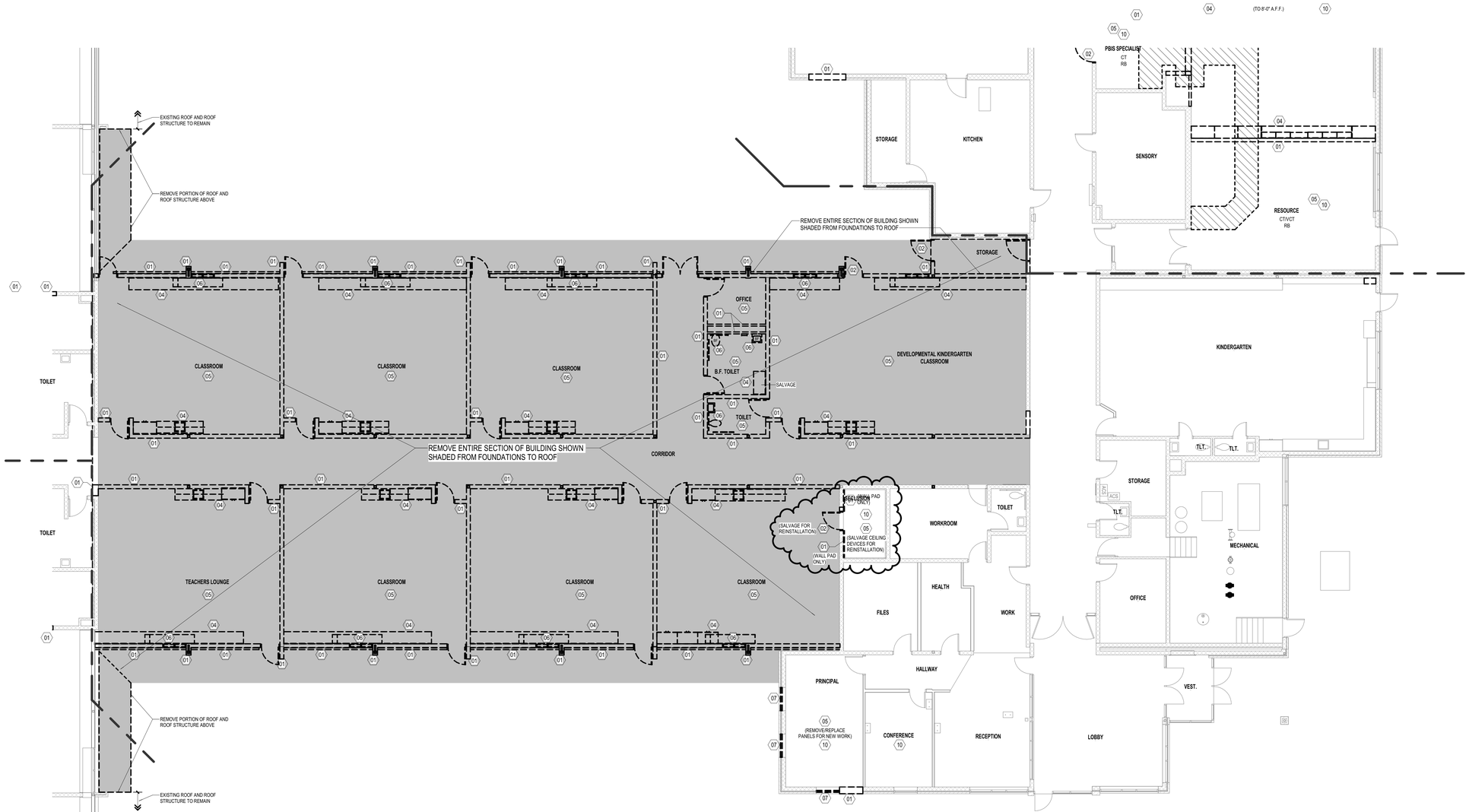

NORTH

UNIT 'A' FIRST FLOOR DEMOLITION PLAN

1/8" = 1'-0"

DEMOLITION NOTES

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- ALL TRADES ARE TO COORDINATE ANY DEMOLITION, CAPPING OR ABANDONMENT OF EXISTING MECHANICAL, ELECTRICAL, PLUMBING OR ARCHITECTURAL ITEMS.
- ALL ITEMS TO BE SAVED AND/OR RELOCATED ARE TO BE STORED IN A PROPER MANNER SO NO DAMAGE WILL OCCUR TO THESE ITEMS DURING THEIR STORAGE PERIOD.
- ALL DEMOLITION WHICH DAMAGES ADJACENT SURFACES IS TO BE REPAIRED TO MATCH THE EXISTING SURFACE DAMAGED (MATERIALS & FINISHES) AND ALL REPAIR WORK IS TO BE COORDINATED WITH NEW CONSTRUCTION. FOR NEW OPENINGS IN EXISTING WALLS, COORDINATE NEW LINTELS W/ MASONRY CONTRACTOR.
- PATCH WALLS & ROOF TO MATCH EXISTING CONSTRUCTION BEHIND REMOVAL OF WALL LOUVERS, EXHAUST FANS, INTAKE HOODS & CABINET HEATERS. VERIFY SEQUENCE OF REMOVAL W/ CONSTRUCTION MANAGER. SEE MECHANICAL AND ELECTRICAL DEMO SHEETS FOR WALL, ROOF & FLOOR OPENINGS TO BE PATCHED.
- ALL TRADES ARE TO COORDINATE THE REMOVAL OF EXISTING LOOSE EQUIPMENT WITH ARCHITECT AND/OR OWNER. ADDITIONAL EQUIPMENT FOUND THAT IS NOT NOTED ON DEMOLITION PLAN SHALL BE REMOVED AS PART OF GENERAL DEMOLITION AFTER VERIFICATION WITH ARCHITECT/OWNER.

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DEMOLITION LEGEND

- EXISTING WALL TO BE DEMOLISHED
- PORTION OF EXISTING WALL TO BE DEMOLISHED
- EXISTING OBJECT TO BE DEMOLISHED
- AREA OF FLOOR CUTTING
- EXISTING WALLS TO REMAIN
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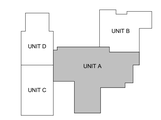

NORTH

KEYPLAN

GMB
616.796.0200
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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION
04.18.2023 ADDENDUM 001

DRAWN	MEE
REVIEWED	TGD
PROJECT NO.	5-5798

UNIT 'A' FIRST FLOOR DEMOLITION PLAN

A1.1A

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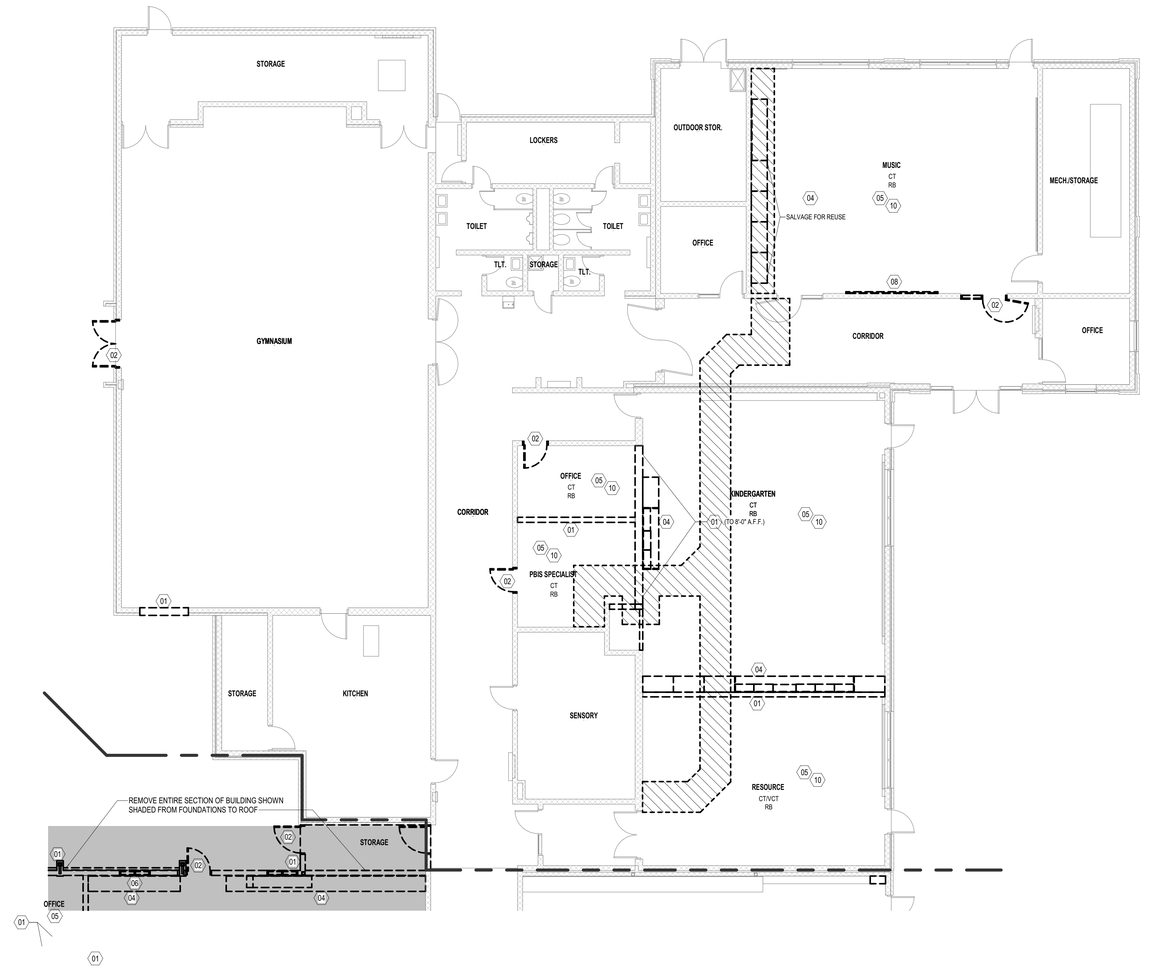

NORTH

UNIT 'B' FIRST FLOOR DEMOLITION PLAN

1/8" = 1'-0"

NORTH

KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE

REVIEWED TGD

PROJECT NO. 5-5798

UNIT 'B' FIRST FLOOR DEMOLITION PLAN

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DEMOLITION LEGEND

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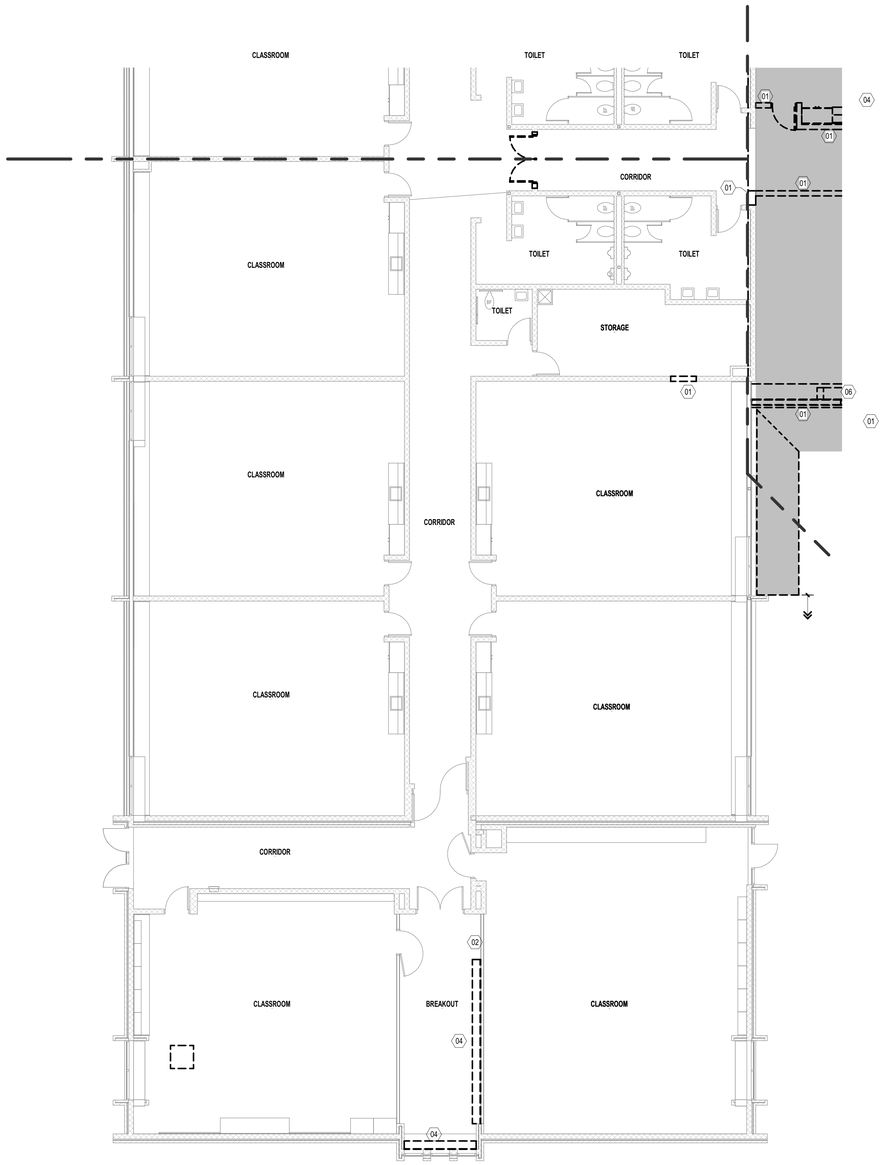
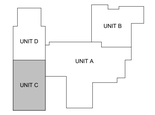


NORTH

UNIT 'C' FIRST FLOOR DEMOLITION PLAN

1/8" = 1'-0"



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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

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ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE

REVIEWED TGD

PROJECT NO. 5-5798

UNIT 'C' FIRST FLOOR DEMOLITION PLAN

A1.1C

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01 REMOVE EXISTING WALL INCLUDING DOORS, WINDOWS, BORROWED LITES, AND ANY EQUIPMENT OR FURNISHINGS ATTACHED TO WALL OR PORTION OF EXISTING WALL AS SHOWN ON FLOOR PLAN (MIN. 4" BELOW FLOOR SLAB) AND AS REQUIRED FOR NEW CONSTRUCTION. FLOOR SURFACE TO BE PATCHED AS REQUIRED TO RECEIVE NEW FLOOR MATERIAL. WALL SURFACE TO BE PATCHED AS REQUIRED TO RECEIVE NEW WALL FINISH. SEE MECHANICAL & ELECTRICAL DEMOLITION NOTES FOR RELATED ITEMS. SUPPORT UNBRACED SECTIONS OF WALL OR ROOF AS REQUIRED.

02 REMOVE EXISTING BORROWED LITE OR DOOR & DOOR FRAME. (DOOR LINTEL TO REMAIN UNLESS OTHERWISE NOTED ON PLAN -SEE STRUCTURAL FOR ADDITIONAL INFORMATION). WHERE DOOR FRAMES ARE TO REMAIN, PROTECT FRAMES FROM DAMAGE. SAND AND PREP FOR NEW PAINT FINISH UNDER SECTION 09 90 00 SEE DOOR SCHEDULE FOR REQUIRED NEW DOORS AND FRAMES OR ONLY NEW DOORS.

03 SAW CUT AND REMOVE FLOOR OR PORTION OF EXISTING FLOOR SLAB AS SHOWN OR DIMENSIONED ON FLOOR PLAN. EXCAVATE, FILL & COMPACT SOIL AS REQUIRED FOR NEW SLAB- COORDINATE WITH MECHANICAL/ ELECTRICAL DEMOLITION NOTES FOR RELATED ITEMS & LOCATIONS. INSTALL NEW SLAB TO MATCH EXIST. ELEVATION. SEE STRUCTURAL FOR ADDITIONAL INFORMATION REGARDING SLAB REMOVAL.

04 REMOVE EXISTING CASEWORK/MILLWORK, COUNTER TOPS & BACK SPLASH. SAVE ITEMS AT OWNER'S REQUEST.

05 REMOVE EXISTING SUSPENDED/PLASTER CEILING-INCLUDING ALL FRAMING, TILES, TEES, HANGERS & WIRES USED TO SUPPORT THAT CEILING. REPLACE PER REFL. CEILING PLANS.

06 SEE MECHANICAL DEMOLITION NOTES FOR REMOVAL OF EXIST. PLUMBING/MECHANICAL (i.e. LAVATORIES, SINKS, WATER CLOSETS, URINALS, FIN TUBE, MECH. DUCTWORK, UNIT VENTS, ETC.)

07 REMOVE EXISTING WINDOW. WINDOW WALL WITH ALUMINUM FRAMING WITH METAL PANELS BELOW WINDOW, FRAME, SILL & GLAZING INCLUDING ALL EXISTING WOOD BLOCKING AND FRAMING ABOVE WINDOWS TO ROOF AND/OR MASONRY TIES AT BRICK PIERS AND SIDE WALLS.

08 REMOVE EXISTING EQUIPMENT OR FURNISHINGS SECURED TO FLOOR, WALL OR CEILING AND STORE FOR REUSE BY OWNER.

09 REMOVE EXISTING CHALK, TACK OR WHITE BOARD. REMOVE ALL GLUE RESIDUE, ETC. FROM BLOCK BEHIND BOARD AND PREPARE SURFACE FOR NEW FINISH MATERIALS WHERE REQUIRED.

10 REMOVE EXISTING FLOOR COVERING AND BASE, INCLUDING ALL GLUE RESIDUE, MUDBEDS, ETC. FROM FLOORS & WALLS AND PREPARE SURFACE FOR NEW FINISH MATERIALS, INCLUDING GRINDING, PATCHING AND/OR SELF-LEVELING COMPOUND AS REQUIRED. WALL & FLOOR SURFACE TO RECEIVE NEW FINISH MATERIAL & PATCH TO MATCH EXISTING.

11 REMOVE PORTION OF EXISTING ROOF & STRUCTURE (AS SHOWN ON DEMOLITION PLAN). PROVIDE TEMPORARY WEATHER PROTECTION AS NEEDED AROUND PERIMETER OF ROOF REMOVAL AS REQUIRED. PROVIDE TEMPORARY SHORING & BRACING AS REQUIRED.

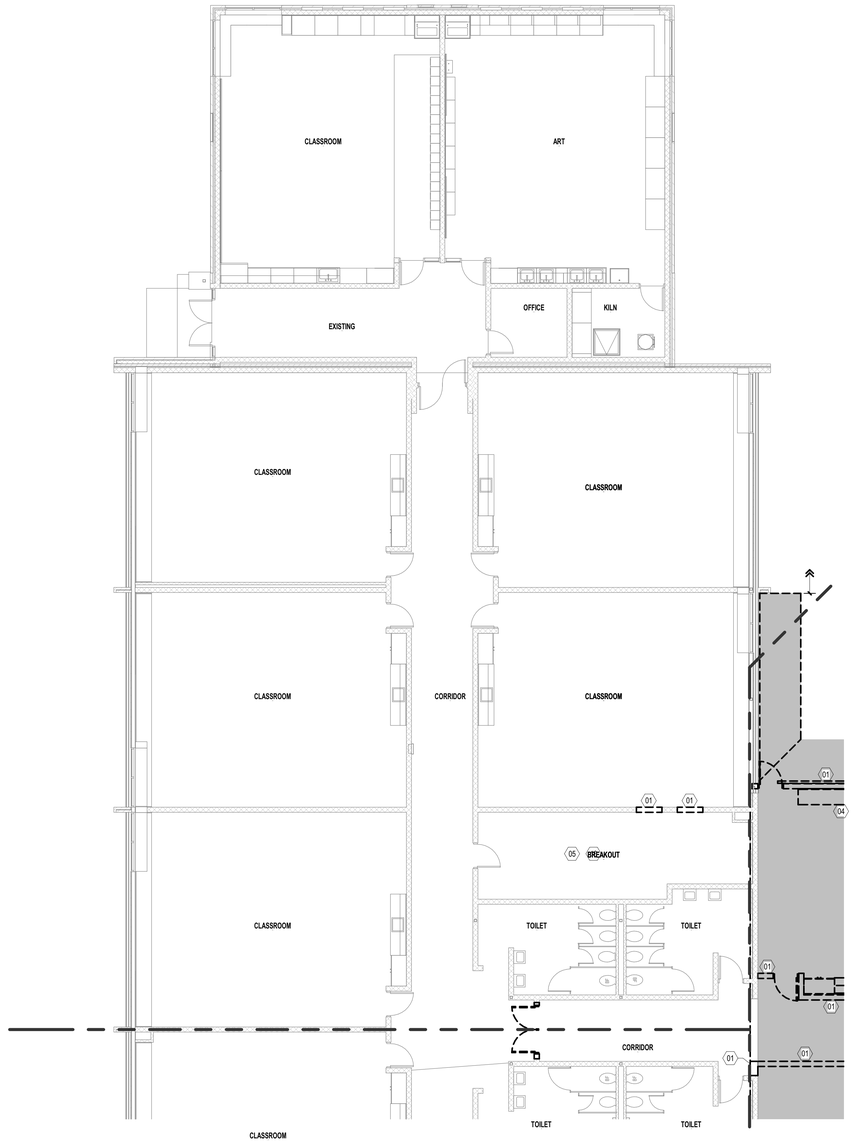
12 REMOVE EXISTING TOILET PARTITION, DISPENSERS AND/OR TOILET ACCESSORIES AND REPAIR ADJACENT SURFACES TO RECEIVE NEW FINISHES.

13 REMOVE EXISTING LOCKERS AND LOCKER BASE. CUT SLOPED LOCKER TOP & BASE AS NECESSARY. RE-USE/RELOCATE EXISTING END PANEL AS REQUIRED. REVISE & PREPARE FOR NEW FINISHES.

14 REMOVE EXISTING MEZZANINE INCLUDING ALL SUPPORT FRAMING, FLOOR DECK, HANGERS AND ALL ADDITIONAL RELATED MATERIALS. REPAIR WALL TO MATCH ADJACENT WALL MATERIALS AND FINISH.

15 REMOVE EXISTING TERRAZZO FLOORING, CONCRETE SLAB AND COVED BASE. REFER TO ROOM FINISH SCHEDULE FOR NEW FLOORING.

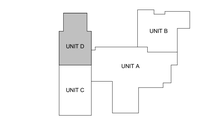
16 REMOVE EXISTING BASKETBALL BACKBOARD AND ALL RELATED HANGERS, FASTENERS AND FRAMING TO STRUCTURE ABOVE.



NORTH

UNIT 'D' FIRST FLOOR DEMOLITION PLAN

1/8" = 1'-0"



NORTH

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE

REVIEWED TGD

PROJECT NO. 5-5798

UNIT 'D' FIRST FLOOR DEMOLITION PLAN

A1.1D

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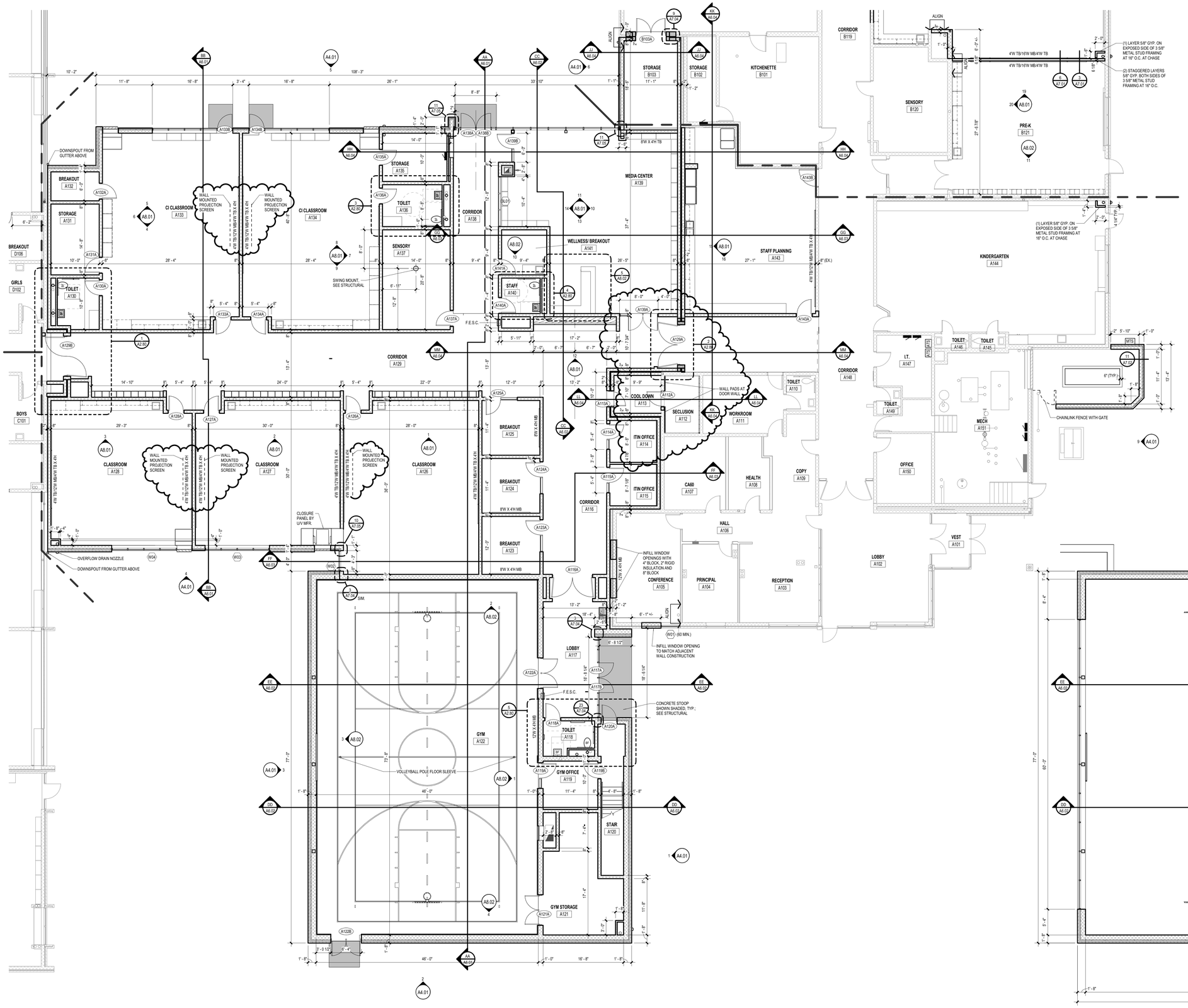

GENERAL FLOOR PLAN NOTES:

1. DIMENSIONS GIVEN ARE TO THE FACE OF MASONRY UNITS OR TO THE FINISHED FACE OF METAL STUD PARTITION WALLS.
2. REFERENCE STRUCTURAL DRAWINGS FOR CONCRETE SLAB SIZES AND SLAB RELATED INFORMATION.
3. INTERIOR STUD WALLS ARE TO USE 3 5/8" METAL STUD FRAMING UNLESS OTHERWISE NOTED.
4. TURN UP VAPOR RETARDER MATERIAL AT JOINTS BETWEEN FLOOR SLAB AND FOUNDATION WALL UNLESS NOTED OTHERWISE.
5. SEE FOUNDATION PLANS FOR FLOOR SLAB RECESSES FOR TILE, WOOD FLOOR, ETC. (VERIFY RECESS REQUIRED BY MFR.)
6. EXTEND ALL INTERIOR WALL PARTITIONS (MASONRY OR STUDS) TO BOTTOM OF DECK ABOVE UNLESS NOTED OTHERWISE.
7. REFERENCE STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL FOR ITEMS NOT SHOWN. COORDINATE AS REQUIRED INCLUDING NECESSARY FRAMING, BLOCKING, ETC.
8. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF ANY CABINETRY, FRAMES, STRUCTURAL ITEMS, ETC.
9. PROVIDE PAINTED ACCESS PANELS IN WALLS AND CEILINGS TO PROVIDE ACCESS TO CONCEALED ITEMS INCLUDING BUT NOT LIMITED TO VALVES, CONTROLS, MECH. EQUIPMENT, ETC. ACCESS PANELS MAY NOT ALWAYS BE SHOWN ON PLANS. IT IS THE SUB CONTRACTOR RESPONSIBILITY TO DETERMINE LOCATIONS. COORDINATE LOCATIONS WITH OTHER GENERAL CONTRACTOR / SITE SUPERVISOR.
10. COORDINATE WALLS WITH COLUMNS AND OTHER ENCASED ITEMS. COLUMNS ARE TO BE CONTAINED WITHIN WALLS. THE FRAMING CONTRACTOR SHALL INCREASE FRAMING SIZE TO ACCOMMODATE COLUMNS, DRAIN LEADERS, PIPING, ELECTRICAL PANELS, ETC. WHERE WALLS REQUIRE EXTRA WIDTH THE ENTIRE WALL SHALL BE WIDENED UNLESS APPROVED BY ARCHITECT.
11. ALL GUARDRAILS AND HANDRAILS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE 2015 M.B.C., ANSI ICC A117.1-2009 & AMERICANS WITH DISABILITIES ACT GUIDELINES. THE MOST STRINGENT SHALL PREVAIL.
12. PROVIDE MINIMUM CLEARANCES AT ALL DOORS PER DETAILS. SEE G0.01 FOR REQUIREMENTS.
13. FOR ALL CABINETRY, SEE INTERIOR ELEVATIONS FOR LAYOUTS. FIELD VERIFY CLEAR WIDTHS PRIOR TO FABRICATION.
14. ALL EXTERIOR BLOCK CORNERS ARE TO BE BULLNOSE BLOCK EXCEPT CONCRETE BLOCK COLUMNS, PIERS AND WALLS TO RECEIVE TILE - UNLESS NOTED OTHERWISE.
15. CONTRACTOR TO MAINTAIN / REPAIR RATING OF EXISTING PARTITIONS AS AFFECTED BY DEMOLITION / NEW CONSTRUCTION. TYPICAL THROUGHOUT.
16. SEAL ALL PENETRATIONS IN FIRE RATED FLOORS AND WALLS WITH APPROVED FIRESTOPPING.
17. WHERE SPECIALTY BLOCK IS REQUIRED AT THE SAME HEIGHT ON BOTH SIDES OF A WALL USE (2) SPECIALTY BLOCKS BACK TO BACK TO MAINTAIN THE FINISHED WALL APPEARANCE BOTH SIDES OF THE WALL. COORDINATE WITH STRUCTURE FOR LINTELS CONDITIONS PER SPECIFICATIONS.
18. WALLS TO BE PATCHED WITH LIKE MATERIALS WHERE EXISTING WALLS HAVE BEEN COMPROMISED FROM DEMOLITION. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO REMOVAL AND REINSTALLATION OF CASEWORK AND WALL MOUNTED EQUIPMENT IN ORDER TO ACHIEVE SAID PATCH. IN AREAS WHERE BLOCK OR BRICK HAVE BEEN USED, NEW MASONRY TO BE TOOTHED IN AND MATCH EXISTING. AREAS AND FINISHES IN QUESTION SHALL BE COORDINATED WITH ARCHITECT.
19. SEE STRUCTURAL FRAMING PLANS FOR ADDITIONAL WALL REINFORCING REQUIREMENTS. MINIMUM REINFORCING (FOR ALL WALLS NOT OTHERWISE NOTED ON STRUCTURAL PLANS):
    A. ALL BEARING WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.
    B. ALL EXTERIOR WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.
    C. ALL INTERIOR NON-BEARING WALLS OVER 16'-0" HIGH SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.

WALL LEGEND

- 5/8" GYP. BOARD BOTH SIDES 3 5/8" LIGHT GA. METAL FRAMING AT 16" O.C. SOUND BATT FULL HEIGHT OF WALL. WALLS TO BOTTOM OF DECK UNLESS NOTED OTHERWISE
- 5/8" GYP. BOARD BOTH SIDES 6" LIGHT GA. METAL FRAMING AT 16" O.C. SOUND BATT FULL HEIGHT OF WALL. WALLS TO BOTTOM OF DECK UNLESS NOTED OTHERWISE
- CMU WALL SEE FLOOR PLANS FOR REQUIRED WALL REINFORCING. NOMINAL DIMENSIONS GIVEN (8" TYPICAL U.N.O.)
- BRICK AND CMU WALL W/ 2" SPRAY APPLIED INSULATION SEE FLOOR PLANS FOR REQUIRED WALL REINFORCING. NOMINAL DIMENSIONS GIVEN. SEE WALL SECTIONS FOR ADDITIONAL DETAILS, BANDING, ETC. (3 5/8" BRICK & 8" CMU TYPICAL U.N.O.)
- CONCRETE WALL SEE STRUCTURAL PLANS FOR REQUIRED REINFORCING.

-FIRE RATINGS AS CALLED FOR ON CODE COMPLIANCE PLAN
-DIMENSIONS GIVEN ARE TO THE FINISHED FACE OF CMU OR GYPSUM WALL BOARD UNLESS NOTED OTHERWISE

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

UNIT 'A' GYM MEZZANINE PLAN
1/8" = 1'-0"

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS
HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

ISSUANCES
03.23.2023 BIDS & CONSTRUCTION
04.18.2023 ADDENDUM 001

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

UNIT 'A' FIRST FLOOR AND GYM MEZZANINE PLANS

A2.1A

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2019.rvt
4/18/2023 12:40:15 PM

WALL LEGEND

4 7/8"	5/8" GYP. BOARD BOTH SIDES 3 5/8" LIGHT GA. METAL FRAMING AT 16" O.C. SOUND BATT FULL HEIGHT OF WALL. WALLS TO BOTTOM OF DECK UNLESS NOTED OTHERWISE
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GENERAL FLOOR PLAN NOTES:

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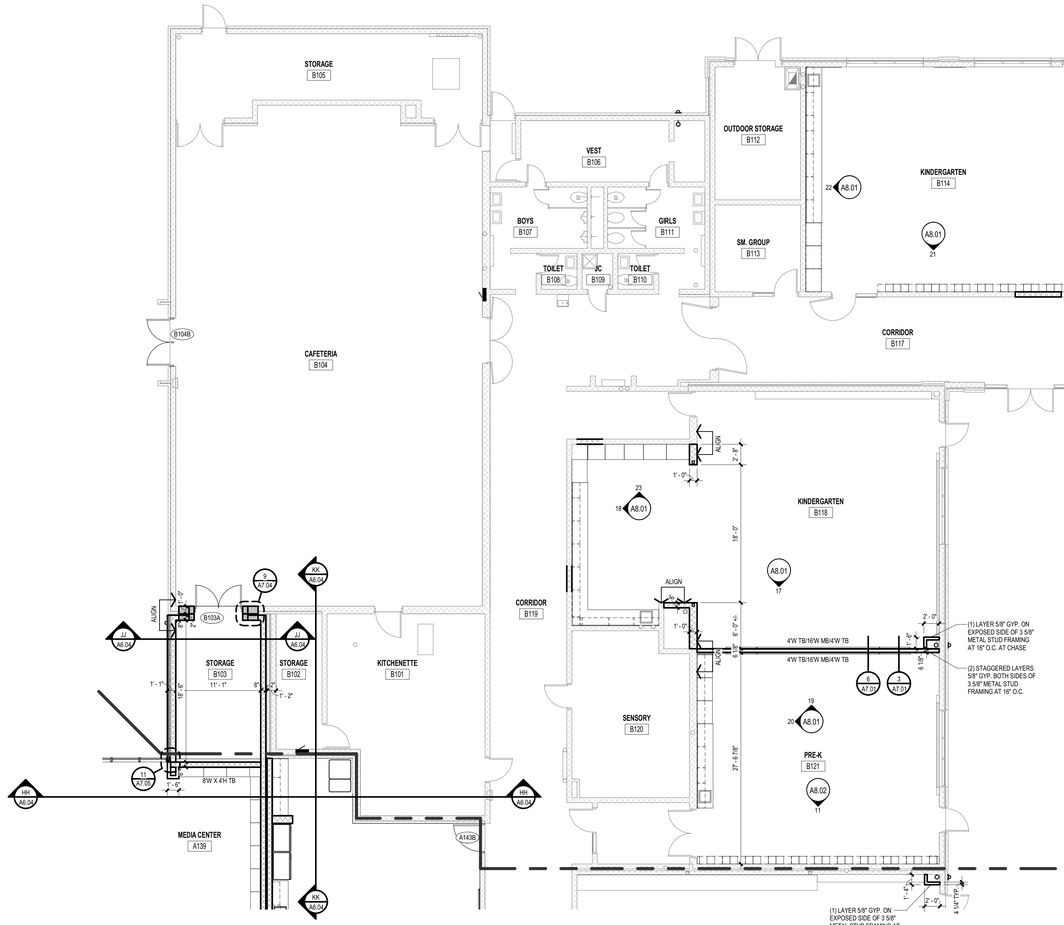
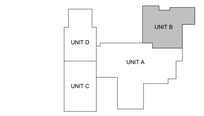


NORTH

UNIT 'B' FIRST FLOOR PLAN

1/8" = 1'-0"



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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE

REVIEWED TGD

PROJECT NO. 5-5798

UNIT 'B' FIRST FLOOR PLAN

A2.1B

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2019.rvt
3/23/2023 12:03:42 AM

WALL LEGEND

4 7/8"	5/8" GYP. BOARD BOTH SIDES 3 5/8" LIGHT GA. METAL FRAMING AT 16" O.C. SOUND BATT FULL HEIGHT OF WALL. WALLS TO BOTTOM OF DECK UNLESS NOTED OTHERWISE
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-FIRE RATINGS AS CALLED FOR ON CODE COMPLIANCE PLAN

-DIMENSIONS GIVEN ARE TO THE FINISHED FACE OF CMU OR GYPSUM WALL BOARD UNLESS NOTED OTHERWISE

GENERAL FLOOR PLAN NOTES:

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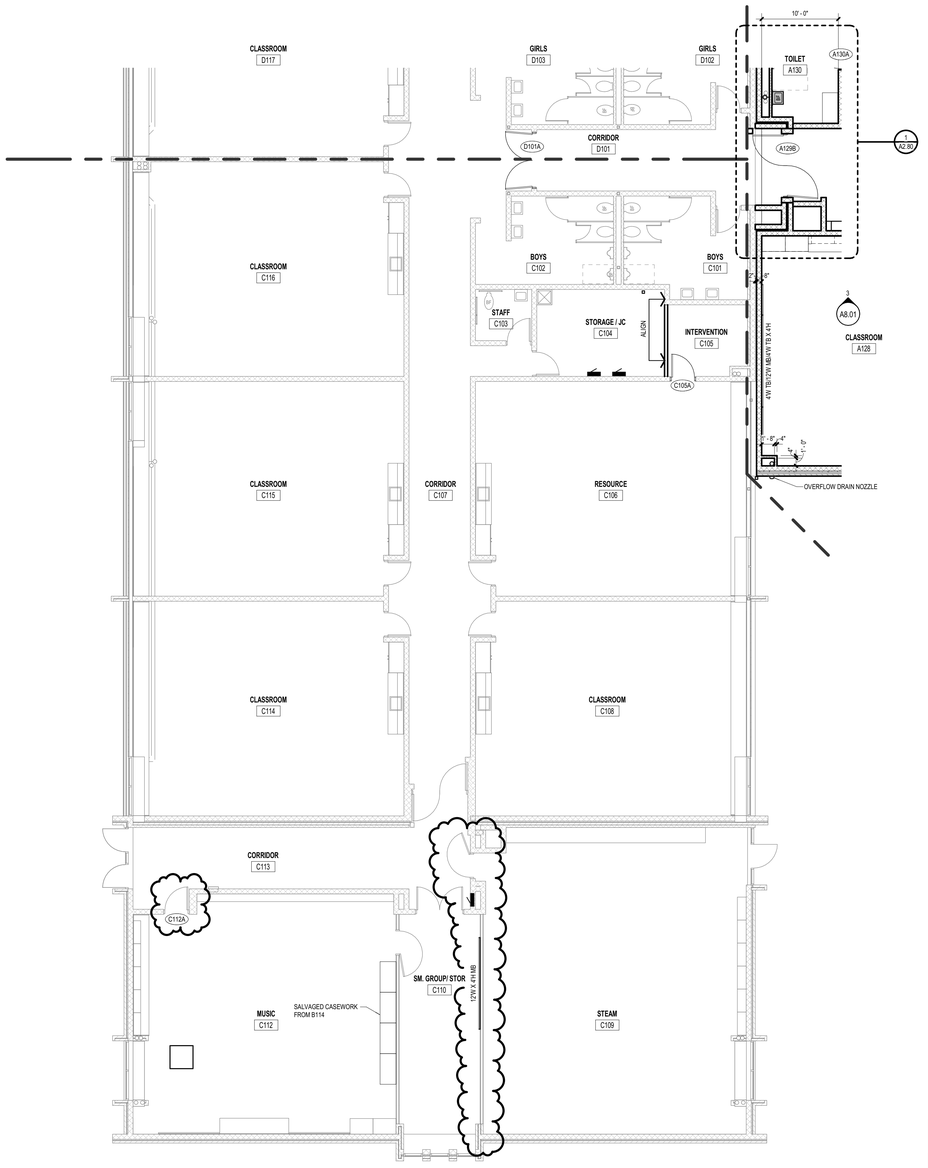
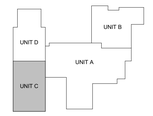


NORTH

UNIT 'C' FIRST FLOOR PLAN

1/8" = 1'-0"



NORTH

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION
04.18.2023 ADDENDUM 001

DRAWN	MEE
REVIEWED	TGD
PROJECT NO.	5-5798

UNIT 'C' FIRST FLOOR PLAN

A2.1C

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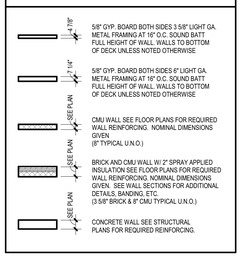
4/18/2023 8:06:45 AM

WALL LEGEND

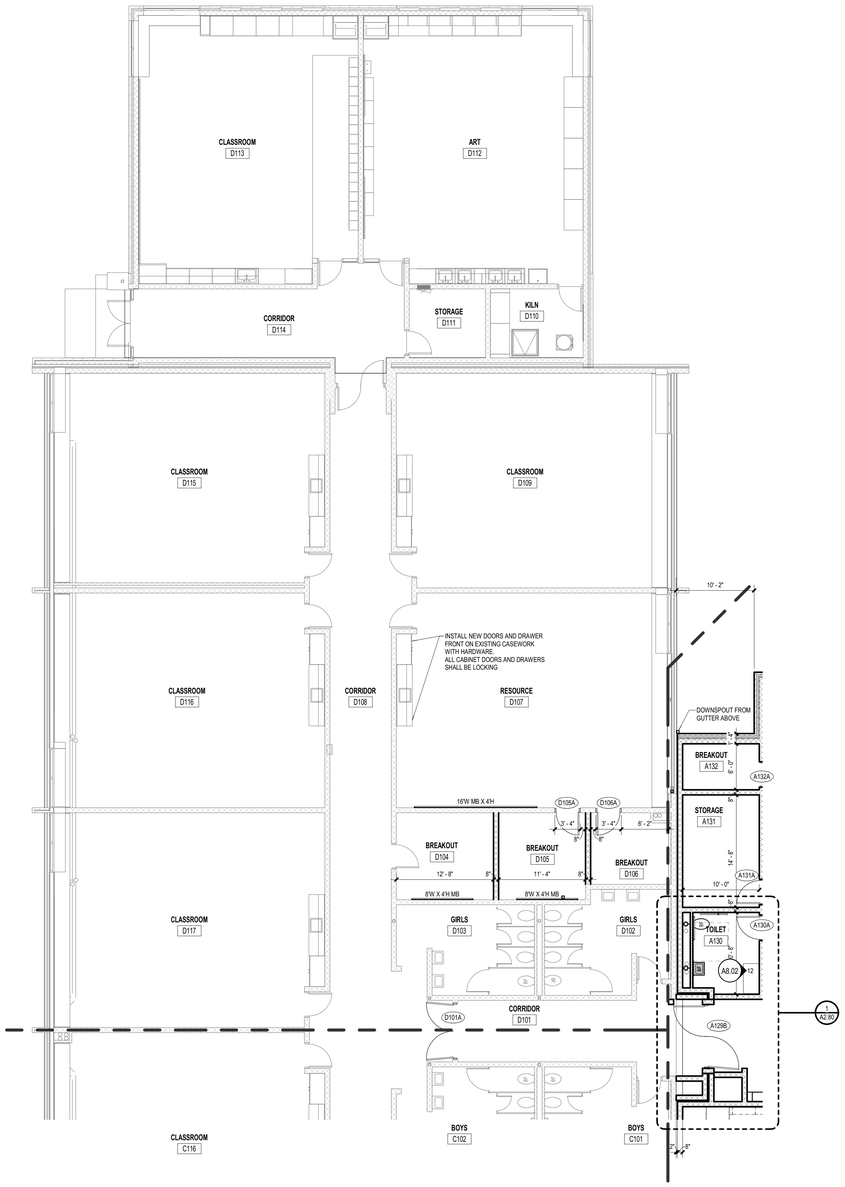


-FIRE RATINGS AS CALLED FOR ON CODE COMPLIANCE PLAN

-DIMENSIONS GIVEN ARE TO THE FINISHED FACE OF CMU OR GYPSUM WALL BOARD UNLESS NOTED OTHERWISE

GENERAL FLOOR PLAN NOTES:

1. DIMENSIONS GIVEN ARE TO THE FACE OF MASONRY UNITS OR TO THE FINISHED FACE OF METAL STUD PARTITION WALLS.
2. REFERENCE STRUCTURAL DRAWINGS FOR CONCRETE SLAB SIZES AND SLAB RELATED INFORMATION.
3. INTERIOR STUD WALLS ARE TO USE 3 5/8" METAL STUD FRAMING UNLESS OTHERWISE NOTED.
4. TURN UP VAPOR RETARDER MATERIAL AT JOINTS BETWEEN FLOOR SLAB AND FOUNDATION WALL UNLESS NOTED OTHERWISE.
5. SEE FOUNDATION PLANS FOR FLOOR SLAB RECESSES FOR TILE, WOOD FLOOR, ETC. (VERIFY RECESS REQUIRED BY MFR.)
6. EXTEND ALL INTERIOR WALL PARTITIONS (MASONRY OR STUDS) TO BOTTOM OF DECK ABOVE UNLESS NOTED OTHERWISE.
7. REFERENCE STRUCTURAL, MECHANICAL, PLUMBING AND ELECTRICAL FOR ITEMS NOT SHOWN. COORDINATE AS REQUIRED INCLUDING NECESSARY FRAMING, BLOCKING, ETC.
8. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF ANY CABINETRY, FRAMES, STRUCTURAL ITEMS, ETC.
9. PROVIDE PAINTED ACCESS PANELS IN WALLS AND CEILINGS TO PROVIDE ACCESS TO CONCEALED ITEMS INCLUDING BUT NOT LIMITED TO VALVES, CONTROLS, MECH. EQUIPMENT, ETC. ACCESS PANELS MAY NOT ALWAYS BE SHOWN ON PLANS. IT IS THE SUB CONTRACTOR RESPONSIBILITY TO DETERMINE LOCATIONS. COORDINATE LOCATIONS WITH OTHER GENERAL CONTRACTOR / SITE SUPERVISOR.
10. COORDINATE WALLS WITH COLUMNS AND OTHER ENCASED ITEMS. COLUMNS ARE TO BE CONTAINED WITHIN WALLS. THE FRAMING CONTRACTOR SHALL INCREASE FRAMING SIZE TO ACCOMMODATE COLUMNS, DRAIN LEADERS, PIPING, ELECTRICAL PANELS, ETC. WHERE WALLS REQUIRE EXTRA WIDTH THE ENTIRE WALL SHALL BE WIDENED UNLESS APPROVED BY ARCHITECT.
11. ALL GUARDRAILS AND HANDRAILS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE 2015 M.B.C., ANSI ICC A117.1-2009 & AMERICANS WITH DISABILITIES ACT GUIDELINES. THE MOST STRINGENT SHALL PREVAIL.
12. PROVIDE MINIMUM CLEARANCES AT ALL DOORS PER DETAILS. SEE G0.01 FOR REQUIREMENTS.
13. FOR ALL CABINETRY, SEE INTERIOR ELEVATIONS FOR LAYOUTS. FIELD VERIFY CLEAR WIDTHS PRIOR TO FABRICATION.
14. ALL EXTERIOR BLOCK CORNERS ARE TO BE BULLNOSE BLOCK EXCEPT CONCRETE BLOCK COLUMNS, PIERS AND WALLS TO RECEIVE TILE - UNLESS NOTED OTHERWISE.
15. CONTRACTOR TO MAINTAIN / REPAIR RATING OF EXISTING PARTITIONS AS AFFECTED BY DEMOLITION / NEW CONSTRUCTION. TYPICAL THROUGHOUT.
16. SEAL ALL PENETRATIONS IN FIRE RATED FLOORS AND WALLS WITH APPROVED FIRESTOPPING.
17. WHERE SPECIALTY BLOCK IS REQUIRED AT THE SAME HEIGHT ON BOTH SIDES OF A WALL USE (2) SPECIALTY BLOCKS BACK TO BACK TO MAINTAIN THE FINISHED WALL APPEARANCE BOTH SIDES OF THE WALL. COORDINATE WITH STRUCTURE FOR LINTELS CONDITIONS PER SPECIFICATIONS.
18. WALLS TO BE PATCHED WITH LIKE MATERIALS WHERE EXISTING WALLS HAVE BEEN COMPROMISED FROM DEMOLITION. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO REMOVAL AND REINSTALLATION OF CASEWORK AND WALL MOUNTED EQUIPMENT IN ORDER TO ACHIEVE SAID PATCH. IN AREAS WHERE BLOCK OR BRICK HAVE BEEN USED, NEW MASONRY TO BE TOOTHED IN AND MATCH EXISTING. AREAS AND FINISHES IN QUESTION SHALL BE COORDINATED WITH ARCHITECT.
19. SEE STRUCTURAL FRAMING PLANS FOR ADDITIONAL WALL REINFORCING REQUIREMENTS. MINIMUM REINFORCING (FOR ALL WALLS NOT OTHERWISE NOTED ON STRUCTURAL PLANS):
    A. ALL BEARING WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.
    B. ALL EXTERIOR WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.
    C. ALL INTERIOR NON-BEARING WALLS OVER 16'-0" HIGH SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.



NORTH

UNIT 'D' FIRST FLOOR PLAN

1/8" = 1'-0"

NORTH

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE

REVIEWED TGD

PROJECT NO. 5-5798

UNIT 'D' FIRST FLOOR PLAN

A2.1D

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2019.rvt
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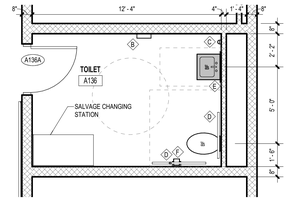
TOILET ACCESSORIES LEGEND

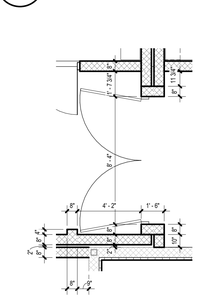
(SEE SHEET G0.01 FOR MOUNTING HEIGHTS)
(SEE SPECS)

- (A) ELECTRIC HAND DRYER
- (B) PAPER TOWEL DISPENSER*
- (C) SOAP DISPENSER*
- (D) BARRIER FREE GRAB BARS
- (E) 24" x 36" FRAMED GLASS MIRROR
- (F) TOILET PAPER DISPENSER*
- (G) NAPKIN DISPOSAL (RECESSED)
- (H) NAPKIN DISPOSAL (WALL MOUNTED)
- (J) BABY CHANGING STATION
- (K) 24" x 60" FRAMED GLASS MIRROR

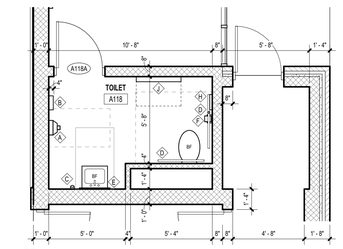
* PROVIDED BY OWNER, INSTALLED BY CONTRACTOR



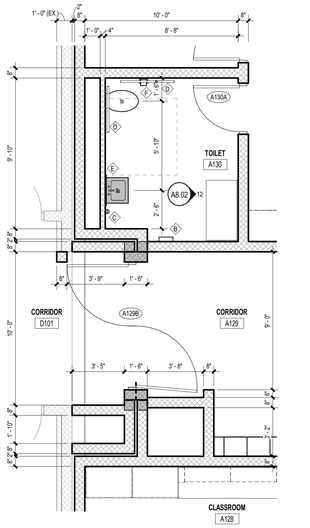
3 / A2.80 TOILET A136
1/4" = 1'-0"



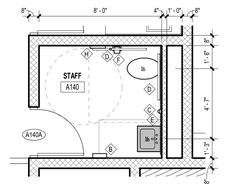
2 / A2.80 PORTAL FRAME A129A
1/4" = 1'-0"



5 / A2.80 TOILET A118
1/4" = 1'-0"



1 / A2.80 TOILET A130 & PORTAL FRAME A129B
1/4" = 1'-0"



4 / A2.80 STAFF A140
1/4" = 1'-0"

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS
HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

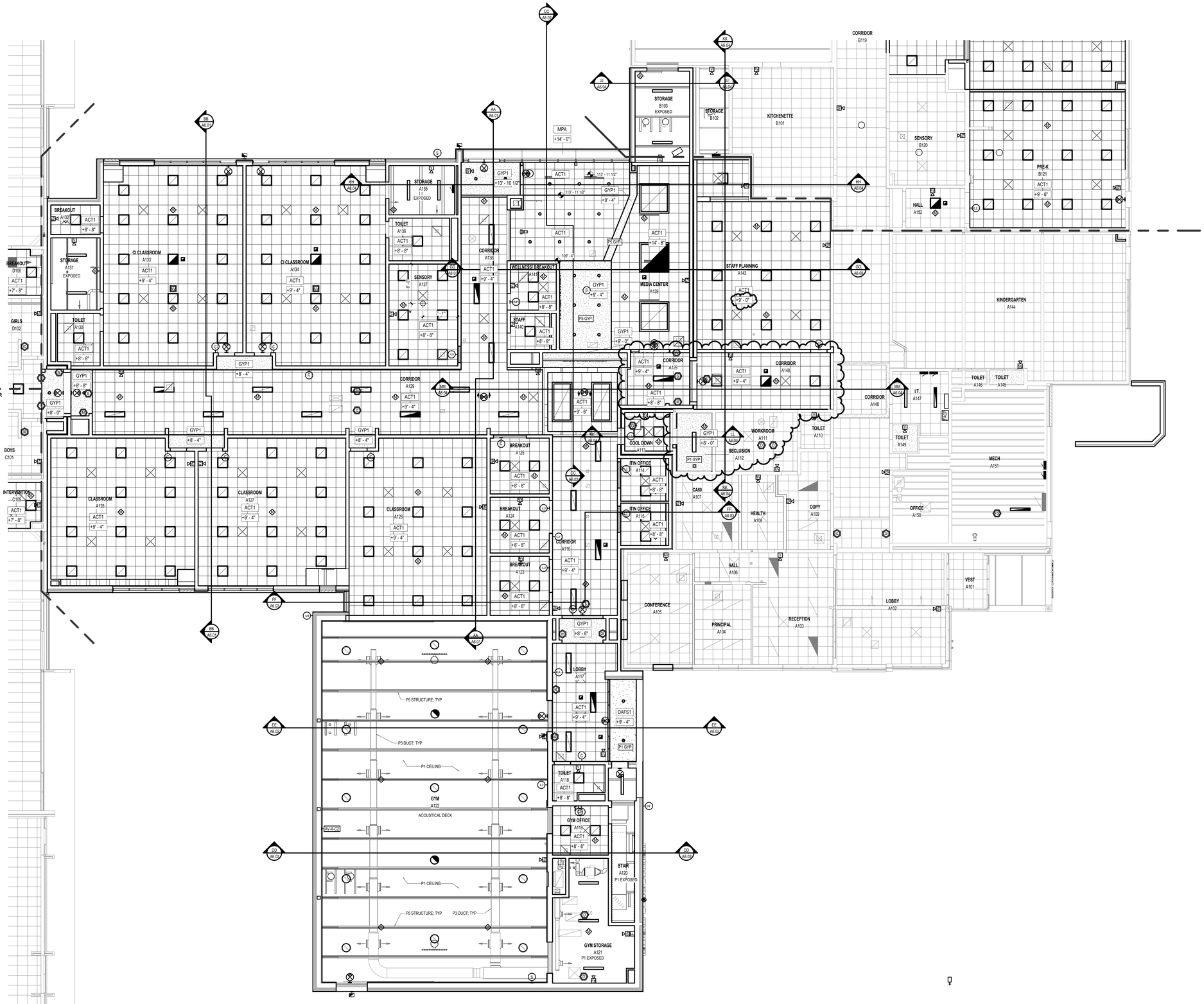
ISSUANCES
03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

ENLARGED PLANS

A2.80



GENERAL REFLECTED CEILING NOTES:

A. CONTRACTOR SHALL FOLLOW GRID PATTERN ESTABLISHED ON THE REFLECTED CEILING PLAN. ANY VARIATIONS SHALL BE APPROVED BY THE ARCHITECT.

B. CEILING TILE TYPE AS SPECIFIED. CEILING HEIGHTS NOTED ON REFLECTED CEILING PLANS. CEILING ELEVATIONS ARE FROM THAT ROOM'S FINISH FLOOR.

C. WIRE CEILING SYSTEM FROM STRUCTURE ABOVE AND WIRE FOR ADDITIONAL LOAD AT LIGHTS, CEILING DIFFUSERS, AND OTHER DEVICES. WIRING TO METAL DECK IS STRICTLY PROHIBITED.

D. UNLESS OTHERWISE NOTED, CEILING TO BE SUSPENDED METAL TEE AND ACOUSTICAL TILE 2' - 0" x 2' - 0" OR 2' - 0" x 4' - 0" TYPICAL. SEE SPECIFICATIONS FOR MANUFACTURER AND STYLE

E. PENDANT MOUNTED FIXTURES CENTERED ON GRID REQUIRE GRID TO BE CUT AND SUPPORTED ON EACH SIDE.

F. MOUNT SPEAKERS AND SUPPLY AIR DIFFUSERS IN THE CENTER OF WHOLE CEILING PANELS. ADHERE A RIGID PANEL BACKER TO PANELS AT LOCATIONS WHICH INDICATE SPEAKERS, DIFFUSERS, LIGHTS, SMOKE DETECTORS, EXIT LIGHTS AND FIRE PROTECTION SPRINKLERS.

G. PROVIDE 2 - 0" CEILING GRID CROSS-TEE AT EACH RETURN AIR GRILLE.

H. PROVIDE AN ADDITIONAL CROSS-TEE AT EACH SLOT DIFFUSER.

I. REFER TO THE MECHANICAL DRAWINGS FOR LOUVERS REQUIRED TO BE FRAMED IN GYPSUM BOARD BULKHEADS.

J. ALL CEILING HEIGHTS ARE SUBJECT TO CHANGE TO ACCOMMODATE UNFORESEEN FIELD CONDITIONS - COORDINATE CHANGES WITH ARCHITECT & AFFECTED DISCIPLINES.

K. SOME CORRIDOR CEILING PANEL LAYOUTS HAVE BEEN ADJUSTED AT A CHANGE IN CORRIDOR DIRECTION TO ACCOMMODATE LIGHTING LAYOUT.

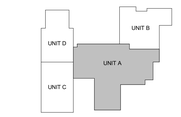
REFLECTED CEILING LEGEND

ACT1 — CEILING TYPE
+10' - 0" — HEIGHT ABOVE FINISH FLOOR
CEILING TAG

ACT1	ACOUSTICAL CEILING TILE SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
ACT2	ACOUSTICAL CEILING TILE SYSTEM GRID SPACING: 48" X 24" SUPPORT: SUSPENSION SYSTEM
DAFS1	DIRECT-APPLIED FINISH SYSTEM C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE SUPPORT: SEE DETAILS
DGC1	DECORATIVE GRID CEILING SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
DGC2	DECORATIVE GRID CEILING SYSTEM GRID SPACING: 48" X 48" SUPPORT: SUSPENSION SYSTEM
GCT1	GYPSUM CEILING TILE SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
GCT2	SUSPENDED GYPSUM CEILING TILE SYSTEM GRID SPACING: 48" X 24" SUPPORT: SUSPENSION SYSTEM
GYP1	GYPSUM BOARD CEILING OR BULKHEAD C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE SUPPORT: SUSPENSION SYSTEM OR METAL STUD FRAMING PAINT: 'P1' UNLESS NOTED OTHERWISE
MPA	METAL PANEL 'A' SOFFIT
PDP1	ACOUSTICAL PYRAMIDAL CEILING DIFFUSER GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
C.J.	CONTROL JOINT
E.J.	EXPANSION JOINT
	CUT TILE
	RECESSED LIGHT FIXTURE
	SURFACE / PENDANT MOUNT LIGHT FIXTURE
	MECHANICAL SUPPLY DIFFUSER / RETURN GRILLE / EXHAUST GRILLE / LINEAR SLOT DIFFUSER
	EXIT SIGN (CEILING OR WALL-MOUNTED)
	ELECTRICAL DEVICES (CEILING OR WALL-MOUNTED)

NOTE: REFER TO STRUCTURAL, PLUMBING/FIRE PROTECTION, MECHANICAL, AND ELECTRICAL/TECHNOLOGY FOR MORE DETAILED SYMBOL LEGENDS. SHOWN FOR GENERAL COORDINATION, NOT ALL SYMBOLS ARE INDICATED. NOTIFY ARCHITECT OF ANY/ALL DISCREPENCIES

UNIT 'A' FIRST FLOOR REFLECTED CEILING PLAN
1/8" = 1'-0"



KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS
HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

ISSUANCES
03.23.2023 BIDS & CONSTRUCTION
04.18.2023 ADDENDUM 001

DRAWN MEE
REVIEWED TGD
PROJECT NO. 5-5798

UNIT 'A' FIRST FLOOR REFLECTED CEILING PLAN

A3.1A

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodelings/5-5798A 2019.rvt
4/18/2023 11:15:48 AM

GENERAL REFLECTED CEILING NOTES:

A. CONTRACTOR SHALL FOLLOW GRID PATTERN ESTABLISHED ON THE REFLECTED CEILING PLAN. ANY VARIATIONS SHALL BE APPROVED BY THE ARCHITECT.

B. CEILING TILE TYPE AS SPECIFIED. CEILING HEIGHTS NOTED ON REFLECTED CEILING PLANS. CEILING ELEVATIONS ARE FROM THAT ROOM'S FINISH FLOOR.

C. WIRE CEILING SYSTEM FROM STRUCTURE ABOVE AND WIRE FOR ADDITIONAL LOAD AT LIGHTS, CEILING DIFFUSERS, AND OTHER DEVICES. WIRING TO METAL DECK IS STRICTLY PROHIBITED.

D. UNLESS OTHERWISE NOTED, CEILING TO BE SUSPENDED METAL TEE AND ACOUSTICAL TILE 2' - 0" x 2' - 0" OR 2' - 0" x 4' - 0" TYPICAL. SEE SPECIFICATIONS FOR MANUFACTURER AND STYLE.

E. PENDANT MOUNTED FIXTURES CENTERED ON GRID REQUIRE GRID TO BE CUT AND SUPPORTED ON EACH SIDE.

F. MOUNT SPEAKERS AND SUPPLY AIR DIFFUSERS IN THE CENTER OF WHOLE CEILING PANELS. ADHERE A RIGID PANEL BACKER TO PANELS AT LOCATIONS WHICH INDICATE SPEAKERS, DIFFUSERS, LIGHTS, SMOKE DETECTORS, EXIT LIGHTS AND FIRE PROTECTION SPRINKLERS.

G. PROVIDE 2' -0" CEILING GRID CROSS-TEE AT EACH RETURN AIR GRILLE.

H. PROVIDE AN ADDITIONAL CROSS-TEE AT EACH SLOT DIFFUSER.

I. REFER TO THE MECHANICAL DRAWINGS FOR LOUVERS REQUIRED TO BE FRAMED IN GYPSUM BOARD BULKHEADS.

J. ALL CEILING HEIGHTS ARE SUBJECT TO CHANGE TO ACCOMMODATE UNFORESEEN FIELD CONDITIONS - COORDINATE CHANGES WITH ARCHITECT & AFFECTED DISCIPLINES.

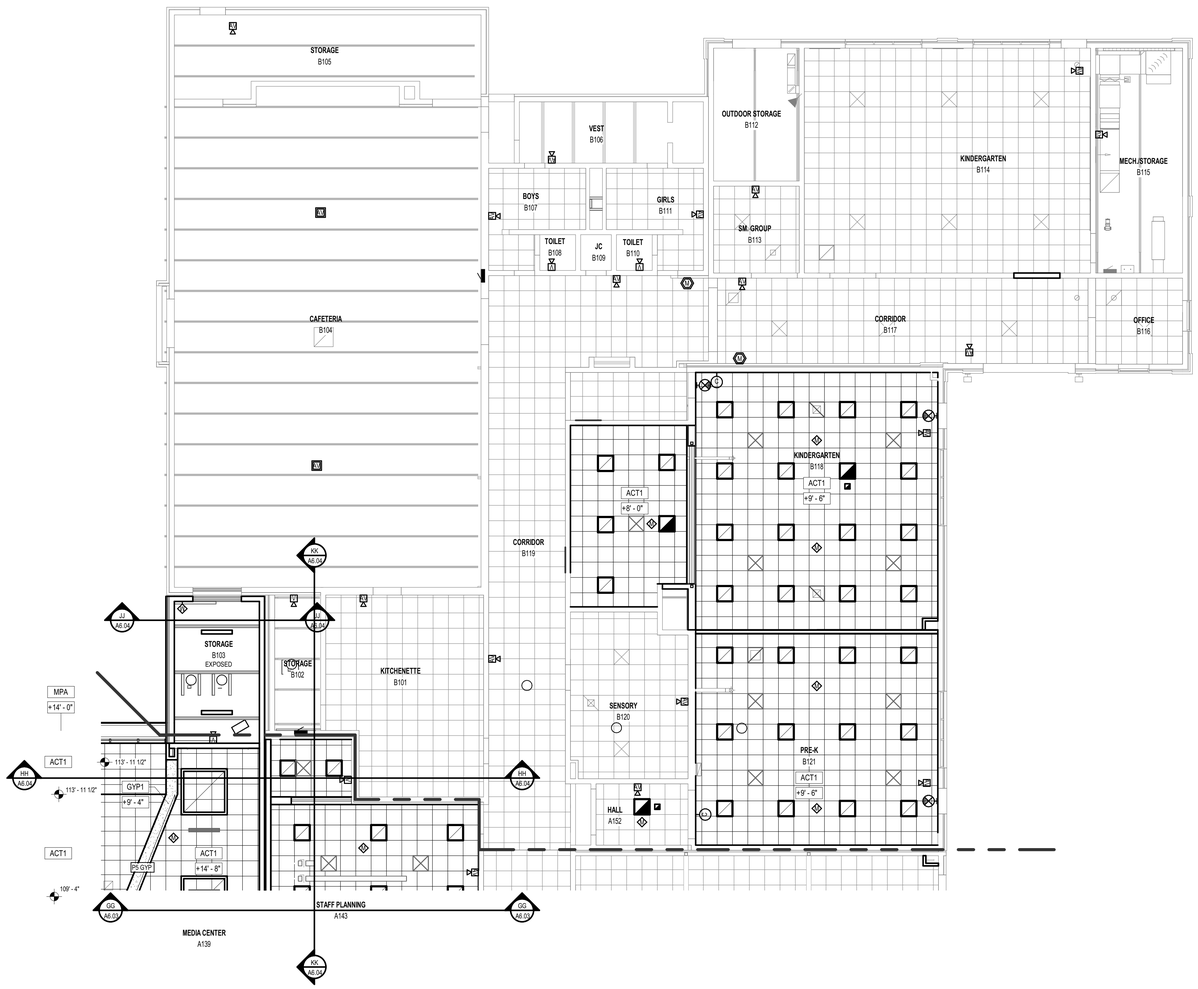
K. SOME CORRIDOR CEILING PANEL LAYOUTS HAVE BEEN ADJUSTED AT A CHANGE IN CORRIDOR DIRECTION TO ACCOMMODATE LIGHTING LAYOUT.

REFLECTED CEILING LEGEND

ACT1 — CEILING TYPE
+10' - 0" — HEIGHT ABOVE FINISH FLOOR
CEILING TAG

ACT1	ACOUSTICAL CEILING TILE SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
ACT2	ACOUSTICAL CEILING TILE SYSTEM GRID SPACING: 48" X 24" SUPPORT: SUSPENSION SYSTEM
DAFS1	DIRECT-APPLIED FINISH SYSTEM C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE SUPPORT: SEE DETAILS
DGC1	DECORATIVE GRID CEILING SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
DGC2	DECORATIVE GRID CEILING SYSTEM GRID SPACING: 48" X 48" SUPPORT: SUSPENSION SYSTEM
GCT1	GYPSUM CEILING TILE SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
GCT2	SUSPENDED GYPSUM CEILING TILE SYSTEM GRID SPACING: 48" X 24" SUPPORT: SUSPENSION SYSTEM
GYP1	GYPSUM BOARD CEILING OR BULKHEAD C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE SUPPORT: SUSPENSION SYSTEM OR METAL STUD FRAMING PAINT: "P1" UNLESS NOTED OTHERWISE
MPA	METAL PANEL 'A' SOFFIT
PDP1	ACOUSTICAL PYRAMIDAL CEILING DIFFUSER GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
C.J.	CONTROL JOINT
E.J.	EXPANSION JOINT
	CUT TILE
	RECESSED LIGHT FIXTURE
	SURFACE / PENDANT MOUNT LIGHT FIXTURE
	MECHANICAL SUPPLY DIFFUSER / RETURN GRILLE / EXHAUST GRILLE / LINEAR SLOT DIFFUSER
	EXIT SIGN (CEILING OR WALL-MOUNTED)
	ELECTRICAL DEVICES (CEILING OR WALL-MOUNTED)

NOTE: REFER TO STRUCTURAL, PLUMBING/FIRE PROTECTION, MECHANICAL, AND ELECTRICAL/TECHNOLOGY FOR MORE DETAILED SYMBOL LEGENDS. SHOWN FOR GENERAL COORDINATION, NOT ALL SYMBOLS ARE INDICATED. NOTIFY ARCHITECT OF ANY/ALL DISCREPENCIES



NORTH

UNIT 'B' FIRST FLOOR REFLECTED CEILING PLAN
1/8" = 1'-0"

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

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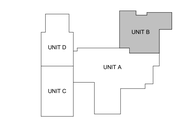
REVIEWED TGD

PROJECT NO. 5-5798



NORTH KEYPLAN

UNIT 'B' FIRST FLOOR REFLECTED CEILING PLAN

A3.1B

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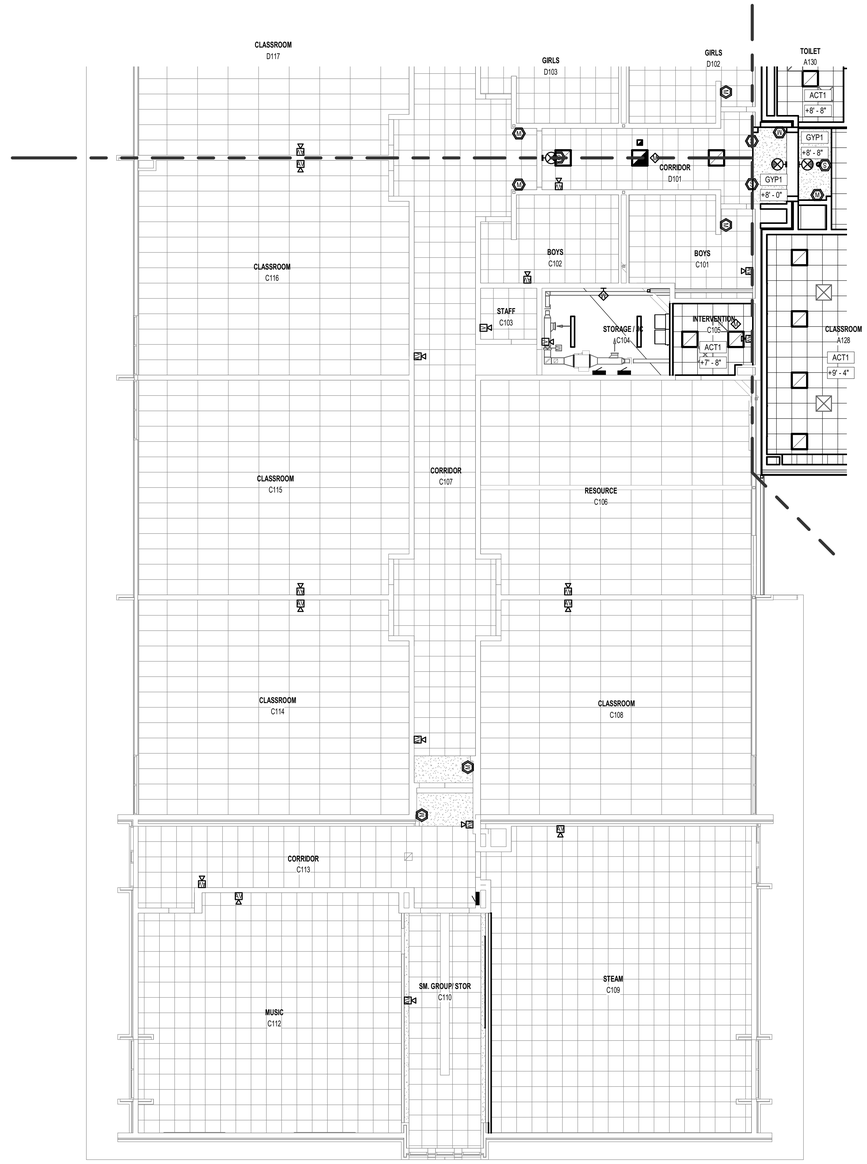

NORTH

UNIT 'C' FIRST FLOOR REFLECTED CEILING PLAN

1/8" = 1'-0"

GENERAL REFLECTED CEILING NOTES:

A. CONTRACTOR SHALL FOLLOW GRID PATTERN ESTABLISHED ON THE REFLECTED CEILING PLAN. ANY VARIATIONS SHALL BE APPROVED BY THE ARCHITECT.

B. CEILING TILE TYPE AS SPECIFIED. CEILING HEIGHTS NOTED ON REFLECTED CEILING PLANS. CEILING ELEVATIONS ARE FROM THAT ROOM'S FINISH FLOOR.

C. WIRE CEILING SYSTEM FROM STRUCTURE ABOVE AND WIRE FOR ADDITIONAL LOAD AT LIGHTS, CEILING DIFFUSERS, AND OTHER DEVICES. WIRING TO METAL DECK IS STRICTLY PROHIBITED.

D. UNLESS OTHERWISE NOTED, CEILING TO BE SUSPENDED METAL TEE AND ACOUSTICAL TILE 2' - 0" x 2' - 0" OR 2' - 0" x 4' - 0" TYPICAL. SEE SPECIFICATIONS FOR MANUFACTURER AND STYLE.

E. PENDANT MOUNTED FIXTURES CENTERED ON GRID REQUIRE GRID TO BE CUT AND SUPPORTED ON EACH SIDE.

F. MOUNT SPEAKERS AND SUPPLY AIR DIFFUSERS IN THE CENTER OF WHOLE CEILING PANELS. ADHERE A RIGID PANEL BACKER TO PANELS AT LOCATIONS WHICH INDICATE SPEAKERS, DIFFUSERS, LIGHTS, SMOKE DETECTORS, EXIT LIGHTS AND FIRE PROTECTION SPRINKLERS.

G. PROVIDE 2' - 0" CEILING GRID CROSS-TEE AT EACH RETURN AIR GRILLE.

H. PROVIDE AN ADDITIONAL CROSS-TEE AT EACH SLOT DIFFUSER.

I. REFER TO THE MECHANICAL DRAWINGS FOR LOUVERS REQUIRED TO BE FRAMED IN GYPSUM BOARD BULKHEADS.

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K. SOME CORRIDOR CEILING PANEL LAYOUTS HAVE BEEN ADJUSTED AT A CHANGE IN CORRIDOR DIRECTION TO ACCOMMODATE LIGHTING LAYOUT.

REFLECTED CEILING LEGEND

ACT1 — CEILING TYPE
+10' - 0" — HEIGHT ABOVE FINISH FLOOR
CEILING TAG

	ACT1	ACOUSTICAL CEILING TILE SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
	ACT2	ACOUSTICAL CEILING TILE SYSTEM GRID SPACING: 48" X 24" SUPPORT: SUSPENSION SYSTEM
	DAFS1	DIRECT APPLIED FINISH SYSTEM C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE SUPPORT: SEE DETAILS
	DGC1	DECORATIVE GRID CEILING SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
	DGC2	DECORATIVE GRID CEILING SYSTEM GRID SPACING: 48" X 48" SUPPORT: SUSPENSION SYSTEM
	GCT1	GYPSUM CEILING TILE SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
	GCT2	SUSPENDED GYPSUM CEILING TILE SYSTEM GRID SPACING: 48" X 24" SUPPORT: SUSPENSION SYSTEM
	GYP1	GYPSUM BOARD CEILING OR BULKHEAD C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE SUPPORT: SUSPENSION SYSTEM OR METAL STUD FRAMING PAINT: 'P1' UNLESS NOTED OTHERWISE
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	PDP1	ACOUSTICAL PYRAMIDAL CEILING DIFFUSER GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
C.J.		CONTROL JOINT
E.J.		EXPANSION JOINT
		CUT TILE
		RECESSED LIGHT FIXTURE
		SURFACE / PENDANT MOUNT LIGHT FIXTURE
		MECHANICAL SUPPLY DIFFUSER / RETURN GRILLE / EXHAUST GRILLE / LINEAR SLOT DIFFUSER
		EXIT SIGN (CEILING OR WALL-MOUNTED)
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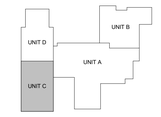
NOTE: REFER TO STRUCTURAL, PLUMBING/FIRE PROTECTION, MECHANICAL, AND ELECTRICAL/TECHNOLOGY FOR MORE DETAILED SYMBOL LEGENDS. SHOWN FOR GENERAL COORDINATION; NOT ALL SYMBOLS ARE INDICATED. NOTIFY ARCHITECT OF ANY/ALL DISCREPENCIES



NORTH

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

UNIT 'C' FIRST FLOOR REFLECTED CEILING PLAN

A3.1C

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2019.rvt
3/23/2023 12:04:43 AM

GENERAL REFLECTED CEILING NOTES:

A. CONTRACTOR SHALL FOLLOW GRID PATTERN ESTABLISHED ON THE REFLECTED CEILING PLAN. ANY VARIATIONS SHALL BE APPROVED BY THE ARCHITECT.

B. CEILING TILE TYPE AS SPECIFIED. CEILING HEIGHTS NOTED ON REFLECTED CEILING PLANS. CEILING ELEVATIONS ARE FROM THAT ROOMS FINISH FLOOR.

C. WIRE CEILING SYSTEM FROM STRUCTURE ABOVE AND WIRE FOR ADDITIONAL LOAD AT LIGHTS, CEILING DIFFUSERS, AND OTHER DEVICES. WIRING TO METAL DECK IS STRICTLY PROHIBITED.

D. UNLESS OTHERWISE NOTED, CEILING TO BE SUSPENDED METAL TEE AND ACOUSTICAL TILE 2' - 0" x 2' - 0" OR 2' - 0" x 4' - 0" TYPICAL. SEE SPECIFICATIONS FOR MANUFACTURER AND STYLE.

E. PENDANT MOUNTED FIXTURES CENTERED ON GRID REQUIRE GRID TO BE CUT AND SUPPORTED ON EACH SIDE.

F. MOUNT SPEAKERS AND SUPPLY AIR DIFFUSERS IN THE CENTER OF WHOLE CEILING PANELS. ADHERE A RIGID PANEL BACKER TO PANELS AT LOCATIONS WHICH INDICATE SPEAKERS, DIFFUSERS, LIGHTS, SMOKE DETECTORS, EXIT LIGHTS AND FIRE PROTECTION SPRINKLERS.

G. PROVIDE 2' - 0" CEILING GRID CROSS-TEE AT EACH RETURN AIR GRILLE.

H. PROVIDE AN ADDITIONAL CROSS-TEE AT EACH SLOT DIFFUSER.

I. REFER TO THE MECHANICAL DRAWINGS FOR LOUVERS REQUIRED TO BE FRAMED IN GYPSUM BOARD BULKHEADS.

J. ALL CEILING HEIGHTS ARE SUBJECT TO CHANGE TO ACCOMMODATE UNFORESEEN FIELD CONDITIONS - COORDINATE CHANGES WITH ARCHITECT & AFFECTED DISCIPLINES.

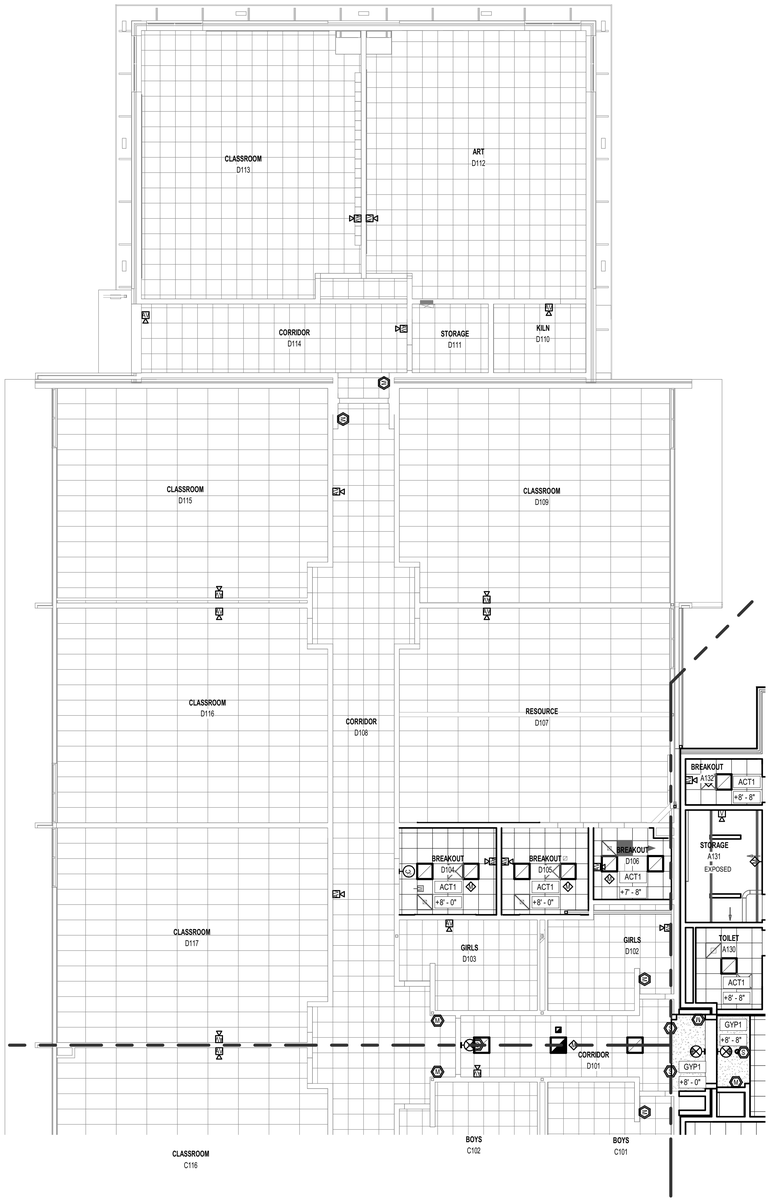
K. SOME CORRIDOR CEILING PANEL LAYOUTS HAVE BEEN ADJUSTED AT A CHANGE IN CORRIDOR DIRECTION TO ACCOMMODATE LIGHTING LAYOUT.

REFLECTED CEILING LEGEND

ACT1 — CEILING TYPE
+10' - 0" — HEIGHT ABOVE FINISH FLOOR
CEILING TAG

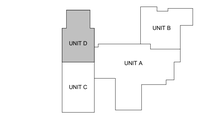
	ACT1	ACOUSTICAL CEILING TILE SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
	ACT2	ACOUSTICAL CEILING TILE SYSTEM GRID SPACING: 48" X 24" SUPPORT: SUSPENSION SYSTEM
	DAFS1	DIRECT-APPLIED FINISH SYSTEM C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE SUPPORT: SEE DETAILS
	DGC1	DECORATIVE GRID CEILING SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
	DGC2	DECORATIVE GRID CEILING SYSTEM GRID SPACING: 48" X 48" SUPPORT: SUSPENSION SYSTEM
	GCT1	GYPSUM CEILING TILE SYSTEM GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
	GCT2	SUSPENDED GYPSUM CEILING TILE SYSTEM GRID SPACING: 48" X 24" SUPPORT: SUSPENSION SYSTEM
	GYP1	GYPSUM BOARD CEILING OR BULKHEAD C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERWISE SUPPORT: SUSPENSION SYSTEM OR METAL STUD FRAMING PAINT: "P1" UNLESS NOTED OTHERWISE
	MPA	METAL PANEL 'A' SOFFIT
	PDP1	ACOUSTICAL PYRAMIDAL CEILING DIFFUSER GRID SPACING: 24" X 24" SUPPORT: SUSPENSION SYSTEM
C.J.		CONTROL JOINT
E.J.		EXPANSION JOINT
		CUT TILE
		RECESSED LIGHT FIXTURE
		SURFACE / PENDANT MOUNT LIGHT FIXTURE
		MECHANICAL SUPPLY DIFFUSER / RETURN GRILLE / EXHAUST GRILLE / LINEAR SLOT DIFFUSER
		EXIT SIGN (CEILING OR WALL-MOUNTED)
		ELECTRICAL DEVICES (CEILING OR WALL-MOUNTED)

NOTE: REFER TO STRUCTURAL, PLUMBING/FIRE PROTECTION, MECHANICAL, AND ELECTRICAL/TECHNOLOGY FOR MORE DETAILED SYMBOL LEGENDS, SHOWN FOR GENERAL COORDINATION, NOT ALL SYMBOLS ARE INDICATED. NOTIFY ARCHITECT OF ANY/ALL DISCREPENCIES



NORTH

UNIT 'D' FIRST FLOOR REFLECTED CEILING PLAN
1/8" = 1'-0"



NORTH

KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

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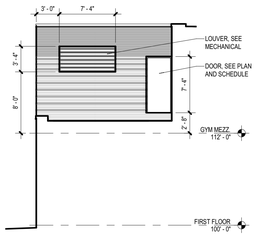
REVIEWED TGD

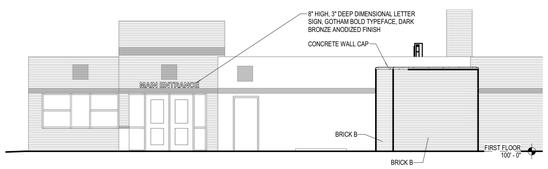
PROJECT NO. 5-5798

UNIT 'D' FIRST FLOOR REFLECTED CEILING PLAN

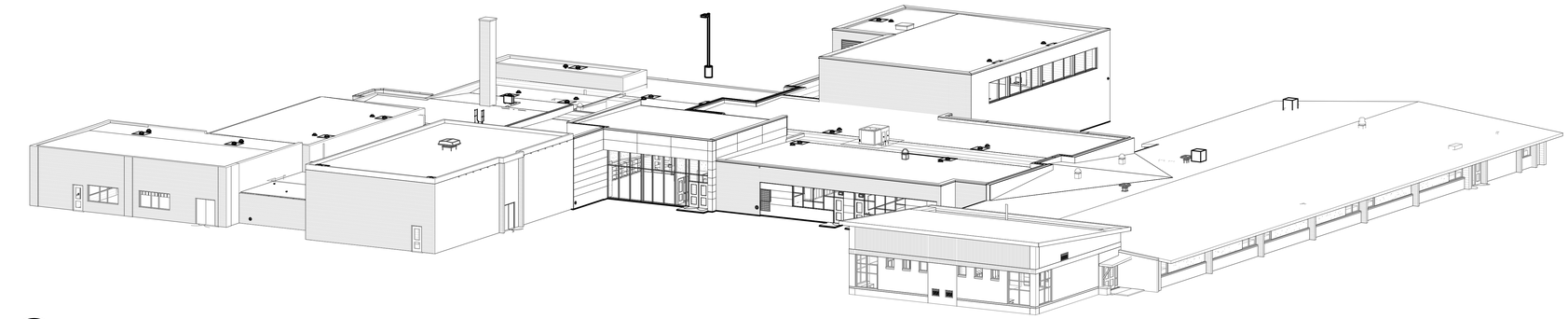
A3.1D



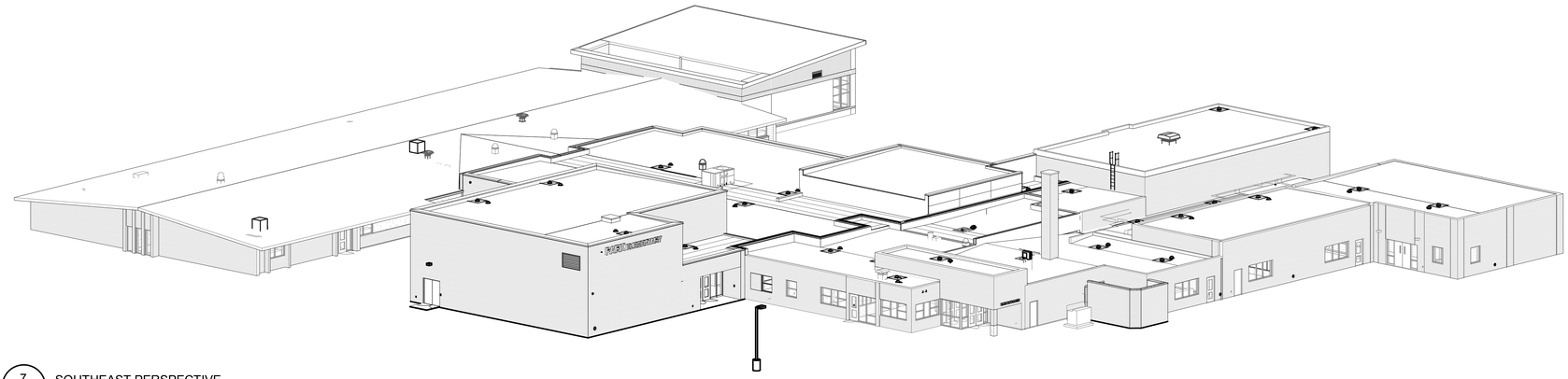
10 A4.01 GYM MEZZANINE NORTH ELEVATION
1/8" = 1'-0"



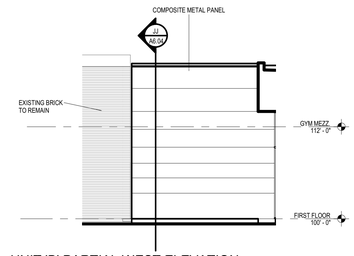
9 A4.01 EAST ELEVATION MAIN ENTRY
1/8" = 1'-0"



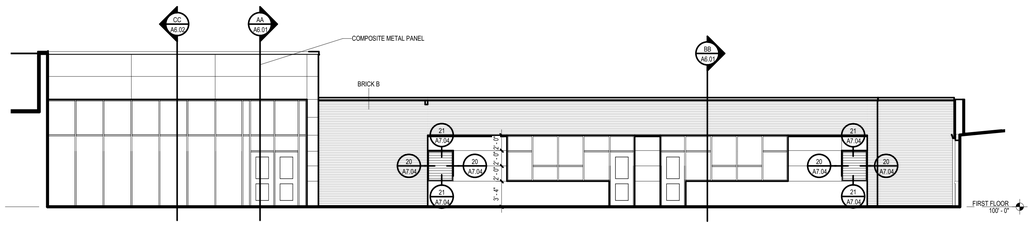
8 A4.01 NORTHWEST PERSPECTIVE



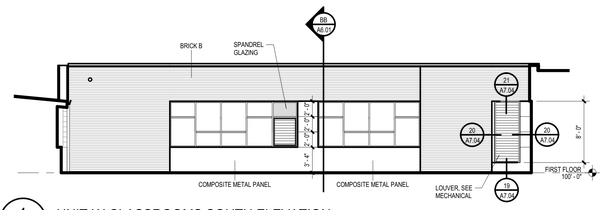
7 A4.01 SOUTHEAST PERSPECTIVE



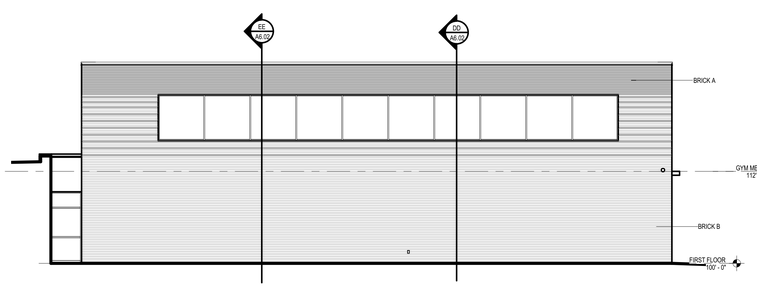
6 A4.01 UNIT 'B' PARTIAL WEST ELEVATION
1/8" = 1'-0"



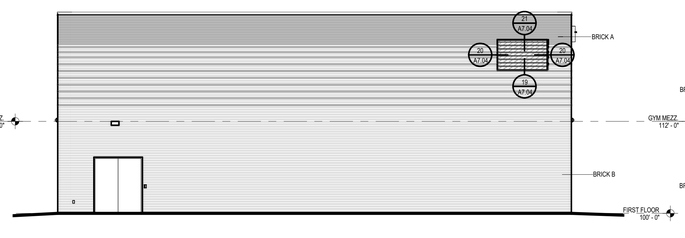
5 A4.01 UNIT 'A' NORTH ELEVATION
1/8" = 1'-0"



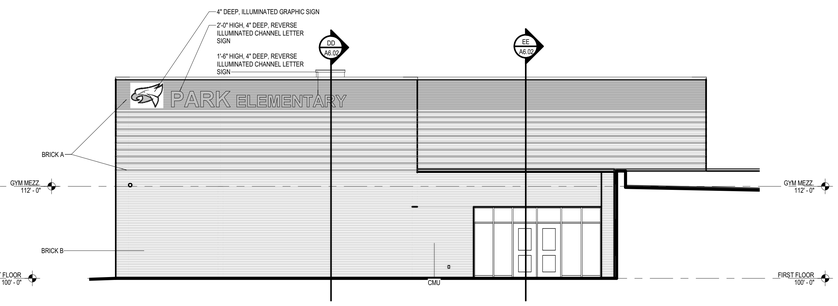
4 A4.01 UNIT 'A' CLASSROOMS SOUTH ELEVATION
1/8" = 1'-0"



3 A4.01 UNIT 'A' GYM WEST ELEVATION
1/8" = 1'-0"



2 A4.01 UNIT 'A' GYM SOUTH ELEVATION
1/8" = 1'-0"



1 A4.01 UNIT 'A' GYM EAST ELEVATION
1/8" = 1'-0"

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2019.rvt
3/23/2023 9:32:31 AM

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HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

EXTERIOR ELEVATIONS

A4.01

DOOR NUMBERING LEGEND

DOOR NUMBERING

A101A
- 'A' FIRST DOOR 'B' SECOND DOOR
- ROOM NUMBER

DOOR NAME / SIZE

3'-0" x 7'-2" x 1 3/4"
- DOOR SIZE

(PR) 3'-0" x 7'-2" x 1 3/4"
- DOOR SIZE
- PAIR OF DOORS, NO FIXED MULLION

(2) 3'-0" x 7'-2" x 1 3/4"
- DOOR SIZE
- TWO DOORS, WITH FIXED MULLION BETWEEN THEM

3'-0" x 7'-2" x 1 3/4" (5'-4")
- OVERALL FRAME WIDTH AND / OR HEIGHT SEE FRAME LEGEND
- DOOR SIZE

NOTE:
STANDARD DOOR AND FRAME DIMENSIONS ARE GIVEN IN: WIDTH x HEIGHT X THICKNESS

GLAZING NOTES:

ALL EXTERIOR WINDOWS AND DOOR LITES:
1" INSULATED PER SPECIFICATIONS.

INTERIOR DOOR & BORROWED LITES:
1/4" CLEAR TYPICAL EXCEPT FIRE-RATED - SEE SPECIFICATIONS.

GLASS TO BE TEMPERED AS REQUIRED BY SPECIFICATIONS AND APPLICABLE CODES.

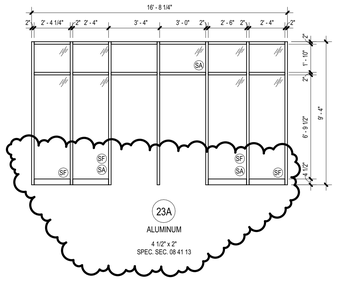
MAXIMUM GLASS AREA PER FIRE RATING:
- 180 MIN. LABEL = NO GLASS
- 90 MIN. LABEL = 100 SQ.IN.
- 45 MIN. LABEL = 1296 SQ.IN.
- 20 MIN. LABEL = AS TESTED

VERIFY COMPLIANCE TO ALL APPLICABLE CODES.

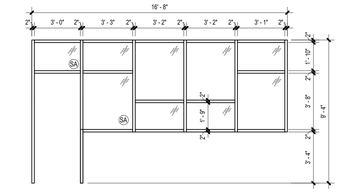
ADJUST LITE SIZE BASED ON SCHEDULED FIRE RATING AS NECESSARY.

NOTE: ALL SIDELITES AND TRANSOMS W/ 20 MIN. DOORS REQUIRE 45 MIN. RATED GLAZING

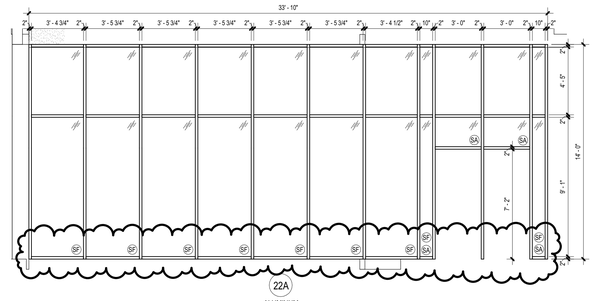
- (E) = EGRESS PANE
- (GF) = GRAPHIC FILM
- (SA) = SAFETY GLAZING
- (SF) = SECURITY FILM
- (SE) = SECURITY GLAZING
- (ST) = SELF TINTING GLAZING
- = SPANDREL PANEL
- = LOUVER PANEL



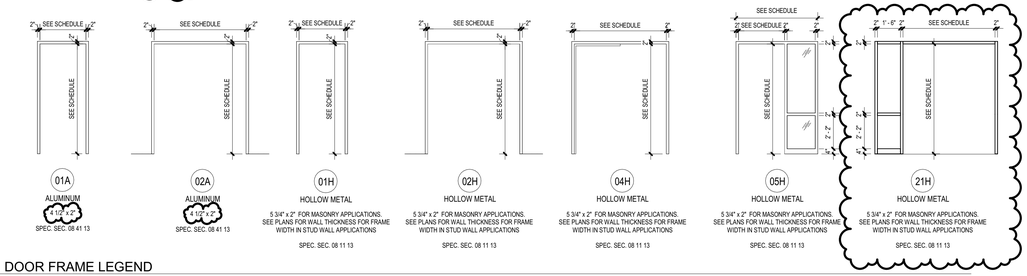
23A
ALUMINUM
4 1/2" x 2"
SPEC. SEC. 08 41 13



20A
ALUMINUM
4 1/2" x 2"
SPEC. SEC. 08 41 13

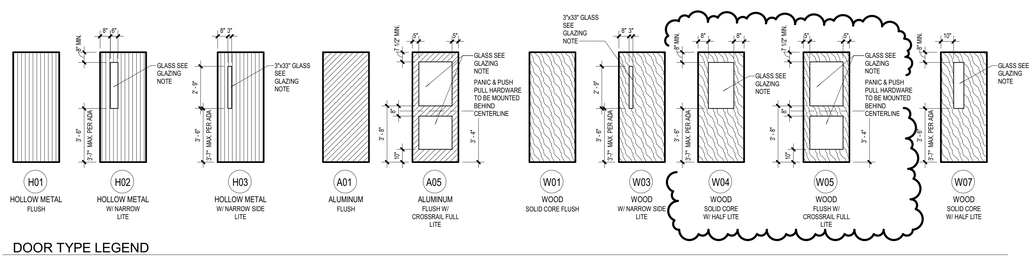


22A
ALUMINUM
6 1/2" x 2"
SPEC. SEC. 08 41 13



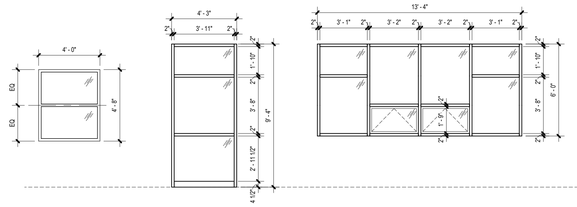
DOOR FRAME LEGEND

1/4" = 1'-0"



DOOR TYPE LEGEND

1/4" = 1'-0"



W01
FIRE RATED CURTAIN WALL - SPEC 08 44 23.13 (60 MIN.)

W02
STOREFRONT - SPEC 08 41 13

W03
STOREFRONT - SPEC 08 41 13 W/ AWNING INSET

W04
STOREFRONT - SPEC 08 41 13 W/ AWNING INSET

BL01
HOLLOW METAL
5 3/4" x 2" FOR MASONRY APPLICATIONS. SEE PLANS FOR WALL THICKNESS FOR FRAME WIDTH IN STUD WALL APPLICATIONS
SPEC. SEC. 08 11 13

WINDOW LEGEND

1/4" = 1'-0"

DOOR & FRAME SCHEDULE UNIT 'C'

DOOR NUMBER	DOOR SIZE	DOOR TYPE	FRAME TYPE	FIRE RATING	HDWR SET NO.	ELEC. HARDWARE	REMOVABLE MULLION	DETAILS: HEAD	DETAILS: JAMB	DETAILS: SILL	REMARKS
C											
C105A	3' 0" x 7' 2" x 1 3/4"	W04	01H		17			7/A7.04	7/A7.04		
C112A	3' 0" x 7' 2" x 1 3/4"	W01	01H		10.1						REPLACE DOOR PANEL ONLY, FRAME TO REMAIN AS IS

DOOR & FRAME SCHEDULE UNIT 'B'

DOOR NUMBER	DOOR SIZE	DOOR TYPE	FRAME TYPE	FIRE RATING	HDWR SET NO.	ELEC. HARDWARE	REMOVABLE MULLION	DETAILS: HEAD	DETAILS: JAMB	DETAILS: SILL	REMARKS
B											
B103A	PR. 3' 0" x 7' 2" x 1 3/4"	W01	02H	90	02			9/A7.04 SIM.	9/A7.04 SIM.		
B104B	PR. 3' 0" x 7' 2" x 1 3/4"	A01	02A		01		■				EGRESS ONLY

DOOR & FRAME SCHEDULE UNIT 'A'

DOOR NUMBER	DOOR SIZE	DOOR TYPE	FRAME TYPE	FIRE RATING	HDWR SET NO.	ELEC. HARDWARE	REMOVABLE MULLION	DETAILS: HEAD	DETAILS: JAMB	DETAILS: SILL	REMARKS
A											
A102A	3' 0" x 7' 2" x 1 3/4"	H02	01H								REMOVE DOOR AND FRAME. REINSTALL IN NEW OPENING. REUSE EXISTING HARDWARE.
A113A	3' 0" x 7' 2" x 1 3/4"	H03	01H	90	11			9/A7.04	9/A7.04		
A114A	3' 0" x 7' 2" x 1 3/4" (5'-4")	W01	05H	45	11	■		5/A7.04	5/A7.04	-	IP LOCK
A115A	3' 0" x 7' 2" x 1 3/4" (5'-4")	W01	05H	45	11	■		5/A7.04	5/A7.04	-	IP LOCK
A116A	PR. 4' 0" x 7' 2" x 1 3/4"	H03	02H	90	12			5/A7.04	5/A7.04	-	
A117A	3' 0" x 7' 2" x 1 3/4"	A05	23A		03	■			2&3/A7.04	1/A7.04	CARD READER
A117B	3' 0" x 7' 2" x 1 3/4"	A05	23A		04				2&3/A7.04	1/A7.04	
A118A	3' 0" x 7' 2" x 1 3/4"	W01	01H		21			5/A7.04	5/7.04		
A119A	3' 0" x 7' 2" x 1 3/4" (5'-4")	W01	05H		16			5/A7.04	5/7.04		
A119B	3' 0" x 7' 2" x 1 3/4"	W01	01H	45	15			5/A7.04	5/7.04		
A120A	3' 0 x 7' 2" x 1 3/4"	A01	01A		04			8/A7.04	2/A7.04	1/A7.04	
A121A	PR. 3' 0" x 7' 2" x 1 3/4"	W01	02H	45	19			5/A7.04	5/7.04		
A122A	PR. 3' 0" x 7' 2" x 1 3/4"	W03	02H	45	06	■	■	5/A7.04	5/7.04		IP LOCK
A122B	PR. 3' 0" x 7' 2" x 1 3/4"	A01	02A		01	■	■	8/A7.04	2/A7.04	1/A7.04	
A123A	3' 0" x 7' 2" x 1 3/4" (6'-8")	W01	05H	45	11	■		5/A7.04	5/A7.04	-	IP LOCK
A124A	3' 0" x 7' 2" x 1 3/4" (6'-8")	W01	05H	45	11	■		5/A7.04	5/A7.04	-	IP LOCK
A125A	3' 0" x 7' 2" x 1 3/4" (6'-8")	W01	05H	45	11	■		5/A7.04	5/A7.04	-	IP LOCK
A126A	3' 0" x 7' 2" x 1 3/4"	W07	01H	45	10	■		5/A7.04	5/A7.04	-	IP LOCK
A127A	3' 0" x 7' 2" x 1 3/4"	W07	01H	45	10	■		5/A7.04	5/A7.04	-	IP LOCK
A128A	3' 0" x 7' 2" x 1 3/4"	W07	01H	45	10	■		5/A7.04	5/A7.04	-	IP LOCK
A129A	PR. 4' 0" x 7' 2" x 1 3/4"	H03	02H	90	13			9/A7.04	9/A7.04		
A129B	PR. 4' 0" x 7' 2" x 1 3/4"	H03	04H	90	14			9/A7.04	9/A7.04	-	DOUBLE EGRESS - ELEC. HOLD OPENS
A130A	3' 0" x 7' 2" x 1 3/4"	W01	01H		21			5/A7.04	5/A7.04	-	
A131A	3' 0" x 7' 2" x 1 3/4"	W01	01H	45	15			5/A7.04	5/A7.04	-	
A132A	3' 0" x 7' 2" x 1 3/4"	W04	01H		18			5/A7.04	5/A7.04	-	
A133A	3' 0" x 7' 2" x 1 3/4"	W07	01H	45	08	■		5/A7.04	5/A7.04	-	IP LOCK
A133B	3' 0" x 7' 2" x 1 3/4"	A05	20A		04			8/A7.04 SIM.	2/A7.04	1/A7.04	
A134A	3' 0" x 7' 2" x 1 3/4"	W07	01H	45	08	■		5/A7.04	5/A7.04	-	IP LOCK
A134B	3' 0" x 7' 2" x 1 3/4"	A05	20A		04			8/A7.04 SIM.	2/A7.04	1/A7.04	
A135A	3' 0" x 7' 2" x 1 3/4"	W01	01H	45	11			5/A7.04	5/A7.04	-	
A136A	3' 0" x 7' 2" x 1 3/4"	W01	01H		21			5/A7.04	5/A7.04	-	
A137A	3' 0" x 7' 2" x 1 3/4"	W07	01H	45	11	■		5/A7.04	5/A7.04	-	IP LOCK
A138A	3' 0" x 7' 2" x 1 3/4"	A05	22A		03	■		14/A7.02 SIM.	11/A7.05 SIM.	1/A7.04	CARD READER
A138B	3' 0" x 7' 2" x 1 3/4"	A05	22A		04			14/A7.02 SIM.	11/A7.05 SIM.	1/A7.04	
A139A	(PR) 3' 0" x 7' 2" x 1 3/4"	W05	21H (PR)	45	05	■	■	5/A7.04	5/A7.04	-	IP LOCK
A139B	3' 0" x 7' 2" x 1 3/4" (6'-0")	W05	05H	45	07	■		5/A7.04	5/7.04	-	IP LOCK
A140A	3' 0" x 7' 2" x 1 3/4"	W01	01H		20			5/A7.04	5/A7.04	-	
A141A	3' 0" x 7' 2" x 1 3/4"	W01	01H		11	■		5/A7.04	5/A7.04	-	IP LOCK
A143A	3' 0" x 7' 2" x 1 3/4"	W01	01H	45	11	■		5/A7.04	5/A7.04	-	IP LOCK
A143B	3'-6" x 7' 0" x 1 3/4"	W01	01H1	45	11	■					IP LOCK
A201A	3' 0 x 7' 2" x 1 3/4"	A01	01A		04.1			8/A7.04	2/A7.04		

DOOR & FRAME SCHEDULE UNIT 'D'

DOOR NUMBER	DOOR SIZE	DOOR TYPE	FRAME TYPE	FIRE RATING	HDWR SET NO.	ELEC. HARDWARE	REMOVABLE MULLION	DETAILS: HEAD	DETAILS: JAMB	DETAILS: SILL	REMARKS
D											
D101A	PR. 3' 6" x 7' 2" x 1 3/4"	H03	02H	90	12			7/A7.04	7/A7.04	-	
D105A	3' 0" x 7' 2" x 1 3/4"	W04	01H		11			7/A7.04	7/A7.04		
D106A	3' 0" x 7' 2" x 1 3/4"	W04	01H		11			7/A7.04	7/A7.04		

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION
04.18.2023 ADDENDUM 001

DRAWN MEE
REVIEWED TGD

PROJECT NO. 5-5798

DOOR & FRAME SCHEDULE

A5.01

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2019.rvt
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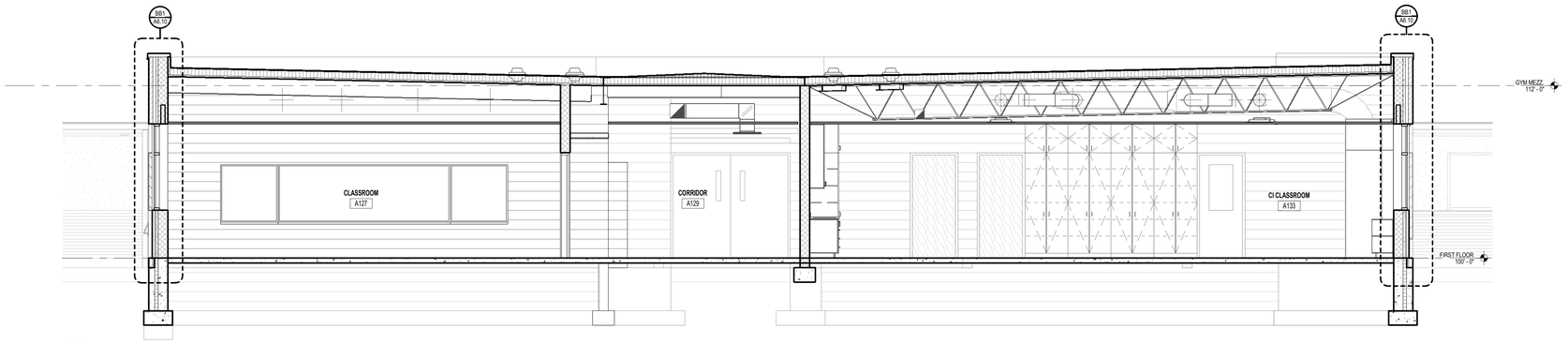
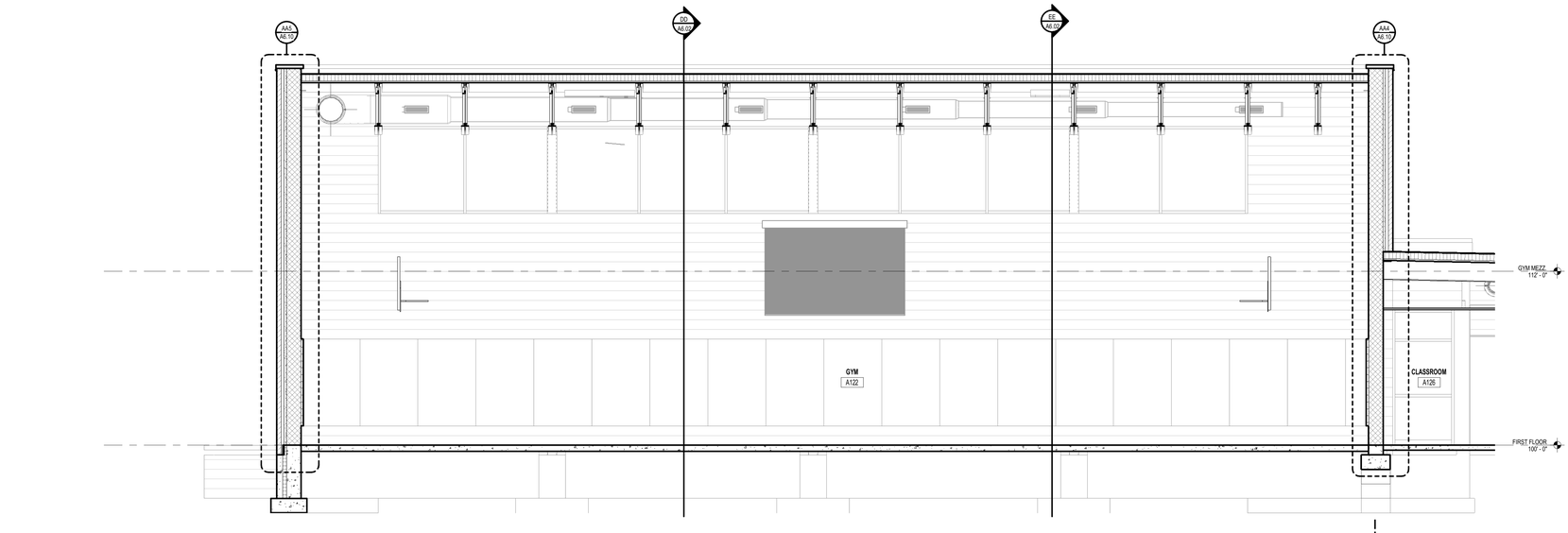
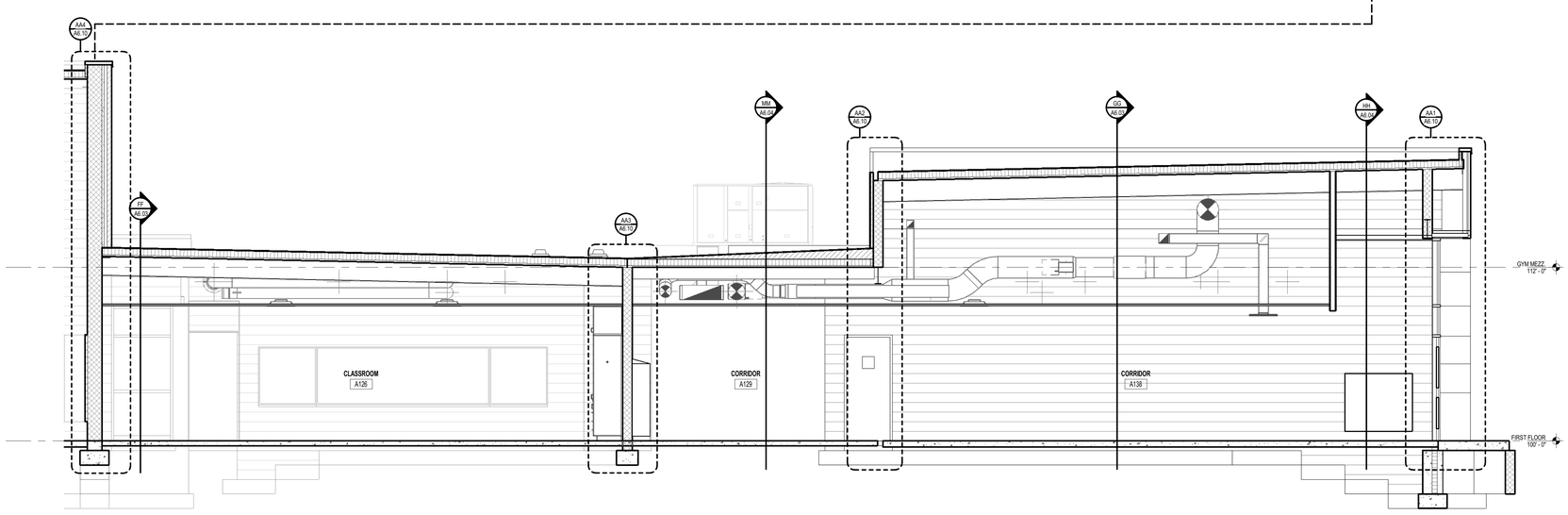


BB
A6.01

BUILDING SECTION BB

1/4" = 1'-0"





AA
A6.01

BUILDING SECTION AA

1/4" = 1'-0"

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3/23/2023 12:05:39 AM

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

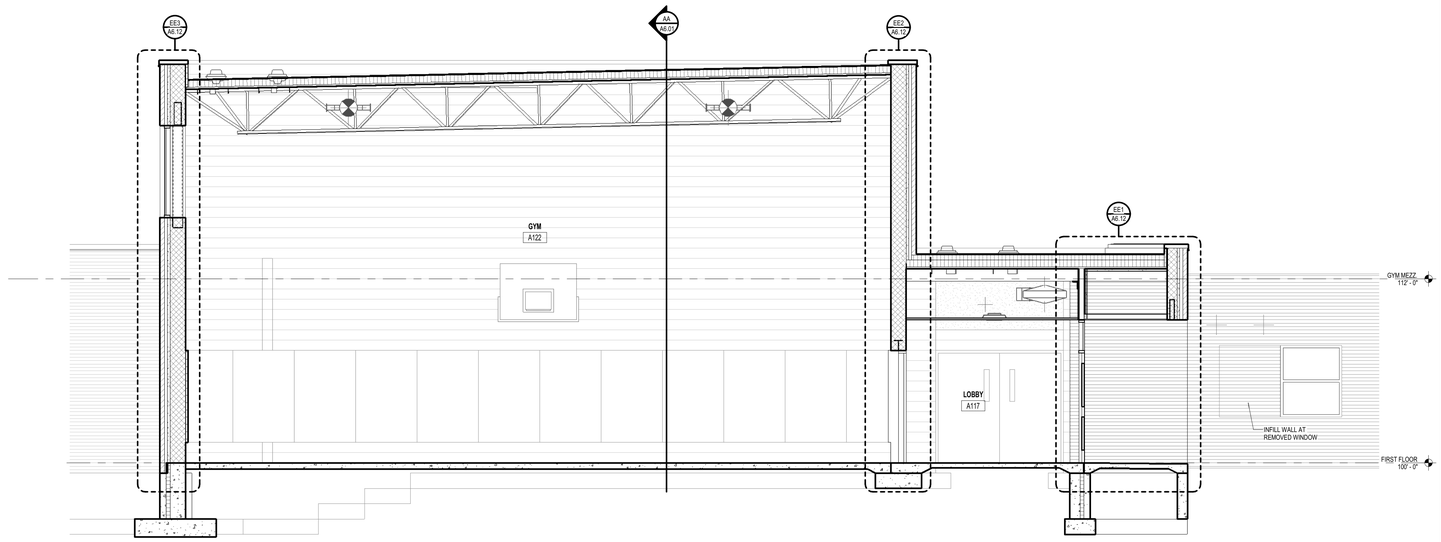
DRAWN MEE

REVIEWED TGD

PROJECT NO. 5-5798

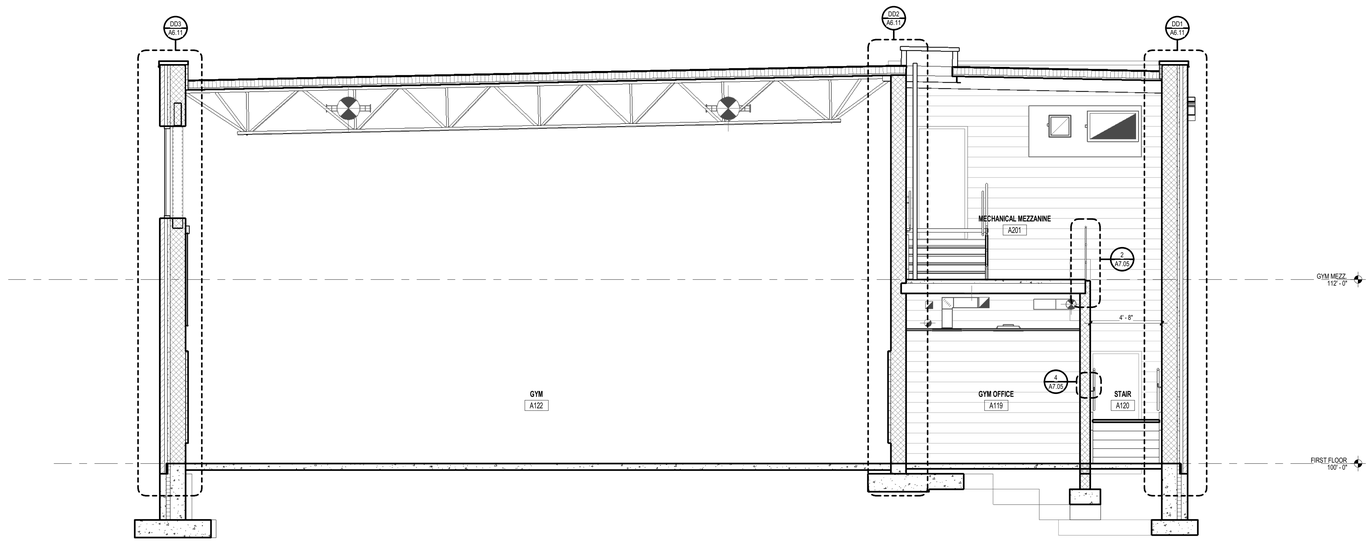
BUILDING SECTIONS

A6.01



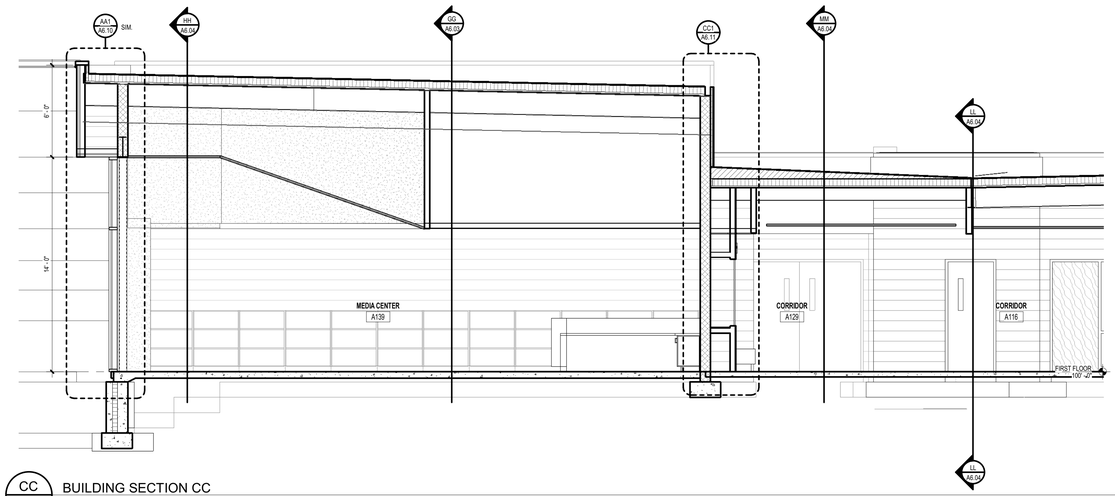
EE
A6.02 BUILDING SECTION EE

1/4" = 1'-0"



DD
A6.02 BUILDING SECTION DD

1/4" = 1'-0"



CC
A6.02 BUILDING SECTION CC

1/4" = 1'-0"

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

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REVIEWED TGD

PROJECT NO. 5-5798

BUILDING SECTIONS

A6.02

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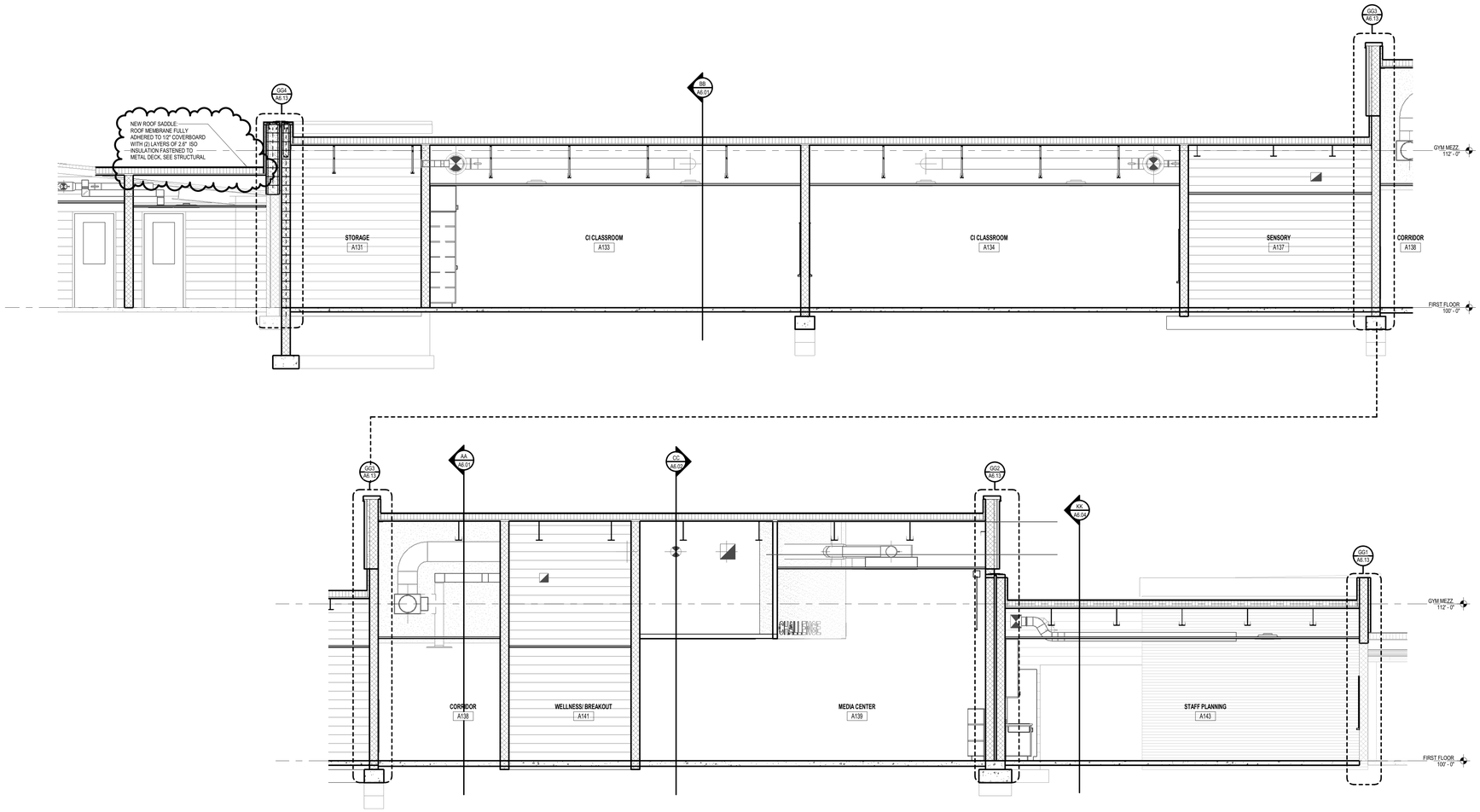
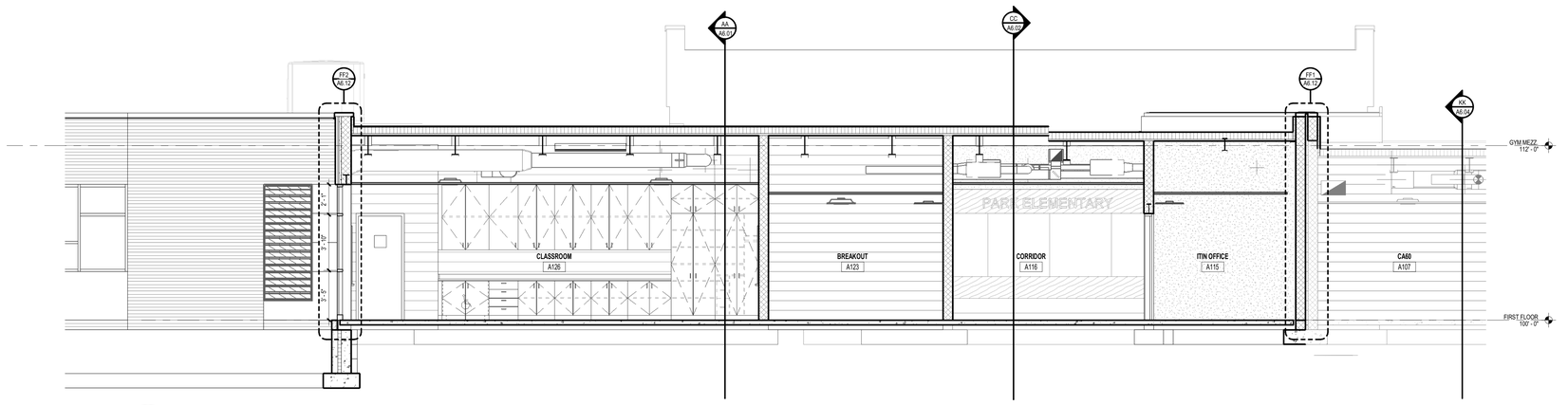


GG
A6.03

BUILDING SECTION GG

1/4" = 1'-0"



FF
A6.03

BUILDING SECTION FF

1/4" = 1'-0"

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HUDSONVILLE PUBLIC SCHOOLS

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PROJECT NO. 5-5798

BUILDING SECTIONS

A6.03

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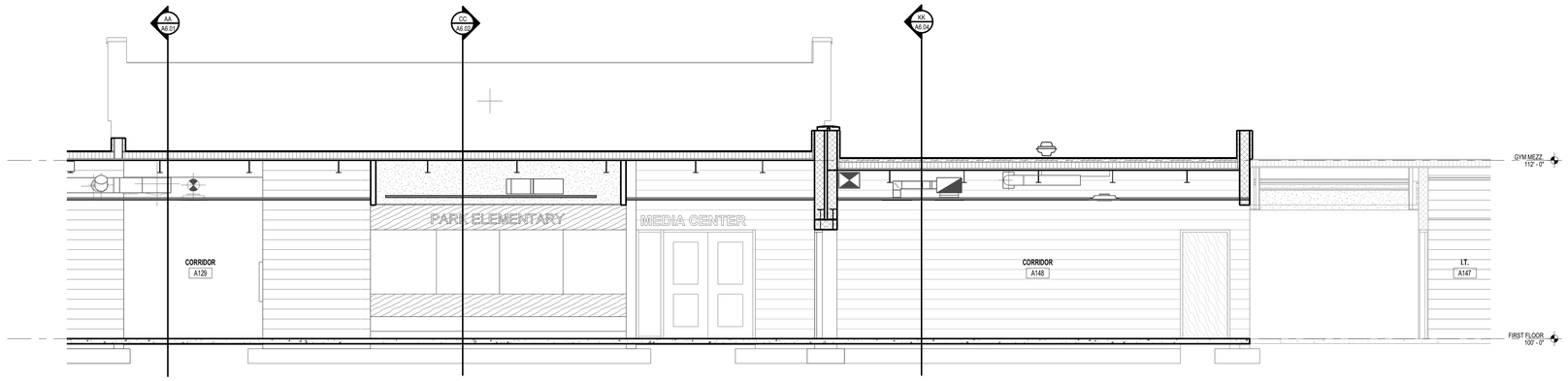
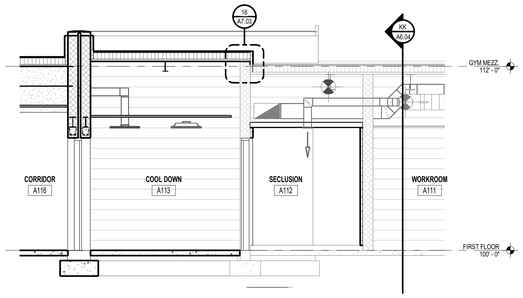
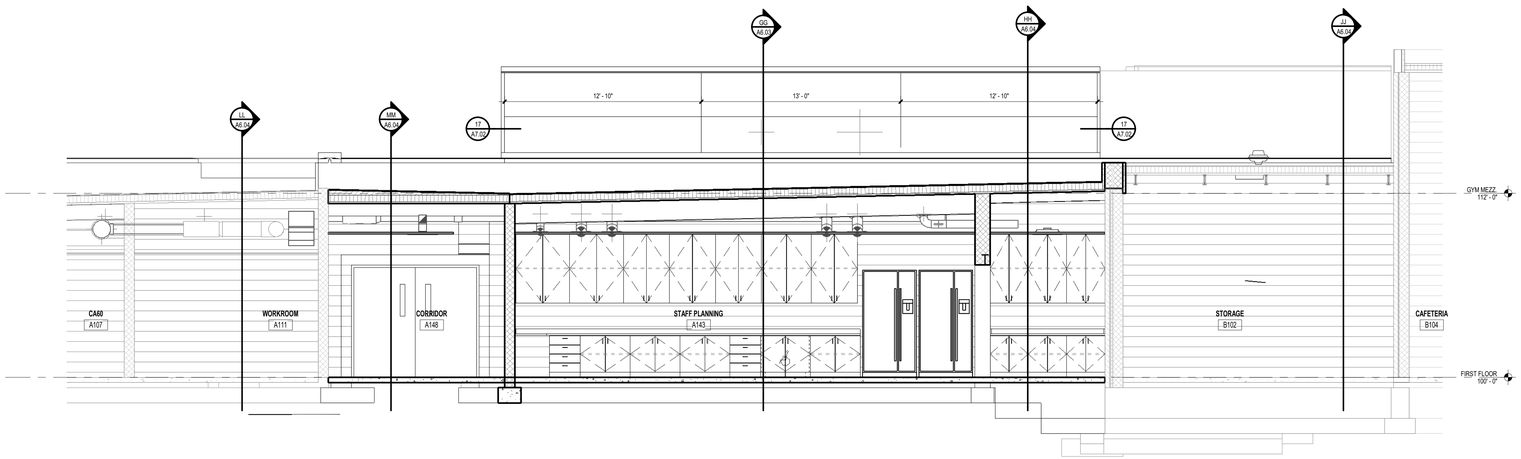


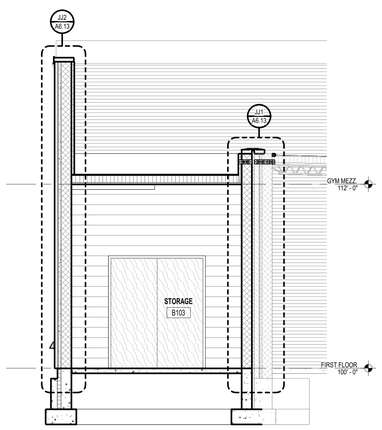
MM A6.04 BUILDING SECTION MM
1/4" = 1'-0"



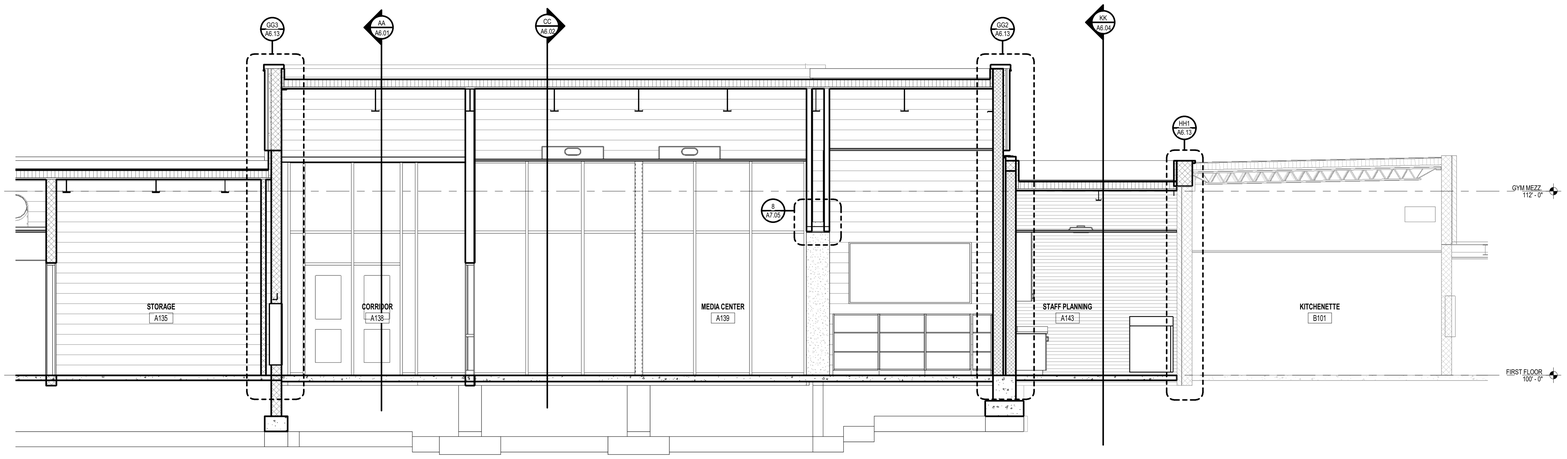
LL A6.04 BUILDING SECTION LL
1/4" = 1'-0"



KK A6.04 BUILDING SECTION KK
1/4" = 1'-0"



JJ A6.04 BUILDING SECTION JJ
1/4" = 1'-0"



HH A6.04 BUILDING SECTION HH
1/4" = 1'-0"

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PROJECT NO. 5-5798

BUILDING SECTIONS

A6.04

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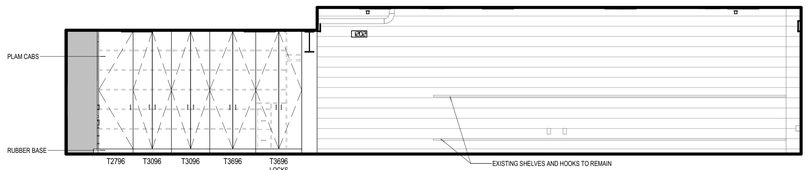
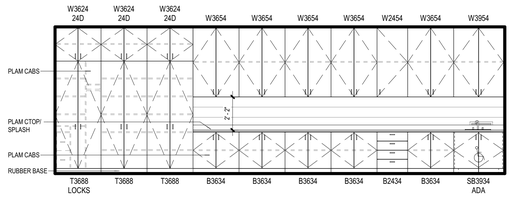
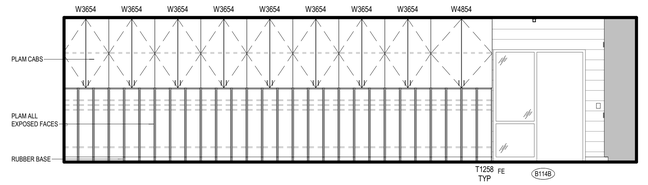


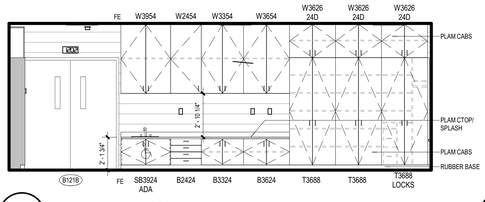
23 A8.01 B118 KINDERGARTEN NORTH
1/4" = 1'-0"



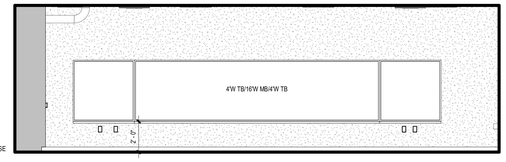
22 A8.01 B114 KINDERGARTEN WEST
1/4" = 1'-0"



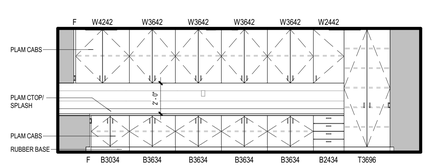
21 A8.01 B114 KINDERGARTEN SOUTH
1/4" = 1'-0"



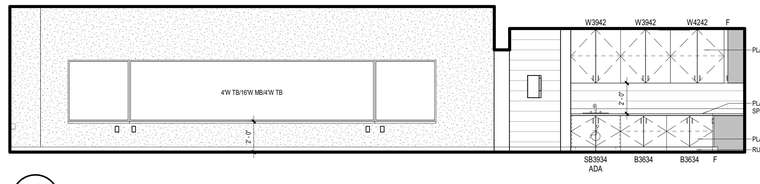
20 A8.01 B121 PRE-K WEST
1/4" = 1'-0"



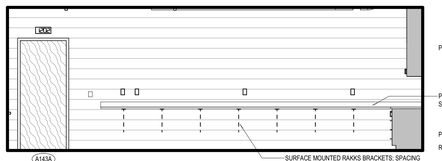
19 A8.01 B121 PRE-K NORTH
1/4" = 1'-0"



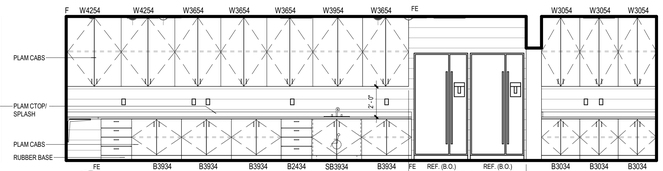
18 A8.01 B118 KINDERGARTEN WEST
1/4" = 1'-0"



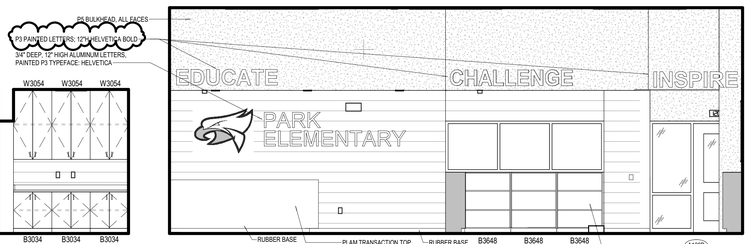
17 A8.01 B118 KINDERGARTEN SOUTH
1/4" = 1'-0"



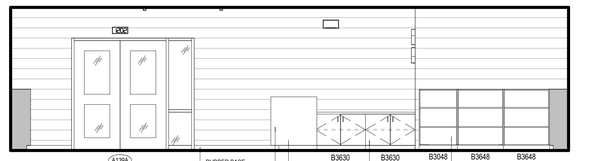
16 A8.01 A143 STAFF PLANNING SOUTH
1/4" = 1'-0"



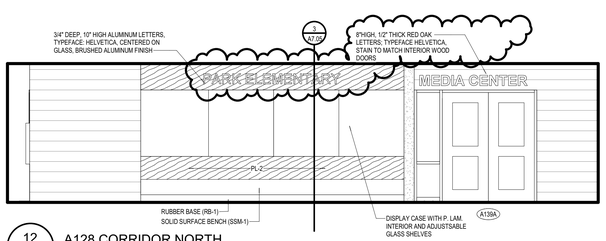
15 A8.01 A143 STAFF PLANNING WEST
1/4" = 1'-0"



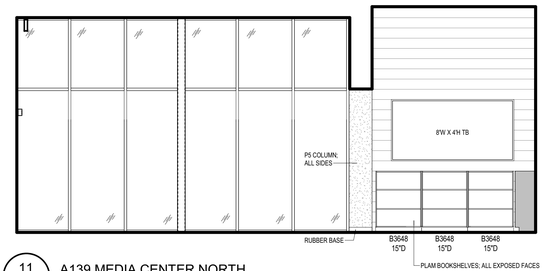
14 A8.01 A139 MEDIA CENTER WEST
1/4" = 1'-0"



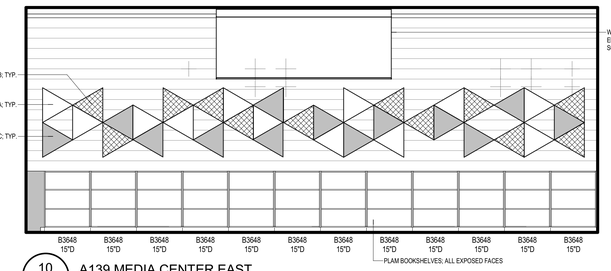
13 A8.01 A139 MEDIA CENTER SOUTH
1/4" = 1'-0"



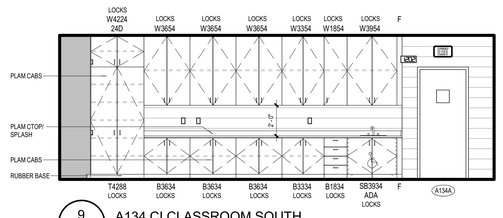
12 A8.01 A128 CORRIDOR NORTH
1/4" = 1'-0"



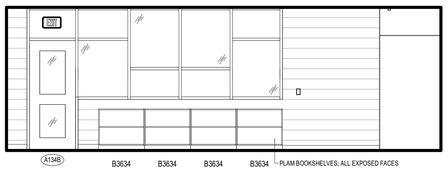
11 A8.01 A139 MEDIA CENTER NORTH
1/4" = 1'-0"



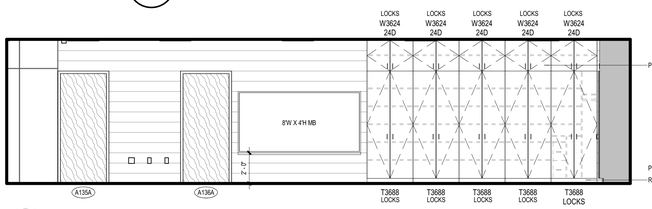
10 A8.01 A139 MEDIA CENTER EAST
1/4" = 1'-0"



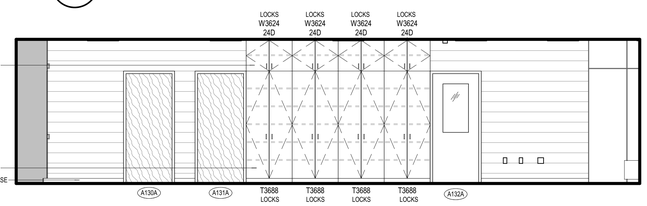
9 A8.01 A134 CI CLASSROOM SOUTH
1/4" = 1'-0"



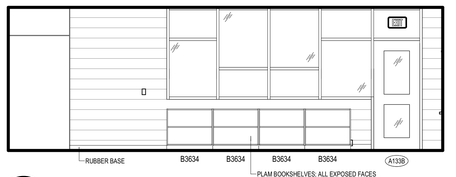
8 A8.01 A134 CI CLASSROOM NORTH
1/4" = 1'-0"



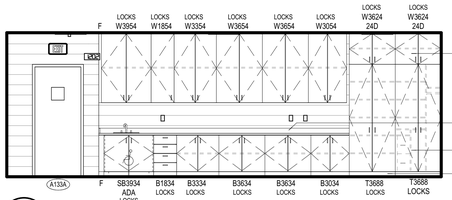
7 A8.01 A134 CI CLASSROOM EAST
1/4" = 1'-0"



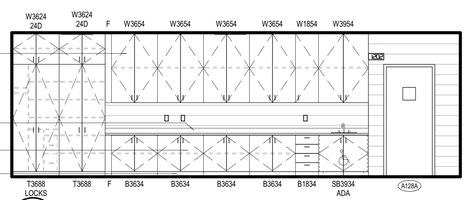
6 A8.01 A133 CI CLASSROOM WEST
1/4" = 1'-0"



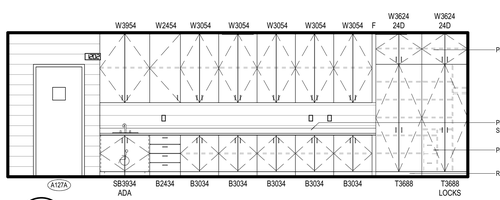
5 A8.01 A133 CI CLASSROOM NORTH
1/4" = 1'-0"



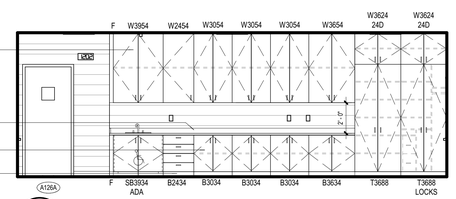
4 A8.01 A133 CI CLASSROOM SOUTH
1/4" = 1'-0"



3 A8.01 A128 CLASSROOM NORTH
1/4" = 1'-0"



2 A8.01 A127 CLASSROOM NORTH
1/4" = 1'-0"



1 A8.01 A126 CLASSROOM NORTH
1/4" = 1'-0"

CASEWORK LEGEND
(SEE ELEVATIONS AND / OR PLANS FOR MORE INFORMATION)
(SEE SPECS)

*DEPTH ONLY GIVEN IF OTHER THAN 24" DEEP FOR BASE / TALL CABINET OR 13" DEEP FOR WALL CABINET ARE USED, TYP.

B	BASE CABINET
F	FILLER PANEL
M	MOBILE CABINET
T	TALL CABINET
W	WALL CABINET

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS
HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

ISSUANCES
03.23.2023 BIDS & CONSTRUCTION
04.18.2023 ADDENDUM 001

DRAWN MRJ
REVIEWED TGD

PROJECT NO. 5-5798

INTERIOR ELEVATIONS

A8.01

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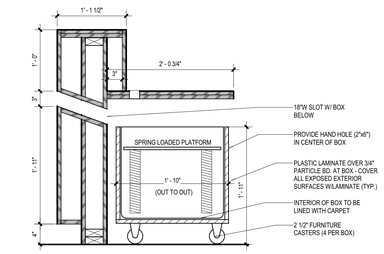
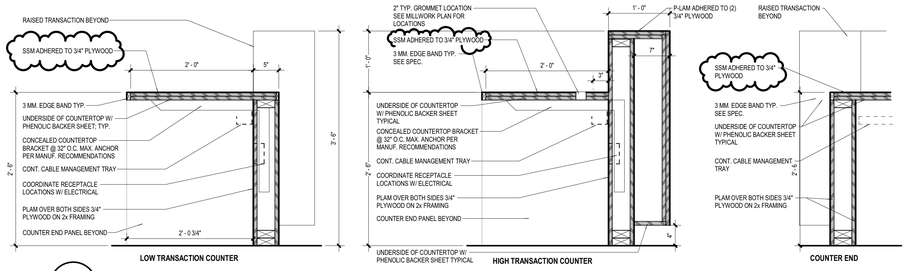
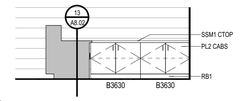
4/18/2023 8:33:03 AM



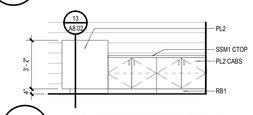
14 A8.02 BOOK DROP SECTION
1" = 1'-0"



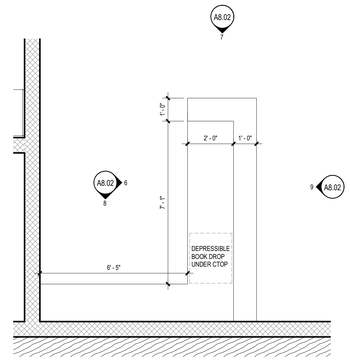
13 A8.02 MILLWORK DESK
1" = 1'-0"



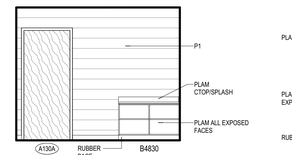
8 A8.02 A139 CIRCULATION SOUTH B
1/4" = 1'-0"



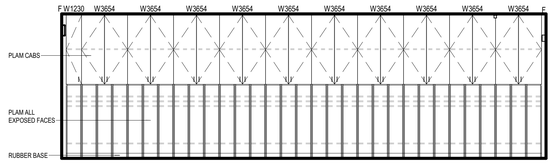
7 A8.02 A139 CIRCULATION SOUTH A
1/4" = 1'-0"



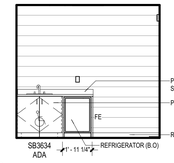
5 A8.02 A139 MEDIA CENTER CIRCULATION DESK
3/8" = 1'-0"



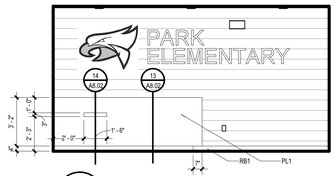
12 A8.02 A130 TOILET EAST
1/4" = 1'-0"



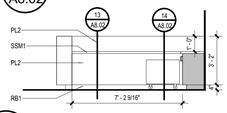
11 A8.02 B121 PRE-K SOUTH
1/4" = 1'-0"



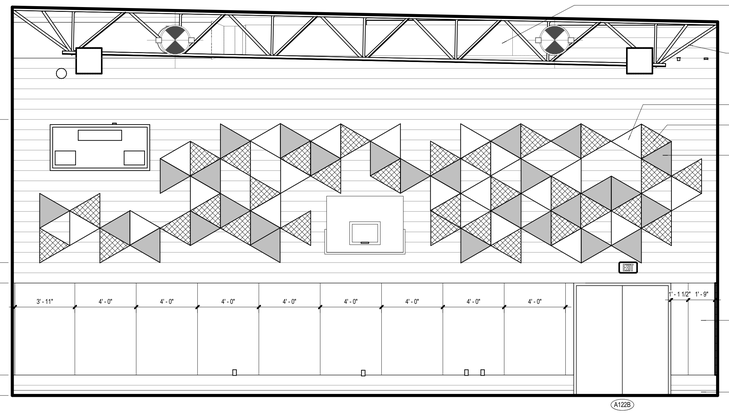
10 A8.02 141 WELLNESS/ BREAKOUT SOUTH
1/4" = 1'-0"



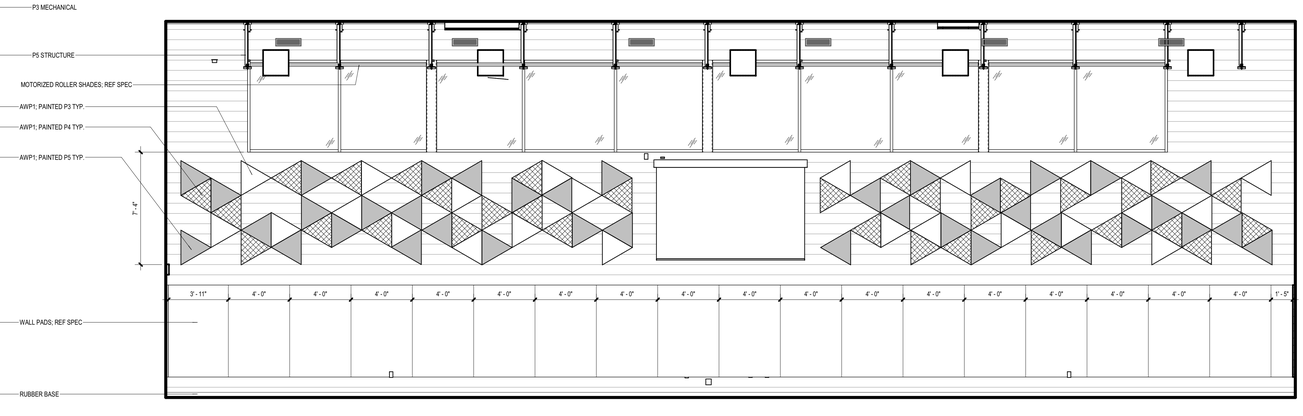
9 A8.02 A139 CIRCULATION WEST
1/4" = 1'-0"



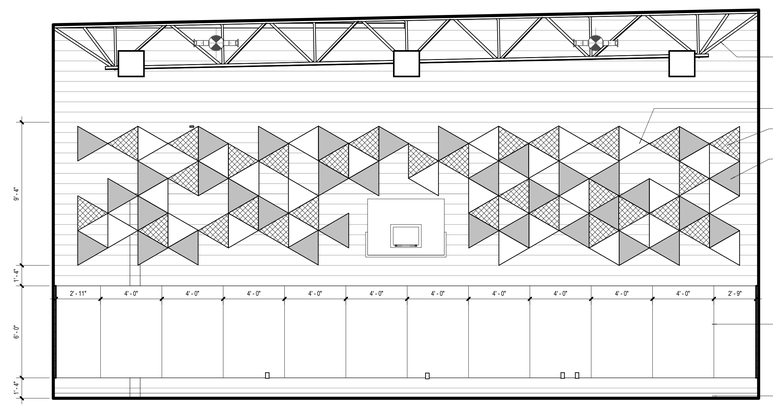
6 A8.02 A139 CIRCULATION EAST
1/4" = 1'-0"



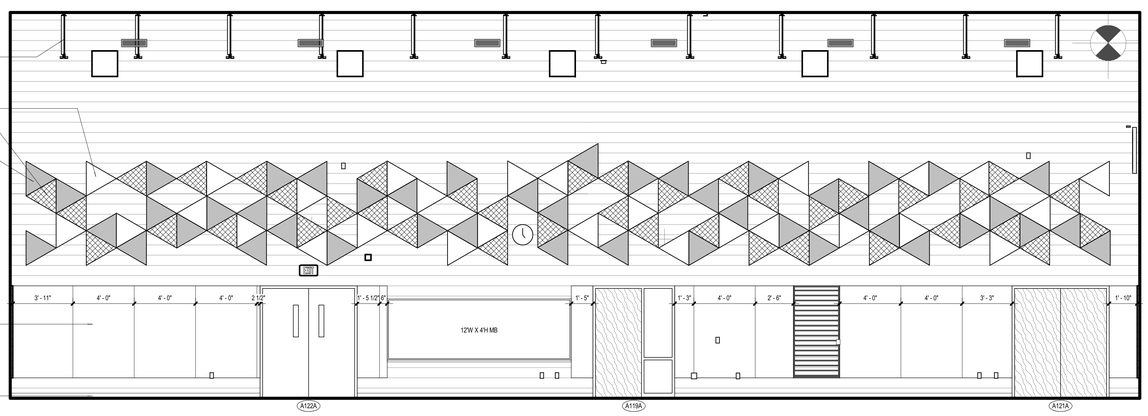
4 A8.02 A121 GYM SOUTH
1/4" = 1'-0"



3 A8.02 A121 GYM WEST
1/4" = 1'-0"



2 A8.02 A121 GYM NORTH
1/4" = 1'-0"



1 A8.02 A121 GYM EAST
1/4" = 1'-0"

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION
04.18.2023 ADDENDUM 001

DRAWN MRJ
REVIEWED TGD

PROJECT NO. 5-5798

INTERIOR ELEVATIONS AND DETAILS

A8.02

UNIT 'A' FIRST FLOOR FINISH PLAN

1/8" = 1'-0"

NORTH

FINISH SYMBOLS :

ROOM NAME
WALL FINISH
FLOOR FINISH
BASE FINISH

CPT1
VCT1
FLOORING TRANSITION

FINISH KEYNOTES :

01 MANUAL ROLLER SHADE LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION

02 MOTORIZED ROLLER SHADES LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION

03 PAINT EXISTING HM/WOOD DOOR FRAME P2; INTERIOR ROOM SIDE ONLY

FINISH LEGEND :

ACT1 ACOUSTICAL CEILING TILE
MFR: USG
STYLE: RADAR CLIMA PLUS 2210
COLOR: WHITE
SIZE: 24" 24" X 5/8"
GRID: DONN DX/DWL

AWP1 ACOUSTICAL WALL PANEL
MFR: ARMSTRONG
STYLE: TECTUM WALL PANEL
COLOR: FIELD PAINTED SEE ELEVATIONS
SIZE: 2'7"L X 2'7"W X 2"D

AWP2 ACOUSTICAL WALL PANEL
MFR: KINETICS OR EQUAL
STYLE: IMPACT RESISTANT WALL PANEL
COLOR:
AWP2A: DESIGNTEX GAMUT - FINCH 3468-204
AWP2B: DESIGNTEX GAMUT - PEWTER 3469-608
AWP2C: DESIGNTEX GAMUT - NAVY 3468-407
SIZE: 2'7"L X 2'7"W X 2"D

CG1 CORNER GUARD
STAINLESS STEEL CORNER GUARD

CT1 CARPET TILE
MFR: INTERFACE
STYLE: AE312
COLOR: 105410 IRON/ ACCENT
SIZE: 50 CM X 50 CM
INSTALLATION: QUARTER TURN

CT2 CARPET TILE
MFR: SHAW CONTRACT
STYLE: FAMILIAR TILE 57235
COLOR: RAINSTORM 35535
SIZE: 9 IN X 36 IN
INSTALLATION: ASHLAR

CT3 CARPET TILE
MFR: INTERFACE
STYLE: STEP REPEAT SR899
COLOR: 104941 ONYX
SIZE: 50 CM X 50 CM
INSTALLATION: MONOLITHIC

CPT1 CARPET TILE (ROLLED GOODS)
MFR: TARKETT
STYLE: 2ND POWER 04987
COLOR: IRON SAND 71622
SIZE: 6'W ROLLED GOODS

CTW1 CERAMIC TILE WALL
MFR: DALTILE
STYLE: COLOR WHEEL LINEAR
COLOR: NAVY
SIZE: 4 X 12 INCHES
INSTALLATION: 1/3 BRICK OFFSET, FULL HEIGHT WALL

LVT1 LUXURY VINYL TILE
MFR: INTERFACE
STYLE: BRUSHED LINES A016
COLOR: GALENA A01604
SIZE: 25 CM X 1 M

P1 PAINT (GENERAL)
MFR: BENJAMIN MOORE
COLOR: MATCH EXISTING GENERAL WALL WHITE

P2 PAINT (TRIM)
MFR: SHERWIN WILLIAMS
COLOR: SW7874 PEPPERCORN

P3 PAINT (ACCENT)
MFR: BENJAMIN MOORE
COLOR: HC-10 STUART GOLD

P4 PAINT (ACCENT)
MFR: SHERWIN WILLIAMS
COLOR: SW7019 GAUNTLET GRAY

P5 PAINT (ACCENT)
MFR: SHERWIN WILLIAMS
COLOR: SW6244 NAVAL

PC1 POLISHED CONCRETE
COLOR: NATURAL
LEVEL 3 POLISH, CLASS 3 AGGREGATE EXPOSURE

PL1 PLASTIC LAMINATE
MFR: WILSONART
COLOR: CRISP LINEN

PL2 PLASTIC LAMINATE
MFR: FORMICA
COLOR: AGED ASH

RAF1 RESILIENT ATHLETIC FLOORING
MFR: GERFLOR
STYLE: TARAFLEX SPORT M PLUS
COLOR: MAPLE DESIGN

RB1 RUBBER BASE
MFR: JOHNSONITE
STYLE: 4"H, 120' ROLLS
COLOR: MATCH EXT. BUILDING COLOR

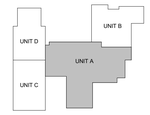
SC1 SEALED CONCRETE
MECHANICAL ROOM FLOOR COATING

SS1 STAINLESS STEEL

SSM1 SOLID SURFACE MATERIAL
MFR: DUPONT
STYLE: CORIAN
COLOR: ARROWROOT

GENERAL FINISH NOTES :

1. ALL AREAS OF CARPET, LVT, SEALED CONCRETE, OR OTHER RESILIENT FLOORING TO RECEIVE RUBBER BASE; U.N.O. ON FINISH PLANS.
2. IT IS THE RESPONSIBILITY OF ALL TRADES TO COORDINATE PREPARATION OF SURFACES TO RECEIVE FINISH PRODUCT. CONSULT WITH MANUFACTURERS RECOMMENDED PRACTICES.
3. ALL REDUCERS TO COORDINATE APPROPRIATELY WITH ABUTTING MATERIAL HEIGHT.
4. INSTALL 4" H. RUBBER BASE (RB) AT CASEWORK TOE KICKS, INSIDE OF FLOORLESS CASEWORK, AND VERTICAL SUPPORTS.
5. SEE SPECIFICATIONS FOR RESILIENT ACCESSORY INFORMATION.
6. PAINT ALL EXPOSED MECHANICAL AND ELECTRICAL ITEMS INTENDED TO RECEIVE FIELD PAINT TO MATCH ADJACENT SURFACES; U.N.O.
7. DOOR AND WINDOW FRAMES TO BE PAINTED P2; U.N.O.
8. EXPOSED CEILINGS, DECK, DUCTWORK, STRUCTURE AND OTHER MISC. EXPOSED ITEMS TO BE PAINTED; U.N.O. ON INTERIOR ELEVATIONS, CEILING PLANS OR FINISH PLANS.
9. FACE & UNDERSIDE OF BULKHEADS TO BE PAINTED P1; U.N.O. ON FINISH PLANS OR NOTED ON INTERIOR ELEVATIONS.
10. REFER TO CEILING PLANS & CEILING SPECIFICATIONS FOR SPECIAL CEILING DESIGNATIONS AND ACT TYPES.
11. REFER TO INTERIOR ELEVATION SHEETS FOR MORE DETAILED PAINT AND INTERIOR FINISH INFORMATION.
12. ALL WALL TILE INSTALLATIONS SHOULD BE FULL HEIGHT; UNLESS NOTED OR SHOWN OTHERWISE ON INTERIOR ELEVATIONS.
13. WHERE MATERIALS TRANSITION AT DOOR THRESHOLD, TRANSITION SHOULD OCCUR AT THE CENTER OF THE DOOR IN THE CLOSE POSITION.
14. MECHANICAL & ELECTRICAL ROOM FINISHES: AS A TYPICAL; PAINT WALLS, DO NOT PAINT EXPOSED STRUCTURE, DO NOT PROVIDE WALL BASE. TYPICAL UNLESS NOTED OTHERWISE ON FINISH PLANS.
15. WHERE SEALED CONCRETE (SC), IS SPECIFIED, REFER TO SPECIFICATION SECTION 09 90 00 PAINTING, FOR SYSTEM TYPE.
16. REFER TO SPECIFICATIONS FOR ALL PAINT TYPES.
17. ALL PAINTED WALLS IN TOILET ROOMS, KITCHENS, LOCKER ROOMS, SCIENCE ROOMS, STEM AND MAKERSPACES SHALL RECEIVE EPOXY PAINT.
18. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF OWNER FURNISHED EQUIPMENT, INCLUDED DIMENSIONS OF SUCH AS THEY RELATE TO THEIR OWN WORK.
19. REMOVE, SALVAGE AND RE-INSTALL EXISTING ROOM SIGNAGE PRIOR TO PAINTING WALLS IN AREAS OF WORK, TYP.
20. REMOVE AND SALVAGE ALL WALL MOUNTED FURNISHINGS AND ARTWORK PRIOR TO PAINTING. COORDINATE SALVAGE AND RE-INSTALLATION WITH OWNER.
21. DO NOT PAINT OVER EXISTING GLAZED FACE BLOCK OR EXPOSED BRICK, U.N.O.
22. PROTECT ALL FINISHES DURING CONSTRUCTION.



NORTH KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MRJ
REVIEWED TGD

PROJECT NO. 5-5798

UNIT 'A' FIRST FLOOR FINISH PLAN

A9.1A

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2019.rvt
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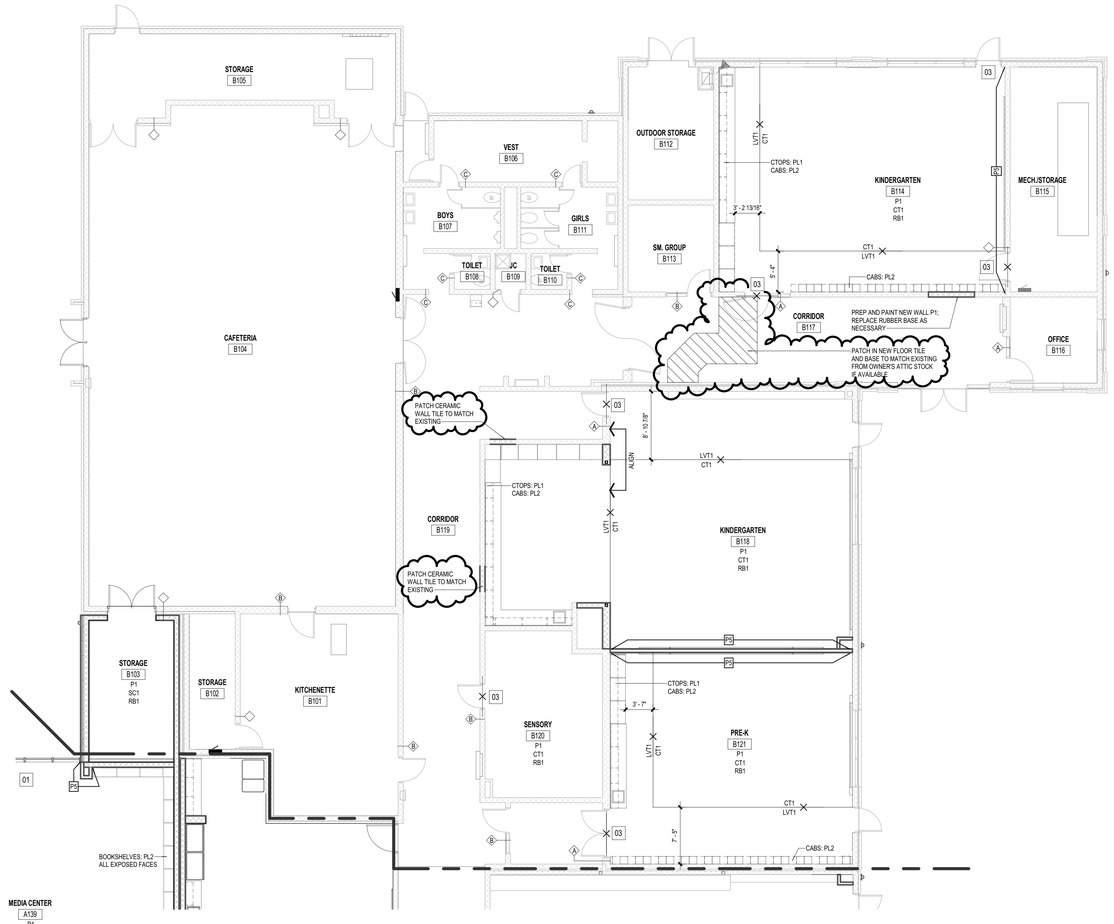


NORTH

UNIT 'B' FIRST FLOOR FINISH PLAN

1/8" = 1'-0"

FINISH SYMBOLS :	
ROOM NAME WALL FINISH FLOOR FINISH BASE FINISH	CPT1 / VCT1 — FLOORING TRANSITION

FINISH KEYNOTES :

01	MANUAL ROLLER SHADE LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION
02	MOTORIZED ROLLER SHADES LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION
03	PAINT EXISTING HMWOOD DOOR FRAME P2; INTERIOR ROOM SIDE ONLY

FINISH LEGEND :

ACT1 ACOUSTICAL CEILING TILE
MFR: USG
STYLE: RADAR CLIMA PLUS 2210
COLOR: WHITE
SIZE: 24" 24" X 5/8"
GRID: DONN DX/DWL

AWP1 ACOUSTICAL WALL PANEL
MFR: ARMSTRONG
STYLE: TECTUM WALL PANEL
COLOR: FIELD PAINTED SEE ELEVATIONS
SIZE: 27"L X 27"W X 2"D

AWP2 ACOUSTICAL WALL PANEL
MFR: KINETICS OR EQUAL
STYLE: IMPACT RESISTANT WALL PANEL
COLOR:
AWP2A: DESIGNTEX GAMUT - FINCH 3468-204
AWP2B: DESIGNTEX GAMUT - PEWTER 3468-808
AWP2C: DESIGNTEX GAMUT - NAVY 3468-407
SIZE: 27"L X 27"W X 2"D

CG1 CORNER GUARD
STAINLESS STEEL CORNER GUARD

CT1 CARPET TILE
MFR: INTERFACE
STYLE: AE312
COLOR: 10410 IRON/ ACCENT
SIZE: 50 CM X 50 CM
INSTALLATION: QUARTER TURN

CT2 CARPET TILE
MFR: SHAW CONTRACT
STYLE: FAMILIAR TILE 57235
COLOR: RAINSTORM 35535
SIZE: 9 IN X 36 IN
INSTALLATION: ASHLAR

CT3 CARPET TILE
MFR: INTERFACE
STYLE: STEP REPEAT SR899
COLOR: 10494 I ONYX
SIZE: 50 CM X 50 CM
INSTALLATION: MONOLITHIC

CPT1 CARPET TILE (ROLLED GOODS)
MFR: TARKETT
STYLE: 2ND.POWER 04987
COLOR: IRON SAND 71922
SIZE: 6'W ROLLED GOODS

CTW1 CERAMIC TILE WALL
MFR: DALTILE
STYLE: COLOR WHEEL LINEAR
COLOR: NAVY
SIZE: 4 X 12 INCHES
INSTALLATION: 1/3 BRICK OFFSET, FULL HEIGHT WALL

LVT1 LUXURY VINYL TILE
MFR: INTERFACE
STYLE: BRUSHED LINES A016
COLOR: GALENA AG1604
SIZE: 25 CM X 1 M

P1 PAINT (GENERAL)
MFR: BENJAMIN MOORE
COLOR: MATCH EXISTING GENERAL WALL WHITE

P2 PAINT (TRIM)
MFR: SHERWIN WILLIAMS
COLOR: SW7674 PEPPERCORN

P3 PAINT (ACCENT)
MFR: BENJAMIN MOORE
COLOR: HC-10 STUART GOLD

P4 PAINT (ACCENT)
MFR: SHERWIN WILLIAMS
COLOR: SW7019 GAUNTLET GRAY

P5 PAINT (ACCENT)
MFR: SHERWIN WILLIAMS
COLOR: SW6244 NAVAL

PC1 POLISHED CONCRETE
COLOR: NATURAL
LEVEL 3 POLISH, CLASS 3 AGGREGATE EXPOSURE

PL1 PLASTIC LAMINATE
MFR: WILSONART
COLOR: CRISP LINEN

PL2 PLASTIC LAMINATE
MFR: FORMICA
COLOR: AGED ASH

RAF1 RESILIENT ATHLETIC FLOORING
MFR: GERFLOR
STYLE: TARAFLEX SPORT M PLUS
COLOR: MAPLE DESIGN

RB1 RUBBER BASE
MFR: JOHNSONITE
STYLE: 4"H, 120' ROLLS
COLOR: MATCH EXT. BUILDING COLOR

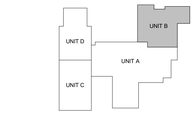
SC1 SEALED CONCRETE
MECHANICAL ROOM FLOOR COATING

SS1 STAINLESS STEEL

SSM1 SOLID SURFACE MATERIAL
MFR: DUPONT
STYLE: CORIAN
COLOR: ARROWROOT

GENERAL FINISH NOTES :

1. ALL AREAS OF CARPET, LVT, SEALED CONCRETE, OR OTHER RESILIENT FLOORING TO RECEIVE RUBBER BASE; U.N.O. ON FINISH PLANS.
2. IT IS THE RESPONSIBILITY OF ALL TRADES TO COORDINATE PREPARATION OF SURFACES TO RECEIVE FINISH PRODUCT. CONSULT WITH MANUFACTURERS RECOMMENDED PRACTICES.
3. ALL REDUCERS TO COORDINATE APPROPRIATELY WITH ABUTTING MATERIAL HEIGHT.
4. INSTALL 4" H. RUBBER BASE (RB) AT CASEWORK TOE KICKS, INSIDE OF FLOORLESS CASEWORK, AND VERTICAL SUPPORTS.
5. SEE SPECIFICATIONS FOR RESILIENT ACCESSORY INFORMATION.
6. PAINT ALL EXPOSED MECHANICAL AND ELECTRICAL ITEMS INTENDED TO RECEIVE FIELD PAINT TO MATCH ADJACENT SURFACES; U.N.O.
7. DOOR AND WINDOW FRAMES TO BE PAINTED P2; U.N.O.
8. EXPOSED CEILINGS, DECK, DUCTWORK, STRUCTURE AND OTHER MISC. EXPOSED ITEMS TO BE PAINTED; U.N.O. ON INTERIOR ELEVATIONS, CEILING PLANS OR FINISH PLANS.
9. FACE & UNDERSIDE OF BULKHEADS TO BE PAINTED P1; U.N.O. ON FINISH PLANS OR NOTED ON INTERIOR ELEVATIONS.
10. REFER TO CEILING PLANS & CEILING SPECIFICATIONS FOR SPECIAL CEILING DESIGNATIONS AND ACT TYPES.
11. REFER TO INTERIOR ELEVATION SHEETS FOR MORE DETAILED PAINT AND INTERIOR FINISH INFORMATION.
12. ALL WALL TILE INSTALLATIONS SHOULD BE FULL HEIGHT; UNLESS NOTED OR SHOWN OTHERWISE ON INTERIOR ELEVATIONS.
13. WHERE MATERIALS TRANSITION AT DOOR THRESHOLD, TRANSITION SHOULD OCCUR AT THE CENTER OF THE DOOR IN THE CLOSE POSITION.
14. MECHANICAL & ELECTRICAL ROOM FINISHES: AS A TYPICAL: PAINT WALLS, DO NOT PAINT EXPOSED STRUCTURE, DO NOT PROVIDE WALL BASE. TYPICAL UNLESS NOTED OTHERWISE ON FINISH PLANS.
15. WHERE SEALED CONCRETE (SC) IS SPECIFIED, REFER TO SPECIFICATION SECTION 09 90 00 PAINTING, FOR SYSTEM TYPE.
16. REFER TO SPECIFICATIONS FOR ALL PAINT TYPES.
17. ALL PAINTED WALLS IN TOILET ROOMS, KITCHENS, LOCKER ROOMS, SCIENCE ROOMS, STEM AND MAKERSPACES SHALL RECEIVE EPOXY PAINT.
18. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF OWNER FURNISHED EQUIPMENT, INCLUDED DIMENSIONS OF SUCH AS THEY RELATE TO THEIR OWN WORK.
19. REMOVE, SALVAGE AND RE-INSTALL EXISTING ROOM SIGNAGE PRIOR TO PAINTING WALLS IN AREAS OF WORK, TYP.
20. REMOVE AND SALVAGE ALL WALL MOUNTED FURNISHINGS AND ARTWORK PRIOR TO PAINTING. COORDINATE SALVAGE AND RE-INSTALLATION WITH OWNER.
21. DO NOT PAINT OVER EXISTING GLAZED FACE BLOCK OR EXPOSED BRICK, U.N.O.
22. PROTECT ALL FINISHES DURING CONSTRUCTION.



KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION
04.18.2023 ADDENDUM 001

DRAWN MRJ
REVIEWED TGD

PROJECT NO. 5-5798

UNIT 'B' FIRST FLOOR FINISH PLAN

A9.1B

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2019.rvt
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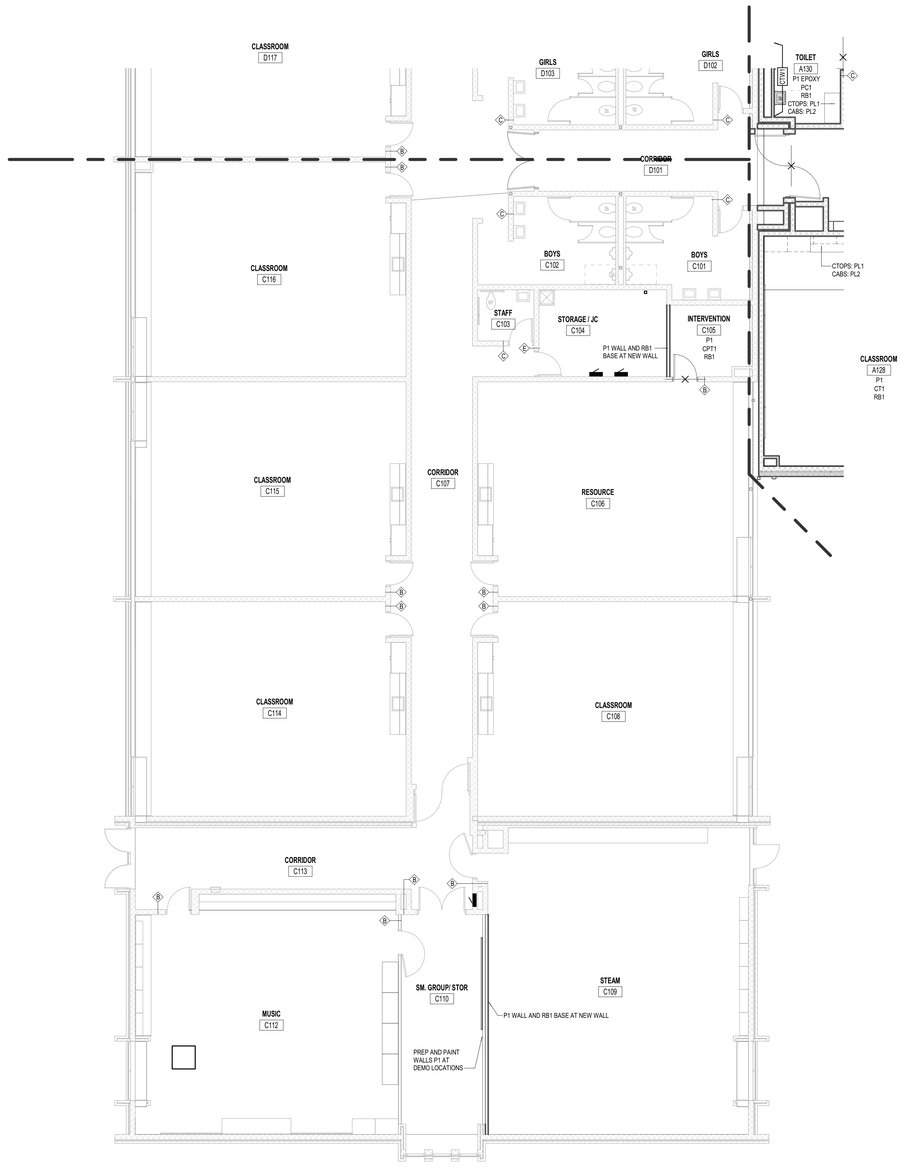


NORTH

UNIT 'C' FIRST FLOOR FINISH PLAN

1/8" = 1'-0"

FINISH SYMBOLS :

ROOM NAME
WALL FINISH
FLOOR FINISH
BASE FINISH

CPT1 / VCT1 — FLOORING TRANSITION

FINISH KEYNOTES :

01 MANUAL ROLLER SHADE LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION

02 MOTORIZED ROLLER SHADES LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION

03 PAINT EXISTING HM/WOOD DOOR FRAME P2. INTERIOR ROOM SIDE ONLY

FINISH LEGEND :

ACT1 ACOUSTICAL CEILING TILE
MFR: USG
STYLE: RADAR CLIMA PLUS 2210
COLOR: WHITE
SIZE: 24" 24" X 5/8"
GRID: DONN DX/DWL

AWP1 ACOUSTICAL WALL PANEL
MFR: ARMSTRONG
STYLE: TECTUM WALL PANEL
COLOR: FIELD PAINTED SEE ELEVATIONS
SIZE: 27"L X 27"W X 2"D

AWP2 ACOUSTICAL WALL PANEL
MFR: KINETICS OR EQUAL
STYLE: IMPACT RESISTANT WALL PANEL
COLOR:
AWP3A: DESIGNTEX GAMUT - FINCH 3468-204
AWP2B: DESIGNTEX GAMUT - PEWTER 3468-808
AWP2C: DESIGNTEX GAMUT - NAVY 3468-407
SIZE: 27"L X 27"W X 2"D

CG1 CORNER GUARD
STAINLESS STEEL CORNER GUARD

CT1 CARPET TILE
MFR: INTERFACE
STYLE: AE312
COLOR: 105410 IRON/ ACCENT
SIZE: 50 CM X 50 CM
INSTALLATION: QUARTER TURN

CT2 CARPET TILE
MFR: SHAW CONTRACT
STYLE: FAMILIAR TILE 57235
COLOR: RAINSTORM 35535
SIZE: 9 IN X 36 IN
INSTALLATION: ASHLAR

CT3 CARPET TILE
MFR: INTERFACE
STYLE: STEP REPEAT SR899
COLOR: 104941 ONYX
SIZE: 50 CM X 50 CM
INSTALLATION: MONOLITHIC

CPT1 CARPET TILE (ROLLED GOODS)
MFR: TARKETT
STYLE: 2ND POWER 04987
COLOR: IRON SAND 71022
SIZE: 6'W ROLLED GOODS

CTW1 CERAMIC TILE WALL
MFR: DALTILE
STYLE: COLOR WHEEL LINEAR
COLOR: NAVY
SIZE: 4 X 12 INCHES
INSTALLATION: 1/3 BRICK OFFSET, FULL HEIGHT WALL

LVT1 LUXURY VINYL TILE
MFR: INTERFACE
STYLE: BRUSHED LINES A016
COLOR: GALENA A01604
SIZE: 25 CM X 1 M

P1 PAINT (GENERAL)
MFR: BENJAMIN MOORE
COLOR: MATCH EXISTING GENERAL WALL WHITE

P2 PAINT (TRIM)
MFR: SHERWIN WILLIAMS
COLOR: SW7674 PEPPERCORN

P3 PAINT (ACCENT)
MFR: BENJAMIN MOORE
COLOR: HC-10 STUART GOLD

P4 PAINT (ACCENT)
MFR: SHERWIN WILLIAMS
COLOR: SW7019 GAUNTLET GRAY

P5 PAINT (ACCENT)
MFR: SHERWIN WILLIAMS
COLOR: SW6244 NAVAL

PC1 POLISHED CONCRETE
COLOR: NATURAL
LEVEL 3 POLISH, CLASS 3 AGGREGATE EXPOSURE

PL1 PLASTIC LAMINATE
MFR: WILSONART
COLOR: CRISP LINEN

PL2 PLASTIC LAMINATE
MFR: FORMICA
COLOR: AGED ASH

RAF1 RESILIENT ATHLETIC FLOORING
MFR: GERFLOR
STYLE: TARAFLEX SPORT M PLUS
COLOR: MAPLE DESIGN

RB1 RUBBER BASE
MRF: JOHNSONITE
STYLE: 4"H, 120' ROLLS
COLOR: MATCH EXT. BUILDING COLOR

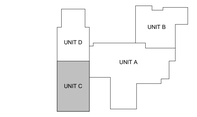
SC1 SEALED CONCRETE
MECHANICAL ROOM FLOOR COATING

SS1 STAINLESS STEEL

SSM1 SOLID SURFACE MATERIAL
MFR: DUPONT
STYLE: CORIAN
COLOR: ARROWROOT

GENERAL FINISH NOTES :

1. ALL AREAS OF CARPET, LVT, SEALED CONCRETE, OR OTHER RESILIENT FLOORING TO RECEIVE RUBBER BASE; U.N.O. ON FINISH PLANS.
2. IT IS THE RESPONSIBILITY OF ALL TRADES TO COORDINATE PREPARATION OF SURFACES TO RECEIVE FINISH PRODUCT. CONSULT WITH MANUFACTURERS RECOMMENDED PRACTICES.
3. ALL REDUCERS TO COORDINATE APPROPRIATELY WITH ABUTTING MATERIAL HEIGHT.
4. INSTALL 4" H. RUBBER BASE (RB) AT CASEWORK TOE KICKS, INSIDE OF FLOORLESS CASEWORK, AND VERTICAL SUPPORTS.
5. SEE SPECIFICATIONS FOR RESILIENT ACCESSORY INFORMATION.
6. PAINT ALL EXPOSED MECHANICAL AND ELECTRICAL ITEMS INTENDED TO RECEIVE FIELD PAINT TO MATCH ADJACENT SURFACES; U.N.O.
7. DOOR AND WINDOW FRAMES TO BE PAINTED P2; U.N.O.
8. EXPOSED CEILINGS, DECK, DUCTWORK, STRUCTURE AND OTHER MISC. EXPOSED ITEMS TO BE PAINTED; U.N.O. ON INTERIOR ELEVATIONS, CEILING PLANS OR FINISH PLANS.
9. FACE & UNDERSIDE OF BULKHEADS TO BE PAINTED P1; U.N.O. ON FINISH PLANS OR NOTED ON INTERIOR ELEVATIONS.
10. REFER TO CEILING PLANS & CEILING SPECIFICATIONS FOR SPECIAL CEILING DESIGNATIONS AND ACT TYPES.
11. REFER TO INTERIOR ELEVATION SHEETS FOR MORE DETAILED PAINT AND INTERIOR FINISH INFORMATION.
12. ALL WALL TILE INSTALLATIONS SHOULD BE FULL HEIGHT; UNLESS NOTED OR SHOWN OTHERWISE ON INTERIOR ELEVATIONS.
13. WHERE MATERIALS TRANSITION AT DOOR THRESHOLD, TRANSITION SHOULD OCCUR AT THE CENTER OF THE DOOR IN THE CLOSE POSITION.
14. MECHANICAL & ELECTRICAL ROOM FINISHES: AS A TYPICAL; PAINT WALLS, DO NOT PAINT EXPOSED STRUCTURE, DO NOT PROVIDE WALL BASE. TYPICAL UNLESS NOTED OTHERWISE ON FINISH PLANS.
15. WHERE SEALED CONCRETE (SC), IS SPECIFIED, REFER TO SPECIFICATION SECTION 09 90 00 PAINTING, FOR SYSTEM TYPE.
16. REFER TO SPECIFICATIONS FOR ALL PAINT TYPES.
17. ALL PAINTED WALLS IN TOILET ROOMS, KITCHENS, LOCKER ROOMS, SCIENCE ROOMS, STEM AND MAKERSPACES SHALL RECEIVE EPOXY PAINT.
18. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF OWNER FURNISHED EQUIPMENT, INCLUDED DIMENSIONS OF SUCH AS THEY RELATE TO THEIR OWN WORK.
19. REMOVE, SALVAGE AND RE-INSTALL EXISTING ROOM SIGNAGE PRIOR TO PAINTING WALLS IN AREAS OF WORK, TYP.
20. REMOVE AND SALVAGE ALL WALL MOUNTED FURNISHINGS AND ARTWORK PRIOR TO PAINTING. COORDINATE SALVAGE AND RE-INSTALLATION WITH OWNER.
21. DO NOT PAINT OVER EXISTING GLAZED FACE BLOCK OR EXPOSED BRICK, U.N.O.
22. PROTECT ALL FINISHES DURING CONSTRUCTION.



NORTH

KEYPLAN

GMB
616.796.0200
WWW.GMB.COM

PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

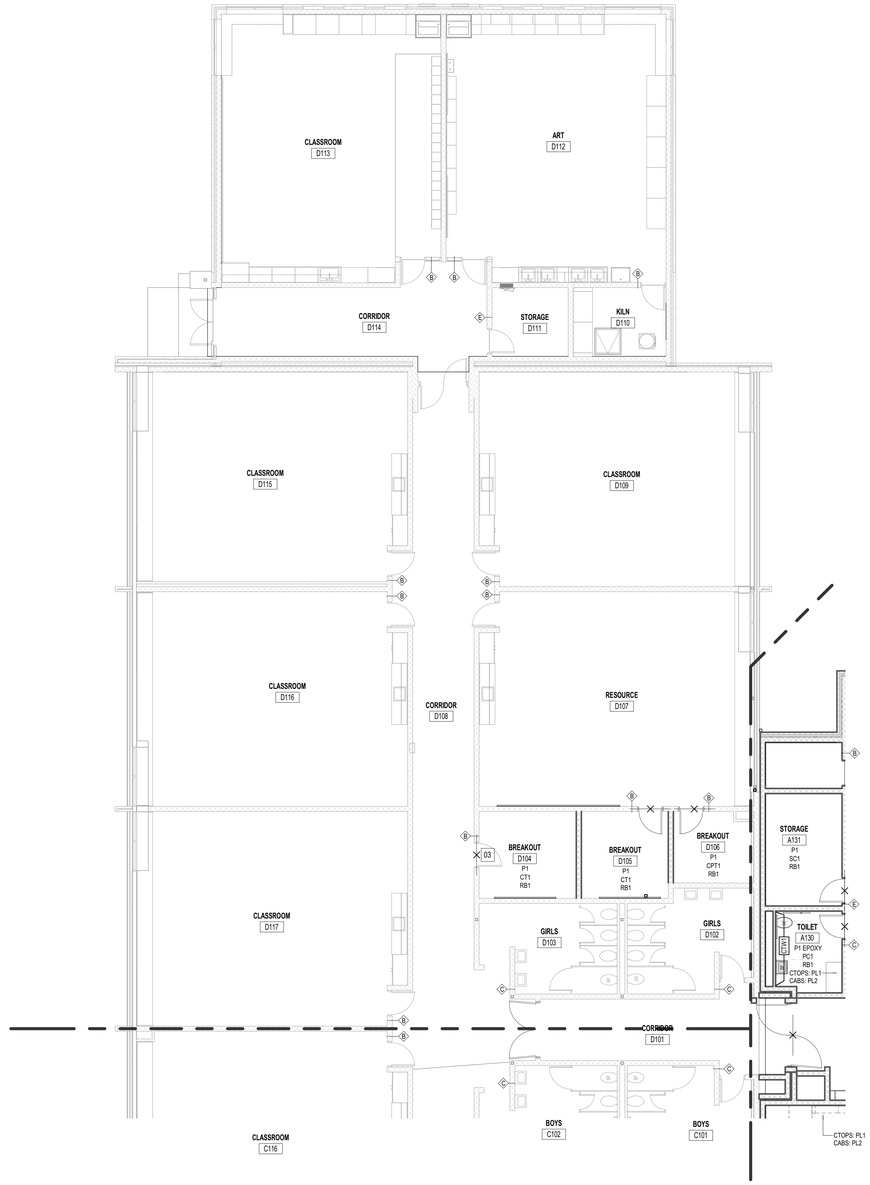
DRAWN MRJ
REVIEWED TGD

PROJECT NO. 5-5798

UNIT 'C' FIRST FLOOR FINISH PLAN

A9.1C

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2019.rvt
3/23/2023 12:06:42 AM



NORTH

UNIT 'D' FIRST FLOOR FINISH PLAN

1/8" = 1'-0"

FINISH SYMBOLS :

ROOM NAME
WALL FINISH
FLOOR FINISH
BASE FINISH

CPT1 / VCT1 — FLOORING TRANSITION

FINISH KEYNOTES :

01 MANUAL ROLLER SHADE LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION

02 MOTORIZED ROLLER SHADES LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION

03 PAINT EXISTING HM/WOOD DOOR FRAME P2; INTERIOR ROOM SIDE ONLY

FINISH LEGEND :

ACT1 ACOUSTICAL CEILING TILE
MFR: USG
STYLE: RADAR CLIMA PLUS 2210
COLOR: WHITE
SIZE: 24" 24" X 5/8"
GRID: DONN DX/DWL

AWP1 ACOUSTICAL WALL PANEL
MFR: ARMSTRONG
STYLE: TECTUM WALL PANEL
COLOR: FIELD PAINTED SEE ELEVATIONS
SIZE: 2'7"L X 2'7"W X 2"D

AWP2 ACOUSTICAL WALL PANEL
MFR: KINETICS OR EQUAL
STYLE: IMPACT RESISTANT WALL PANEL
COLOR:
AWP2A: DESIGNTEX GAMUT - FINCH 3468-204
AWP2B: DESIGNTEX GAMUT - PEWTER 3468-808
AWP2C: DESIGNTEX GAMUT - NAVY 3468-407
SIZE: 2'7"L X 2'7"W X 2"D

CG1 CORNER GUARD
STAINLESS STEEL CORNER GUARD

CT1 CARPET TILE
MFR: INTERFACE
STYLE: AE312
COLOR: 105410 IRON/ ACCENT
SIZE: 50 CM X 50 CM
INSTALLATION: QUARTER TURN

CT2 CARPET TILE
MFR: SHAW CONTRACT
STYLE: FAMILIAR TILE 5T235
COLOR: RAINSTORM 35535
SIZE: 9 IN X 36 IN
INSTALLATION: ASHLAR

CT3 CARPET TILE
MFR: INTERFACE
STYLE: STEP REPEAT SR899
COLOR: 104941 ONYX
SIZE: 50 CM X 50 CM
INSTALLATION: MONOLITHIC

CPT1 CARPET TILE (ROLLED GOODS)
MFR: TARKETT
STYLE: 2ND POWER 04987
COLOR: IRON SAND 71622
SIZE: 6'W ROLLED GOODS

CTW1 CERAMIC TILE WALL
MFR: DALTILE
STYLE: COLOR WHEEL LINEAR
COLOR: NAVY
SIZE: 4 X 12 INCHES
INSTALLATION: 1/3 BRICK OFFSET, FULL HEIGHT WALL

LVT1 LUXURY VINYL TILE
MFR: INTERFACE
STYLE: BRUSHED LINES A016
COLOR: GALENA A01604
SIZE: 25 CM X 1 M

P1 PAINT (GENERAL)
MFR: BENJAMIN MOORE
COLOR: MATCH EXISTING GENERAL WALL WHITE

P2 PAINT (TRIM)
MFR: SHERWIN WILLIAMS
COLOR: SW7674 PEPPERCORN

P3 PAINT (ACCENT)
MFR: BENJAMIN MOORE
COLOR: HC-10 STUART GOLD

P4 PAINT (ACCENT)
MFR: SHERWIN WILLIAMS
COLOR: SW7019 GAUNTLET GRAY

P5 PAINT (ACCENT)
MFR: SHERWIN WILLIAMS
COLOR: SW6244 NAVAL

PC1 POLISHED CONCRETE
COLOR: NATURAL
LEVEL 3 POLISH, CLASS 3 AGGREGATE EXPOSURE

PL1 PLASTIC LAMINATE
MFR: WILSONART
COLOR: CRISP LINEN

PL2 PLASTIC LAMINATE
MFR: FORMICA
COLOR: AGED ASH

RAF1 RESILIENT ATHLETIC FLOORING
MFR: GERFLOR
STYLE: TARAFLEX SPORT M PLUS
COLOR: MAPLE DESIGN

RB1 RUBBER BASE
MFR: JOHNSONITE
STYLE: 4"H, 120' ROLLS
COLOR: MATCH EXT. BUILDING COLOR

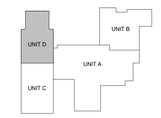
SC1 SEALED CONCRETE
MECHANICAL ROOM FLOOR COATING

SS1 STAINLESS STEEL

SSM1 SOLID SURFACE MATERIAL
MFR: DUPONT
STYLE: CORIAN
COLOR: ARROWROOT

GENERAL FINISH NOTES :

1. ALL AREAS OF CARPET, LVT, SEALED CONCRETE, OR OTHER RESILIENT FLOORING TO RECEIVE RUBBER BASE; U.N.O. ON FINISH PLANS.
2. IT IS THE RESPONSIBILITY OF ALL TRADES TO COORDINATE PREPARATION OF SURFACES TO RECEIVE FINISH PRODUCT. CONSULT WITH MANUFACTURERS RECOMMENDED PRACTICES.
3. ALL REDUCERS TO COORDINATE APPROPRIATELY WITH ABUTTING MATERIAL HEIGHT.
4. INSTALL 4" H. RUBBER BASE (RB) AT CASEWORK TOE KICKS, INSIDE OF FLOORLESS CASEWORK, AND VERTICAL SUPPORTS.
5. SEE SPECIFICATIONS FOR RESILIENT ACCESSORY INFORMATION.
6. PAINT ALL EXPOSED MECHANICAL AND ELECTRICAL ITEMS INTENDED TO RECEIVE FIELD PAINT TO MATCH ADJACENT SURFACES; U.N.O.
7. DOOR AND WINDOW FRAMES TO BE PAINTED P2; U.N.O.
8. EXPOSED CEILINGS, DECK, DUCTWORK, STRUCTURE AND OTHER MISC. EXPOSED ITEMS TO BE PAINTED; U.N.O. ON INTERIOR ELEVATIONS, CEILING PLANS OR FINISH PLANS.
9. FACE & UNDERSIDE OF BULKHEADS TO BE PAINTED P1; U.N.O. ON FINISH PLANS OR NOTED ON INTERIOR ELEVATIONS.
10. REFER TO CEILING PLANS & CEILING SPECIFICATIONS FOR SPECIAL CEILING DESIGNATIONS AND ACT TYPES.
11. REFER TO INTERIOR ELEVATION SHEETS FOR MORE DETAILED PAINT AND INTERIOR FINISH INFORMATION.
12. ALL WALL TILE INSTALLATIONS SHOULD BE FULL HEIGHT; UNLESS NOTED OR SHOWN OTHERWISE ON INTERIOR ELEVATIONS.
13. WHERE MATERIALS TRANSITION AT DOOR THRESHOLD, TRANSITION SHOULD OCCUR AT THE CENTER OF THE DOOR IN THE CLOSE POSITION.
14. MECHANICAL & ELECTRICAL ROOM FINISHES: AS A TYPICAL; PAINT WALLS, DO NOT PAINT EXPOSED STRUCTURE, DO NOT PROVIDE WALL BASE. TYPICAL UNLESS NOTED OTHERWISE ON FINISH PLANS.
15. WHERE SEALED CONCRETE (SC), IS SPECIFIED, REFER TO SPECIFICATION SECTION 09 90 00 PAINTING, FOR SYSTEM TYPE.
16. REFER TO SPECIFICATIONS FOR ALL PAINT TYPES.
17. ALL PAINTED WALLS IN TOILET ROOMS, KITCHENS, LOCKER ROOMS, SCIENCE ROOMS, STEM AND MAKERSPACES SHALL RECEIVE EPOXY PAINT.
18. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF OWNER FURNISHED EQUIPMENT, INCLUDED DIMENSIONS OF SUCH AS THEY RELATE TO THEIR OWN WORK.
19. REMOVE, SALVAGE AND RE-INSTALL EXISTING ROOM SIGNAGE PRIOR TO PAINTING WALLS IN AREAS OF WORK, TYP.
20. REMOVE AND SALVAGE ALL WALL MOUNTED FURNISHINGS AND ARTWORK PRIOR TO PAINTING. COORDINATE SALVAGE AND RE-INSTALLATION WITH OWNER.
21. DO NOT PAINT OVER EXISTING GLAZED FACE BLOCK OR EXPOSED BRICK, U.N.O.
22. PROTECT ALL FINISHES DURING CONSTRUCTION.



NORTH

KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN MRJ
REVIEWED TGD

PROJECT NO. 5-5798

UNIT 'D' FIRST FLOOR FINISH PLAN

A9.1D

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2019.rvt
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ELECTRICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	INTLK	INTERLOCK
ACC	ACCESSORY	JCT	JUNCTION
ADO	AUTOMATIC DOOR OPERATOR	JB	JUNCTION BOX
AHU	AIR HANDLING UNIT	KW	KILOWATT
ATS	AUTOMATIC TRANSFER SWITCH	KWH	KILOWATT HOUR
BKR	BREAKER	KO	KNOCK OUT
BOB	BOTTOM OF BOX	LBL	LABEL
BOD	BOTTOM OF DECK	LT	LIGHT
BOS	BOTTOM OF STRUCTURE	LC	LIGHTING CONTROL
BP	BREAKER PANEL	LCM	LIGHTING CONTROL MODULE
BLDG	BUILDING	LCN	LIGHTING CONTROL NARRATIVE
CAP	CAPACITY	LTG	LIGHTING
CLG	CEILING	MAX	MAXIMUM
CKT	CIRCUIT	MBJ	MAIN BONDING JUMPER
CB	CIRCUIT BREAKER	MCC	MOTOR CONTROL CENTER
C	CONDUIT	MIN	MINIMUM
COMM	COMMUNICATIONS	MTS	MANUAL TRANSFER SWITCH
CONN	CONNECTION	NEC	NATIONAL ELECTRICAL CODE
CONST	CONSTRUCTION	NEG	NEGATIVE (-)
CONTR	CONTRACT (OR)	NC	NORMALLY CLOSED
CLL	CONTRACT LIMIT LINE	NO	NORMALLY OPEN
CT	CURRENT TRANSFORMER	N/A	NOT APPLICABLE
E.C.	ELECTRICAL CONTRACTOR	NIC	NOT IN CONTRACT
EGC	EQUIPMENT GROUNDING CONDUCTOR	NL	NIGHT LIGHT
EHD	ELECTRIC HAND DRYER	OCPD	OVERCURRENT PROTECTIVE DEVICE
ELEC	ELECTRIC (AL)	PC	PHOTOCELL / PHOTOCONTROL
EWC	ELECTRIC WATER COOLER	POS	POSITIVE (+)
EM	EMERGENCY	PWR	POWER
ENT	ENTRANCE	P & L	POWER & LIGHTING
EQ	EQUAL	S	SURFACE
EQUIP	EQUIPMENT	SBJ	SYSTEM BONDING JUMPER
EST	ESTIMATE	S.B.O.	SUPPLIED BY OTHERS
EF	EXHAUST FAN	SP	SINGLE POLE
ETR	EXISTING TO REMAIN	SPD	SURGE PROTECTION DEVICE
EX	EXISTING	SPKR	SPEAKER
F	FLUSH	SPEC	SPECIFICATION
FA	FIRE ALARM	SSBJ	SUPPLY-SIDE BONDING JUMPER
FSE	FOOD SERVICE EQUIPMENT	SUB	SUBSTITUTE
FP	FIRE PROOF / FIRE PROTECTION	SWBD	SWITCHBOARD
FLR	FLOOR	TEL	TELEPHONE
FLUOR	FLUORESCENT	TSTAT	THERMOSTAT
GEC	GROUNDING ELECTRODE CONDUCTOR	XFMR	TRANSFORMER
GEN	GENERATOR	UG	UNDERGROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UL	UNDERWRITERS LABORATORIES
GRD	GROUND	UH	UNIT HEATER
HORIZ	HORIZONTAL	UNO	UNLESS NOTED OTHERWISE
HTR	HEATER	VERT	VERTICAL
HTG	HEATING	W/	WITH
HV	HEATING / VENTILATING	W/O	WITHOUT
HVAC	HEATING, VENTILATING, AIR CONDITIONING	WG	WIRE GUARD
HOA	HAND - OFF - AUTOMATIC	WL	WET LOCATION
HP	HEAT PUMP	WP	WEATHER PROOF

MAXIMUM CONDUCTOR LENGTHS FOR TYPICAL BRANCH CIRCUITS

FEET ONE-WAY BASED ON SINGLE PHASE, 20A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG
120	60	100	150	245	385
208	100	170	265	425	670
277	135	230	355	565	890
480	240	400	615	980	

FEET ONE-WAY BASED ON SINGLE PHASE, 30A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#10 AWG	#8 AWG	#6 AWG	#4 AWG	
120	60	100	150	245	
208	100	170	265	425	
277	135	230	355	565	
480	240	400	615	980	

FEET ONE-WAY BASED ON THREE PHASE, 20A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG
208	120	200	305	490	775
480	275	460	710	1,130	

FEET ONE-WAY BASED ON THREE PHASE, 30A CIRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP

CIRCUIT VOLTAGE	CONDUCTOR SIZE				
	#10 AWG	#8 AWG	#6 AWG	#4 AWG	
208	120	200	305	490	
480	275	460	710	1,130	

COMMUNICATIONS SYMBOL LEGEND

- COMMUNICATIONS OUTLET ROUGH-IN
- COMMUNICATIONS OUTLET, CEILING-MOUNTED
- COMMUNICATIONS OUTLET, FLOOR-MOUNTED
- CEILING-MOUNTED VIDEO PROJECTOR
- COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED 2-POST
- COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED 4-POST
- COMMUNICATIONS EQUIPMENT RACK, WALL-MOUNTED
- CONDUIT SLEEVE FOR COMMUNICATIONS CABLING, 2" DIA. OR EQUIV. FREE AREA TYP. UNLESS NOTED OTHERWISE. IN FIRE-RATED AND/OR SMOKE BARRIER WALLS, REFER TO SPECIFICATIONS FOR ACCEPTABLE FIRESTOP AND SMOKE SEAL PRODUCTS.
- (S) LOUDSPEAKER, CEILING-MOUNTED, PROVIDE SINGLE-GANG FLUSH BOX WITH 3/4" CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINATE WITH OWNER'S COMMUNICATION CONTRACTOR
- (S) LOUDSPEAKER, WALL-MOUNTED, PROVIDE SINGLE-GANG FLUSH BOX WITH 3/4" CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINATE WITH OWNER'S COMMUNICATION CONTRACTOR
- CS INTERCOM SYSTEM CALL STATION BUTTON
- VC VOLUME CONTROL FOR AUDIO SYSTEM, PAGING, OR INTERCOM LOUDSPEAKERS
- (C) SECONDARY CLOCK, CEILING-MOUNTED, PROVIDE SINGLE-GANG FLUSH BOX WITH 3/4" CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINATE WITH OWNER'S COMMUNICATION CONTRACTOR
- (C) SECONDARY CLOCK, WALL-MOUNTED, PROVIDE SINGLE-GANG FLUSH BOX WITH 3/4" CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINATE WITH OWNER'S COMMUNICATION CONTRACTOR
- SIGNALING BELL

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

POWER SYMBOL LEGEND

- (5) THREE PHASE MOTOR CONNECTION, 5 HORSEPOWER (EXAMPLE)
- (1/2) SINGLE PHASE MOTOR CONNECTION, 1/2 HORSEPOWER (EXAMPLE)
- (D) HVAC CONTROL DAMPER ACTUATOR CONNECTION
- (D) SD HVAC SMOKE DAMPER ACTUATOR CONNECTION
- (D) F/S HVAC COMBINATION FIRE/SMOKE DAMPER ACTUATOR CONNECTION
- SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE
- SAFETY SWITCH DISCONNECTING MEANS, FUSIBLE
- COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS
- VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS
- MOTOR STARTER
- $_{BF}$ BOX-COVER FUSIBLE DISCONNECT SWITCH
- $_{M}$ MANUAL MOTOR CONTROLLER
- $ POWER SWITCH, REFER TO LIGHTING SYMBOL LEGEND FOR SIMILAR SWITCH TYPES
- DIRECT ELECTRICAL CONNECTION
- SINGLE NEMA 5-20R RECEPTACLE
- SINGLE NEMA 5-20R RECEPTACLE, CEILING-MOUNTED
- SINGLE NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED
- DUPLEX NEMA 5-20R RECEPTACLE
- E "E" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX
- GFCI "GFCI" NOTATION: GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE
- S "S" NOTATION: SURFACE-MOUNTED
- WL "WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER
- DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED
- DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED
- DUPLEX NEMA 5-20R RECEPTACLE, CONNECTED TO STANDBY POWER BRANCH CIRCUIT
- DUPLEX NEMA 5-20R RECEPTACLE, SPLIT-WIRED
- QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE
- QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED
- QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED
- RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE
- RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE, FLOOR-MOUNTED
- VERT HORIZ SURFACE RACEWAY SYSTEM
- ATS AUTOMATIC TRANSFER SWITCH
- MTS MANUAL TRANSFER SWITCH
- SWITCHBOARD / SWITCHGEAR
- PANELBOARD
- T TRANSFORMER
- MOTOR CONTROL CENTER
- EMERGENCY STOP STATION, REFER TO DETAIL FOR REQUIREMENTS.
- AUTOMATIC DOOR OPERATOR PUSH BUTTON
- ON/OFF PUSH BUTTON
- THREE-FUNCTION PUSH BUTTON
- FBT1 FLOORBOX, TYPE 1
- J JUNCTION BOX
- M METER
- T THERMOSTAT ROUGH-IN
- R RELAY
- C ENCLOSED CONTROL CONTACTOR

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

LIGHTING SYMBOL LEGEND

- $ SINGLE POLE TOGGLE SWITCH
- $_{2}$ DOUBLE POLE TOGGLE SWITCH
- $_{3}$ THREE-WAY TOGGLE SWITCH
- $_{4}$ FOUR-WAY TOGGLE SWITCH
- $_{OS}$ SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR
- $_{OSD}$ SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR AND DIMMER
- $_{D}$ WALL-BOX DIMMER SWITCH
- $_{D3}$ THREE-WAY WALL-BOX DIMMER SWITCH
- $_{T}$ ELECTRONIC INTERVAL TIMER SWITCH
- $_{IP}$ LIGHT SWITCH WITH PILOT LIGHT
- $_{C}$ LIGHTING CONTROL SWITCH, REFER TO LIGHTING CONTROL SWITCH SCHEDULE AND SPECIFICATIONS FOR DETAILS.
- $_{DT}$ DOUBLE-THROW (MAINTAINED) LIGHT SWITCH
- $_{K}$ KEY-OPERATED SWITCH (SUFFIX DESIGNATION – NONE: SINGLE POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY)
- $_{L}$ LOCKING SWITCH (SUFFIX DESIGNATION – NONE: SINGLE-POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY)
- TP TOUCHSCREEN PANEL
- LPA-X CIRCUIT NUMBER FOR LIGHT FIXTURES WITHIN INDICATED SPACE
- A WALL-MOUNTED LIGHTING FIXTURE, TYPE 'A'
- A RECESSED LIGHTING FIXTURE, TYPE 'A'
- A SURFACE-MOUNTED LIGHTING FIXTURE, TYPE 'A'
- TRACK LIGHTING
- SINGLE FACE EXIT SIGN, TYPE "X1" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION
- DOUBLE FACE EXIT SIGN, TYPE "X2" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION
- WALL-MOUNTED EXIT SIGN, SHADING INDICATES FACE ORIENTATION
- EMERGENCY LIGHT FIXTURE DESIGNATION
- EMERGENCY LIGHTING AUTOMATIC LOAD CONTROL RELAY
- R LIGHTING CONTROL RELAY
- C LIGHTING CONTROL ENCLOSED CONTACTOR
- TS TIME SWITCH
- LCM LIGHTING CONTROL MODULE
- LCP LIGHTING CONTROL PANEL
- INV-1 EMERGENCY LIGHTING INVERTER, TYPE 1
- WALL-MOUNTED OCCUPANCY SENSOR
- CEILING-MOUNTED OCCUPANCY SENSOR
- PC WALL-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
- PC CEILING-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
- PS WALL-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
- PS CEILING-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
- POLE-MOUNTED SITE/AREA FIXTURE
- SELF-CONTAINED EMERGENCY LIGHTING UNIT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

FIRE ALARM SYMBOL LEGEND

- MANUAL PULL STATION
- AUDIBLE NOTIFICATION APPLIANCE, WALL-MOUNTED
- VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
- AV AUDIBLE/VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
- A AUDIBLE NOTIFICATION APPLIANCE, CEILING-MOUNTED
- AV AUDIBLE/VISUAL NOTIFICATION APPLIANCE, CEILING-MOUNTED
- V VISUAL NOTIFICATION APPLIANCE, CEILING-MOUNTED
- WG/PC WHERE "WG/PC" IS NOTED, PROVIDE LISTED WIRE GUARD OR PROTECTIVE POLYCARBONATE COVER FOR NOTIFICATION DEVICE.
- WL WHERE "WL" IS NOTED, PROVIDE LISTED WET-LOCATION NOTIFICATION DEVICE, SUITABLE FOR INDOOR OR OUTDOOR USE.
- SD SMOKE DETECTOR
- HD HEAT DETECTOR
- DD DUCT SMOKE DETECTOR
- FP FIRE PROTECTION FLOW SWITCH
- TD FIRE PROTECTION TAMPER SWITCH
- EM ELECTROMAGNETIC DOOR HOLD-OPEN DEVICE
- AR ADDRESSABLE RELAY FOR FIRE ALARM CONTROL
- PS PRESSURE SWITCH
- CO CARBON MONOXIDE DETECTOR
- NAC NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY
- FAA FIRE ALARM REMOTE ANNUNCIATOR
- FACP FIRE ALARM CONTROL PANEL
- $_{KTS}$ KEYED TEST SWITCH AND REMOTE INDICATOR FOR DUCT SMOKE DETECTOR
- FP FIRE PROTECTION OR ALARM BELL

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

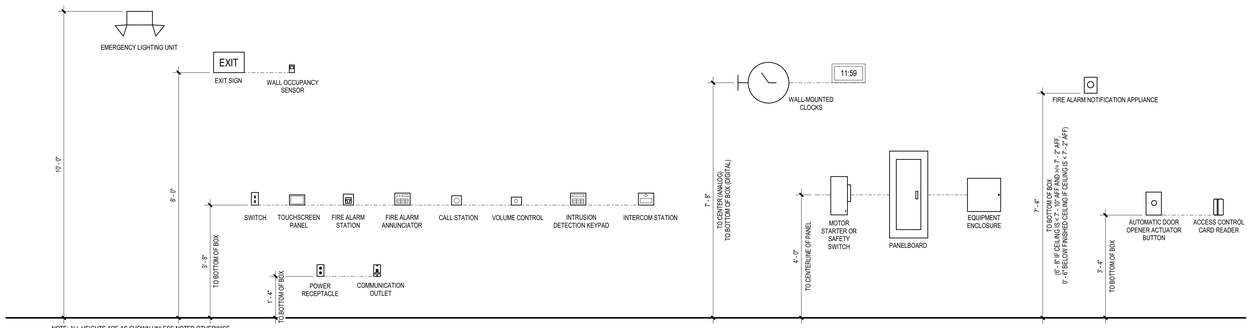
ELECTRONIC SAFETY / SECURITY SYMBOL LEGEND

- DC DOOR CONTACT
- EL ELECTRONIC LATCH
- ES ELECTRONIC STRIKE
- K INTRUSION DETECTION KEYPAD
- IC INTERCOM STATION
- SC WALL-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH-IN
- SC CEILING-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH IN
- SC WALL-MOUNTED SURVEILLANCE CAMERA, TYPE 1
- SC CEILING-MOUNTED SURVEILLANCE CAMERA, TYPE 1
- ID WALL-MOUNTED INFRARED MOTION DETECTOR
- ID CEILING-MOUNTED INFRARED MOTION DETECTOR
- UD WALL-MOUNTED ULTRASONIC MOTION DETECTOR
- UD CEILING-MOUNTED ULTRASONIC MOTION DETECTOR
- CR CARD READER
- CR M CARD READER, MULLION-MOUNTED
- XXXXX ACCESS CONTROL DOOR TAG, REFER TO HARDWARE SCHEDULE(S) IN SECTION 08 71 00 AND OWNER'S ACCESS CONTROL VENDOR FOR FURTHER DETAILED REQUIREMENTS
- ACS ACCESS CONTROL SYSTEM EQUIPMENT
- IDS INTRUSION DETECTION SYSTEM EQUIPMENT
- PSU POWER SUPPLY UNIT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

ELECTRICAL GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AS AMENDED AND ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION WHERE THE WORK IS PERFORMED.
2. ALL "LOW-VOLTAGE" CONTROLS, COMMUNICATIONS, AND SAFETY/SECURITY CABLING MAY BE INSTALLED WITHOUT CONDUIT, RACEWAY, OR CABLE TRAY ONLY WHERE CONCEALED ABOVE A SUSPENDED CEILING SYSTEM AND ACCESSIBLE FOR FUTURE MAINTENANCE. OTHERWISE, ALL CABLING (INCLUDING BUT NOT LIMITED TO CABLES ASSOCIATED WITH SYSTEMS SUCH AS ARCHITECTURAL EQUIPMENT, BUILDING ENERGY MANAGEMENT, TEMPERATURE CONTROLS, LIGHTING CONTROLS, COMMUNICATIONS NETWORKS, TELEPHONE, AUDIO-VIDEO, INTERCOM, PAGING, CLOCK, SURVEILLANCE, ACCESS CONTROL, FIRE ALARM, ETC.) SHALL BE INSTALLED IN AN APPROVED CONDUIT, RACEWAY SYSTEM, AND/OR CABLE TRAY UNLESS OTHERWISE NOTED. IN EXPOSED STRUCTURE CEILING AREAS, CONCEALED INSTALLATION OF CABLES IN RACEWAYS SHALL BE REQUIRED FOR AESTHETIC REASONS. REFER TO REFLECTED CEILING PLANS FOR LOCATION(S). THIS APPLIES TO ALL TRADES AND WORK CATEGORIES. EXCEPTIONS:
   A. DEDICATED MECHANICAL AND/OR ELECTRICAL ROOMS ABOVE 8'-0" AFF
   B. DEDICATED TELECOMMUNICATIONS ROOMS
3. ALL DEVICES SHOWN TO BE INSTALLED ON EXISTING WALLS SHALL BE INSTALLED FLUSH; CUT IN BOXES AND FISH WALLS WITH FLEXIBLE CONDUIT AS REQUIRED. DOCUMENT AND COORDINATE EXCEPTIONS WITH ARCHITECT/ENGINEER IN WRITING FOR REVIEW IN FIELD. IF WALL IS PROVEN NOT ABLE TO BE FISHED, PROVIDE SURFACE RACEWAY SYSTEMS PER SECTION 26 05 33.23. SHALL BE PROVIDED BY THE CONTRACTOR; SUCH COSTS SHALL BE INCLUDED IN BID. SURFACE-MOUNTED CONDUIT IS NOT ACCEPTABLE WHERE EXPOSED TO VIEW IN SPACES OTHER THAN DEDICATED MECHANICAL/ELECTRICAL ROOMS.
4. "LOW-VOLTAGE" CONTROLS, COMMUNICATIONS, AND SAFETY/SECURITY CABLING SHALL NOT BE PAINTED. CONTRACTORS INSTALLING CABLING WHERE APPROVED FOR EXPOSED INSTALLATION SHALL INSTALL CABLES AFTER PAINTING HAS BEEN COMPLETED OR PROVIDE TEMPORARY PROTECTION OF CABLES UNTIL PAINTING HAS BEEN COMPLETED. PROVIDE TEMPORARY PROTECTION OF ANY EXISTING CABLING PRIOR TO PAINTING EXISTING AREAS. PAINTED CABLES SHALL BE REPLACED AT THE EXPENSE OF THE NEGLIGENT CONTRACTOR.
5. METAL CLAD CABLE MAY BE USED FOR FIXTURE WHIPS IN LENGTHS OF 6 FEET OR LESS ABOVE AN ACCESSIBLE SUSPENDED CEILING SYSTEM ONLY. OTHERWISE, METAL CLAD OR OTHER FLEXIBLE CABLE TYPES SHALL NOT BE USED UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEER. IT IS THE INTENT OF THESE CONTRACT DOCUMENTS THAT ALL INSTALLED BRANCH CIRCUITS CONSIST OF SEPARATE RACEWAY AND CONDUCTORS ALLOWING REMOVAL AND REPLACEMENT OF WIRING AS REQUIRED FOR FUTURE UPGRADES. REFER TO SPECIFICATIONS FOR EXCEPTIONS.
6. CIRCUIT WIRING FOR ARTICLE 700 EMERGENCY SYSTEMS AND ARTICLE 708 CRITICAL OPERATIONS POWER SYSTEMS SHALL BE INSTALLED IN SEPARATE CONDUITS/RACEWAYS AND BE KEPT ENTIRELY INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT PER NEC REQUIREMENTS.
7. ALL FEEDERS AND BRANCH CIRCUITS SHALL CONTAIN AN EQUIPMENT GROUNDING CONDUCTOR SIZED ACCORING TO THE NEC RACEWAYS INCLUDING CONDUITS, BOXES, WIREWAYS, ETC. SHALL NOT BE CONSIDERED AN ACCEPTABLE GROUND.
8. CONDUITS AND CABLING SHALL NOT BE INSTALLED WITHIN 4" OF ROOF DECK, EXCEPT AS NECESSARY TO SERVE ROOF-MOUNTED ITEMS AND ONLY WHEN THE CONDUIT OR CABLE IS ROUTED VERTICALLY TO SUCH EQUIPMENT FROM BELOW. CLEARANCE SHALL BE PERMITTED TO BE REDUCED TO 1 1/2" WHERE SUPPLEMENTAL METAL FRAMING MEMBERS PROVIDE AN EFFECTIVE BARRIER BETWEEN THE ROOF DECK AND ANY CONDUIT/CABLING.
9. SUPPLEMENTAL METAL FRAMING SHALL BE PROVIDED FOR SUSPENSION POINTS OF ALL ITEMS LOCATED BETWEEN STRUCTURAL MEMBERS (JOISTS, TRUSSES, BEAMS, ETC.) IN OPEN/VISIBLE STRUCTURE CEILING OR SUPPORT COLUMN AREAS. METAL FRAMING SHALL SPAN ACROSS THE TOP CHORD OR FLANGE OF OVERHEAD STRUCTURAL MEMBERS FOR BOTH STRUCTURAL AND AESTHETIC PURPOSES. SPECIFIC EXCEPTIONS SHALL BE COORDINATED IN WRITING WITH THE ARCHITECT/ENGINEER.
10. CONDUIT INSTALLED WITHIN INACCESSIBLE CONSTRUCTION SHALL BE 3/4" MINIMUM SIZE.
11. FEEDERS SHOWN ON DRAWINGS ARE SCHEMATIC ONLY. CONDUIT RUNS SHALL COMPLY WITH CONDUIT SPECIFICATIONS AND CONTAIN BENDS THAT ARE NO GREATER THAN 90 DEGREES. CONDUITS INSTALLED ABOVE GRADE SHALL BE RUN PARALLEL TO, OR PERPENDICULAR WITH, BUILDING STEEL AND/OR ARCHITECTURAL LINES.
12. CONTRACTOR(S) SHALL VERIFY COLOR/FINISH OF WIRING DEVICES, DEVICE FACEPLATES, SURFACE RACEWAY SYSTEMS, AND/OR MULTI-OUTLET ASSEMBLIES WITH ARCHITECT/ENGINEER IF NOT EXPLICITLY SPECIFIED.
13. ELECTRICAL CONTRACTOR SHALL REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ADDITIONAL INFORMATION REGARDING LIGHTING FIXTURE MOUNTING LOCATIONS, ARRANGEMENTS, AND CEILING FINISHES.
14. ELECTRICAL CONTRACTOR SHALL ADJUST LIGHTING FIXTURE LOCATIONS IN MECHANICAL ROOMS TO ACCOMMODATE MECHANICAL EQUIPMENT, DUCTWORK, AND RELATED FIELD CONDITIONS.
15. CONTRACTOR(S) SHALL BE RESPONSIBLE TO REVIEW INTERIOR ELEVATION SHEETS FOR PLACEMENT OF DEVICE BOXES. COORDINATE LOCATIONS SO THAT NO DEVICES ARE INSTALLED BEHIND CASEWORK, MILLWORK, VISUAL DISPLAY BOARDS, MIRRORS, CUSTOM GRAPHICS, SIGNAGE, ETC.
16. ELECTRICAL CONTRACTOR SHALL REVIEW TOILET EQUIPMENT SHOP DRAWINGS AND ARCHITECTURAL DETAILS/ELEVATIONS FOR CORRECT DEVICE BOX ROUGH-IN LOCATION OF HAND DRYERS.
17. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH PLUMBING CONTRACTOR AND THE ELECTRIC WATER COOLER / BOTTLE FILLER SHOP DRAWINGS FOR MOUNTING HEIGHT AND CONNECTION METHOD OF PLUMBING EQUIPMENT POWER CONNECTIONS. READILY ACCESSIBLE GFCI PROTECTION SHALL BE PROVIDED FOR THE BRANCH CIRCUIT(S) SUPPLYING ALL SUCH UNITS PER NEC REQUIREMENTS.
18. REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR DETAILED INFORMATION REGARDING EQUIPMENT AND CONTROL. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING AND PROVIDING ITEMS AS SPECIFICALLY LISTED AND ASSIGNED ON MECHANICAL EQUIPMENT SCHEDULE SUCH AS DISCONNECT SWITCHES, VARIABLE FREQUENCY DRIVES, STARTERS, TIMERS, SWITCHES, ETC.
19. ELECTRICAL CONTRACTOR SHALL CONFIRM THE LOCATION OF THE EXHAUST FANS LISTED IN THE MECHANICAL EQUIPMENT SCHEDULES BY REFERRING TO MECHANICAL/HVAC PLANS.
20. REFER TO ROOF PLANS FOR EXACT LOCATIONS OF ROOF-TOP MECHANICAL EQUIPMENT.
21. PROVIDE FLUSH SINGLE-GANG BOXES IN WALLS FOR HVAC / TEMPERATURE CONTROL DEVICES, AT LEAST ONE PER OCCUPIABLE ROOM OR SPACE. INSTALL 3/4" CONDUIT RACEWAY FROM BOX TO CORRESPONDING TEMPERATURE CONTROL SYSTEM DEVICE OR CONTROLLED UNIT. REFER TO MECHANICAL DRAWINGS FOR PROPOSED LOCATIONS AND COORDINATE WITH MECHANICAL / TEMPERATURE CONTROLS CONTRACTOR'S SHOP DRAWINGS.
22. CABINET UNIT HEATERS MAY HAVE LINE-VOLTAGE THERMOSTATS SUPPLIED BY MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. REFER TO MECHANICAL EQUIPMENT SCHEDULE.
23. DIVISION 26 CONTRACTOR SHALL PROVIDE CONDUIT SLEEVES WITH APPROPRIATE BUSHINGS FOR CONTROLS AND ELECTRONIC SAFETY/SECURITY CABLING THROUGH WALLS AND FLOORS. SLEEVE SIZES SHALL BE COORDINATED WITH CABLING REQUIREMENTS.
24. SECTION 27 05 28 CONTRACTOR SHALL PROVIDE DEDICATED CONDUIT SLEEVES WITH APPROPRIATE BUSHINGS THROUGH WALLS AND FLOORS FOR DIV. 27 COMMUNICATIONS AND DIV. 28 SAFETY/SECURITY CABLING. SLEEVE SIZE SHALL BE MINIMUM 2" DIA. OR EQUIVALENT FREE AREA UNLESS NOTED OTHERWISE. SPECIFIED CABLE PATHWAY PENETRATION DEVICES SHALL BE SUBSTITUTED FOR CONDUIT SLEEVES WHERE THERE IS A REQUIRED RATING IN THE CONSTRUCTED ASSEMBLY.
25. BUILDING SYSTEMS CABLING SHALL BE SLEEVED WHERE CABLES PASS THROUGH WALLS. NO CABLING SHALL PASS THROUGH OR OVER THE TOP OF WALL CONSTRUCTION WITHOUT THE USE OF A SLEEVE. DIVISION 26 CONTRACTOR SHALL PROVIDE SLEEVES (UNLESS OTHERWISE ASSIGNED) AND COORDINATE WITH ARCHITECTURAL TRADES DURING THE WALL CONSTRUCTION PROCESS. THIS REQUIREMENT APPLIES TO EXISTING CABLING IN FOOTPRINT OF ANY NEW WALLS; PROVIDE SPLIT SLEEVES IF CABLING CANNOT BE DISCONNECTED. FIELD-VERIFY QUANTITIES AND LOCATIONS, OR COORDINATE USE OF ALLOWANCES FOR SLEEVES WITH PROJECT ADMINISTRATIVE REQUIREMENTS.
26. PROVIDE DIRECT CONNECTIONS FROM DEDICATED LOCAL BRANCH CIRCUIT(S) TO ACCESS CONTROL SYSTEM AND DOOR HARDWARE POWER SUPPLIES WHERE REQUIRED FOR DOOR LOCK DEVICES, CONTROLLERS, ETC. REFER TO DOOR HARDWARE SCHEDULE AND ACCESS CONTROL SYSTEM SCHEDULE IN RESPECTIVE SPECIFICATIONS FOR QUANTITIES AND LOCATIONS.



NOTE: ALL HEIGHTS ARE AS SHOWN UNLESS NOTED OTHERWISE.

TYPICAL MOUNTING HEIGHTS FOR WALL DEVICES, EQUIPMENT, & FIXTURES

NOT TO SCALE

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN KSS

REVIEWED MCK

PROJECT NO. 5-5798

ELECTRICAL SYMBOL LEGENDS & GENERAL NOTES

E0.01

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798E 2019.rvt
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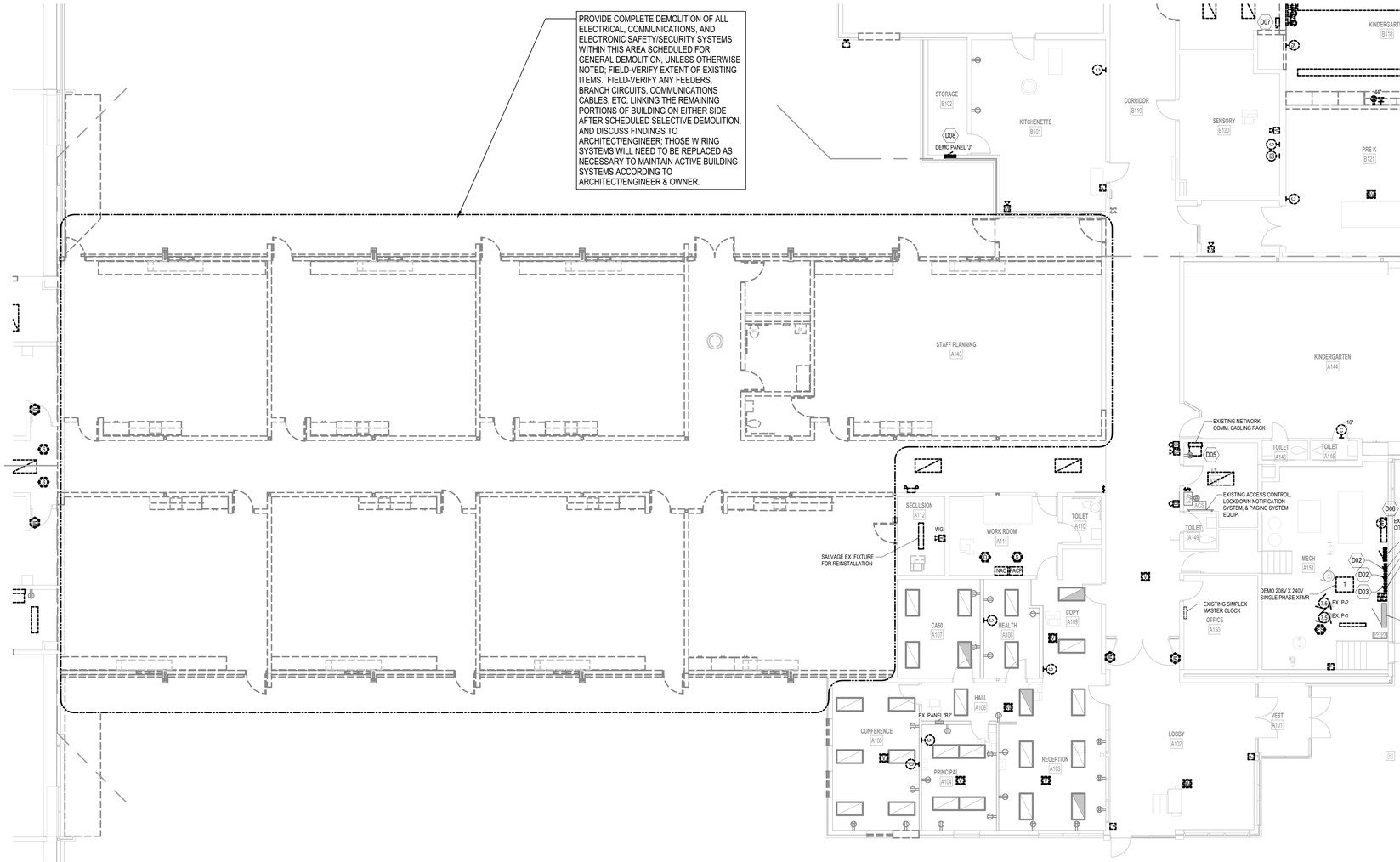
PROVIDE COMPLETE DEMOLITION OF ALL ELECTRICAL, COMMUNICATIONS, AND ELECTRONIC SAFETY/SECURITY SYSTEMS WITHIN THIS AREA SCHEDULED FOR GENERAL DEMOLITION, UNLESS OTHERWISE NOTED; FIELD-VERIFY EXTENT OF EXISTING ITEMS. FIELD-VERIFY ANY FEEDERS, BRANCH CIRCUITS, COMMUNICATIONS CABLES, ETC. LINKING THE REMAINING PORTIONS OF BUILDING ON EITHER SIDE AFTER SCHEDULED SELECTIVE DEMOLITION, AND DISCUSS FINDINGS TO ARCHITECT/ENGINEER; THOSE WIRING SYSTEMS WILL NEED TO BE REPLACED AS NECESSARY TO MAINTAIN ACTIVE BUILDING SYSTEMS ACCORDING TO ARCHITECT/ENGINEER & OWNER.



ELECTRICAL DEMOLITION GENERAL NOTES

1. REMOVE ALL ITEMS SHOWN ON DEMO PLAN, UNLESS OTHERWISE NOTED. REMOVE ALL UNUSED CONDUIT, RACEWAYS, WIRE, CABLE, CONTROLS, JUNCTION BOXES, DISCONNECTS, MOUNTS, AND RELATED ELECTRICAL ACCESSORIES COMPLETELY BACK TO SOURCE. REFER TO DEMOLITION SPECIFICATION.
2. MAKE PROVISIONS TO BACKFEED OR RE-CIRCUIT ANY ITEMS THAT ARE EXISTING TO REMAIN WHICH ARE AFFECTED BY THE DEMOLITIONS.
3. THE OWNER RESERVES THE RIGHT TO SALVAGE, WHOLE OR IN PART, ANY EQUIPMENT, SYSTEMS, AND/OR MATERIALS THAT ARE SCHEDULED FOR DEMOLITION PRIOR TO REMOVAL FROM THE BUILDING/SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTION AND GATHERING OF SUCH ITEMS TO A CENTRAL LOCATION AGREED UPON BY THE OWNER AND CONTRACTOR. ALL REMAINING EQUIPMENT AND/OR MATERIALS REMOVED AND NOT REUSED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE BUILDING/SITE.
4. ALL EQUIPMENT AND/OR MATERIALS SLATED FOR REUSE SHALL BE CAREFULLY REMOVED AND STORED TO PREVENT DAMAGE AND REINSTALLED AS WORK PROGRESSES.
5. ALL DEMOLITION SHOWN IS GATHERED FROM FIELD OBSERVATION AND/OR RECORD DRAWINGS. INVESTIGATION OF EXISTING SYSTEMS WILL BE REQUIRED BY THE CONTRACTOR AS PART OF THE BID PRICE, SO THAT THE EXACT EXTENT OF DEMOLITION CAN BE ACCURATELY DETERMINED. THE CONTRACTOR'S BID PRICE SHALL ALSO INCLUDE REMOVAL OF SOME PORTIONS OF SYSTEMS NOT EXPLICITLY SHOWN ON THIS DRAWING, BUT DISCOVERED DURING THE INVESTIGATION PROCESS. WHERE THE EXTENT OF DEMOLITION IS UNCLEAR, THE CONTRACTOR SHALL CONSULT WITH THE ARCHITECT/ENGINEER AND OWNER TO DETERMINE WHICH PORTIONS OF EXISTING SYSTEMS MUST REMAIN ACTIVE AND WHICH PORTIONS MUST BE DEMOLISHED.
6. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATION AND SIZES OF EXISTING CONDUIT, WIRING, AND EQUIPMENT.
7. IF ASBESTOS OR PCB MATERIAL IS ENCOUNTERED IT WILL BE REMOVED BY THE OWNER.
8. LAMPS CONTAINING MERCURY (FLUORESCENT, METAL HALIDE, SODIUM VAPOR, MERCURY VAPOR, ETC.) SHALL BE DISPOSED OF IN A PROPER HAZARDOUS WASTE RECYCLING FACILITY.
9. PATCH AND REPAIR ALL FLOOR, WALL AND CEILING OPENINGS DUE TO DEMOLITION WHICH ARE NOT TO BE RE-USED TO MATCH EXISTING CONSTRUCTION.
10. CONTRACTOR SHALL PROTECT ALL WALLS, CEILINGS, FLOORS, LIGHTS, AND OTHER FINISHED SURFACES THAT ARE NOT TO BE REMOVED. IF DAMAGED, CONTRACTOR SHALL REPAIR TO MATCH EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
11. BACKFILLING SHALL PROMPTLY FOLLOW UNDERGROUND DEMOLITION OR REMOVAL WORK AND SHALL CONTINUE AS THE DEMOLITION PROGRESSES.
12. EXISTING CONDUIT SYSTEMS MAY BE REUSED FOR THE INSTALLATION OF NEW CONDUCTORS IF THEY ARE DEEMED TO BE IN GOOD CONDITION AND OF ADEQUATE SIZE FOR CODE-COMPLIANT INSTALLATION OF THE NEW CONDUCTORS. REVISE / REROUTE CONDUIT AS NECESSARY TO PROVIDE FEEDS PER POWER AND/OR LIGHTING PLANS.
13. PROVIDE BLANK COVER OVER ANY ABANDONED AND REMAINING ROUGH-INS OR JUNCTION BOXES TO MATCH EXISTING.
14. DEMOLISH EXISTING FIRE ALARM SYSTEM AND ALL ASSOCIATED DEVICES (WHETHER INDICATED ON PLAN OR NOT), INCLUDING WIRING AND ACCESSIBLE ABANDONED CONDUIT. DEVICES THAT ARE AN INTEGRAL PART OF OTHER RELATED SYSTEMS, SUCH AS WATERFLOW SWITCHES, TAMPER SWITCHES, MONITORING EQUIPMENT, ETC., SHALL REMAIN FOR INTERCONNECTION WITH NEW FIRE ALARM SYSTEM. REFER TO SECTION 28 05 05 FOR FURTHER INFORMATION.

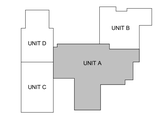
ELECTRICAL KEYNOTES

D02	DISCONNECT, CAREFULLY REMOVE, AND DISCARD EXISTING PANELBOARD AND ASSOCIATED SINGLE-PHASE FEEDER BACK TO DISTRIBUTION PANEL IN MECH. A151. PRESERVE ANY EXISTING BRANCH CIRCUIT WIRING THAT REMAINS AFTER SELECTIVE DEMOLITION; PREPARE FOR RECONNECTION OF REMAINING EXISTING BRANCH CIRCUITS TO NEW PANELBOARD IN SAME LOCATION AS SHOWN ON POWER PLAN, PANELBOARD SCHEDULES, AND ONE-LINE DIAGRAM.
D03	DISCONNECT, CAREFULLY REMOVE, AND DISCARD EXISTING PANELBOARD AND ASSOCIATED SINGLE-PHASE FEEDER BACK TO DISTRIBUTION PANEL IN MECH. A151. PRESERVE ANY EXISTING BRANCH CIRCUIT WIRING THAT REMAINS AFTER SELECTIVE DEMOLITION; PREPARE FOR RECONNECTION OF REMAINING EXISTING BRANCH CIRCUITS TO NEW PANELBOARD IN NEW LOCATION AS SHOWN ON POWER PLAN, PANELBOARD SCHEDULES, AND ONE-LINE DIAGRAM.
D05	CAPTURE EXISTING COMMUNICATION CABLES AND PREPARE TO CONNECT TO NEW FLOOR MOUNTED DATA RACK.
D06	DISCONNECT AND REMOVE EXISTING ABANDONED C/T CABINET AND METER. FIELD-VERIFY ANY FEEDERS, BRANCH CIRCUITS, COMMUNICATIONS CABLES, ETC.
D07	CAPTURE AND SALVAGE EXISTING VFD AND WIRING/CONDUIT. PREPARE TO RELOCATE. REFER TO POWER PLANS FOR NEW VFD LOCATION.
D08	DISCONNECT, CAREFULLY REMOVE, AND DISCARD EXISTING PANELBOARD RECESSED IN WALL AND ASSOCIATED SINGLE-PHASE FEEDER BACK TO DISTRIBUTION PANEL IN MECH. A151. PRESERVE ANY EXISTING BRANCH CIRCUIT WIRING THAT REMAINS AFTER SELECTIVE DEMOLITION; PREPARE FOR RECONNECTION OF REMAINING EXISTING BRANCH CIRCUITS TO NEW PANELBOARD IN SAME LOCATION AS SHOWN ON POWER PLAN, PANELBOARD SCHEDULES, AND ONE-LINE DIAGRAM. COORDINATE CUTTING AND PATCHING OF SURROUNDING MASONRY WITH ARCHITECTURAL TRADES.

NORTH

UNIT 'A' ELECTRICAL DEMOLITION PLAN

1/8" = 1'-0"



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KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN KSS

REVIEWED MCK

PROJECT NO. 5-5798

UNIT 'A' ELECTRICAL DEMOLITION PLAN

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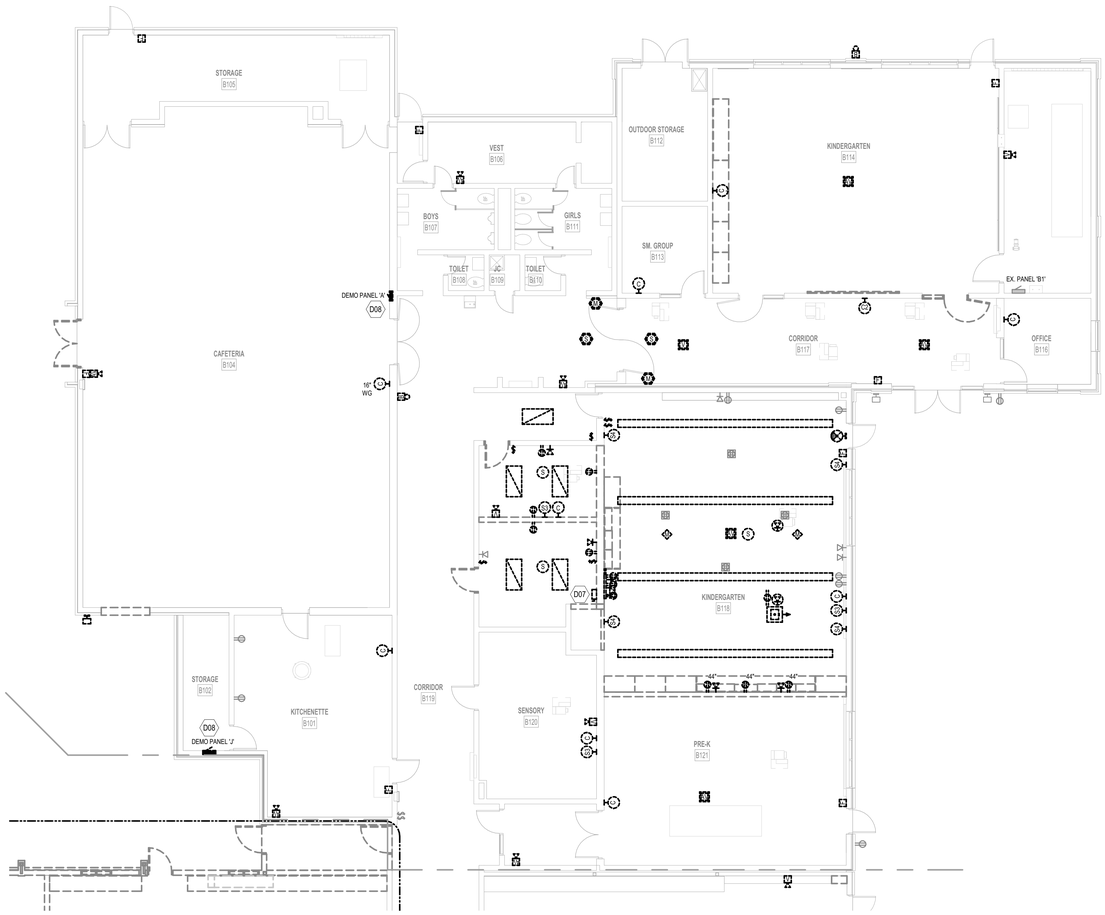

NORTH

UNIT 'B' ELECTRICAL DEMOLITION PLAN

1/8" = 1'-0"

ELECTRICAL DEMOLITION GENERAL NOTES

1. REMOVE ALL ITEMS SHOWN ON DEMO PLAN, UNLESS OTHERWISE NOTED. REMOVE ALL UNUSED CONDUIT, RACEWAYS, WIRE, CABLE, CONTROLS, JUNCTION BOXES, DISCONNECTS, MOUNTS, AND RELATED ELECTRICAL ACCESSORIES COMPLETELY BACK TO SOURCE. REFER TO DEMOLITION SPECIFICATION.
2. MAKE PROVISIONS TO BACKFEED OR RE-CIRCUIT ANY ITEMS THAT ARE EXISTING TO REMAIN WHICH ARE AFFECTED BY THE DEMOLITIONS.
3. THE OWNER RESERVES THE RIGHT TO SALVAGE, WHOLE OR IN PART, ANY EQUIPMENT, SYSTEMS, AND/OR MATERIALS THAT ARE SCHEDULED FOR DEMOLITION PRIOR TO REMOVAL FROM THE BUILDING/SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTION AND GATHERING OF SUCH ITEMS TO A CENTRAL LOCATION AGREED UPON BY THE OWNER AND CONTRACTOR. ALL REMAINING EQUIPMENT AND/OR MATERIALS REMOVED AND NOT REUSED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE BUILDING/SITE.
4. ALL EQUIPMENT AND/OR MATERIALS SLATED FOR REUSE SHALL BE CAREFULLY REMOVED AND STORED TO PREVENT DAMAGE AND REINSTALLED AS WORK PROGRESSES.
5. ALL DEMOLITION SHOWN IS GATHERED FROM FIELD OBSERVATION AND/OR RECORD DRAWINGS. INVESTIGATION OF EXISTING SYSTEMS WILL BE REQUIRED BY THE CONTRACTOR AS PART OF THE BID PRICE, SO THAT THE EXACT EXTENT OF DEMOLITION CAN BE ACCURATELY DETERMINED. THE CONTRACTOR'S BID PRICE SHALL ALSO INCLUDE REMOVAL OF SOME PORTIONS OF SYSTEMS NOT EXPLICITLY SHOWN ON THIS DRAWING, BUT DISCOVERED DURING THE INVESTIGATION PROCESS. WHERE THE EXTENT OF DEMOLITION IS UNCLEAR, THE CONTRACTOR SHALL CONSULT WITH THE ARCHITECT/ENGINEER AND OWNER TO DETERMINE WHICH PORTIONS OF EXISTING SYSTEMS MUST REMAIN ACTIVE AND WHICH PORTIONS MUST BE DEMOLISHED.
6. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATION AND SIZES OF EXISTING CONDUIT, WIRING, AND EQUIPMENT.
7. IF ASBESTOS OR PCB MATERIAL IS ENCOUNTERED IT WILL BE REMOVED BY THE OWNER.
8. LAMPS CONTAINING MERCURY (FLUORESCENT, METAL HALIDE, SODIUM VAPOR, MERCURY VAPOR, ETC.) SHALL BE DISPOSED OF IN A PROPER HAZARDOUS WASTE RECYCLING FACILITY.
9. PATCH AND REPAIR ALL FLOOR, WALL AND CEILING OPENINGS DUE TO DEMOLITION WHICH ARE NOT TO BE RE-USED TO MATCH EXISTING CONSTRUCTION.
10. CONTRACTOR SHALL PROTECT ALL WALLS, CEILINGS, FLOORS, LIGHTS, AND OTHER FINISHED SURFACES THAT ARE NOT TO BE REMOVED. IF DAMAGED, CONTRACTOR SHALL REPAIR TO MATCH EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
11. BACKFILLING SHALL PROMPTLY FOLLOW UNDERGROUND DEMOLITION OR REMOVAL WORK AND SHALL CONTINUE AS THE DEMOLITION PROGRESSES.
12. EXISTING CONDUIT SYSTEMS MAY BE REUSED FOR THE INSTALLATION OF NEW CONDUCTORS IF THEY ARE DEEMED TO BE IN GOOD CONDITION AND OF ADEQUATE SIZE FOR CODE-COMPLIANT INSTALLATION OF THE NEW CONDUCTORS. REVISE / REROUTE CONDUIT AS NECESSARY TO PROVIDE FEEDS PER POWER AND/OR LIGHTING PLANS.
13. PROVIDE BLANK COVER OVER ANY ABANDONED AND REMAINING ROUGH-INS OR JUNCTION BOXES TO MATCH EXISTING.
14. DEMOLISH EXISTING FIRE ALARM SYSTEM AND ALL ASSOCIATED DEVICES (WHETHER INDICATED ON PLAN OR NOT), INCLUDING WIRING AND ACCESSIBLE ABANDONED CONDUIT. DEVICES THAT ARE AN INTEGRAL PART OF OTHER RELATED SYSTEMS, SUCH AS WATERFLOW SWITCHES, TAMPER SWITCHES, MONITORING EQUIPMENT, ETC., SHALL REMAIN FOR INTERCONNECTION WITH NEW FIRE ALARM SYSTEM. REFER TO SECTION 28 05 05 FOR FURTHER INFORMATION.

ELECTRICAL KEYNOTES

D07	CAPTURE AND SALVAGE EXISTING VFD AND WIRING/CONDUIT. PREPARE TO RELOCATE. REFER TO POWER PLANS FOR NEW VFD LOCATION.
D08	DISCONNECT, CAREFULLY REMOVE, AND DISCARD EXISTING PANELBOARD RECESSED IN WALL AND ASSOCIATED SINGLE-PHASE FEEDER BACK TO DISTRIBUTION PANEL IN MECH. A151. PRESERVE ANY EXISTING BRANCH CIRCUIT WIRING THAT REMAINS AFTER SELECTIVE DEMOLITION; PREPARE FOR RECONNECTION OF REMAINING EXISTING BRANCH CIRCUITS TO NEW PANELBOARD IN SAME LOCATION AS SHOWN ON POWER PLAN. PANELBOARD SCHEDULES, AND ONE-LINE DIAGRAM. COORDINATE CUTTING AND PATCHING OF SURROUNDING MASONRY WITH ARCHITECTURAL TRADES.

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN KSS

REVIEWED MCK

PROJECT NO. 5-5798

UNIT 'B' ELECTRICAL DEMOLITION PLAN

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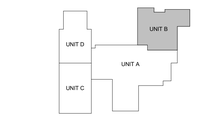
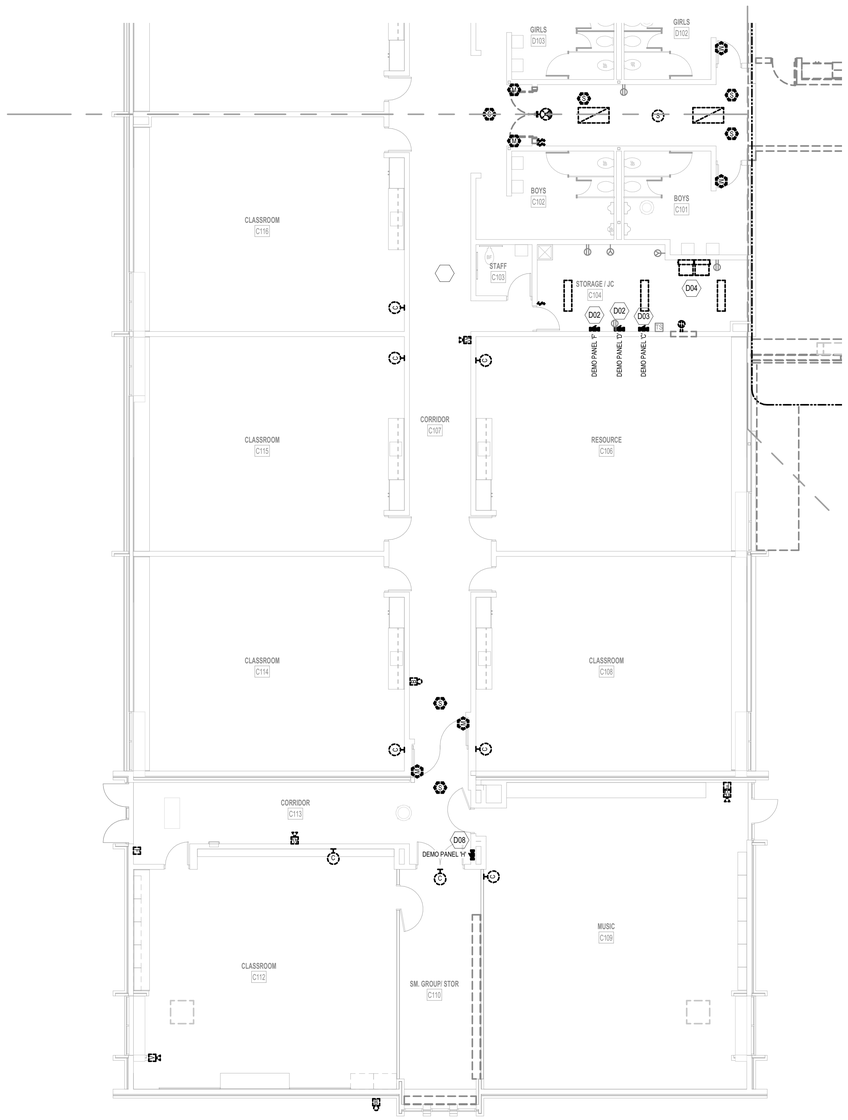


NORTH

KEYPLAN



NORTH

UNIT 'C' ELECTRICAL DEMOLITION PLAN

1/8" = 1'-0"

ELECTRICAL DEMOLITION GENERAL NOTES

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9. PATCH AND REPAIR ALL FLOOR, WALL AND CEILING OPENINGS DUE TO DEMOLITION WHICH ARE NOT TO BE RE-USED TO MATCH EXISTING CONSTRUCTION.
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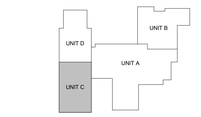
13. PROVIDE BLANK COVER OVER ANY ABANDONED AND REMAINING ROUGH-INS OR JUNCTION BOXES TO MATCH EXISTING.
14. DEMOLISH EXISTING FIRE ALARM SYSTEM AND ALL ASSOCIATED DEVICES (WHETHER INDICATED ON PLAN OR NOT), INCLUDING WIRING AND ACCESSIBLE ABANDONED CONDUIT. DEVICES THAT ARE AN INTEGRAL PART OF OTHER RELATED SYSTEMS, SUCH AS WATERFLOW SWITCHES, TAMPER SWITCHES, MONITORING EQUIPMENT, ETC., SHALL REMAIN FOR INTERCONNECTION WITH NEW FIRE ALARM SYSTEM. REFER TO SECTION 28 05 05 FOR FURTHER INFORMATION.

ELECTRICAL KEYNOTES

D02	DISCONNECT, CAREFULLY REMOVE, AND DISCARD EXISTING PANELBOARD AND ASSOCIATED SINGLE-PHASE FEEDER BACK TO DISTRIBUTION PANEL IN MECH. A151. PRESERVE ANY EXISTING BRANCH CIRCUIT WIRING THAT REMAINS AFTER SELECTIVE DEMOLITION; PREPARE FOR RECONNECTION OF REMAINING EXISTING BRANCH CIRCUITS TO NEW PANELBOARD IN SAME LOCATION AS SHOWN ON POWER PLAN, PANELBOARD SCHEDULES, AND ONE-LINE DIAGRAM.
D03	DISCONNECT, CAREFULLY REMOVE, AND DISCARD EXISTING PANELBOARD AND ASSOCIATED SINGLE-PHASE FEEDER BACK TO DISTRIBUTION PANEL IN MECH. A151. PRESERVE ANY EXISTING BRANCH CIRCUIT WIRING THAT REMAINS AFTER SELECTIVE DEMOLITION; PREPARE FOR RECONNECTION OF REMAINING EXISTING BRANCH CIRCUITS TO NEW PANELBOARD IN NEW LOCATION AS SHOWN ON POWER PLAN, PANELBOARD SCHEDULES, AND ONE-LINE DIAGRAM.
D04	CAPTURE EXISTING COMMUNICATION CABLES AND DATA RACKS AND PREPARE TO MOVE TO NEW LOCATION. REFER TO POWER PLANS FOR NEW DATA RACK LOCATION.
D08	DISCONNECT, CAREFULLY REMOVE, AND DISCARD EXISTING PANELBOARD RECESSED IN WALL AND ASSOCIATED SINGLE-PHASE FEEDER BACK TO DISTRIBUTION PANEL IN MECH. A151. PRESERVE ANY EXISTING BRANCH CIRCUIT WIRING THAT REMAINS AFTER SELECTIVE DEMOLITION; PREPARE FOR RECONNECTION OF REMAINING EXISTING BRANCH CIRCUITS TO NEW PANELBOARD IN SAME LOCATION AS SHOWN ON POWER PLAN, PANELBOARD SCHEDULES, AND ONE-LINE DIAGRAM. COORDINATE CUTTING AND PATCHING OF SURROUNDING MASONRY WITH ARCHITECTURAL TRADES.



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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN KSS

REVIEWED MCK

PROJECT NO. 5-5798

UNIT 'C' ELECTRICAL DEMOLITION PLAN

E1.1C

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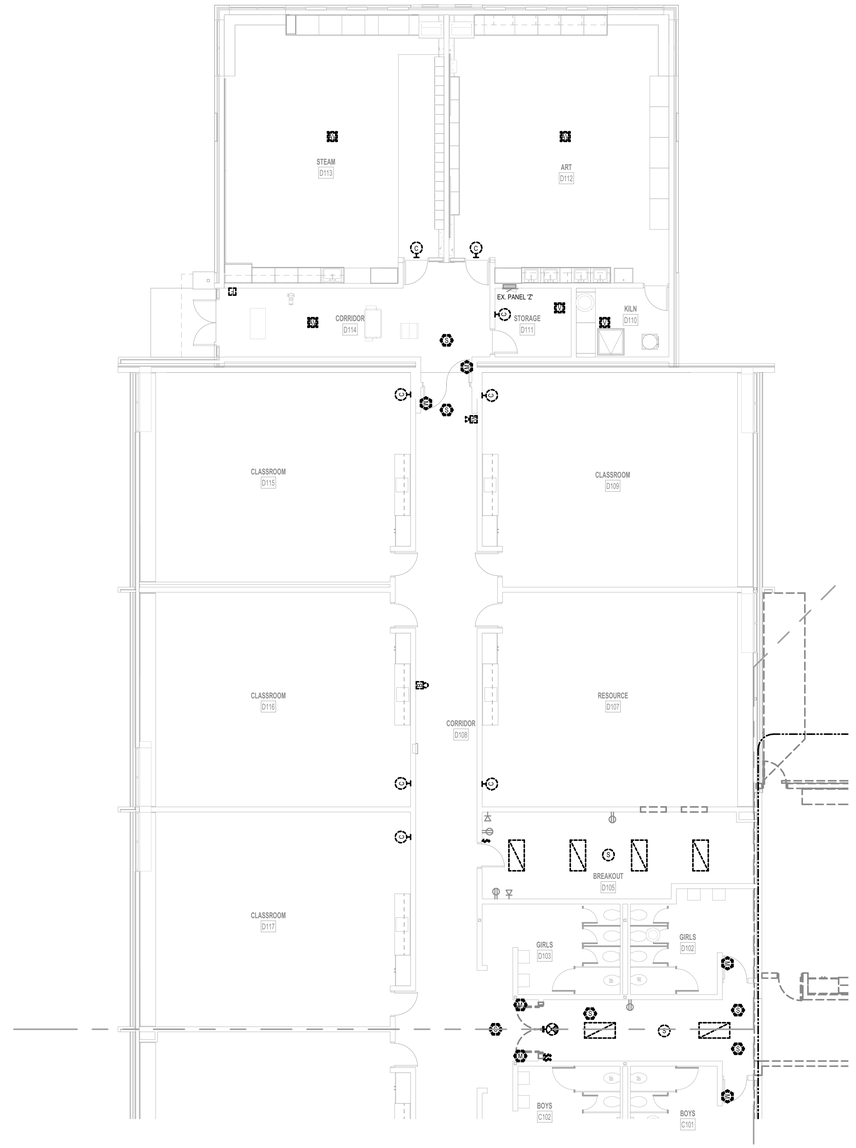

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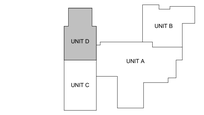
UNIT 'D' ELECTRICAL DEMOLITION PLAN

1/8" = 1'-0"

ELECTRICAL DEMOLITION GENERAL NOTES

1. REMOVE ALL ITEMS SHOWN ON DEMO PLAN, UNLESS OTHERWISE NOTED. REMOVE ALL UNUSED CONDUIT, RACEWAYS, WIRE, CABLE, CONTROLS, JUNCTION BOXES, DISCONNECTS, MOUNTS, AND RELATED ELECTRICAL ACCESSORIES COMPLETELY BACK TO SOURCE. REFER TO DEMOLITION SPECIFICATION.
2. MAKE PROVISIONS TO BACKFEED OR RE-CIRCUIT ANY ITEMS THAT ARE EXISTING TO REMAIN WHICH ARE AFFECTED BY THE DEMOLITIONS.
3. THE OWNER RESERVES THE RIGHT TO SALVAGE, WHOLE OR IN PART, ANY EQUIPMENT, SYSTEMS, AND/OR MATERIALS THAT ARE SCHEDULED FOR DEMOLITION PRIOR TO REMOVAL FROM THE BUILDING/SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISCONNECTION AND GATHERING OF SUCH ITEMS TO A CENTRAL LOCATION AGREED UPON BY THE OWNER AND CONTRACTOR. ALL REMAINING EQUIPMENT AND/OR MATERIALS REMOVED AND NOT REUSED ON THE PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE BUILDING/SITE.
4. ALL EQUIPMENT AND/OR MATERIALS SLATED FOR REUSE SHALL BE CAREFULLY REMOVED AND STORED TO PREVENT DAMAGE AND REINSTALLED AS WORK PROGRESSES.
5. ALL DEMOLITION SHOWN IS GATHERED FROM FIELD OBSERVATION AND/OR RECORD DRAWINGS. INVESTIGATION OF EXISTING SYSTEMS WILL BE REQUIRED BY THE CONTRACTOR AS PART OF THE BID PRICE, SO THAT THE EXACT EXTENT OF DEMOLITION CAN BE ACCURATELY DETERMINED. THE CONTRACTOR'S BID PRICE SHALL ALSO INCLUDE REMOVAL OF SOME PORTIONS OF SYSTEMS NOT EXPLICITLY SHOWN ON THIS DRAWING, BUT DISCOVERED DURING THE INVESTIGATION PROCESS. WHERE THE EXTENT OF DEMOLITION IS UNCLEAR, THE CONTRACTOR SHALL CONSULT WITH THE ARCHITECT/ENGINEER AND OWNER TO DETERMINE WHICH PORTIONS OF EXISTING SYSTEMS MUST REMAIN ACTIVE AND WHICH PORTIONS MUST BE DEMOLISHED.
6. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATION AND SIZES OF EXISTING CONDUIT, WIRING, AND EQUIPMENT.
7. IF ASBESTOS OR PCB MATERIAL IS ENCOUNTERED IT WILL BE REMOVED BY THE OWNER.
8. LAMPS CONTAINING MERCURY (FLUORESCENT, METAL HALIDE, SODIUM VAPOR, MERCURY VAPOR, ETC.) SHALL BE DISPOSED OF IN A PROPER HAZARDOUS WASTE RECYCLING FACILITY.
9. PATCH AND REPAIR ALL FLOOR, WALL AND CEILING OPENINGS DUE TO DEMOLITION WHICH ARE NOT TO BE RE-USED TO MATCH EXISTING CONSTRUCTION.
10. CONTRACTOR SHALL PROTECT ALL WALLS, CEILINGS, FLOORS, LIGHTS, AND OTHER FINISHED SURFACES THAT ARE NOT TO BE REMOVED. IF DAMAGED, CONTRACTOR SHALL REPAIR TO MATCH EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
11. BACKFILLING SHALL PROMPTLY FOLLOW UNDERGROUND DEMOLITION OR REMOVAL WORK AND SHALL CONTINUE AS THE DEMOLITION PROGRESSES.
12. EXISTING CONDUIT SYSTEMS MAY BE REUSED FOR THE INSTALLATION OF NEW CONDUCTORS IF THEY ARE DEEMED TO BE IN GOOD CONDITION AND OF ADEQUATE SIZE FOR CODE-COMPLIANT INSTALLATION OF THE NEW CONDUCTORS. REVISE / REROUTE CONDUIT AS NECESSARY TO PROVIDE FEEDS PER POWER AND/OR LIGHTING PLANS.
13. PROVIDE BLANK COVER OVER ANY ABANDONED AND REMAINING ROUGH-INS OR JUNCTION BOXES TO MATCH EXISTING.
14. DEMOLISH EXISTING FIRE ALARM SYSTEM AND ALL ASSOCIATED DEVICES (WHETHER INDICATED ON PLAN OR NOT), INCLUDING WIRING AND ACCESSIBLE ABANDONED CONDUIT. DEVICES THAT ARE AN INTEGRAL PART OF OTHER RELATED SYSTEMS, SUCH AS WATERFLOW SWITCHES, TAMPER SWITCHES, MONITORING EQUIPMENT, ETC., SHALL REMAIN FOR INTERCONNECTION WITH NEW FIRE ALARM SYSTEM. REFER TO SECTION 28 05 05 FOR FURTHER INFORMATION.

ELECTRICAL KEYNOTES



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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN KSS

REVIEWED MCK

PROJECT NO. 5-5798

UNIT 'D' ELECTRICAL DEMOLITION PLAN

E1.1D

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodelings/5-5798E 2019.rvt
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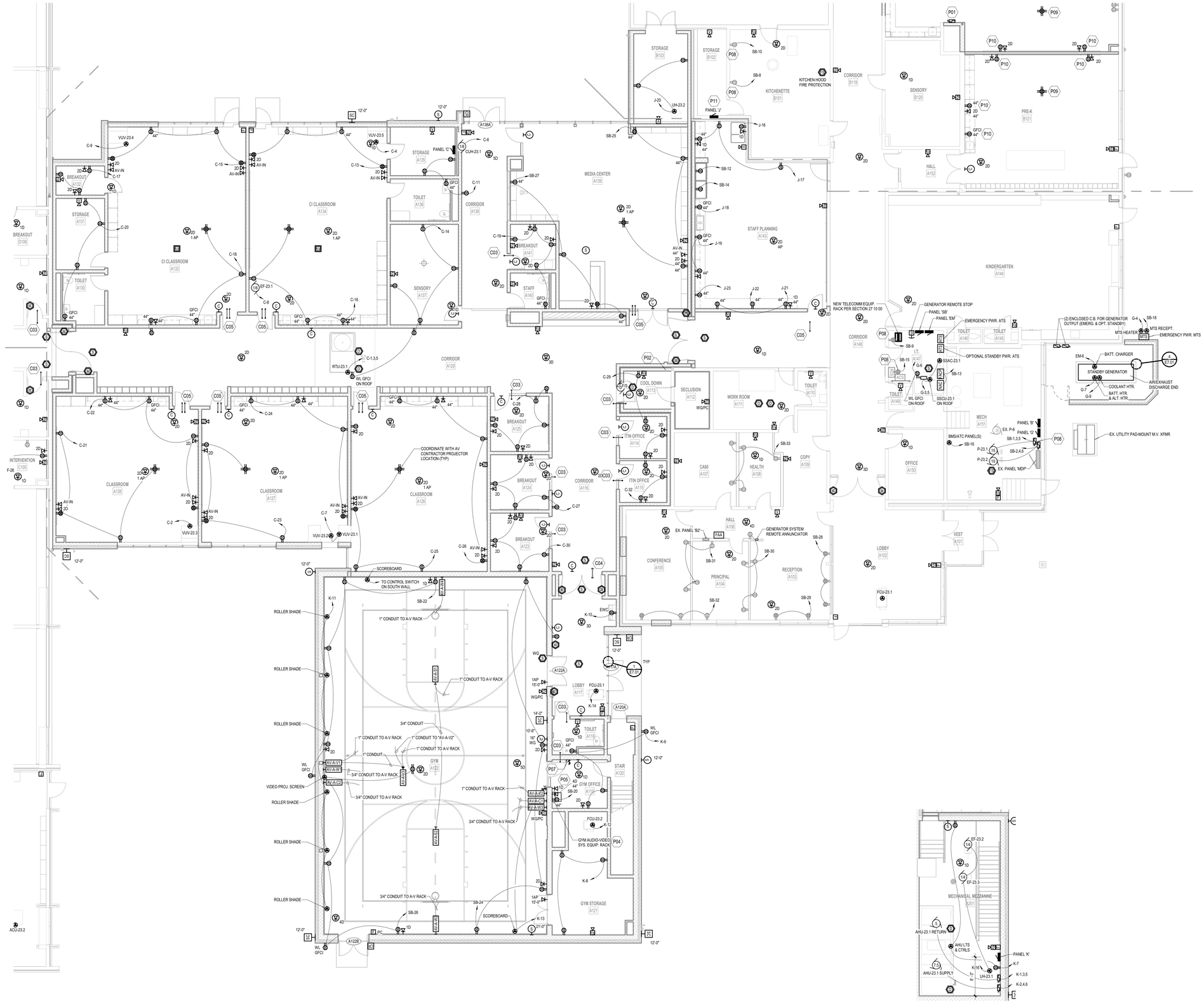


POWER & COMMUNICATION GENERAL NOTES

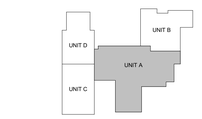
1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   B. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   C. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   D. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
5. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SMALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
6. DESIGNATED CABLING PATHWAYS (CONDUITS, CABLE TRAYS, PENETRATION SLEEVES, ETC.) SHALL BE RESERVED FOR DIV. 27 COMMUNICATIONS CABLING AND DIV. 28 SAFETY/SECURITY CABLING ONLY. OTHER CABLING TYPES, SUCH AS DIV. 23 CONTROLS, DIV. 26 CONTROLS, AND ARCHITECTURAL EQUIPMENT CABLING SHALL BE SUPPORTED AND SLEEVED BY OTHER INDEPENDENT PATHWAYS, HANGERS, AND SUPPORTS.
7. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED FOR CONTINUED OPERATION UNDER LOSS OF UTILITY POWER.
8. THE FOLLOWING DIV. 27 AND DIV. 28 SYSTEMS WILL BE DOCUMENTED AND BID SEPARATELY BY CONSULTANT IN ASSOCIATION WITH HUDSONVILLE P.S. TECHNOLOGY DEPT.:
   A. NETWORK ELECTRONICS (SWITCHES, ACCESS POINTS, ETC.)
   B. VOIP TELEPHONE SYSTEMS
   C. CLASSROOM AUDIO-VIDEO EQUIPMENT AND INSTRUCTIONAL TECHNOLOGY
   D. AUDIO-VIDEO SYSTEM FOR GYMNASIUM
   E. ACCESS CONTROL SYSTEM
   F. VIDEO SURVEILLANCE SYSTEM

ELECTRICAL KEYNOTES

C03	(1) 2" CONDUIT SLEEVES FOR DIV. 27 COMMUNICATIONS CABLING
C04	(1) 4" CONDUIT SLEEVES FOR DIV. 27 COMMUNICATIONS CABLING
C05	(2) 2" CONDUIT SLEEVES FOR DIV. 27 COMMUNICATIONS CABLING
P01	RELOCATE EXISTING CONDUIT/WIRE TO RELOCATED VFD, EXTEND/MODIFY CONDUIT AND WIRE AS REQUIRED TO MAKE NEW CONNECTIONS.
P02	ESTABLISH NEW CONCRETE-ENCASED GROUNDING ELECTRODE IN FOOTING OF NEW ADDITION, INTERCONNECT WITH GROUNDING ELECTRODE SYSTEM AT SERVICE ENTRANCE OR NEAREST SEPARATELY-DERIVED SYSTEM PER NEC AND SPECIFICATION REQUIREMENTS.
P04	INSTALL 8"H X 8"W X 6"D JUNCTION BOX BEHIND AUDIO EQUIP. RACK FOR A-V CONDUITS TO ENTER RACK W/HILE RECESSED IN WALL. SURFACE-MOUNTED CONDUITS ARE NOT ACCEPTABLE ABOVE, BELOW, OR ON SIDES RACK. STUB AN ADDITIONAL (2) 1" "CONDUITS OUT ABOVE ACCESSIBLE CEILING SPACE FROM BOX."
P05	PROVIDE "1D" NETWORK ACTIVATION FOR CONNECTION TO COMMUNICATIONS OR SAFETY/SECURITY DEVICE, TERMINATED INSIDE RECESSED DEVICE BACKBOX.
P07	ROLLER SHADE CONTROL FOR GYMNASIUM, KEY-OPERATED SWITCH FURNISHED BY SECTION 12 24 13, WIRED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
P08	CAPTURE AND REDIRECT EXISTING CIRCUIT TO PANEL AS INDICATED.
P09	CAPTURE EXISTING CIRCUIT FOR PROJECTOR AND EXTEND TO NEW LOCATIONS.
P10	CAPTURE EXISTING CIRCUIT FOR GENERAL RECEPTACLES AND EXTEND TO NEW LOCATIONS.
P11	RECESS NEW REPLACEMENT PANELBOARD INTO EXISTING MASONRY WALL, COORDINATE CUTTING AND PATCHING OF MASONRY WITH ARCHITECTURAL TRADES AS REQUIRED. INTERCEPT, EXTEND, AND RECONNECT ANY BRANCH CIRCUIT LOAD CONDUITS/CONDUCTORS FROM CORRESPONDING DEMOLISHED PANEL THAT REMAIN AFTER SELECTIVE DEMOLITION TO NEW CIRCUIT BREAKERS IN THIS PANEL.

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

MECH MEZZANINE POWER & COMMUNICATIONS PLAN
1/8" = 1'-0"



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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN KSS
REVIEWED MCK

PROJECT NO. 5-5798

UNIT 'A' POWER & COMMUNICATIONS PLANS

E2.1A

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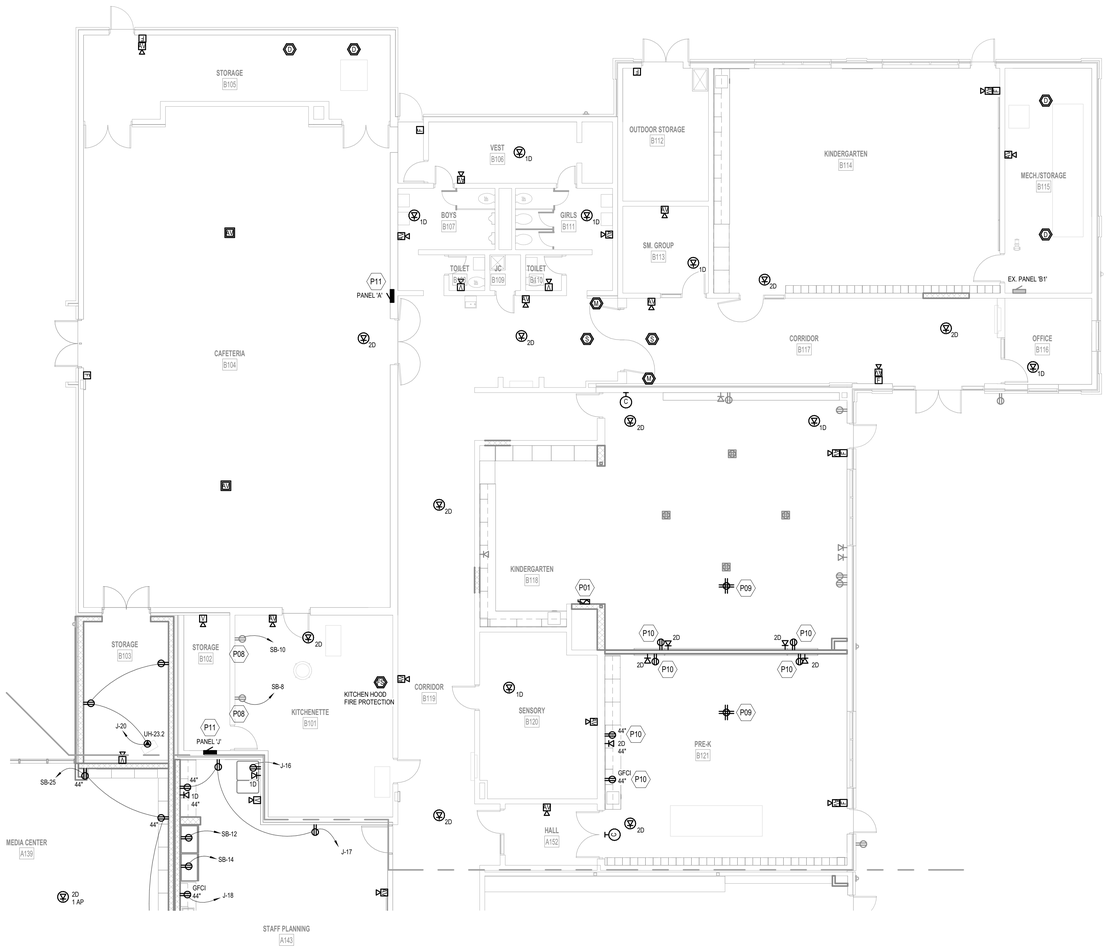
POWER & COMMUNICATION GENERAL NOTES

1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   B. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   C. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   D. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
5. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SMALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
6. DESIGNATED CABLING PATHWAYS (CONDUITS, CABLE TRAYS, PENETRATION SLEEVES, ETC.) SHALL BE RESERVED FOR DIV. 27 COMMUNICATIONS CABLING AND DIV. 28 SAFETY/SECURITY CABLING ONLY. OTHER CABLING TYPES, SUCH AS DIV. 23 CONTROLS, DIV. 26 CONTROLS, AND ARCHITECTURAL EQUIPMENT CABLING SHALL BE SUPPORTED AND SLEEVED BY OTHER INDEPENDENT PATHWAYS, HANGERS, AND SUPPORTS.
7. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED FOR CONTINUED OPERATION UNDER LOSS OF UTILITY POWER.
8. THE FOLLOWING DIV. 27 AND DIV. 28 SYSTEMS WILL BE DOCUMENTED AND BID SEPARATELY BY CONSULTANT IN ASSOCIATION WITH HUDSONVILLE P.S. TECHNOLOGY DEPT.:
   A. NETWORK ELECTRONICS (SWITCHES, ACCESS POINTS, ETC.)
   B. VOIP TELEPHONE SYSTEMS
   C. CLASSROOM AUDIO-VIDEO EQUIPMENT AND INSTRUCTIONAL TECHNOLOGY
   D. AUDIO-VIDEO SYSTEM FOR GYMNASIUM
   E. ACCESS CONTROL SYSTEM
   F. VIDEO SURVEILLANCE SYSTEM



NORTH

UNIT 'B' POWER & COMMUNICATIONS PLAN

1/8" = 1'-0"

	ELECTRICAL KEYNOTES
P01	RELOCATE EXISTING CONDUIT/WIRE TO RELOCATED VFD, EXTEND/MODIFY CONDUIT AND WIRE AS REQUIRED TO MAKE NEW CONNECTIONS.
P08	CAPTURE AND REDIRECT EXISTING CIRCUIT TO PANEL AS INDICATED.
P09	CAPTURE EXISTING CIRCUIT FOR PROJECTOR AND EXTEND TO NEW LOCATIONS.
P10	CAPTURE EXISTING CIRCUIT FOR GENERAL RECEPTACLES AND EXTEND TO NEW LOCATIONS.
P11	RECESS NEW REPLACEMENT PANELBOARD INTO EXISTING MASONRY WALL. COORDINATE CUTTING AND PATCHING OF MASONRY WITH ARCHITECTURAL TRADES AS REQUIRED. INTERCEPT, EXTEND, AND RECONNECT ANY BRANCH CIRCUIT LOAD CONDUITS/CONDUCTORS FROM CORRESPONDING DEMOLISHED PANEL THAT REMAIN AFTER SELECTIVE DEMOLITION TO NEW CIRCUIT BREAKERS IN THIS PANEL.

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

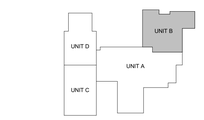
ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN KSS

REVIEWED MCK

PROJECT NO. 5-5798



NORTH KEYPLAN

UNIT 'B' POWER & COMMUNICATIONS PLAN

E2.1B

POWER & COMMUNICATION GENERAL NOTES

1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
   B. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT SWITCH AT EACH DAMPER.
   C. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   D. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
5. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SMALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
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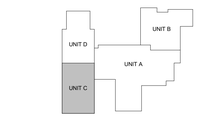
7. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED FOR CONTINUED OPERATION UNDER LOSS OF UTILITY POWER.
8. THE FOLLOWING DIV. 27 AND DIV. 28 SYSTEMS WILL BE DOCUMENTED AND BID SEPARATELY BY CONSULTANT IN ASSOCIATION WITH HUDSONVILLE P.S. TECHNOLOGY DEPT.:
   A. NETWORK ELECTRONICS (SWITCHES, ACCESS POINTS, ETC.)
   B. VOIP TELEPHONE SYSTEMS
   C. CLASSROOM AUDIO-VIDEO EQUIPMENT AND INSTRUCTIONAL TECHNOLOGY
   D. AUDIO-VIDEO SYSTEM FOR GYMNASIUM
   E. ACCESS CONTROL SYSTEM
   F. VIDEO SURVEILLANCE SYSTEM

NORTH

UNIT 'C' POWER & COMMUNICATIONS PLAN

1/8" = 1'-0"

	ELECTRICAL KEYNOTES
C01	CAPTURE EXISTING COMMUNICATION CABLES AND DATA RACKS AND MOVE TO NEW LOCATION. REROUTE EXISTING CABLES AS NECESSARY TO EXISTING DATA RACKS.
C03	(1) 2" CONDUIT SLEEVES FOR DIV. 27 COMMUNICATIONS CABLING
P08	CAPTURE AND REDIRECT EXISTING CIRCUIT TO PANEL AS INDICATED.
P11	RECESS NEW REPLACEMENT PANELBOARD INTO EXISTING MASONRY WALL; COORDINATE CUTTING AND PATCHING OF MASONRY WITH ARCHITECTURAL TRADES AS REQUIRED. INTERCEPT, EXTEND, AND RECONNECT ANY BRANCH CIRCUIT LOAD CONDUITS/CONDUCTORS FROM CORRESPONDING DEMOLISHED PANEL THAT REMAIN AFTER SELECTIVE DEMOLITION TO NEW CIRCUIT BREAKERS IN THIS PANEL.



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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN KSS

REVIEWED MCK

PROJECT NO. 5-5798

UNIT 'C' POWER & COMMUNICATIONS PLAN

E2.1C

BIM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798E 2019.rvt
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POWER & COMMUNICATION GENERAL NOTES

1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.01.
2. REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS AND RATINGS OF VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. PROVIDE APPROPRIATE FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO MEET ALL APPLICABLE CODES.
3. ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCKING RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 406.12 AND SPECIFICATION SECTION 26 27 26.
4. PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS AND COMBINATION FIRE/SMOKE DAMPERS.
   A. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (WITH BREAKER LOCK-ON ACCESSORY) IN LOCAL PANELBOARD FOR DAMPER(S) IN EACH AREA (DAMPERS MAY BE GROUPED ON EACH CIRCUIT).
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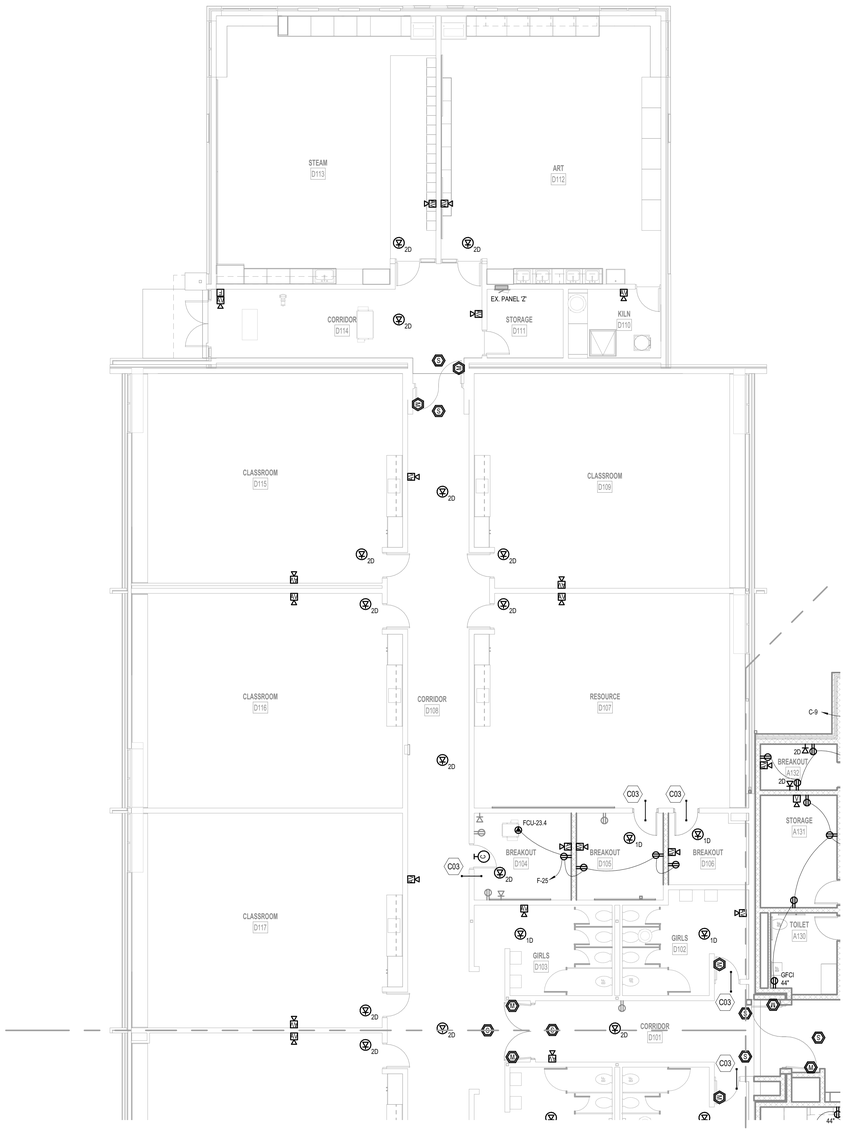
   C. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET).
   D. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FOR INTERLOCKING DAMPER W/ CORRESPONDING HVAC UNIT(S) PER CODE REQUIREMENTS.
5. PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ON BUILDING INTERIOR IN ACCESSIBLE LOCATION) FOR EACH SMALL (< 1/2 HP) MECHANICAL AND/OR PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE THAN ONE UNIT IS CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICAL EQUIPMENT TYPES INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS, DAMPERS, EXHAUST FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BOXES, ETC.
6. DESIGNATED CABLING PATHWAYS (CONDUITS, CABLE TRAYS, PENETRATION SLEEVES, ETC.) SHALL BE RESERVED FOR DIV. 27 COMMUNICATIONS CABLING AND DIV. 28 SAFETY/SECURITY CABLING ONLY. OTHER CABLING TYPES, SUCH AS DIV. 23 CONTROLS, DIV. 26 CONTROLS, AND ARCHITECTURAL EQUIPMENT CABLING SHALL BE SUPPORTED AND SLEEVED BY OTHER INDEPENDENT PATHWAYS, HANGERS, AND SUPPORTS.
7. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO DESIGNATED ACCESS CONTROL EQUIPMENT LOCATION(S). CONNECT ALL POWER SUPPLIES TO DEDICATED STANDBY POWER SYSTEM BRANCH CIRCUIT(S) AS DESIGNATED FOR CONTINUED OPERATION UNDER LOSS OF UTILITY POWER.
8. THE FOLLOWING DIV. 27 AND DIV. 28 SYSTEMS WILL BE DOCUMENTED AND BID SEPARATELY BY CONSULTANT IN ASSOCIATION WITH HUDSONVILLE P.S. TECHNOLOGY DEPT.:
   A. NETWORK ELECTRONICS (SWITCHES, ACCESS POINTS, ETC.)
   B. VOIP TELEPHONE SYSTEMS
   C. CLASSROOM AUDIO-VIDEO EQUIPMENT AND INSTRUCTIONAL TECHNOLOGY
   D. AUDIO-VIDEO SYSTEM FOR GYMNASIUM
   E. ACCESS CONTROL SYSTEM
   F. VIDEO SURVEILLANCE SYSTEM

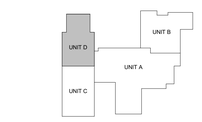


NORTH

UNIT 'D' POWER & COMMUNICATIONS PLAN

1/8" = 1'-0"

ELECTRICAL KEYNOTES	
C03	(1) 2" CONDUIT SLEEVES FOR DIV. 27 COMMUNICATIONS CABLING



NORTH

KEYPLAN

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

DRAWN KSS

REVIEWED MCK

PROJECT NO. 5-5798

UNIT 'D' POWER & COMMUNICATIONS PLAN

E2.1D

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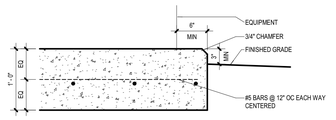
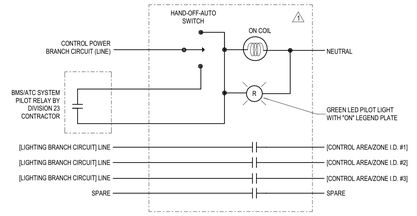


NOTE:
1. SLAB DIMENSIONS PER EQUIPMENT MANUFACTURER RECOMMENDATIONS.
2. INFO SHOWN IS MINIMUM REQUIREMENT. COORD WITH EQUIPMENT MANUFACTURER'S RECOMMENDATIONS IF MORE STRINGENT.
3. ANY SLAB OPENINGS ARE TO BE COORDINATED WITH EQUIPMENT MANUFACTURER.
4. SLAB TO BE POURED ON COMPACTED BASE - COORD W/ CIVIL & GEOTECH.
5. PROVIDE 4000 PSI CONCRETE W/ LIMESTONE AGGREGATE & 6% AIR ENTRAINMENT.

4 E7.01 EXTERIOR EQUIPMENT PAD DETAIL

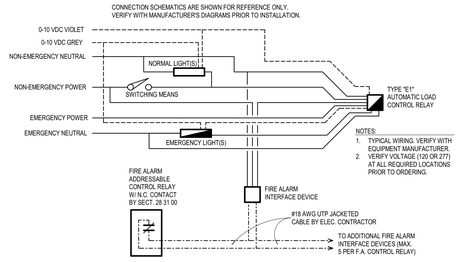
NOT TO SCALE



⚠1 ENCLOSED MULTIPOLE CONTACTOR PER SECTION 26 09 19 WITH THE FOLLOWING:
- NO. OF LOAD CONTACT POLES: 4
- 20A MIN. LOAD RATING WITH LED LOADS TYPES PER NEMA 410
- ELECTRICALLY-HELD WITH 120VAC CONTROL COIL
- HAND/OFF/AUTO SWITCH
- GREEN LED PILOT LIGHT FOR "ON" INDICATION
- NEMA 1 ENCLOSURE
- ENGRAVED NAMEPLATE INDICATING "[EXTERIOR] LIGHTING CONTROL - [CONTROL AREA/ZONE I.D.]".

3 E7.01 LIGHTING CONTROL CONTACTOR DETAIL

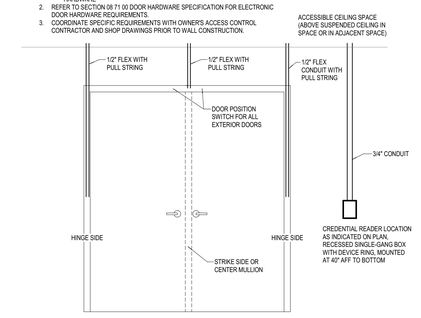
NOT TO SCALE



2 E7.01 EMERGENCY LIGHTING AUTOMATIC LOAD CONTROL RELAY WITH FIRE ALARM INTERFACE

NOT TO SCALE

NOTES:
1. PROVIDE RACEWAYS INTO DOOR FRAME AT:
   A. ALL NEW EXTERIOR DOORS
   B. ALL INTERIOR DOORS DESIGNATED FOR RECEIVING ELECTRONIC DOOR HARDWARE
2. REFER TO SECTION 08 71 00 DOOR HARDWARE SPECIFICATION FOR ELECTRONIC DOOR HARDWARE REQUIREMENTS.
3. COORDINATE SPECIFIC REQUIREMENTS WITH OWNER'S ACCESS CONTROL CONTRACTOR AND SHOP DRAWINGS PRIOR TO WALL CONSTRUCTION.



1 E7.01 TYPICAL ROUGH-IN FOR DOORS WITH ELECTRONIC ACCESS CONTROL / MONITORING

NOT TO SCALE

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS

HUDSONVILLE PUBLIC SCHOOLS

HUDSONVILLE, MICHIGAN

ISSUANCES

03.23.2023 BIDS & CONSTRUCTION

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PROJECT NO. 5-5798

ELECTRICAL DETAILS

E7.01

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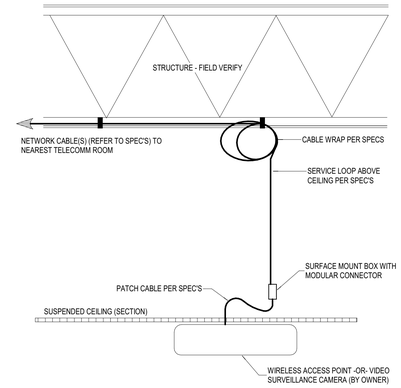
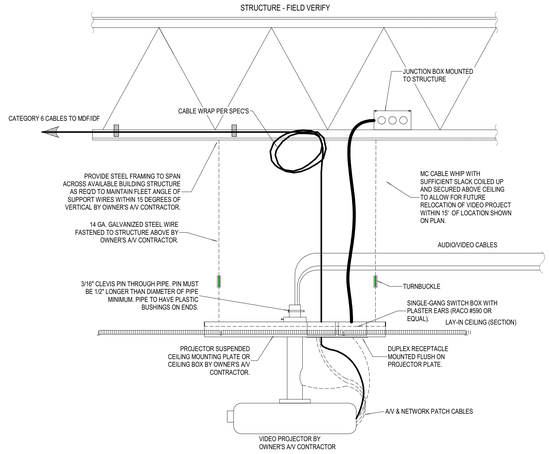
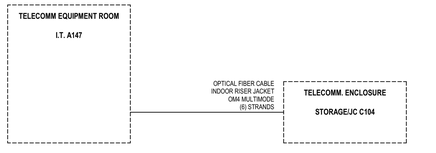


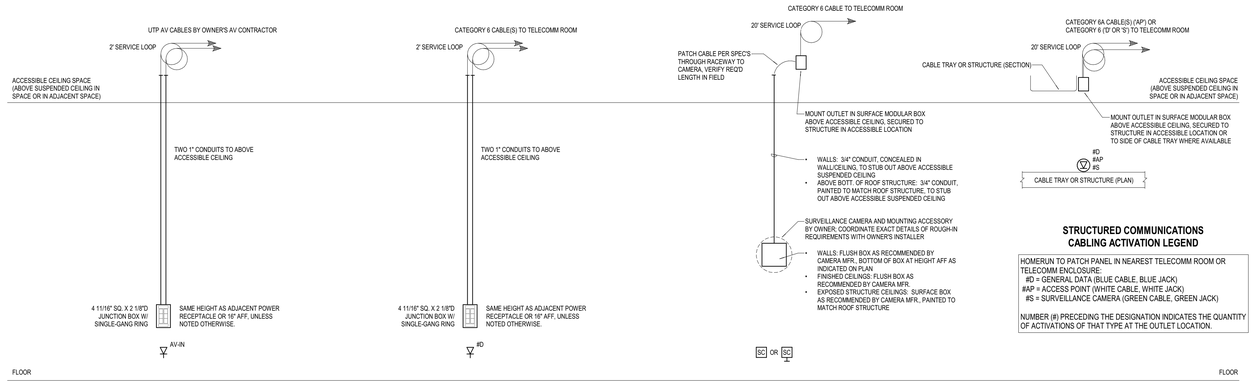
3 E7.02 CEILING MOUNTED COMMUNICATION DEVICE
NOT TO SCALE



2 E7.02 TYPICAL CLASSROOM VIDEO PROJECTOR MOUNTING DETAIL
NOT TO SCALE



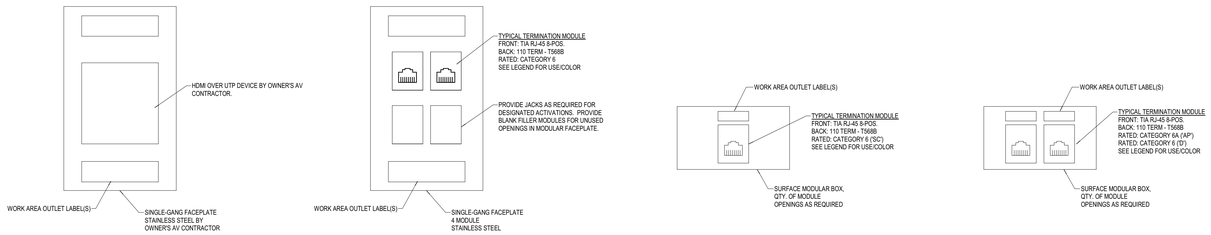
4 E7.02 COMMUNICATIONS CABLING BACKBONE RISER
NOT TO SCALE



STRUCTURED COMMUNICATIONS CABLING ACTIVATION LEGEND

HOMERUN TO PATCH PANEL IN NEAREST TELECOMM ROOM OR TELECOMM ENCLOSURE:
#D = GENERAL DATA (BLUE CABLE, BLUE JACK)
#AP = ACCESS POINT (WHITE CABLE, WHITE JACK)
#S = SURVEILLANCE CAMERA (GREEN CABLE, GREEN JACK)

NUMBER (#) PRECEDING THE DESIGNATION INDICATES THE QUANTITY OF ACTIVATIONS OF THAT TYPE AT THE OUTLET LOCATION.



TYPICAL COMMUNICATIONS WALL OUTLET WITH 'AV-IN' ACTIVATION

TYPICAL COMMUNICATIONS WALL OUTLET WITH '_D' OR '_AP' ACTIVATION

TYPICAL COMMUNICATIONS OUTLET FOR VIDEO SURVEILLANCE CAMERA

TYPICAL COMMUNICATIONS OUTLET ABOVE ACCESSIBLE CEILING (WIRELESS ACCESS POINT, AUDIO-VIDEO SYSTEM EQUIP., ETC.)

1 E7.02 TYPICAL COMMUNICATION OUTLET DETAILS
NOT TO SCALE

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PARK ELEMENTARY ADDITIONS AND RENOVATIONS
HUDSONVILLE PUBLIC SCHOOLS
HUDSONVILLE, MICHIGAN

ISSUANCES
03.23.2023 BIDS & CONSTRUCTION
04.18.2023 ADDENDUM 001

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PROJECT NO. 5-5798

COMMUNICATIONS DETAILS

E7.02

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HUDSONVILLE PUBLIC SCHOOLS
PROJECT: HPS TECHNOLOGY ADDITIONS AND RENOVATIONS
APPENDIX A: SYSTEM COUNTS
ADDENDUM 1

27 10 00 - LOW VOLTAGE CABLING BASE BID

SCHOOL NAME	CAT 6 DATA DROPS	CAT 6A DATA DROPS
BAUER ELEMENTARY	174	2
PARK ELEMENTARY	36	5
TOTAL	210	7

27 10 00 - LOW VOLTAGE CABLING ALTERNATE ADDITIONS

SCHOOL NAME	CAT 6 DATA DROPS	CAT 6A DATA DROPS
FOREST GROVE ELEMENTARY	32	0
TOTAL	32	0

27 41 16 - MULTIMEDIA SYSTEM BASE BID

SCHOOL NAME	PROJECTOR	PROJECTION SCREEN	SPEAKER	TEACHER STATION	GYM AV SYSTEM
BAUER ELEMENTARY	3	3	13	3	1
PARK ELEMENTARY	9	9	26	9	1
TOTAL	12	12	39	12	2

27 41 16 - MULTIMEDIA SYSTEM ALTERNATE ADDITIONS

SCHOOL NAME	PROJECTOR BASE	PROJECTION SCREEN	SPEAKER	TEACHER STATION	GYM AV SYSTEM
BAUER ELEMENTARY	26	26	117	26	0
PARK ELEMENTARY	17	17	74	17	0
SOUTH ELEMENTARY	26	26	114	26	0
TOTAL	69	69	305	69	0

27 51 16 - PUBLIC ADDRESS SYSTEM BASE BID

SCHOOL NAME	CEILING PA SPEAKER	WALL PA SPEAKER (INTERIOR)	WALL PA SPEAKER (EXTERIOR)	DEMO SPEAKER (INTERIOR)	DEMO SPEAKER (EXTERIOR)	DEMO CALL BUTTON
BAUER ELEMENTARY	40	2	12	39	3	23
PARK ELEMENTARY	37	1	5	31	0	0
TOTAL	77	3	17	70	3	23

27 51 16 - PUBLIC ADDRESS SYSTEM ALTERNATE ADDITIONS

SCHOOL NAME	CEILING PA SPEAKER	WALL PA SPEAKER (INTERIOR)	WALL PA SPEAKER (EXTERIOR)	DEMO SPEAKER (INTERIOR)	DEMO SPEAKER (EXTERIOR)	DEMO CALL BUTTON
FOREST GROVE ELEMENTARY	16	2	8	0	0	0
TOTAL	16	2	8	0	0	0

27 53 13 - CLOCK SYSTEM BASE BID

SCHOOL NAME	INTERIOR CLOCK (SINGLE SIDED)	INTERIOR CLOCK (DOUBLE SIDED)	LARGE CLOCK GYM/CAFE	DEMO CLOCK
FOREST GROVE ELEMENTARY	0	0	0	23
BAUER ELEMENTARY	37	9	2	29
PARK ELEMENTARY	43	8	2	33
TOTAL	80	17	4	85

28 13 00 - BUILDING ACCESS SYSTEM BASE BID

SCHOOL NAME	EXISTING DOORS	NEW DOORS
ALWARD ELEMENTARY	26	0
GEORGETOWN ELEMENTARY	18	0
JAMESTOWN UPPER ELEMENTARY	15	0
JAMESTOWN LOWER ELEMENTARY	21	0
SOUTH ELEMENTARY	14	0
BAUER ELEMENTARY	11	21
PARK ELEMENTARY	18	29
TOTAL	123	50

28 23 00 - VIDEO MONITORING SYSTEM ALTERNATE ADDITIONS

SCHOOL NAME	CAMERA TYPE S1	CAMERA TYPE S2	CAMERA TYPE S3	CAMERA TYPE S4	CAMERA TYPE S5	CAMERA TYPE S6
ALWARD ELEMENTARY	2	5	3	4	5	3
FOREST GROVE ELEMENTARY	2	14	2	2	0	1
GEORGETOWN ELEMENTARY	1	17	0	2	0	3

JAMESTOWN UPPER ELEMENTARY	3	15	1	2	1	3
JAMESTOWN LOWER ELEMENTARY	1	20	0	3	1	3
BAUER ELEMENTARY	1	23	0	7	0	3
PARK ELEMENTARY	4	14	1	4	3	3
TOTAL	14	108	7	24	10	19

28 23 00 - VIDEO MONITORING SYSTEM ALTERNATE ADDITIONS

HUDSONVILLE SPORTS COMPLEX	CAMERA TYPE P3719-PLE	CAMERA TYPE Q3628-VE	CAMERA TYPE Q1786-LE	CAMERA TYPE P3268-LVE
CONCESSIONS/TICKETING	2	2	0	0
PRESS BOX	3	1	1	0
LOCKER ROOM	2	1	0	1
TOTAL	7	4	1	1