Hudsonville Public Schools Technology Additions and Renovations

Technology Request for Bid

Hudsonville Public Schools

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ALTERNATES:

Section 27 10 00 - Low Voltage Cabling - Alternate Additions Drawings

Section 27 51 16 – Public Address System – Alternate Additions Drawings

Section 27 53 13 – Clock System – Alternate Additions Drawings

APPENDIX:

Camera System Inventory Typical Drawing

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

LIST OF DRAWINGS 00 01 15 - 2

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:
 - Alward Elementary School 3811 Port Sheldon St Hudsonville, MI 49426
 - 2. Bauer Elementary School 8136 48th Avenue Hudsonville, MI 49426
 - Forest Grove Elementary School 1645 32nd Avenue Hudsonville, MI 49426
 - Georgetown Elementary School 3909 Baldwin Street Hudsonville, MI 49426
 - Jamestown Lower Elementary School 2522 Greenly Hudsonville, MI 49426
 - Jamestown Upper Elementary School 3291 Lincoln Ct. Hudsonville, MI 49426

- Park Elementary School 5525 Park Avenue Hudsonville, MI 49426
- 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
- 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 <u>highly encouraged</u> 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 - <u>rszilagy@cbdconsulting.com</u>

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

INVITATION TO BID 00 11 16 - 7

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 <u>Primary Contact</u> <u>Information</u> 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

<u>Submit unaltered and completed form to:</u> Rebecca Szilagy Communications by Design, Inc. <u>rszilagy@cbdconsulting.com</u>

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 Renoavations TECHNOLOGY BID 3019
INCLUDING ADDENDA:	Addendum No. Dated 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 Tech Renovations TECHNOLOGY BID 3019	hnology Additions and	
The undersigned, cost of work, and and herein referer propose to furnish for proper comple	having familiarized themselves with having examined the site and all appli- nced, including, but not limited to, all n all labor, material, equipment, appli- etion of each of the following categorie	all local conditions affec licable Bidding Documen addenda issued thereto, cable taxes and services n ies of this project for the	ting the nts herein, hereby required sum of:
Bid Category	Title		
		Dollars (\$).
Said amount write	ten above constituting the Base Bid		
Bid Category	Title		
		Dollars (\$).
Said amount write	ten above constituting the Base Bid	、	
Bid Category	Title		
		Dollars (\$).
Said amount write	ten above constituting the Base Bid	```	
Bid Category	Title		
		Dollars (\$).
Said amount write	ten above constituting the Base Bid	X [_]	/

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: Low Voltage Cabling Additions_____

Alternate B: Public Address System Additions_____

Alternate C: Clock System Additions

Alternate D: 5 Year W	Warranty on Access	Control System E	Equipment and
Software			

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

Alternate F

Alternate G

PRINCIPAL SUBCONTRACTORS

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

Legal Name:	Work Proposed
Legal Name:	_Work Proposed
Legal Name:	Work Proposed

BID SECURITY:

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

Dollars (\$),

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

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

FAMILIAL DISCLOSURE:

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

EXCEPTIONS:

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

SIGNATORY AUTHORITY:

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

AGREEMENT:

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

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

Respe	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 <u>no</u> 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 little:	
	2022
Subscribed and sworn this day of	, 2023.
In the County of State of	
By	Seal or Stamp:
Notary Public Signature	-
My commission expires on	

BID FORMS 00 40 00 - 15

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
1 total y	I uone	Signature

Μv	Comm	issi	on ex	nires:		
IVIY	Comm	1991	OII CA	pnes.		

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:						
	Explanation						

<u>NOTE</u>: 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.

(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: _____

					Unit Labor	Total Proposed
ID	Qty	Part Number	Mfg and Description	Unit Cost	Cost	Cost
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			(Must moteh head hid)			
			(iviusi maich base bid)			

(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.)

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Bidder: _____

					Unit Labor	Total Proposed
ID	Qty	Part Number	Mfg and Description	Unit Cost	Cost	Cost
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			(Must moteh head hid)			
			(iviusi maich base bid)			

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Bidder: _____

					Unit Labor	Total Proposed
ID	Qty	Part Number	Mfg and Description	Unit Cost	Cost	Cost
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			(Must moteh head hid)			
			(iviusi maich base bid)			

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Bidder: _____

					Unit Labor	Total Proposed
ID	Qty	Part Number	Mfg and Description	Unit Cost	Cost	Cost
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			(Must moteh head hid)			
			(iviusi maich base bid)			

(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: _____

					Unit Labor	Total Proposed
ID	Qty	Part Number	Mfg and Description	Unit Cost	Cost	Cost
			PROJECT MANAGEMENT			
			BONDS AND INSURANCE			
			(Must match hase hid)			
			(whith match base blu)			

END OF SECTION

BID FORMS 00 40 00 - 26

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 <u>not</u> 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 subcontractors 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 (<u>SCHEDULE OF VALUES</u> 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:

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- 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.

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- 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 <u>not</u> 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 <u>not</u> exceed 90 meters (295 ft.).
- 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:
 - Alward Elementary School 3811 Port Sheldon St Hudsonville, MI 49426
 - Bauer Elementary School 8136 48th Avenue Hudsonville, MI 49426

- Forest Grove Elementary School 1645 32nd Avenue Hudsonville, MI 49426
- Georgetown Elementary School 3909 Baldwin Street Hudsonville, MI 49426
- Jamestown Lower Elementary School 2522 Greenly Hudsonville, MI 49426
- Jamestown Upper Elementary School 3291 Lincoln Ct. Hudsonville, MI 49426
- Park Elementary School 5525 Park Avenue Hudsonville, MI 49426
- 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

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- 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.
- 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 <u>no</u> 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 <u>Microsoft Project</u> 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 1080p¹ 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.

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- 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:
 - 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 ¹/₂wave 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
- 1. 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

- 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 audiovideo 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.

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- 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 manufacturerbuilt 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) = $\frac{1}{4}$ " 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) = $\frac{1}{4}$ " 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) = $XLRF-\frac{1}{4}$ " 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.

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- 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 grouding 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 structurallyrated 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 asbuilt 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 <u>no</u> 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.

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- 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 <u>no</u> 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. <u>Microsoft Project</u> 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.

CLOCKS & TIMERS 27 53 13 - 106 E. MANDATORY ALTERNATE: Contractor to provide mandatory alternate pricing for additional clocks as specified and show on drawings. Clocks will be a 1-1 replacement of existing. New clock locations are to be above doors. Any hole caused by removal of old clock requires a cover plate. Contractor to assume a 14"x28" steel cover plate painted white will be required.

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

CLOCKS & TIMERS 27 53 13 - 108 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.

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- 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 asbuilt 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.

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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

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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 <u>no</u> 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.

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- 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 Exacquision
 - 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.

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- 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.

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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.

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- 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:
 - Bauer Elementary 8136 48th Avenue Hudsonville, Michigan 49426
 - Park Elementary
 5525 Park Avenue
 Hudsonville, Michigan 49426

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- 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 asbuilt 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

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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 <u>no</u> 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.
 - 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. Five cameras shall be provided for each bus indicated. Camera System Inventory. See Schedule(s) provided herein for information on quantity and locations. All power, cable, lenses, mounting hardware, storage and

configuration shall be included. Cameras shall meet or exceed the following specified capabilities: 28

- 1. Two (2) Passenger Interior Cameras shall be provided on each bus
 - a. Axis M4308-PLE Panoramic Camera
- 2. One (1) Doghouse view Interior Camera shall be provided on each bus
 - a. Axis P3935-LR Network Camera or equal
- 3. Two (2) Exterior Swing Arm Cameras shall be provided on each bus. One camera looking forward, and one looking rearward.
 - a. Axis P3925-LRE Network Camera or equal
 - b. Cameras shall be installed in mechanical flush mounted, integrated, tamper and impact resistant dome enclosure mount adapter to facilitate installation directly on bus exterior at, or near the stop swing arm location. Enclosures shall also meet or exceeding the following requirements:
 - 1. Optically correct polycarbonate or acrylic dome with integral UV protection and light loss not greater than 11.5 f-stops.
 - 2. Puncture resistant with capability to withstand a pointed impact force of 35 foot-pounds without creating an internal depression greater than .2 inches.
 - 3. Impact resistant with capability to withstand repeated multiple blunt impact forces up to 100 foot-pounds.
 - 4. Dust and water protection based on IEC/EN60529 standard of IP66/67.
 - 5. All non-translucent components shall be of a color matching the exterior surface of the bus and as acceptable to Owner.
- C. Cameras shall properly and acceptably be powered by, communicate over and attach to, standard communications cables provided and installed by Contractor.
- D. 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.

- E. 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
- F. IEEE 802.3 (Ethernet) UTP eight (8) pin modular connector.
- G. 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.
- H. 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.
- I. Include SD Card for all cameras.

2.07 BUS UPLOAD

- A. Each bus must maintain a minimum of twelve (12) hours of stored video and audio information compiled during bus operation. Bus cameras may overwrite oldest video and audio information provided it is at least twelve (12) hours old (based on bus operating hours not lapse time).
- B. All new information stored on buses shall be uploaded to central system each time bus returns to the HPS Transportation Center. System shall only upload video and audio information not previously confirmed as uploaded successfully.
- C. Upload function shall not require the bus engine to remain running, and shall self-initiate upon bus being within range of Owner provided 5Ghz WiFi signal emanating from bus canopy at the Transportation Center. Such upload shall commence within five (5) minutes of bus arriving at a canopy parking location and shall not take longer than 90 minutes to complete.
- D. System must provide for notification/alert for bus equipment uploads being completed successfully, or exception notification/alert for unsuccessful

video/audio uploads. Such alerts may be provided by any one, or combination of the following methods:

- 1. System logs
- 2. Email transmission
- 3. SMS transmission
- 4. Visual indicators inside buses.

2.08 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.

2.09 ALLOWANCES

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

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- 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









3291 Lincoln Ct. Hudsonville, MI 49426 (616) 896-9375







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SECTION 27 10 00 - Low Voltage Cabling SYMBOL LEGEND

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OVERALL FIRST FLOOR PLAN

A0.01













Georgetown Elementary School

3909 Baldwin Street Hudsonville, MI 49426

(616) 797-9797

SECTION 27 41 16 - Multimedia System

SYMBOL LEGEND

← ⊡ ²	NEW PROJECTOR
S6	CLASSROOM SPEAKER
™ S ▼	TEACHER WORK STATION
SC	PROJECTION SCREEN







Jamestown Upper Elementary School 3291 Lincoln Ct. Hudsonville, MI 49426 (616) 896-9375







BIM 360://5 10/4/2022 (

SECTION 27 41 16 - Multimedia System

SYMBOL LEGEND

PJ PJ	NEW PROJECTOR
(56)	CLASSROOM SPEAKER
¥	TEACHER WORK STATION
sc	PROJECTION SCREEN









BIM 360/if5-5798 Hudsonville Park Elementary Additions & Remodeling(5-5788A 2018.nd 3/23/2023 12.02.37 AM



SYMBOL LEGEND

PJ PJ	NEW PROJECTOR
(56)	CLASSROOM SPEAKER
¥	TEACHER WORK STATION
SC	PROJECTION SCREEN





A0.01



BIM 360://5 10/4/2022 6

SECTION 27 51 16 - PUBLIC ADDRESS SYSTEM

(51)	NEW CEILING MOUNT PA SPEAKER
<u>(55</u>	NEW WALL MOUNT PA SPEAKER
(<u>§1</u>)	DEMOLITION OF EXISTING PA SPEAKER
(<u>66</u>)	DEMOLITION OF PA CALL BUTTON
(HS) H	DEMOLITION OF EXISTING PA HORN











SECTION 27 51 16 - PUBLIC ADDRESS SYSTEM

SYMBOL LEGEND

(51)	NEW CEILING MOUNT PA SPEAKER
<u>(55</u>	NEW WALL MOUNT PA SPEAKER
(<u>s</u>)	DEMOLITION OF EXISTING PA SPEAKER
(ĉB)	DEMOLITION OF PA CALL BUTTON
(HS) H	DEMOLITION OF EXISTING PA HORN





A0.01



BIM 360://5 10/4/2022 6



(î)	NEW SINGLE SIDE CLOCK
œ	NEW DOUBLE SIDED CLOCK
G	NEW LARGE SCREEN CLOCK
(0#) L	DEMOLITION OF EXISTING CLOCK











SECTION 27 53 13 -Clock System

SYMBOL LEGEND

(î)	NEW SINGLE SIDE CLOCK
©	NEW DOUBLE SIDED CLOCK
G	NEW LARGE SCREEN CLOCK
(6#) I	DEMOLITION OF EXISTING CLOCK







5-5798

MIC NVILLE, I - AUD







Georgetown Elementary School

3909 Baldwin Street Hudsonville, MI 49426

(616) 797-9797

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 D	EXISTING DOOR - PULL CABLE ONLY





Hudsonville, MI 49426 (616) 896-9375



DOOR D





SIM:

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









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
EastA	NEW DOOR - SEE DOOR HARDWARE SCHEDULE
OCOR #	EXISTING DOOR - PULL CABLE ONLY












3291 Lincoln Ct. Hudsonville, MI 49426 (616) 896-9375







BIM 360://5 10/4/2022 (

0	2MP SINGLE LENS NETWORK CAMERA
0	5MP SINGLE LENS NETWORK CAMERA
\bigcirc	2MP DUAL LENS NETWORK CAMERA
Ś	8MP MULIT-LENS NETWORK CAMERA
$\langle \rangle$	12MP MULIT-LENS NETWORK CAMERA
$\langle \rangle$	15MP MULIT-LENS NETWOKR CAMERA



BAUER ELEMENTARY ADDITIONS AND RENOVATIONS HUDSONVILLE PUBLIC SCHOOLS

MIC VILLE, DH

10.04.2022 BIDS AND CONSTRUCTION

ISSUANCES

DRAWN MEE REVIEWED TGD

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OVERALL FLOOR PLAN

A0.01



AM BIM 360:/

Section 28 23 00 - Video Monitoring System

SYMBOL LEGEND

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







MIC



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OVERALL FIRST FLOOR PLAN

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Hudsonville, MI 49426 (616) 896-9375













Hudsonville, MI 49426 (616) 896-9375







3811 Port Sheldon St Hudsonville, MI 49426 (616) 669-6700

SECTION 27 53 13 -Clock System ALTERNATE ADDITIONS

SYMBOL LEGEND





PROVIDE ANI INSTALL WIR GUARD

DF 2

0



Georgetown Elementary School

3909 Baldwin Street Hudsonville, MI 49426

(616) 797-9797

SECTION 27 53 13 -Clock System ALTERNATE ADDITIONS

SYMBOL LEGEND

NEW SINGLE SIDE CLOCK
NEW DOUBLE SIDED CLOCK

- Image: New Large Screen Clock
- **DEMOLITION OF EXISTING CLOCK**





3291 Lincoln Ct. Hudsonville, MI 49426 (616) 896-9375





Unit Number	Make	Model	VIN	Model Year	Plate	Plate Capacity		Camera System	Version	Stop Arm
4	Thomas	C2	4UZABRDT0DCFB6266	2013	001X814	71	8/1/2012	AngelTrax	Pro 8	NO
5	Thomas	C2	4UZABRDT2GCHA3609	2016	103X339	77	7/20/2015	ExacqVision	1.0	YES
6	Thomas	C2	4UZABRDT3HCHS7004	2017	103X344	77	5/9/2016	ExacqVision	1.0	YES
7	Thomas	C2	4UZABRDT5HCHS7005	2017	103X346	77	5/9/2016	ExacqVision	1.0	YES
8	Thomas	C2	4UZARBDT7HCHS7006	2017	103X347	77	5/6/2016	ExacqVision	1.0	YES
9	Thomas	C2	4UZARBDT9HCHS7007	2017	103X343	77	5/6/2016	ExacqVision	1.0	YES
11	Thomas	C2	4UZARBDT2HCHS7009	2017	001X762	77	5/6/2016	ExacqVision	1.0	YES
12	Thomas	C2	4UZARBDT9HCHS7010	2017	103X342	77	5/6/2016	ExacqVision	1.0	YES
13SE	Thomas	C2	4UZABRDT6HCHV2611	2017	103X345	36	7/13/2016	ExacqVision	1.0	YES
14SE	Thomas	C2	4UZABRDT8HCHV2612	2017	106X922	36	7/13/2016	ExacqVision	1.0	YES
15SE	Thomas	C2	4UZABRDT8HCHV2613	2017	106X923	36	7/13/2016	ExacqVision	1.0	YES
17SE	Thomas	C2	4UZABRFC1JCJR7096	2018	106X926	36	7/6/2017	AngelTrax	Pro 8	NO
18SE	Thomas	C2	4UZABRDT1HCJB8213	2017	001X768	36	11/21/2016	ExacqVision	1.0	YES
19	Thomas	C2	4UZABRFC8JCJR4597	2018	001X791	78	7/6/2017	AngelTrax	Pro 8	NO
20	Thomas	C2	4UZABRFCXJCJR4598	2018	001X771	78	7/6/2017	AngelTrax	Pro 8	NO
21	Thomas	C2	4UZABRFBXRCUF6781	2024	121X954	77	2/2/2023			
22	Thomas	C2	4UZABRFB1RCUF6782	2024	121X955	77	1/19/2023			
23	Thomas	C2	4UZABRFB3RCUF6783	2024	121X957	77	1/18/2023			
49	Thomas	C2	4UZABRDT9GCGT5202	2016	106X924	78	8/13/2018	ExacqVision	1.0	YES
50SE	Thomas	C2	4UZABRFC1LCLT1513	2020	001X835	36	5/7/2019	AngelTrax	Pro 8	YES
51	Thomas	C2	4UZABRFC8LCLT1511	2020	001X766	77	5/7/2019	AngelTrax	Pro 8	YES
52	Thomas	C2	4UZABRFB1LCLW3644	2020	001X773	77	7/1/2019	AngelTrax	Pro 8	YES
53	Thomas	C2	4UZABRFB3LCLW3645	2020	115X669	77	7/25/2019	AngelTrax	Pro 8	YES
54	Thomas	C2	4UZABRFB5LCLW3646	2020	001X777	77	7/1/2019	AngelTrax	Pro 8	YES
55	Thomas	C2	4UZABRFB7LCLW3647	2020	115X664	77	7/25/2019	AngelTrax	Pro 8	YES
56	Thomas	C2	4UZABRFB9LCLW3648	2020	001X822	77	7/1/2019	AngelTrax	Pro 8	YES
57	Thomas	C2	4UZABRFB0LCLW3649	2020	001X842	77	7/1/2019	AngelTrax	Pro 8	YES
58SE	Thomas	C2	4UZABRFB1LCLW2512	2020	001X774	36	7/1/2019	AngelTrax	Pro 8	YES
59	Thomas	C2	4UZABRFB0NCNL4242	2022	115X663	77	8/5/2021	ExacqVision	1.5	YES
60	Thomas	C2	4UZABRFB2NCNL4243	2022	115X668	77	8/5/2021	ExacqVision	1.5	YES
61	Thomas	C2	4UZABRFB8MCML6896	2021	001X781	77	7/29/2020	ExacqVision	1.5	YES

Unit Number	Make	Model	VIN	Model Year		Plate Capacity		Camera System	Version	Stop Arm
62	Thomas	C2	4UZABRFB3MCML6899	2021	001X840	77	7/29/2020	ExacqVision	1.5	YES
63	Thomas	C2	4UZABRFB1MCML6898	2021	001X837	77	7/27/2020	ExacqVision	1.5	YES
64	Thomas	C2	4UZABRFBXMCML6897	2021	001X846	77	7/27/2020	ExacqVision	1.5	YES
65	Thomas	C2	4UZABRFBXMCML6900	2021	001X827	77	7/28/2020	ExacqVision	1.5	YES
66SE	Thomas	C2	4UZABRFB1MCML7565	2021	001X821	36	8/17/2020			
67SE	Thomas	C2	4UZABRFB3MCML7566	2021	001X776	36	8/12/2020			
68SE	Thomas	C2	4UZABRFB5MCML7567	2021	001X838	36	8/7/2020			
69	Thomas	C2	4UZABRFB4NCNL4244	2022	115X667	77	8/5/2021			
70	Thomas	C2	4UZABRFB5RCUF6784	2024	121X958	77	2/27/2023	ExacqVision	2.0	YES
71	Thomas	C2	4UZABRFB6NCNL4245	2022	115X666	77	8/5/2021			
72	Thomas	C2	4UZABRFB8NCNL4246	2022	115X662	77	8/5/2021			
73	Thomas	C2	4UZABRFBXNCNL4247	2022	115X665	77	8/5/2021			
74	Thomas	C2	4UZABRFB1NCNL4248	2022	115X660	77	8/9/2021	ExacqVision	1.5	YES
75	Thomas	C2	4UZABRFB3NCNL4249	2022	115X670	70 77 8/5/2021 ExacqVision		ExacqVision	1.5	YES
76	Thomas	C2	4UZABRFB7RCUF6785	UF6785 2024 121X959 77 1/12/2023						
77	Thomas	C2	4UZABRFB9RCUF6786	2024	121X960	77	1/6/2023			
78	Thomas	C2	4UZABRFB0RCUF6787	2024	121X961	77	2/15/2023			
79	Thomas	C2	4UZABRFB2RCUF6788	2024	121X962	77	6/6/2023			
85SE	Thomas	C2	4UZABRFC6KCKU1630	2018	001X817	36	8/13/2018	AngelTrax	Pro 8	YES
87	Thomas	C2	4UZABRDT1ACAM2358	2010	001X851	77	2/1/2009	ExacqVision	1.0	YES
91	Thomas	C2	4UZABRDT3ACAR2551	2010	068X501	77	2/1/2009	AngelTrax	Pro 7	NO
92	Thomas	C2	4UZABRDT5ACAR2552	2010	068X502	77	10/1/2009	ExacqVision	1.0	YES
				SPAR	E BUSSES					
1S	Thomas	C2	4UZABRDT8CCBA1694	2012	001X819	71	4/1/2011	ExacqVision	1.0	YES
2S	Thomas	C2	4UZABRDT7DCFB6264	2013	001X802	71	8/1/2012	ExacqVision	1.0	YES
3S	Thomas	C2	4UZABRDT9DCFB6265	2013	001X815	71	8/1/2012	AngelTrax	Pro 8	YES
10S	Thomas	C2	4UZABRDT0HCHS7008	2017	103X341	77	5/9/2016	ExacqVision	1.0	YES
42SES	Thomas	C2	4UZABPDT9ECFJ0198	2014	001X811	54	6/1/2013	ExacqVision	1.0	YES
43SES	Thomas	C2	4UZABRDT2GCGR8156	2015	001X850	36	12/11/2014	ExacqVision	1.0	YES
88S	Thomas	C2	4UZABRDT3ACAM2359	2010	068X496	77	2/1/2009	ExacqVision	1.0	YES

Unit Number	Make	Model	VIN	Model Year	Model Year Plate Capacity Delive			Camera System	Version	Stop Arm
89S	Thomas	C2	4UZABRDTXACAM2360	2010	068X497	77	2/1/2009	AngelTrax	Pro 7	NO
90S	Thomas	C2	4UZABRDT1ACAM2361	2010	068X498	77	2/1/2009	ExacqVision	1.0	YES
93S	Thomas	C2	4UZABRDT7ACAR2553	2010	068X503	77	10/1/2009	AngelTrax	Pro 7	NO
94S	Thomas	C2	4UZABRDT9ACAR2554	2010	068X500	77	10/1/2009	AngelTrax	Pro 7	NO
95S	Thomas	C2	4UZABRDTXCCBA1311	2012	001X795	71	4/1/2011	AngelTrax	Pro 8	NO
97S	Thomas	C2	4UZABRDT3CCBA1313	2012	001X853	71	4/1/2011	ExacqVision	1.0	YES
98S	Thomas	C2	4UZABRDT5CCBA1314	2012	001X785	71	4/1/2011	ExacqVision	1.0	YES
99S	Thomas	C2	4UZABRDT7CCBA1315	2012	001X499	71	4/1/2011	ExacqVision	1.0	YES
			SYSTEN	IS REMOVED	FROM RET	RED BUSES	;			
								ExacqVision	1.0	YES
								ExacqVision	1.0	YES
				NEW BUSE	ES ON ORDE	R				
24	Thomas	C2		2024		61	12/2023			
25	Thomas	C2		2024		77	12/2023			
26	Thomas	C2		2024		77	12/2023			
27	Thomas	C2		2024		77	12/2023			
28	Thomas	C2		2024		77	12/2023			
29	Thomas	C2		2024		77	12/2023			
30SE	Chevrolet	Minotour		2024		29	10/2023			
31SE	Chevrolet	Minotour		2024		29	10/2023			
				LAST UPDATE	D: 7/18/2023 - F	RJM				
ExacqVision	1.0	26								
ExacqVision	1.5	9	36							
ExacqVision	2.0	1								
AngelTrax	Pro 8 w/ Arm	11								
AngelTrax	Pro 8 w/o Arm	5	20							
AngelTrax	Pro 7	4		Legacy system	no longer suppo	rted				
No Came	era System	22	22							



TYP 3 - SURFACE MOUNTED POWER & DATA OUTLET DETAIL NOT TO SCALE



HUDSONVILLE, MICHIGAN

ISSUANCES DATE: OUT TO BID DATE: 08/16/2023

DRAWN INITIALS CJM REVIEWED INITIALS CJM

T0.01

PROJECT NO. TYPICAL DRAWING 3019

HUDSONVILLE PUBLIC SCHOOLS TECHNOLOGY ADDITIONS AND RENOVATIONS HUDSONVILLE PUBLIC SCHOOLS



BAUER ELEMENTARY ADDITIONS AND RENOVATIONS HUDSONVILLE PUBLIC SCHOOLS

8136 48TH. AVENUE HUDSONVILLE, MICHIGAN

GENERA	L INFORMATION
G0.01	GENERAL NOTES DIMENSIONS AND LEGENDS
G1.01	CODE COMPLIANCE PLAN
Ç TE-1	TEMPORARY EGRESS PLAN - PHASE 1 🔾
TE-2	TEMPORARY EGRESS PLAN - PHASE 2
S.	mun
CIVIL	
C1.01	DEMOLITION PLAN
C2.01	SITE PLAN
C3.01	GRADING PLAN
C4.01	UTILITY PLAN
C6.01	LANDSCAPE PLAN
C7.01	SESC PLAN
C8.01	SITE DETAILS
C8.02	SITE DETAILS

STRUCTURAL

S0.01	STRUCTURAL GENERAL INFORMATION
S0.02	STRUCTURAL SCHEDULES
S2.1E	UNIT 'E' FOUNDATION PLAN
S3.1B	UNIT 'B' LOW ROOF FRAMING PLAN
S3.1E	UNIT 'E' LOW ROOF FRAMING PLAN
S3.2E	UNIT 'E' HIGH ROOF FRAMING PLAN
S7.01	STRUCTURAL FOUNDATION DETAILS
S7.02	STRUCTURAL FRAMING DETAILS



RCHITEC	CTURAL	PLUMBING	
0.01	OVERALL FLOOR PLAN	P0.01	PLUMBING GENERAL INFORMATION
1.1C	UNIT 'C' DEMOLITION PLAN	P2.0E	UNIT 'E' FOUNDATION PLUMBING PLAN
1.1D	UNIT 'D' DEMOLITION PLAN	P2.1C	UNIT 'C' FIRST FLOOR PLUMBING PLAN
2.1C	UNIT 'C' FLOOR PLAN	P2.1E	UNIT 'E' FIRST FLOOR PLUMBING PLAN
2.1E	UNIT 'E' FLOOR PLAN AND GYM MEZZANINE PLAN	P2.2E	UNIT 'E' SECOND FLOOR PLUMBING PLAN
2.3E	UNIT 'E' ROOF PLAN		
2.80	ENLARGED PLANS		
3.1B	UNIT 'B' REFLECTED CEILING PLAN		
3.1C	UNIT 'C' REFLECTED CEILING PLAN		
3.1E	UNIT 'E' REFLECTED CEILING PLAN		
4.01			
5.01	DOOR & FRAME SCHEDULE		
0.01 c.02	BUILDING SECTIONS	MECHANI	CAL
0.UZ 6 10	BUILDING SECTIONS	M0.01	MECHANICAL GENERAL INFORMATION
0.10 6.11	WALL SECTIONS	M1.01	MECHANICAL DEMOLITION PLANS
0.11 6 12	WALL SECTIONS	M2.1B	UNIT 'B' FIRST FLOOR HVAC PLAN
0.12 7.01		M2.1D	UNIT 'D' FIRST FLOOR HVAC PLAN
7.02	DOOR WINDOW AND LOUVER DETAILS	M2.1E	UNIT 'E' FIRST FLOOR HVAC PLAN
7.02	WALL SECTION DETAILS	M3.01	OVERALL FIRST FLOOR HYDRONIC PLAN
7.04	MISC. DETAILS	M3.1E	UNIT 'E' FIRST FLOOR HYDRONIC PLAN
8.01	INTERIOR ELEVATIONS	M5.01	ENLARGED MECHANICAL PLANS
9.01	ROOM SIGNAGE	M7.01	
9.1B	UNIT 'B' FINISH PLAN	M8.01	UNITS 'A' & 'B' FIRST FLOOR CONTROL PLAN
9.1C	UNIT 'C' FINISH PLAN	M8.02	UNITS 'C' & 'D' FIRST FLOOR CONTROL PLAN
9.1E	UNIT 'E' FINISH PLAN	M8.03	MECHANICAL CONTROL DIAGRAMS
		IVI8.04	
		ELECTRIC E0.01 E1.1A E1.1B E1.1C E1.1D E1.11 E2.1A E2.1B E2.1C E2.1D E2.1E E3.1E E4.01 E5.10 E7.01 ES1.01 ES2.01	AL ELECTRICAL SYMBOL LEGENDS & GENERAL UNIT 'A' ELECTRICAL DEMOLITION PLAN UNIT 'B' ELECTRICAL DEMOLITION PLAN UNIT 'C' ELECTRICAL DEMOLITION PLAN UNIT 'D' ELECTRICAL DEMOLITION PLAN OVERALL ELECTRICAL DEMOLITION PLAN UNIT 'A' POWER & COMMUNICATIONS PLAN UNIT 'B' POWER & COMMUNICATIONS PLAN UNIT 'C' POWER & COMMUNICATIONS PLAN UNIT 'C' POWER & COMMUNICATIONS PLAN UNIT 'C' POWER & COMMUNICATIONS PLAN UNIT 'E' POWER & COMMUNICATIONS PLAN UNIT 'E' POWER & COMMUNICATIONS PLAN UNIT 'E' LIGHTING PLAN POWER DISTRIBUTION ONE-LINE DIAGRAM & LIGHTING FIXTURE, CONTROL, & ENERGY SO ELECTRICAL DETAILS SITE ELECTRICAL DEMOLITION PLAN SITE ELECTRICAL PLAN
IRE PRO P2.01 P7.01	TECTION OVERALL FIRST FLOOR FIRE PROTECTION PLAN FIRE PROTECTION DETAILS		

CONSTRUCTION MANAGER

OWNER

HUDSONVILLE PUBLIC SCHOOLS 3886 VAN BUREN STREET, HUDSONVILLE, MI 49426 P. 616.669.1740 WWW.HUDSONVILLEPUBLICSCHOOLS.ORG

B

BIDS AND CONSTRUCTION GMB PROJECT # 5-5769

VICINITY MAP



ALTERNATES

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

ARCHITECT + ENGINEER

GMB ARCHITECTURE + ENGINEERING 85 EAST EIGHTH STREET, SUITE 200, HOLLAND, MI 49423 P. 616.796.0200 WWW.GMB.COM

R CONTROL PLANS CONTROL PLAN & UNIT 'E' FIRST FLOOR CONTROL PLAN AGRAMS GRAMS

ENDS & GENERAL NOTES LITION PLAN LITION PLAN LITION PLAN LITION PLAN IICATIONS PLAN ICATIONS PLAN ICATIONS PLAN ICATIONS PLAN

E-LINE DIAGRAM & EQUIPMENT SCHEDULES ROL, & ENERGY SCHEDULES







ELECTRICAL ABBREVIATIONS					POWER SYMBOL LEGEND		LIGHTING SYMBOL LEGEND			
AFE				(5)	THREE PHASE MOTOR CONNECTION, 5 HORSEPOWER (EXAMPLE)	\$	SINGLE POLE TOGGLE SWITCH			
AFF	ABOVE FINISHED FLOOR ACCESSORY	IN ILK JCT	JUNCTION			s s s s s s s s s s s s s s s s s s s				
ADO	AUTOMATIC DOOR OPERATOR	JB		(1/2)	SINGLE PHASE MOTOR CONNECTION, 1/2 HORSEPOWER (EXAMPLE)	₩2				
AHU ATS	AIR HANDLING UNIT	KW KWH	KILOWATT HOUR		HVAC CONTROL DAMPER ACTUATOR CONNECTION	\$ 3	THREE-WAY TOGGLE SWITCH			
BKR	BREAKER	КО	KNOCK OUT	(D) SD	HVAC SMOKE DAMPER ACTUATOR CONNECTION	\$ 4	FOUR-WAY TOGGLE SWITCH			
BOB	BOTTOM OF BOX	LBL LT	LABEL LIGHT			¢				
BOD BOS	BOTTOM OF DECK BOTTOM OF STRUCTURE	LC	LIGHTING CONTROL	D F/S	HVAC COMBINATION FIRE/SMOKE DAMPER ACTUATOR CONNECTION	\$OS	SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR			
BP	BREAKER PANEL	LCM			SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE	\$osd	SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR AND DIMMER			
BLDG CAP	BUILDING	LTG	LIGHTING		SAFETY SWITCH DISCONNECTING MEANS FUSIBLE	\$ _D	WALL-BOX DIMMER SWITCH			
CLG	CEILING	MAX	MAXIMUM							
CKT		MCC	MAIN BONDING JUMPER MOTOR CONTROL CENTER		COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS	\$ D3	THREE-WAY WALL-BOX DIMMER SWITCH			
C	CONDUIT	MIN	MINIMUM		VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS	\$ ⊤	ELECTRONIC INTERVAL TIMER SWITCH			
	COMMUNICATIONS	MTS NEC	MANUAL TRANSFER SWITCH NATIONAL ELECTRICAL CODE		MOTOR STARTER	\$₽	LIGHT SWITCH WITH PILOT LIGHT			
CONN	CONSTRUCTION	NEG	NEGATIVE (-)							
CONTR	CONTRACT (OR)	NC NO	NORMALLY CLOSED NORMALLY OPEN	⊅ F	BOX-COVER FUSIBLE DISCONNECT SWITCH	\$c	LIGHTING CONTROL SWITCH, REFER TO LIGHTING CONTROL SWITCH SCHEDULE AND SPECIFICATIONS FOR DETAILS.			
CLL		N/A	NOT APPLICABLE	\$M	MANUAL MOTOR CONTROLLER	\$ DT	DOUBLE-THROW (MAINTAINED) LIGHT SWITCH			
E.C.	ELECTRICAL CONTRACTOR	NIC		s s	POWER SWITCH, REFER TO LIGHTING SYMBOL LEGEND FOR SIMILAR SWITCH TYPES	¢v	KEY-OPERATED SWITCH			
EGC FHD	EQUIPMENT GROUNDING CONDUCTOR	OCPD	OVERCURRENT PROTECTIVE DEVICE			۹ň	(SUFFIX DESIGNATION NONE: SINGLE POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY			
ELEC	ELECTRIC (AL)	PC			DIRECT ELECTRICAL CONNECTION	\$∟	LOCKING SWITCH (SUFFIX DESIGNATION NONE: SINGLE-POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY			
EWC		PUS	POWER	φ	SINGLE NEMA 5-20R RECEPTACLE	ТР	TOUCHSCREEN PANEL			
ENT	ENTRANCE	P&L	POWER & LIGHTING	μ φ	SINGLE NEMA 5-20R RECEPTACLE. CEILING-MOUNTED		CIRCUIT NUMBER FOR LIGHT FIXTURES WITHIN INDICATED SPACE			
EQ	EQUAL	S SBJ	SURFACE SYSTEM BONDING JUMPER	Ψ						
EQUIP	ESTIMATE	S.B.O.	SUPPLIED BY OTHERS		SINGLE NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED		WALL-MOUNTED LIGHTING FIXTURE, TYPE 'A'			
EF	EXHAUST FAN	SP SPD	SINGLE POLE SURGE PROTECTION DEVICE	φ	DUPLEX NEMA 5-20R RECEPTACLE	A	RECESSED LIGHTING FIXTURE, TYPE 'A'			
EIR EX	EXISTING TO REMAIN EXISTING	SPKR	SPEAKER	₽	"F" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX	A				
F	FLUSH	SPEC SSBJ	SPECIFICATION SUPPLY-SIDE BONDING JUMPER				SURFACE-WOUNTED LIGHTING FIXTURE, TIPE A			
FA FSE	FIRE ALARM FOOD SERVICE EQUIPMENT	SUB	SUBSTITUTE	₽ GFCI	"GFCI" NOTATION: GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE		TRACK LIGHTING			
FP	FIRE PROOF / FIRE PROTECTION	SWBD TEL	SWITCHBOARD TELEPHONE	₽s	"S" NOTATION: SURFACE-MOUNTED					
FLR FLUOR	FLOOR	T'STAT	THERMOSTAT	₽ wL	"WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH		SINGLE FACE EXIT SIGN, TYPE "X1" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION			
GEC	GROUNDING ELECTRODE CONDUCTOR	XFMR UG	TRANSFORMER UNDERGROUND		EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER					
GEN GECI	GENERATOR GROUND FAULT CIRCUIT INTERRUPTER	UL	UNDERWRITERS LABORATORIES		DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED		DOUBLE FACE EXIT SIGN, TYPE "X2" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION			
GRD	GROUND	UH UNO	UNIT HEATER		DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED					
HORIZ HTR	HORIZONTAL	VERT	VERTICAL	0	DUPLEX NEMA 5-20R RECEPTACLE. CONNECTED TO STANDBY POWER BRANCH CIRCUIT		WALL-MOUNTED EXIT SIGN, SHADING INDICATES FACE ORIENTATION			
HTG	HEATING	W/ W/O	WITH				EMERGENCY LIGHT FIXTURE DESIGNATION			
HVAC	HEATING / VENTILATING	WG	WIRE GUARD	₩	DUPLEX NEMA 5-20R RECEPTACLE, SPLIT-WIRED					
HOA	HAND - OFF - AUTOMATIC	WL WP	WET LOCATION	● ●	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE		EMERGENCY LIGHTING AUTOMATIC LOAD CONTROL RELAY			
HP	HEAT PUMP	•••		┃	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED	R	LIGHTING CONTROL RELAY			
						C	LIGHTING CONTROL ENCLOSED CONTACTOR			
				μ φ	RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE	TS	TIME SWITCH			
					RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE. FLOOR-MOUNTED	LCM	LIGHTING CONTROL MODULE			
				VERT. HORIZ.						
						LCP	LIGHTING CONTROL PANEL			
				ATS	AUTOMATIC TRANSFER SWITCH	INV-1	EMERGENCY LIGHTING INVERTER, TYPE 1			
FEET	ONE-WAY BASED ON SINGLE PHASE.	FEET	ONE-WAY BASED ON SINGLE PHASE.		SWITCHBOARD / SWITCHGEAR		WALL-MOUNTED OCCUPANCY SENSOR			
20A CI	RCUIT, 75% LOAD, 100% P.F., IN STEEL	30	A CIRCUIT, 75% LOAD, 100% P.F., IN		PANEL BOARD					
	CONDUCTOR SIZE						CEILING-MOUNTED OCCUPANCY SENSOR			
OLTAGE #	12 AWG #10 AWG #8 AWG #6 AWG #4 AWG	VOLTAG	E #10 AWG #8 AWG #6 AWG #4 AWG		TRANSFORMER		WALL-MOUNTED PHOTOCELL FOR ON/OFF CONTROL			
120	60 100 150 245 385	120	60 100 150 245		MOTOR CONTROL CENTER	PC	CEILING-MOUNTED PHOTOCELL FOR ON/OFF CONTROL			
208	100 170 265 425 670 135 230 355 565 890	208	<u>100</u> 170 265 425 135 230 355 565		EMERGENCY STOP STATION, REFER TO DETAIL FOR REQUIREMENTS.	PS	WALL-MOLINTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL			
480	240 400 615 980	480	240 400 615 980							
I	· _ · _ · _ J		· · · · · ·		AUTOMATIC DOOR OPERATOR PUSH BUTTON	PS	CEILING-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL			
FEET 20A CI	ONE-WAY BASED ON THREE PHASE, RCUIT, 75% LOAD. 100% P.F IN STEFL	FEE1 30A C	T ONE-WAY BASED ON THREE PHASE, IRCUIT, 75% LOAD, 100% P.F IN STEEL	8	ON/OFF PUSH BUTTON		POLE-MOUNTED SITE/AREA FIXTURE			
	CONDUIT, 3% VOLTAGE DROP		CONDUIT, 3% VOLTAGE DROP	8	THREE-FUNCTION PUSH BUTTON		SELF-CONTAINED EMERGENCY LIGHTING UNIT			
							NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED			
208 #1	Z AWG #10 AWG #8 AWG #6 AWG #4 AWG 120 200 305 400 775	202	#10 AWG #8 AWG #6 AWG #4 AWG 120 200 305 490		ILOURDUA, ITE I					
480	275 460 710 1,130	480	275 460 710 1,130		JUNCTION BOX					
I		L			METER					
				R	RELAY					

ELECTRICAL ABBREVIATIONS			IS		POWER SYMBOL LEGEND			LIGHTING SYMBOL LEG		
				(5)	THREE PHASE MOTOR CONNECTION, 5 HORSEPOWER (EXAMPLE)		s	SINGLE POLE TOGGLE SWITCH		
AFF ACC	ABOVE FINISHED FLOOR ACCESSORY	INTLK JCT	INTERLOCK JUNCTION				\$ 2			
ADO	AUTOMATIC DOOR OPERATOR	JB	JUNCTION BOX	(1/2)	SINGLE PHASE MOTOR CONNECTION, 1/2 HORSEPOWER (EXAMPLE)		¥۷			
AHU ATS	AIR HANDLING UNIT	KWH	KILOWATT HOUR	D	HVAC CONTROL DAMPER ACTUATOR CONNECTION		\$ 3	THREE-WAY TOGGLE SWITCH		
BKR	BREAKER	KO I BI	KNOCK OUT		HVAC SMOKE DAMPER ACTUATOR CONNECTION		\$ 4	FOUR-WAY TOGGLE SWITCH		
BOB BOD	BOTTOM OF BOX BOTTOM OF DECK	LT	LIGHT	D F/S	HVAC COMBINATION FIRE/SMOKE DAMPER ACTUATOR CONNECTION		\$os	SINGLE POLE SWITCH WITH INTEGRAL OCCUPAN		
BOS	BOTTOM OF STRUCTURE	LC LCM	LIGHTING CONTROL LIGHTING CONTROL MODULE	9			*			
BP BLDG	BREAKER PANEL BUILDING	LCN	LIGHTING CONTROL NARRATIVE		SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE		≯OSD	SINGLE POLE SWITCH WITH INTEGRAL OCCUPAN		
CAP	CAPACITY	LTG MAX	LIGHTING		SAFETY SWITCH DISCONNECTING MEANS, FUSIBLE		\$ D	WALL-BOX DIMMER SWITCH		
CLG CKT	CEILING CIRCUIT	MBJ	MAIN BONDING JUMPER		COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS		\$ D3	THREE-WAY WALL-BOX DIMMER SWITCH		
СВ		MCC MIN	MOTOR CONTROL CENTER MINIMUM		VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS		S⊤	ELECTRONIC INTERVAL TIMER SWITCH		
COMM	COMMUNICATIONS	MTS	MANUAL TRANSFER SWITCH				•			
CONN	CONNECTION	NEC NEG	NATIONAL ELECTRICAL CODE NEGATIVE (-)		MOTOR STARTER		\$ ₽	LIGHT SWITCH WITH PILOT LIGHT		
CONST	CONSTRUCTION CONTRACT (OR)	NC	NORMALLY CLOSED	\$ ⊢	BOX-COVER FUSIBLE DISCONNECT SWITCH		\$ c	LIGHTING CONTROL SWITCH, REFER TO LIGHTING AND SPECIFICATIONS FOR DETAILS.		
CLL	CONTRACT LIMIT LINE	NO N/A	NORMALLY OPEN NOT APPLICABLE	\$ M	MANUAL MOTOR CONTROLLER		\$ DT	DOUBLE-THROW (MAINTAINED) LIGHT SWITCH		
E.C.	ELECTRICAL CONTRACTOR	NIC	NOT IN CONTRACT	c c			451 A	KEY-OPERATED SWITCH		
EGC	EQUIPMENT GROUNDING CONDUCTOR	NL OCPD	NIGHT LIGHT OVERCURRENT PROTECTIVE DEVICE		POWER SWITCH, REPER TO LIGHTING STMIDDL LEGEND FOR SIMILAR SWITCH TIFES		≯K	(SUFFIX DESIGNATION NONE: SINGLE POLE, 2: I		
ELEC	ELECTRIC (AL)	PC		۲	DIRECT ELECTRICAL CONNECTION		\$ ∟	LOCKING SWITCH (SUFFIX DESIGNATION NONE: SINGLE-POLE, 2: I		
EWC		POS PWR	POSITIVE (+) POWER	φ	SINGLE NEMA 5-20R RECEPTACLE		TP	TOUCHSCREEN PANEL		
ENT	ENTRANCE	P&L	POWER & LIGHTING	φ	SINGLE NEMA 5-20R RECEPTACLE. CEILING-MOUNTED		LPA-X	CIRCUIT NUMBER FOR LIGHT FIXTURES WITHIN IN		
EQ EQUIP	EQUAL	S SBJ	SURFACE SYSTEM BONDING JUMPER	Υ Τ						
EST	ESTIMATE	S.B.O.	SUPPLIED BY OTHERS		SINGLE NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED		H	WALL-MOUNTED LIGHTING FIXTURE, TYPE 'A'		
EF ETR	EXHAUST FAN EXISTING TO REMAIN	SPD	SURGE PROTECTION DEVICE	₽	DUPLEX NEMA 5-20R RECEPTACLE		A	RECESSED LIGHTING FIXTURE, TYPE 'A'		
EX	EXISTING	SPKR SPEC	SPEAKER SPECIFICATION	₽	"E" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX		А	SURFACE-MOUNTED LIGHTING FIXTURE, TYPE 'A'		
F FA	FLUSH FIRE ALARM	SSBJ	SUPPLY-SIDE BONDING JUMPER	Morol						
FSE	FOOD SERVICE EQUIPMENT	SUB SWBD	SUBSTITUTE SWITCHBOARD	₩ ^{GPCI}	Grof Notation. GRound Fault Circuit Interrorter Tipe Receptagle			TRACK LIGHTING		
FP FLR	FIRE PROOF / FIRE PROTECTION FLOOR	TEL	TELEPHONE	Ψs	"S" NOTATION: SURFACE-MOUNTED		Ч			
FLUOR	FLUORESCENT	T'STAT XFMR	THERMOSTAT TRANSFORMER	₽w∟	"WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER		\bigotimes	SINGLE FACE EXIT SIGN, TYPE "X1" IN SCHEDULE SHADING INDICATES FACE ORIENTATION		
GEC GEN	GROUNDING ELECTRODE CONDUCTOR GENERATOR	UG	UNDERGROUND	Ь b	DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED			DOUBLE FACE EXIT SIGN ITYPE "X2" IN SCHEDUIE		
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UL UH	UNDERWRITERS LABORATORIES UNIT HEATER	। ⊓ याष				SHADING INDICATES FACE ORIENTATION		
grd Horiz	GROUND HORIZONTAL	UNO	UNLESS NOTED OTHERWISE		DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED		$\overline{\Delta}$	WALL-MOUNTED EXIT SIGN, SHADING INDICATES		
HTR	HEATER	VERI W/	VERTICAL WITH	P	DUPLEX NEMA 5-20R RECEPTACLE, CONNECTED TO STANDBY POWER BRANCH CIRCUIT					
HIG HV	HEATING HEATING / VENTILATING	W/O	WITHOUT	₽	DUPLEX NEMA 5-20R RECEPTACLE, SPLIT-WIRED			EMERGENCY LIGHT FIXTURE DESIGNATION		
HVAC	HEATING, VENTILATING, AIR CONDITIONING	WG	WIRE GUARD WET LOCATION	● ●	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE					
HP	HEAT PUMP	WP	WEATHER PROOF							
				┃ ┃ Ψ	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED		R	LIGHTING CONTROL RELAY		
					QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED		C	LIGHTING CONTROL ENCLOSED CONTACTOR		
				φ	RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE		TS	TIME SWITCH		
					RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE),		L CM			
				VERT. HORIZ.	SEE PLAN FOR TYPE, FLOOR-MOUNTED					
					SURFACE RACEWAY SYSTEM		LCP	LIGHTING CONTROL PANEL		
		X I Y PICA		ATS	AUTOMATIC TRANSFER SWITCH		INV-1	EMERGENCY LIGHTING INVERTER, TYPE 1		
FEET	ONE-WAY BASED ON SINGLE PHASE	FEET	T ONE-WAY BASED ON SINGLE PHASE		SWITCHBOARD / SWITCHGEAR		\diamond	WALL-MOUNTED OCCUPANCY SENSOR		
20A C	IRCUIT, 75% LOAD, 100% P.F., IN STEEL	30	DA CIRCUIT, 75% LOAD, 100% P.F., IN							
					FANELDOARD			CEILING-MOUNTED OCCUPANCY SENSOR		
VOLTAGE #	112 AWG #10 AWG #8 AWG #6 AWG #4 AWG	VOLTAG	E #10 AWG #8 AWG #6 AWG #4 AWG	Т	TRANSFORMER		PC	WALL-MOUNTED PHOTOCELL FOR ON/OFF CONTR		
120	60 100 150 245 385	120	60 100 150 245		MOTOR CONTROL CENTER		PC	CEILING-MOUNTED PHOTOCELL FOR ON/OFF CON		
208	100 170 265 425 670 135 230 355 565 890	208	<u>100</u> 170 265 425 135 230 355 565	l l fi	EMERGENCY STOP STATION, REFER TO DETAIL FOR REQUIREMENTS.		PS	WALL-MOLINTED PHOTOSENSOR FOR DAYLIGHT I		
480	240 400 615 980	480	240 400 615 980							
	· · · · · · · · · · · · · · · · · · ·		I		AUTOMATIC DOOR OPERATOR PUSH BUTTON		PS	CEILING-MOUNTED PHOTOSENSOR FOR DAYLIGH		
FEET 20A C	T ONE-WAY BASED ON THREE PHASE, IRCUIT, 75% LOAD, 100% P.F., IN STEEL	FEE 30A C	T ONE-WAY BASED ON THREE PHASE, IRCUIT, 75% LOAD, 100% P.F., IN STEEL		ON/OFF PUSH BUTTON			POLE-MOUNTED SITE/AREA FIXTURE		
	CONDUIT, 3% VOLTAGE DROP		CONDUIT, 3% VOLTAGE DROP	8	THREE-FUNCTION PUSH BUTTON		4-P	SELF-CONTAINED EMERGENCY LIGHTING UNIT		
								NOTE: NOT ALL SYMBOLS ARE NECESSAF		
208	12 AVVG #10 AVVG #8 AVVG #6 AVVG #4 AWG 120 200 305 490 775	208	#ΤΟ ΑΥΥΟ #δ ΑΥΥΟ #δ ΑΨΟ #δ AWG #4 AWG 120 200 305 490							
480	275 460 710 1,130	480	275 460 710 1,130		JUNCTION BOX					
					METER					
				(ī)	THERMOSTAT ROUGH-IN					

С

ENCLOSED CONTROL CONTACTOR

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

	COMMUNICATIONS SYMBOL LEGEND
Δ	
¥	COMMUNICATIONS OUTLET ROUGH-IN
(a)	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
 3	CONDUIT SLEEVE FOR COMMUNICATIONS CABLING, 2" DIA. OR EQU TYP. UNLESS NOTED OTHERWISE. IN FIRE-RATED OR SMOKE-TIGH PROVIDE CABLE PATHWAY PENETRATION DEVICE(S) PER SECTION
<u>(S1)</u>	LOUDSPEAKER, CEILING-MOUNTED, TYPE 1
S1	LOUDSPEAKER, WALL-MOUNTED, TYPE 1
CS	INTERCOM SYSTEM CALL STATION BUTTON
VC	VOLUME CONTROL FOR AUDIO SYSTEM, PAGING, OR INTERCOM LO
C 1	SECONDARY CLOCK, CEILING-MOUNTED, TYPE 1
C1	SECONDARY CLOCK, WALL-MOUNTED, TYPE 1
B O	SIGNALING BELL
	NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

CABLING, 2" DIA. OR EQUIV. FREE AREA E-RATED OR SMOKE-TIGHT WALLS, I DEVICE(S) PER SECTION 27 05 28.

PAGING, OR INTERCOM LOUDSPEAKERS

YPE 1



SC

SC1

ID

UD

UD

CR

CR M

XXXXX

ACS

IDS

PSU

CARD READER

POWER SUPPLY UNIT

CARD READER, MULLION-MOUNTED

ACCESS CONTROL SYSTEM EQUIPMENT

INTRUSION DETECTION SYSTEM EQUIPMENT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

GEND		FIRE ALARM SYMBOL LEGEND
	Ē	MANUAL PULL STATION
	A	AUDIBLE NOTIFICATION APPLIANCE, WALL-MOUNTED
	⊠	VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
		AUDIBLE/VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
NCY SENSOR	Ā	AUDIBLE NOTIFICATION APPLIANCE, CEILING-MOUNTED
ANCY SENSOR AND DIMMER	AM	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.
	S	SMOKE DETECTOR
NG CONTROL SWITCH SCHEDULE		HEAT DETECTOR
	Ø	DUCT SMOKE DETECTOR
2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY)	(S)	FIRE PROTECTION FLOW SWITCH
2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY)		FIRE PROTECTION TAMPER SWITCH
		ELECTROMAGNETIC DOOR HOLD-OPEN DEVICE
INDICATED SPACE	R	ADDRESSABLE RELAY FOR FIRE ALARM CONTROL
	63	PRESSURE SWITCH
	C	CARBON MONOXIDE DETECTOR
A'	NAC	NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY
	FAA	FIRE ALARM REMOTE ANNUNCIATOR
	FACP	FIRE ALARM CONTROL PANEL
E UNLESS OTHERWISE NOTED,	\$ _{RTS}	KEYED TEST SWITCH AND REMOTE INDICATOR FOR DUCT SMOKE DETECTOR
LE UNLESS OTHERWISE NOTED,	Ę	FIRE PROTECTION OR ALARM BELL
		NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED
S FACE ORIENTATION		
	EL	ECTRONIC SAFETY / SECURITY SYMBOL LEGEND
TROL RELAY	DC	DOOR CONTACT
	EL	ELECTRONIC LATCH
	ES	ELECTRONIC STRIKE
	К	INTRUSION DETECTION KEYPAD
	IC	INTERCOM STATION
	sc	WALL-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH-IN

CEILING-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH IN

WALL-MOUNTED SURVEILLANCE CAMERA, TYPE 1

CEILING-MOUNTED SURVEILLANCE CAMERA, TYPE 1

WALL-MOUNTED INFRARED MOTION DETECTOR

CEILING-MOUNTED INFRARED MOTION DETECTOR

WALL-MOUNTED ULTRASONIC MOTION DETECTOR

CEILING-MOUNTED ULTRASONIC MOTION DETECTOR

ACCESS CONTROL DOOR TAG, REFER TO HARDWARE SCHEDULE(S) IN SECTION 08 71 00 AND/OR SECTION 28 10 00 FOR FURTHER DETAILED REQUIREMENTS

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





WALL TAG & HEIGHT DIAGRAM 3/8'' = 1'-0



		COLD-F	NC ORMED	ON-LOAD BEARING	SCHEDULE		(
	DEPTH	GAUGE (33 KSI)	FLANGE WIDTH	IDENTIFICATION AISI S100/S200	LOCATION / USE	Rough Opening	
	2 1/2"	20	1 1/4"	250S125-30	BULKHEADS & MISC. FRAMING	6'-0" MAX.	HE
ISTS	3 5/8" 6"	20 18	1 1/4" 1 5/8"	362S125-30 600S162-43	INTERIOR WALLS & BULKHEADS		JA
IOL & SUU	3 5/8" 6"	20 18	1 5/8" 1 5/8"	362S162-33 600S162-43	INTERIOR JAMBS	10'-0" MAX.	HE JA
SI	6"	16	1 5/8"	600S162-54	EXTERIOR WALLS	12'-0"	HE
						MAX.	JA
	2 1/2"	20	1 1/4"	250T125-30	BULKHEADS & MISC. FRAMING	ALL HEADERS	
	3 5/8"	20	1 1/4"	362T125-30	INTERIOR WALLS & BULKHEADS	BASED OF	N 12' \
TRACK	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		-
۸T)	7/8"	20	N/A	087F125-33	WHERE NOTED	2' - 1"	
RING (H/	1 1/2"	20	N/A	150F125-33	WHERE NOTED		
FUR							
NOTE:	ALL MEN	MBERS IN TH	IS SCHEDULE N SPAN A MA	ARE SIZED FOR MAXIMU XIMUM HEIGHT OF 28'	M 15' TALL WALLS, NOTE THAT 6"		<u> </u>
	SEE CO	LD-FORMED	METAL HEAD	ER SCHEDULE FOR SPEC	IFIC JAMB & HEADER REQUIREMENTS		





BARRIER FREE ADA DIMENSIONS 1/4" = 1'-0"



- 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
- 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.
- ALL EXTERIOR WALLS SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48. ALL INTERIOR NON-BEARING WALLS OVER 16'-0" HIGH SHALL RECEIVE A MINIMUM REINFORCING OF R1-5-48.

1. FINISH FLOOR ELEVATION = 665.04 = 100'-0"

GENERAL PROJECT NOTES:

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.



- 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.
- 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.

5' - 0" MIN

ABBREVIATIONS			
A.D.A.	=	AMERICANS WITH DISABILITY ACT	MFR.
A.F.F.	=	ABOVE FINISHED FLOOR	MAX.
ALT.	=	ALTERNATE	M.B.
ALUM.	. =	ALUMINUM	M.B.C.
BD.	=	BOARD	MECH.
B.F.	=	BARRIER FREE	MIN.
BATT.	=	BATTEN INSULATION	MISC.
B.O.	=	BOTTOM OF	M.J.
BRG.	=	BEARING	M.O.
C.J.	=	CONTROL JOINT	MTL.
CLG.	=	CEILING	N.I.C.
CONC	. =	CONCRETE	NOM.
CONT.	=	CONTINUOUS	0.C.
CONF.	=	CONFERENCE	OPP.
CORR	. =	CORRIDOR	P.LAM
DIA.	=	DIAMETER	P.T.
DIM.	=	DIMENSION	REQ.
DW.	=	DISHWASHER	REINF.
D.F.	=	DRINKING FOUNTAIN	R.D.
DN.	=	DOWN	SIM.
DS.	=	DOWNSPOUT	SPEC.
EQ.	=	EQUAL	STD.
EL.	=	ELEVATION	STOR.
EX.	=	EXISTING	S.S.
EXP.	=	EXPANSION	Т.
F.D.	=	FLOOR DRAIN	T.B.
F.E.	=	FIRE EXTINGUISHER	T&G
F.E.C.	=	FIRE EXTINGUISHER CABINET	T.O.F.
F.E.R.	C. =	FIRE EXT. RECESSED CABINET	T.O.M.
F.E.S.	C. =	FIRE EXT. SEMI-RECESSED CABINET	T.O.W.
FIN.	=	FINISHED	TYP.
FLR.	=	FLOOR	U.N.O.
GA.	=	GAUGE	V.I.F.
GYP.	=	GYPSUM BOARD	VERT.
H.D.	=	HAND DRYER	VEST.
HORIZ	<u>.</u> =	HORIZONTAL	W/
H.S.S.	=	HOLLOW STRUCT. SECTION	W.W.F.
ISO.	=	ISOCYANURATE	
INSUL	. =	INSULATION	



_	CC	DE NOTES:
_	1.	FIRE DEPARTMEN

= MANUFACTURER = MAXIMUM = MARKER BOARD = MICHIGAN BUILDING CODE = MECHANICAL = MINIMUM = MISCELLANEOUS = MASONRY JOINT = MASONRY OPENING = METAL = NOT IN CONTRACT = NOMINAL = ON CENTER = OPPOSITE = PLASTIC LAMINATE = PRESSURE TREATED = REQUIRED . = REINFORCING = ROOF DRAIN = SIMILAR TO = SPECIFICATION = STANDARD = STORAGE = STAINLESS STEEL = TOILET = TACK BOARD = TONGUE AND GROOVE = TOP OF FOOTING = TOP OF MASONRY . = TOP OF WALL = TYPICAL = UNLESS NOTED OTHERWISE = VERIFY IN FIELD = VERTICAL = VESTIBULE = WITH . = WELDED WIRE FABRIC

ABOVE GRAB BAR TO 48" MAX ABOVE FLOOR SEAT IF APPLICABLE





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CONSTRUCTION

10.04.2022 BIDS AND

ISSUANCES

DRAWN TGD REVIEWED TGD

PROJECT NO.

5-5769

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GENERAL NOTES DIMENSIONS AND LEGENDS

G0.01

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



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

1/16" = 1'-0"





RENOVATIONS SCHOOLS AND E PUBLIC DDITIONS HUDSONVIL ELEMENTARY ISSUANCES 10.04.2022 BIDS AND CONSTRUCTION DRAWN MEE REVIEWED TGD PROJECT NO. 5-5769 NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATA BASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF GMB COPYRIGHT © 2022 ALL RIGHTS RESERVED -OVERALL FLOOR PLAN

UNIT E











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 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.
- 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.

<u>(04</u>)	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 SOFFIT AND FASCIA (AS SHOWN ON DEMOLITION PLAN). PROVIDE TEMPORARY WEATHER PROTECTION AS NEEDED AROUND AREA REMOVED. PROVIDE TEMPORARY SHORING & BRACING AS REQUIRED.
< <u>12</u> >	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.

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





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UIRED. ESIDUE, MUDBEDS, ETC. FROM INCLUDING GRINDING, PATCHING ACE TO RECEIVE NEW FINISH OLITION PLAN). PROVIDE ED. PROVIDE TEMPORARY SHORING SSORIES AND REPAIR ADJACENT OP & BASE AS NECESSARY. RE FOR NEW FINISHES. R DECK, HANGERS AND ALL ALL MATERIALS AND FINISH. 15REMOVE EXISTING TERRAZZO FLOORING, CONCRETE SLAB AND COVED BASE. REFER TO ROOM FINISHSCHEDULE FOR NEW FLOORING. S RENOVATION SCHOOLS AND PUBLIC **ADDITIONS** ш HUDSONVILI EMENTARY Ш ISSUANCES 10.04.2022 BIDS AND CONSTRUCTION DRAWN MEE REVIEWED TGD

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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					
$\langle xx \rangle$	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.

- 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.
- 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.
$\langle 11 \rangle$	REMOVE PORTION OF EXISTING SOFFIT AND FASCIA (AS SHOWN ON DEMOLITION PLAN). PROVIDE TEMPORARY WEATHER PROTECTION AS NEEDED AROUND AREA REMOVED. 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.
$\langle 14 \rangle$	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) SCHEDULE FOR NEW FLOORING.
- REMOVE EXISTING BASKETBALL BACKBOARD AND ALL RELATED HANGERS, FASTENERS AND FRAMING TO 16 STRUCTURE ABOVE.

UNIT A UNIT B UNIT C UNIT D _____KEYPLAN

UNIT E



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CKING AND FRAMING ABOVE WALLS. ALL OR CEILING AND STORE FOR RESIDUE, ETC. FROM BLOCK BEHIND EQUIRED. RESIDUE, MUDBEDS, ETC. FROM S, INCLUDING GRINDING, PATCHING RFACE TO RECEIVE NEW FINISH IOLITION PLAN). PROVIDE /ED. PROVIDE TEMPORARY SHORING ESSORIES AND REPAIR ADJACENT TOP & BASE AS NECESSARY. ARE FOR NEW FINISHES. OR DECK, HANGERS AND ALL WALL MATERIALS AND FINISH. REMOVE EXISTING TERRAZZO FLOORING, CONCRETE SLAB AND COVED BASE. REFER TO ROOM FINISH S RENOVATION S SCHOOL AND PUBLIC DDITIONS ш HUDSONVILI ELEMENTARY $\boldsymbol{\mathcal{C}}$ Ш Ш ISSUANCES 10.04.2022 BIDS AND CONSTRUCTION

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WALL LEGEND



-FIRE RATINGS AS CALLED FOR ON CODE COMPLIANCE PLAN -DIMENSIONS GIVEN ARE TO THE FINISHED FACE OF CMU OR GENERAL FLOOR PLAN NOTES:

- 1. DIMENSIONS GIVEN ARE TO THE FACE OF MASONRY UNITS OR TO THE FINISHED FACE OF METAL STUD PARTITION WALLS. 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.
- 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.



UNIT E



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UNIT 'C' FLOOR PLAN

A2.1C







-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
- 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.
- 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.



UNIT E

TO BACK TO MAINTAIN THE FINISHED WALL APPEARANCE BOTH SIDES OF THE WALL. COORDINATE WITH STRUCTURE FOR



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UNIT 'E' FLOOR PLAN AND GYM MEZZANINE PLAN





GENERAL NOTES

- 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 RIGII SECTIONS) 1/4"
	TAPERED RIGIE @ 1/2" SLOPE F
ST. SLOPE	DIRECTION OF ROOF SLOPE. (PLANS FOR RO SLOPES)
SLOPE	DIRECTION OF WITH TAPERED
O	STANDARD RO
RD-5-1	ROOF DRAIN LA
+ 7 1/4"	THICKNESS OF PERIMETER OF BASE INSULATI
	ROOF HATCH
	ROOF WALKWA (SEE SPEC. FO MATERIAL)









TOILET ACCESSORIES LEGEND (SEE SHEET G0.01 FOR MOUNTING HEIGHTS) (SEE SPECS)	GMR
 PAPER TOWEL DISPENSER (BY OWNER) TOILET PAPER DISPENSER (BY OWNER) NAPKIN DISPOSAL (WALL MOUNTED) SOAP DISPENSER (BY OWNER) BABY CHANGING STATION BARRIER FREE GRAB BARS 24" x 60" FRAMED GLASS MIRROR ELECTRIC HAND DRYER RECESSED NAPKIN DISPENSER 	616.796.0200 WWW.GMB.COM
	BAUER ELEMENTARY ADDITIONS AND RENOVATIONS HUDSONVILLE PUBLIC SCHOOLS HUDSONVILLE, MICHIGAN
RILS RILS	ISSUANCES 10.04.2022 BIDS AND CONSTRUCTION DRAWN MEE REVIEWED TGD PROJECT NO. 5-5769 NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATA BASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF GMB COPYRIGHT © 2022 ALL RIGHTS RESERVED
	A2.80





UNIT 'B' REFLECTED CEILING PLAN

GENERAL CEILING NOTES:

- 1. CONTRACTOR SHALL FOLLOW GRID PATTERN ESTABLISHED ON THE REFLECTED CEILING PLAN. ANY VARIATIONS SHALL BE APPROVED BY THE
- ARCHITECT.
- 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.



UNIT E



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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.
- 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.
- 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

UNIT E



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RENO 0 ŎH AND C S BLIC S TION Δ \Box ш ELEMENTARY HUDSONVIL ISSUANCES 10.04.2022 BIDS AND CONSTRUCTION DRAWN MEE REVIEWED TGD 5-5769 PROJECT NO. NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATA BASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF GMB COPYRIGHT © 2022 ALL RIGHTS RESERVED _____ UNIT 'C' REFLECTED CEILING PLAN A3.1C



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.



ANY/ALL DISCREPENCIES



UNIT E

GENERAL COORDINATION, NOT ALL SYMBOLS ARE INDICATED. NOTIFY ARCHITECT OF



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UNIT 'E' REFLECTED CEILING PLAN





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







PREFINISHED METAL COPING





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

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FIRST FLOOR 100' - 0"

UUVER - COORDINATE

<u>GYM MEZZ.</u> 112' - 0"

<u>FIRST FLOOR</u> 100' - '0"

GYM MEZZ. 112' - 0"

<u>FIRST FLOOR</u> 100' - 0"

FIRST FLOOR 100' - 0"

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EXTERIOR ELEVATION

A4.01

	DOOR & FRAME SCHEDULE UNIT 'E'										
							Z		DETAILS		
DOOR NUMBER	DOOR SIZE	DOOR TYPE	FRAME TYPE	FIRE RATING	HDWR SET NO.	ELEC. HARDWARE	REMOVABLE MULLIC	HEAD	JAMB	SILL	REMARKS
E				1		1	1	1			
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 /' 10" x 1 3/4"	A05	22A (PR)		02			14/A7.02	16&1//A/02		
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		

WINDOW LEGEND 1/4" = 1'-0"

DOOR FRAME LEGEND 1/4" = 1'-0"

60' - 0" 4' - 10" 4' - 10" 2"_{\]} 4' - 10" 4' - 10" 4' - 10" 2" 4' - 10" 2" N 4' - 10" 2" 4' - 9" |||| |||| |||| ||||

(W03) STOREFRONT - SPEC 08 41 13

JOR NUMBER		OR TYPE	AME TYPE	RATING	WR SET NO.	EC. HARDWARE	MOVABLE MULLIO				
8	DOOR SIZE		L CL		모			HEAD	JAMB	SILL	REMARKS

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_____ DOOR & FRAME SCHEDULE

A5.01

<u>FIRST_FLOOR</u> 100' - 0"

FI<u>RST</u> FLOOR 100' - 0"

AA A6.01	21' - 0 15/16"	20' - 0"
	Image: Control of Con	Image: Constraint of the second of
FF2 A6.12		
		8" ALUMINUM STAND OFF LETTERS, SEE SPEC.
		$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
		WRAP REVEALS AT END 15 - 4"

A6.02

G<u>YM MEZZ.</u> 112' - 0" FIRST FLOOR 100' - 0" _____FIR<u>ST</u> FLOOR ______100' --0"_____ ____<u>GYM MEZZ.</u>_____ 112' - 0"_____

SEE SPECS.

17 A7.01

EQUIPMENT HOUSING SEE -

EQUIPMENT RAIL FLASHING -

ON MEMBRANE UP & OVER

1" ISO INSULATION OVER -

EQUIPMENT RAILS. TYP.

FOR ADDITIONAL NOTES

(4) SIDES BY ROOFING

MECHANICAL

EQUIPMENT RAIL

CONTRACTOR

16

A7.01

6 A7.01

A7.01

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-BLOCK WALL - SEE FLOOR

PLANS FOR EXACT

BULLNOSE BLOCK JAMB (TYP)

—SECURE NEW FRAME TO EXISTING MASONRY W/ 3/4" DIA. EXP. ANCHORS (3) PER JAMB CURTAINWALL FRAME · SEE DOOR SCHEDULE * = FIELD VERIFY EXISTING BRICK AND --SEALANT OVER BACKER ROD BLOCK WALL TO REMAIN AT PERIMETER OF FRAME -BOTH SIDES (TYPICAL) 9 EXTERIOR DOOR JAMB IN EX. OPENING A7.02 1 1/2" = 1'-0" -4" BRICK MASONRY OVER AIR SPACE ON 12" BLOCK W/ HORIZ. REINF. AT 16" O.C. -SEALANT OVER BACKER ROD

A7.02

1 1/2" = 1'-0"

FLASHING IS TO BE POST APPLIED WITH A

TERMINATION BAR SYSTEM OR ADHERED

OVER DAMP-

BLOCK W/ HORIZ. REINF. AT 16" O.C.

1 1/2" = 1'-0"

FINISH FLOOR

—SEALANT OVER BACKER ROD AT PERIMETER OF LOUVER INSIDE & OUTSIDE (TYPICAL)

-SEALANT OVER BACKER ROD AT PERIMETER OF LOUVER INSIDE & OUTSIDE (TYPICAL)

— METAL SILL FLASHING AND (2) 2x6 TREATED WOOD PERIMETER OF MASONRY

OPENING AT LOUVER SILL SPACE & 2" SPRAY APPLIED INSUL. OVER BLOCK W/

HORIZ. REINF. AT 16" O.C. -SEE FLOOR PLANS FOR VERTICAL WALL REINFORCING

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DOOR, WINDOW AND LOUVER DETAILS

A7.02

W4230 24D

= = + = = = = =

T4284

PLAM CABS

RUBBER BASE

W4230 24D

T4284

	[]	W1530 W4230	W4230 W4230				
PLAM CABS							EXISTING CASEWORK
PLAM CTOP/							
PLAM CABS							
RUBBER BASE					\bigvee		
	(C112A)	B1534 SB3930 ADA	B3630 B3034	T4884	T4884	T4884	,
	(14) C112 CL	ASSROOM	NORTH				
	A8 01 1/4" = 1'-0"						

12 A7.04

E117	74	WOOD BENCH	-PL1		E117D	

W4230 24D	W4230 24D	W4230 24D	W4230 24D	W4230 24D	W4230 24D	W2430 24D	

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INTERIOR ELEVATIONS

A8.01

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

FINISH SYMBOLS :	GENERAL FINISH NOTES :		FINISH LEGEND
ROOM NAME WALL FINISH FLOOR FINISH	 ALL AREAS OF CARPET, LVT, SEALED CONCRETE, OR OTHER RESILIENT FLOORING TO RECEIVE RUBBER BASE; U.N.O. ON FINISH PLANS. IT IS THE RESPONSIBILITY OF ALL TRADES TO COORDINATE PREPARATION OF SURFACES TO RECEIVE FINISH PRODUCT. CONSULT WITH MANUFACTURERS DECOMMENDED PRACTICE 	ACT1	ACOUSTICAL CEILING TILE MFR: USG STYLE: RADAR CLIMA PLUS 2210 COLOR: WHITE SIZE: 24" 24" X 5/8"
BASE FINISH WORK POINT	 ALL REDUCERS TO COORDINATE APPROPRIATELY WITH ABUTTING MATERIAL HEIGHT. INSTALL 4" H. RUBBER BASE (RB) AT CASEWORK TOE KICKS, INSIDE OF FLOORLESS CASEWORK, AND VERTICAL SUPPORTS. 	AWP1	GRID: DONN DX/DWL ACOUSTICAL WALL PANEL MFR: ARMSTRONG STYLE: TECTUM WALL PANEL COLOR: FIELD PAINTED SEE ELEVATIONS
FINISH KEYNOTES :	 SEE SPECIFICATIONS FOR RESILIENT ACCESSORY INFORMATION. PAINT ALL EXPOSED MECHANICAL AND ELECTRICAL ITEMS INTENDED TO RECEIVE FIELD 	CG1	SIZE: 69"L X 34"W X 2"D CORNER GUARD STAINLESS STEEL CORNER GUARD
 MANUAL ROLLER SHADE LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION MOTORIZED ROLLER SHADES LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION 	 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. 	CT1 CT2	CARPET TILE MFR: INTERFACE STYLE: AE312 COLOR: 105410 IRON/ ACCENT SIZE: 50CM X 50CM INSTALLATION: QUARTER TURN CARPET TILE MFR: INTERFACE
	 REFER TO CEILING PLANS & CEILING SPECIFICATIONS FOR SPECIAL CEILING DESIGNATIONS AND ACT TYPES. REFER TO INTERIOR ELEVATION SHEETS FOR MORE DETAILED PAINT AND INTERIOR FINISH INFORMATION. 		STYLE: ON LINE COLOR: 103795 OCEAN SIZE: 25CM X 1M INSTALLATION: QUARTER TURN
	 ALL WALL TILE INSTALLATIONS SHOULD BE FULL HEIGHT; UNLESS NOTED OR SHOWN OTHERWISE ON INTERIOR ELEVATIONS. ALIGN FLOOR TILE GROUT JOINTS WITH WALL TILE GROUT JOINTS WHERE APPLICABLE. 	CT3	CARPET TILE MFR: INTERFACE STYLE: STEP REPEAT SR899 COLOR: 104941 ONYX SIZE: 50CM X 50CM
	 WHERE MATERIALS TRANSITION AT DOOR THRESHOLD, TRANSITION SHOULD OCCUR AT THE CENTER OF THE DOOR IN THE CLOSE POSITION. FOR ALL TILE INSTALLATIONS; REFER TO SPECIFICATIONS FOR TRIM FINISH INFORMATION. 	CTW1	INSTALLATION: MONOLITHIC CERAMIC TILE WALL MFR: DALTILE STYLE: COLOR WHEEL LINEAR COLOR: NAVY
	 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. 	P1	SIZE: 4 X 12 INCHES INSTALLATION: 1/3 BRICK OFFSET, FULL H PAINT (GENERAL) MFR: BENJAMIN MOORE
	 WHERE SEALED CONCRETE (SC). IS SPECIFIED, REFER TO SPECIFICATION SECTION 09 90 00 PAINTING, FOR SYSTEM TYPE. REFER TO SPECIFICATIONS FOR ALL PAINT TYPES. 	P2	COLOR: MATCH EXISTING GENERAL WALL PAINT (ACCENT) MFR: BENJAMIN MOORE COLOR: HC-10 STUART GOLD
	 ALL PAINTED WALLS IN TOILET ROOMS, KITCHENS, LOCKER ROOMS, SCIENCE ROOMS, STEM AND MAKERSPACES SHALL RECEIVE EPOXY PAINT. ALL STAIR AND GUARDRAIL RAILINGS, HANDRAILS, STRINGERS, RISERS, ETC ARE TO BE PAINTED P2: UN O 	P3	PAINT (ACCENT) MFR: BENJAMIN MOORE COLOR: HC-155 NEWBURY PORT BLUE
	 21. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF OWNER FURNISHED EQUIPMENT, INCLUDED DIMENSIONS OF SUCH AS THEY RELATE TO THEIR OWN WORK. 	P4	PAINT (TRIM) MFR: SHERWIN WILLIAMS COLOR: SW7019 GAUNTLET GRAY
	 REMOVE, SALVAGE AND RE-INSTALL EXISTING ROOM SIGNAGE PRIOR TO PAINTING WALLS IN AREAS OF WORK, TYP. REMOVE AND SALVAGE ALL WALL MOUNTED ELIPHISHINGS AND ARTWORK PRIOR TO 	PC1	POLISHED CONCRETE COLOR: NATURAL LEVEL 3 POLISH, CLASS 3 AGGREGATE E)
	 23. REMOVE AND SALVAGE ALL WALL MOUNTED FORNISHINGS 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. 	PL1	PLASTIC LAMINATE MFR: WILSONART COLOR: 10776-60 KENSINGTON MAPLE
	25. PROTECT ALL FINISHES DURING CONSTRUCTION.	PL2	PLASTIC LAMINATE MFR: WILSONART COLOR: 4942-38 CRISP LINEN
		RAF1	RESILIENT ATHLETIC FLOORING MFR: GERFLOR STYLE: TARAFLEX SPORT M PLUS COLOR: MAPLE DESIGN

L HEIGHT WALL

L WHITE

EXPOSURE

RUBBER BASE MRF: JOHNSONITE STYLE: 4"H, 120' ROLLS COLOR: MATCH EXT. BUILDING COLOR

SEALED CONCRETE MECHANICAL ROOM FLOOR COATING

STAINLESS STEEL

RB1

SC1

SS1

ER ELEMENTARY ADDITIONS AND RENOVATIONS HUDSONVILLE PUBLIC SCHOOLS

BA

HUDSONVILLE, MICHIGAN

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UNIT 'B' FINISH PLAN

A9.1B

UNIT E

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

	FINISH SYMBOLS :	GENERAL FINISH NOTES :		FINISH LEGENE
ROOM NAME WALL FINISH FLOOR FINISH BASE FINISH	CPT1 X FLOORING TRANSIT	 ALL AREAS OF CARPET, LVT, SEALED CONCRETE, OR OTHER RESILIENT FLOORING TO RECEIVE RUBBER BASE; U.N.O. ON FINISH PLANS. IT IS THE RESPONSIBILITY OF ALL TRADES TO COORDINATE PREPARATION OF SURFACES TO RECEIVE FINISH PRODUCT. CONSULT WITH MANUFACTURERS RECOMMENDED PRACTICES. ALL REDUCERS TO COORDINATE APPROPRIATELY WITH ABUTTING MATERIAL HEIGHT. 	ACT1 AWP1	ACOUSTICAL CEILING TILE MFR: USG STYLE: RADAR CLIMA PLUS 2210 COLOR: WHITE SIZE: 24" 24" X 5/8" GRID: DONN DX/DWL ACOUSTICAL WALL PANEL
	,	 4. INSTALL 4" H. RUBBER BASE (RB) AT CASEWORK TOE KICKS, INSIDE OF FLOORLESS CASEWORK, AND VERTICAL SUPPORTS. 		MFR: ARMSTRONG STYLE: TECTUM WALL PANEL COLOR: FIELD PAINTED SEE ELEVATION SIZE: 69"L X 34"W X 2"D
	FINISH KEYNOTES :	 SEE SPECIFICATIONS FOR RESILIENT ACCESSORY INFORMATION. PAINT ALL EXPOSED MECHANICAL AND ELECTRICAL ITEMS INTENDED TO RECEIVE FIELD PAINT TO MATCH AD INSCRIPTION UPERATED UNDER CONTROL OF A STATEMENT OF A	CG1	CORNER GUARD STAINLESS STEEL CORNER GUARD
01 MANUAL ROLLER S ASSEMBLY AT EAC 02 MOTORIZED ROLLE WINDOW ASSEMBL	HADE LOCATION. PROVIDE FULL WIDTH OF WINDOW H LOCATION REFER TO SPECIFICATION R SHADES LOCATION. PROVIDE FULL WIDTH OF Y AT EACH LOCATION REFER TO SPECIFICATION	 DOOR AND WINDOW FRAMES TO BE PAINTED P4; U.N.O. EXPOSED CEILINGS, DECK, DUCTWORK, STRUCTURE AND OTHER MISC. EXPOSED ITEMS TO BE PAINTED; U.N.O. ON INTERIOR ELEVATIONS, CEILING PLANS OR FINISH PLANS. FACE & UNDERSIDE OF BULKHEADS TO BE PAINTED P1; U.N.O. ON FINISH PLANS OR NOTED ON INTERIOR ELEVATIONS. REFER TO CEILING PLANS & CEILING SPECIFICATIONS FOR SPECIAL CEILING DESIGNATIONS AND ACT TYPES. 	CT1 CT2	CARPET TILE MFR: INTERFACE STYLE: AE312 COLOR: 105410 IRON/ ACCENT SIZE: 50CM X 50CM INSTALLATION: QUARTER TURN CARPET TILE MFR: INTERFACE STYLE: ON LINE COLOR: 103795 OCEAN
		 REFER TO INTERIOR ELEVATION SHEETS FOR MORE DETAILED PAINT AND INTERIOR FINISH INFORMATION. ALL WALL TILE INSTALLATIONS SHOULD BE FULL HEIGHT; UNLESS NOTED OR SHOWN OTHERWISE ON INTERIOR ELEVATIONS. ALIGN FLOOR TILE GROUT JOINTS WITH WALL TILE GROUT JOINTS WHERE APPLICABLE. 	CT3	SIZE: 25CM X 1M INSTALLATION: QUARTER TURN CARPET TILE MFR: INTERFACE STYLE: STEP REPEAT SR899 COLOR: 104941 ONYX SIZE: 50CM X 50CM INSTALLATION: MONOLITHIC
	1	 WHERE MATERIALS TRANSITION AT DOOR THRESHOLD, TRANSITION SHOULD OCCUR AT THE CENTER OF THE DOOR IN THE CLOSE POSITION. FOR ALL TILE INSTALLATIONS; REFER TO SPECIFICATIONS FOR TRIM FINISH INFORMATION. MECHANICAL & ELECTRICAL ROOM FINISHES: AS A TYPICAL; PAINT WALLS, DO NOT DUPLE EXECUTE DOT DOT DOT DOT DOT DOT DOT DOT DOT DOT	CTW1	CERAMIC TILE WALL MFR: DALTILE STYLE: COLOR WHEEL LINEAR COLOR: NAVY SIZE: 4 X 12 INCHES INSTALLATION: 1/3 BRICK OFFSET, FULL
		 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. 	P1 P2	PAINT (GENERAL) MFR: BENJAMIN MOORE COLOR: MATCH EXISTING GENERAL WA PAINT (ACCENT)
		 REFER TO SPECIFICATIONS FOR ALL PAINT TYPES. ALL PAINTED WALLS IN TOILET ROOMS, KITCHENS, LOCKER ROOMS, SCIENCE ROOMS, STEM AND MAKERSPACES SHALL RECEIVE EPOXY PAINT. ALL STAIR AND GUARDRAIL RAILINGS, HANDRAILS, STRINGERS, RISERS, ETC ARE TO BE 	Ρ3	MFR: BENJAMIN MOORE COLOR: HC-10 STUART GOLD PAINT (ACCENT) MFR: BENJAMIN MOORE COLOR: HC-155 NEWBURY PORT BLUE
		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.	P4	PAINT (TRIM) MFR: SHERWIN WILLIAMS COLOR: SW7019 GAUNTLET GRAY
		 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 	PC1	POLISHED CONCRETE COLOR: NATURAL LEVEL 3 POLISH, CLASS 3 AGGREGATE
		PAINTING. COORDINATE SALVAGE AND RE-INSTALLATION WITH OWNER. 24. DO NOT PAINT OVER EXISTING GLAZED FACE BLOCK OR EXPOSED BRICK, U.N.O.	PL1	PLASTIC LAMINATE MFR: WILSONART COLOR: 10776-60 KENSINGTON MAPLE
C	LASSROOM C121	25. PROTECT ALL FINISHES DURING CONSTRUCTION.	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

RENOVATIONS SCHOOLS AND E PUBLIC **ADDITIONS** HUDSONVILL ELEMENTARY Ц Ш B⊿ ISSUANCES 10.04.2022 BIDS AND CONSTRUCTION DRAWN MRJ REVIEWED TGD PROJECT NO. 5-5769 NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATA BASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF

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UNIT 'C' FINISH PLAN

UNIT E

OFFICE/ BREAKOUT E103

P1

CT1

FINISH SYMBOLS :	GENERAL FINISH NOTES :		FINISH LEGEND :
ROOM NAME CPT1 VCT1 FLOORING TRANSITION WALL FINISH FLOOR FINISH BASE FINISH W P 1	 ALL AREAS OF CARPET, LVT, SEALED CONCRETE, OR OTHER RESILIENT FLOORING TO RECEIVE RUBBER BASE; U.N.O. ON FINISH PLANS. IT IS THE RESPONSIBILITY OF ALL TRADES TO COORDINATE PREPARATION OF SURFACES TO RECEIVE FINISH PRODUCT. CONSULT WITH MANUFACTURERS RECOMMENDED PRACTICES. 	ACT1	ACOUSTICAL CEILING TILE MFR: USG STYLE: RADAR CLIMA PLUS 2210 COLOR: WHITE SIZE: 24" 24" X 5/8" GRID: DONN DX/DWL
	 ALL REDUCERS TO COORDINATE APPROPRIATELY WITH ABUTTING MATERIAL HEIGHT. INSTALL 4" H. RUBBER BASE (RB) AT CASEWORK TOE KICKS, INSIDE OF FLOORLESS CASEWORK, AND VERTICAL SUPPORTS. 	AWP1	ACOUSTICAL WALL PANEL MFR: ARMSTRONG STYLE: TECTUM WALL PANEL COLOR: FIELD PAINTED SEE ELEVATIONS
FINISH KEYNOTES :	 SEE SPECIFICATIONS FOR RESILIENT ACCESSORY INFORMATION. PAINT ALL EXPOSED MECHANICAL AND ELECTRICAL ITEMS INTENDED TO RECEIVE FIELD PAINT TO MATCH ADJACENT SURFACES: U.N.O. 	CG1	SIZE: 69 L X 34 W X 2 D CORNER GUARD STAINLESS STEEL CORNER GUARD
 MANUAL ROLLER SHADE LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION MOTORIZED ROLLER SHADES LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION 	 DOOR AND WINDOW FRAMES TO BE PAINTED P4; U.N.O. EXPOSED CEILINGS, DECK, DUCTWORK, STRUCTURE AND OTHER MISC. EXPOSED ITEMS TO BE PAINTED; U.N.O. ON INTERIOR ELEVATIONS, CEILING PLANS OR FINISH PLANS. FACE & UNDERSIDE OF BULKHEADS TO BE PAINTED P1; U.N.O. ON FINISH PLANS OR NOTED ON INTERIOR ELEVATIONS. 	CT1 CT2	CARPET TILE MFR: INTERFACE STYLE: AE312 COLOR: 105410 IRON/ ACCENT SIZE: 50CM X 50CM INSTALLATION: QUARTER TURN CARPET TILE MFR: INTERFACE
	 REFER TO CEILING PLANS & CEILING SPECIFICATIONS FOR SPECIAL CEILING DESIGNATIONS AND ACT TYPES. REFER TO INTERIOR ELEVATION SHEETS FOR MORE DETAILED PAINT AND INTERIOR FINISH INFORMATION. ALL WALL TILE INSTALLATIONS SHOULD BE FULL HEIGHT; UNLESS NOTED OR SHOWN 	CT3	STYLE: ON LINE COLOR: 103795 OCEAN SIZE: 25CM X 1M INSTALLATION: QUARTER TURN CARPET TILE MFR: INTERFACE
	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.	CTW1	STYLE: STEP REPEAT SR899 COLOR: 104941 ONYX SIZE: 50CM X 50CM INSTALLATION: MONOLITHIC CERAMIC TILE WALL
	 FOR ALL TILE INSTALLATIONS; REFER TO SPECIFICATIONS FOR TRIM FINISH INFORMATION. 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 READS 		MFR: DALTILE STYLE: COLOR WHEEL LINEAR COLOR: NAVY SIZE: 4 X 12 INCHES INSTALLATION: 1/3 BRICK OFFSET, FULL HEIGHT WALL BAINT (CENERAL)
	 WHERE SEALED CONCRETE (SC). IS SPECIFIED, REFER TO SPECIFICATION SECTION 09 90 00 PAINTING, FOR SYSTEM TYPE. 	P1	PAINT (GENERAL) MFR: BENJAMIN MOORE COLOR: MATCH EXISTING GENERAL WALL WHITE PAINT (ACCENT)
	 REFER TO SPECIFICATIONS FOR ALL PAINT TYPES. ALL PAINTED WALLS IN TOILET ROOMS, KITCHENS, LOCKER ROOMS, SCIENCE ROOMS, STEM AND MAKERSPACES SHALL RECEIVE EPOXY PAINT 	P3	MFR: BENJAMIN MOORE COLOR: HC-10 STUART GOLD PAINT (ACCENT)
	20. ALL STAIR AND GUARDRAIL RAILINGS, HANDRAILS, STRINGERS, RISERS, ETC ARE TO BE PAINTED P2; U.N.O.	P4	MFR: BENJAMIN MOORE COLOR: HC-155 NEWBURY PORT BLUE PAINT (TRIM)
	 CONTRACTOR SHALL COORDINATE THE INSTALLATION OF OWNER FURNISHED EQUIPMENT, INCLUDED DIMENSIONS OF SUCH AS THEY RELATE TO THEIR OWN WORK. REMOVE, SALVAGE AND RE-INSTALL EXISTING ROOM SIGNAGE PRIOR TO PAINTING 	PC1	MFR: SHERŴIN WILLIAMS COLOR: SW7019 GAUNTLET GRAY POLISHED CONCRETE
	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.	PL1	COLOR: NATURAL LEVEL 3 POLISH, CLASS 3 AGGREGATE EXPOSURE PLASTIC LAMINATE
	 24. DO NOT PAINT OVER EXISTING GLAZED FACE BLOCK OR EXPOSED BRICK, U.N.O. 25. PROTECT ALL FINISHES DURING CONSTRUCTION. 	PL2	MFR: WILSONART COLOR: 10776-60 KENSINGTON MAPLE PLASTIC LAMINATE
		RAF1	MFR: WILSUNART COLOR: 4942-38 CRISP LINEN 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
		331	
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UNIT E

RENOVATIONS SCHOOLS AND E PUBLIC ADDITIONS / ш HUDSONVILI ELEMENTARY 111 ISSUANCES 10.04.2022 BIDS AND CONSTRUCTION

DRAWN MRJ REVIEWED TGD 5-5769 PROJECT NO.

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_____ UNIT 'E' FINISH PLAN

A9.1E

ELECTRICAL DEMOLITION GENERAL NOTES

- 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
- BUILDING/SITE. 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
- 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

DEMOLISHED.

OWNER.

- LAMPS CONTAINING MERCURY (FLUORESCENT, METAL HALIDE, SODIUM VAPOR, MERCURY VAPOR, ETC.) SHALL BE DISPOSED OF IN A PROPER HAZARDOUS WASTE RECYCLING FACILITY.
- 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.
- 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 DEMOLITION GENERAL NOTES

- ALL UNUSED CONDUIT, RACEWAYS, WIRE, CABLE, CONTROLS, JUNCTION BOXES, DISCONNECTS, MOUNTS, AND RELATED ELECTRICAL ACCESSORIES COMPLETELY BACK TO SOURCE. REFER TO DEMOLITION SPECIFICATION.
- 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
- ALL EQUIPMENT AND/OR MATERIALS SLATED FOR REUSE SHALL BE CAREFULLY REMOVED AND STORED TO PREVENT DAMAGE AND REINSTALLED AS WORK PROGRESSES.

BUILDING/SITE.

DEMOLISHED.

- 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
- 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.
- 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

SMALL GROUP C122 A

UNIT A UNIT B UNIT C KEYPLAN

UNIT 'C' ELECTRICAL DEMOLITION PLAN

ELECTRICAL DEMOLITION GENERAL NOTES

- PRIOR TO REMOVAL FROM THE BUILDING/SITE. THE CONTRACTOR SHALL BE
- BUILDING/SITE.
- DEMOLISHED. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATION AND SIZES OF EXISTING CONDUIT, WIRING, AND EQUIPMENT.
- OWNER. RECYCLING FACILITY.
- OWNER.
- PLANS.

:63 (3):

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.
- 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
- 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.
- 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
- 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.

UNIT E

2. MAKE PROVISIONS TO BACKFEED OR RE-CIRCUIT ANY ITEMS THAT ARE EXISTING TO

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

10. CONTRACTOR SHALL PROTECT ALL WALLS, CEILINGS, FLOORS, LIGHTS, AND OTHER

SIZE FOR CODE-COMPLIANT INSTALLATION OF THE NEW CONDUCTORS. REVISE /

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0 -C. O REN 0 ÔH DN ND C S 4 PUBLIC S DITION \square Ш HUDSONVILI EMENTARY Ш ISSUANCES 10.04.2022 BIDS & CONSTRUCTION DRAWN KSS REVIEWED LCT PROJECT NO. 5-5769 NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATA BASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF GMB COPYRIGHT © 2022 ALL RIGHTS RESERVED -UNIT 'D' ELECTRICAL DEMOLITION PLAN E1.1D

EX. PANEL 'C' EX. PANEL 'G' EX. PANEL 'H' OVERALL ELECTRICAL PLAN 1/16" = 1'-0"

UNIT B UNIT C UNIT D

PC	WER & COMMUNICATION GENERAL
1.	REFER TO ELECTRICAL GENERAL NOTES ON SHEET E
2.	REFER TO CODE COMPLIANCE PLAN FOR LOCATIONS A VERTICAL AND HORIZONTAL BUILDING ASSEMBLIES. F FIRESTOPPING SYSTEMS PER SPECIFICATIONS TO ME CODES.
3.	ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NON-LOCH SHALL BE TAMPER-RESISTANT TYPE; REFER TO NEC 4 SECTION 26 27 26.
4.	 PROVIDE 120VAC POWER FOR ALL SMOKE DAMPERS A FIRE/SMOKE DAMPERS. A. REFER TO MECHANICAL/HVAC DRAWINGS FOR LO OF DAMPERS. B. CONNECT TO DEDICATED 20A BRANCH CIRCUIT (V ACCESSORY) IN LOCAL PANELBOARD FOR DAMPE (DAMPERS MAY BE GROUPED ON EACH CIRCUIT). C. TERMINATE W/ BOX-COVER FUSIBLE DISCONNECT DAMPER. D. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR W DAMPER (UNLESS COVERED BY ANOTHER DUCT DE E. PROVIDE FIRE ALARM ADDRESSABLE RELAY(S) FO DAMPER W/ CORRESPONDING HVAC UNIT(S) PER
5.	PROVIDE BOX-COVER FUSIBLE DISCONNECT SWITCH (ACCESSIBLE LOCATION) FOR EACH SMALL (< 1/2 HP) M PLUMBING EQUIPMENT MOTOR LOAD WHERE MORE TH CONNECTED TO A COMMON BRANCH CIRCUIT. TYPICA INCLUDE BUT ARE NOT LIMITED TO CABINET HEATERS FANS, FAN COIL UNITS, PUMPS, UNIT HEATERS, VAV BU
6.	DESIGNATED CABLING PATHWAYS (CONDUITS, CABLE SLEEVES, ETC.) SHALL BE RESERVED FOR DIV. 27 COM AND DIV. 28 SAFETY/SECURITY CABLING ONLY. OTHEF AS DIV. 23 CONTROLS, DIV. 26 CONTROLS, AND ARCHIT CABLING SHALL BE SUPPORTED AND SLEEVED BY OTH PATHWAYS, HANGERS, AND SUPPORTS.
7.	CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR I HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOC DESIGNATED ACCESS CONTROL EQUIPMENT LOCATIO POWER SUPPLIES TO DEDICATED STANDBY POWER S' CIRCUIT(S) AS DESIGNATED.

SMALL GROUP

C122

ELECTRICAL ABBREVIATIONS			POWER SYMBOL LEGEND		LIGHTING SYMBOL LEGEND		
AFE				(5)	THREE PHASE MOTOR CONNECTION, 5 HORSEPOWER (EXAMPLE)	\$	SINGLE POLE TOGGLE SWITCH
AFF	ABOVE FINISHED FLOOR ACCESSORY	IN ILK JCT	JUNCTION			s s s s s s s s s s s s s s s s s s s	
ADO	AUTOMATIC DOOR OPERATOR	JB		(1/2)	SINGLE PHASE MOTOR CONNECTION, 1/2 HORSEPOWER (EXAMPLE)	₩2	
AHU ATS	AIR HANDLING UNIT	KW KWH	KILOWATT HOUR		HVAC CONTROL DAMPER ACTUATOR CONNECTION	\$ 3	THREE-WAY TOGGLE SWITCH
BKR	BREAKER	КО	KNOCK OUT	(D) SD	HVAC SMOKE DAMPER ACTUATOR CONNECTION	\$ 4	FOUR-WAY TOGGLE SWITCH
BOB	BOTTOM OF BOX	LBL LT	LABEL LIGHT			¢	
BOD BOS	BOTTOM OF DECK BOTTOM OF STRUCTURE	LC	LIGHTING CONTROL	D F/S	HVAC COMBINATION FIRE/SMOKE DAMPER ACTUATOR CONNECTION	\$OS	SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR
BP	BREAKER PANEL	LCM			SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE	\$osd	SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR AND DIMMER
BLDG CAP	BUILDING	LTG	LIGHTING		SAFETY SWITCH DISCONNECTING MEANS FUSIBLE	\$ _D	WALL-BOX DIMMER SWITCH
CLG	CEILING	MAX	MAXIMUM				
CKT		MCC	MAIN BONDING JUMPER MOTOR CONTROL CENTER		COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS	\$ D3	THREE-WAY WALL-BOX DIMMER SWITCH
C	CONDUIT	MIN	MINIMUM		VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS	\$ ⊤	ELECTRONIC INTERVAL TIMER SWITCH
	COMMUNICATIONS	MTS NEC	MANUAL TRANSFER SWITCH NATIONAL ELECTRICAL CODE		MOTOR STARTER	\$₽	LIGHT SWITCH WITH PILOT LIGHT
CONN	CONSTRUCTION	NEG	NEGATIVE (-)				
CONTR	CONTRACT (OR)	NC NO	NORMALLY CLOSED NORMALLY OPEN	⊅ F	BOX-COVER FUSIBLE DISCONNECT SWITCH	\$c	LIGHTING CONTROL SWITCH, REFER TO LIGHTING CONTROL SWITCH SCHEDULE AND SPECIFICATIONS FOR DETAILS.
CLL		N/A	NOT APPLICABLE	\$M	MANUAL MOTOR CONTROLLER	\$ DT	DOUBLE-THROW (MAINTAINED) LIGHT SWITCH
E.C.	ELECTRICAL CONTRACTOR	NIC		s s	POWER SWITCH, REFER TO LIGHTING SYMBOL LEGEND FOR SIMILAR SWITCH TYPES	¢v	KEY-OPERATED SWITCH
EGC FHD	EQUIPMENT GROUNDING CONDUCTOR	OCPD	OVERCURRENT PROTECTIVE DEVICE			۹ň	(SUFFIX DESIGNATION NONE: SINGLE POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY
ELEC	ELECTRIC (AL)	PC			DIRECT ELECTRICAL CONNECTION	\$∟	LOCKING SWITCH (SUFFIX DESIGNATION NONE: SINGLE-POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY
EWC		PUS	POWER	φ	SINGLE NEMA 5-20R RECEPTACLE	ТР	TOUCHSCREEN PANEL
ENT	ENTRANCE	P&L	POWER & LIGHTING	μ φ	SINGLE NEMA 5-20R RECEPTACLE. CEILING-MOUNTED		CIRCUIT NUMBER FOR LIGHT FIXTURES WITHIN INDICATED SPACE
EQ	EQUAL	S SBJ	SURFACE SYSTEM BONDING JUMPER	Ψ			
EQUIP	ESTIMATE	S.B.O.	SUPPLIED BY OTHERS		SINGLE NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED		WALL-MOUNTED LIGHTING FIXTURE, TYPE 'A'
EF	EXHAUST FAN	SP SPD	SINGLE POLE SURGE PROTECTION DEVICE	φ	DUPLEX NEMA 5-20R RECEPTACLE	A	RECESSED LIGHTING FIXTURE, TYPE 'A'
EIR EX	EXISTING TO REMAIN EXISTING	SPKR	SPEAKER	₽	"F" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX	A	
F	FLUSH	SPEC SSBJ	SPECIFICATION SUPPLY-SIDE BONDING JUMPER				SURFACE-WOUNTED LIGHTING FIXTURE, TIPE A
FA FSE	FIRE ALARM FOOD SERVICE EQUIPMENT	SUB	SUBSTITUTE	₽ GFCI	"GFCI" NOTATION: GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE		TRACK LIGHTING
FP	FIRE PROOF / FIRE PROTECTION	SWBD TEL	SWITCHBOARD TELEPHONE	₽s	"S" NOTATION: SURFACE-MOUNTED		
FLR FLUOR	FLOOR	T'STAT	THERMOSTAT	₽ wL	"WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH		SINGLE FACE EXIT SIGN, TYPE "X1" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION
GEC	GROUNDING ELECTRODE CONDUCTOR	XFMR UG	TRANSFORMER UNDERGROUND		EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER		
GEN GECI	GENERATOR GROUND FAULT CIRCUIT INTERRUPTER	UL	UNDERWRITERS LABORATORIES		DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED		DOUBLE FACE EXIT SIGN, TYPE "X2" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION
GRD	GROUND	UH UNO	UNIT HEATER		DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED		
HORIZ HTR	HORIZONTAL	VERT	VERTICAL	0	DUPLEX NEMA 5-20R RECEPTACLE. CONNECTED TO STANDBY POWER BRANCH CIRCUIT		WALL-MOUNTED EXIT SIGN, SHADING INDICATES FACE ORIENTATION
HTG	HEATING	W/ W/O	WITH				EMERGENCY LIGHT FIXTURE DESIGNATION
HVAC	HEATING / VENTILATING	WG	WIRE GUARD	₩	DUPLEX NEMA 5-20R RECEPTACLE, SPLIT-WIRED		
HOA	HAND - OFF - AUTOMATIC	WL WP	WET LOCATION	● ●	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE		EMERGENCY LIGHTING AUTOMATIC LOAD CONTROL RELAY
HP	HEAT PUMP	•••		┃	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED	R	LIGHTING CONTROL RELAY
						C	LIGHTING CONTROL ENCLOSED CONTACTOR
				μ φ	RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE	TS	TIME SWITCH
					RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE. FLOOR-MOUNTED	LCM	LIGHTING CONTROL MODULE
				VERT. HORIZ.			
						LCP	LIGHTING CONTROL PANEL
				ATS	AUTOMATIC TRANSFER SWITCH	INV-1	EMERGENCY LIGHTING INVERTER, TYPE 1
FEET	ONE-WAY BASED ON SINGLE PHASE.	FEET	ONE-WAY BASED ON SINGLE PHASE.		SWITCHBOARD / SWITCHGEAR		WALL-MOUNTED OCCUPANCY SENSOR
20A CI	RCUIT, 75% LOAD, 100% P.F., IN STEEL	30	A CIRCUIT, 75% LOAD, 100% P.F., IN		PANEL BOARD		
	CONDUCTOR SIZE						CEILING-MOUNTED OCCUPANCY SENSOR
OLTAGE #	12 AWG #10 AWG #8 AWG #6 AWG #4 AWG	VOLTAG	E #10 AWG #8 AWG #6 AWG #4 AWG		TRANSFORMER		WALL-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
120	60 100 150 245 385	120	60 100 150 245		MOTOR CONTROL CENTER	PC	CEILING-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
208	100 170 265 425 670 135 230 355 565 890	208	<u>100</u> 170 265 425 135 230 355 565		EMERGENCY STOP STATION, REFER TO DETAIL FOR REQUIREMENTS.	PS	WALL-MOLINTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
480	240 400 615 980	480	240 400 615 980				
I	· _ · _ · _ J		· · · · · ·		AUTOMATIC DOOR OPERATOR PUSH BUTTON	PS	CEILING-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
FEET 20A CI	ONE-WAY BASED ON THREE PHASE, RCUIT, 75% LOAD. 100% P.F IN STEFL	FEE1 30A C	T ONE-WAY BASED ON THREE PHASE, IRCUIT, 75% LOAD, 100% P.F IN STEEL	8	ON/OFF PUSH BUTTON		POLE-MOUNTED SITE/AREA FIXTURE
	CONDUIT, 3% VOLTAGE DROP		CONDUIT, 3% VOLTAGE DROP	8	THREE-FUNCTION PUSH BUTTON		SELF-CONTAINED EMERGENCY LIGHTING UNIT
							NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED
208 #1	Z AWG #10 AWG #8 AWG #6 AWG #4 AWG 120 200 305 400 775	202	#10 AWG #8 AWG #6 AWG #4 AWG 120 200 305 490		ILOURDUA, ITE I		
480	275 460 710 1,130	480	275 460 710 1,130		JUNCTION BOX		
I		L			METER		
				R	RELAY		

ELECTRICAL ABBREVIATIONS			POWER SYMBOL LEGEND		LIGHTING SYMBOL LEGE		
				(5)	THREE PHASE MOTOR CONNECTION, 5 HORSEPOWER (EXAMPLE)	s	SINGLE POLE TOGGLE SWITCH
AFF ACC	ABOVE FINISHED FLOOR ACCESSORY	INTLK JCT	INTERLOCK JUNCTION			\$ 2	
ADO	AUTOMATIC DOOR OPERATOR	JB	JUNCTION BOX	(1/2)	SINGLE PHASE MOTOR CONNECTION, 1/2 HORSEPOWER (EXAMPLE)	¥۷	
AHU ATS	AIR HANDLING UNIT	KWH	KILOWATT HOUR	D	HVAC CONTROL DAMPER ACTUATOR CONNECTION	\$ 3	THREE-WAY TOGGLE SWITCH
BKR	BREAKER	KO I BI	KNOCK OUT		HVAC SMOKE DAMPER ACTUATOR CONNECTION	\$ 4	FOUR-WAY TOGGLE SWITCH
BOB BOD	BOTTOM OF BOX BOTTOM OF DECK	LT	LIGHT	D F/S	HVAC COMBINATION FIRE/SMOKE DAMPER ACTUATOR CONNECTION	\$os	SINGLE POLE SWITCH WITH INTEGRAL OCCUPAN
BOS	BOTTOM OF STRUCTURE	LC LCM	LIGHTING CONTROL LIGHTING CONTROL MODULE	9		*	
BP BLDG	BREAKER PANEL BUILDING	LCN	LIGHTING CONTROL NARRATIVE		SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE	\$ OSD	SINGLE POLE SWITCH WITH INTEGRAL OCCUPAN
CAP	CAPACITY	LTG MAX	LIGHTING		SAFETY SWITCH DISCONNECTING MEANS, FUSIBLE	\$ D	WALL-BOX DIMMER SWITCH
CLG CKT	CEILING CIRCUIT	MBJ	MAIN BONDING JUMPER		COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS	\$ D3	THREE-WAY WALL-BOX DIMMER SWITCH
СВ		MCC MIN	MOTOR CONTROL CENTER MINIMUM		VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS	S⊤	ELECTRONIC INTERVAL TIMER SWITCH
COMM	COMMUNICATIONS	MTS	MANUAL TRANSFER SWITCH			•	
CONN	CONNECTION	NEC NEG	NATIONAL ELECTRICAL CODE NEGATIVE (-)		MOTOR STARTER	\$ ₽	LIGHT SWITCH WITH PILOT LIGHT
CONST	CONSTRUCTION CONTRACT (OR)	NC	NORMALLY CLOSED	\$ ⊢	BOX-COVER FUSIBLE DISCONNECT SWITCH	\$ c	LIGHTING CONTROL SWITCH, REFER TO LIGHTING AND SPECIFICATIONS FOR DETAILS.
CLL	CONTRACT LIMIT LINE	NO N/A	NORMALLY OPEN NOT APPLICABLE	\$ M	MANUAL MOTOR CONTROLLER	\$ DT	DOUBLE-THROW (MAINTAINED) LIGHT SWITCH
E.C.	ELECTRICAL CONTRACTOR	NIC	NOT IN CONTRACT	c c		451 A	KEY-OPERATED SWITCH
EGC	EQUIPMENT GROUNDING CONDUCTOR	NL OCPD	NIGHT LIGHT OVERCURRENT PROTECTIVE DEVICE		POWER SWITCH, REPER TO LIGHTING STMIDDL LEGEND FOR SIMILAR SWITCH TIFES	₿K	(SUFFIX DESIGNATION NONE: SINGLE POLE, 2: I
ELEC	ELECTRIC (AL)	PC		۲	DIRECT ELECTRICAL CONNECTION	\$ ∟	LOCKING SWITCH (SUFFIX DESIGNATION NONE: SINGLE-POLE, 2: I
EWC		POS PWR	POSITIVE (+) POWER	φ	SINGLE NEMA 5-20R RECEPTACLE	TP	TOUCHSCREEN PANEL
ENT	ENTRANCE	P&L	POWER & LIGHTING	φ	SINGLE NEMA 5-20R RECEPTACLE. CEILING-MOUNTED	LPA-X	CIRCUIT NUMBER FOR LIGHT FIXTURES WITHIN IN
EQ EQUIP	EQUAL	S SBJ	SURFACE SYSTEM BONDING JUMPER	Υ Τ			
EST	ESTIMATE	S.B.O.	SUPPLIED BY OTHERS		SINGLE NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED	H	WALL-MOUNTED LIGHTING FIXTURE, TYPE 'A'
EF ETR	EXHAUST FAN EXISTING TO REMAIN	SPD	SURGE PROTECTION DEVICE	₽	DUPLEX NEMA 5-20R RECEPTACLE	A	RECESSED LIGHTING FIXTURE, TYPE 'A'
EX	EXISTING	SPKR SPEC	SPEAKER SPECIFICATION	₽	"E" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX	А	SURFACE-MOUNTED LIGHTING FIXTURE, TYPE 'A'
F FA	FLUSH FIRE ALARM	SSBJ	SUPPLY-SIDE BONDING JUMPER	Morol			
FSE	FOOD SERVICE EQUIPMENT	SUB SWBD	SUBSTITUTE SWITCHBOARD	₩ ^{GPCI}	Grof Notation. GRound Fault Circuit Interrorter Tipe Receptagle		TRACK LIGHTING
FP FLR	FIRE PROOF / FIRE PROTECTION FLOOR	TEL	TELEPHONE	Ψs	"S" NOTATION: SURFACE-MOUNTED	Ч	
FLUOR	FLUORESCENT	T'STAT XFMR	THERMOSTAT TRANSFORMER	₽w∟	"WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER	\bigotimes	SINGLE FACE EXIT SIGN, TYPE "X1" IN SCHEDULE SHADING INDICATES FACE ORIENTATION
GEC GEN	GROUNDING ELECTRODE CONDUCTOR GENERATOR	UG	UNDERGROUND	Ь b	DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED		DOUBLE FACE EXIT SIGN ITYPE "X2" IN SCHEDUIE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UL UH	UNDERWRITERS LABORATORIES UNIT HEATER	। ⊓ याष			SHADING INDICATES FACE ORIENTATION
grd Horiz	GROUND HORIZONTAL	UNO	UNLESS NOTED OTHERWISE		DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED	$\overline{\Delta}$	WALL-MOUNTED EXIT SIGN, SHADING INDICATES
HTR	HEATER	VERI W/	VERTICAL WITH	P	DUPLEX NEMA 5-20R RECEPTACLE, CONNECTED TO STANDBY POWER BRANCH CIRCUIT		
HIG HV	HEATING HEATING / VENTILATING	W/O	WITHOUT	₽	DUPLEX NEMA 5-20R RECEPTACLE, SPLIT-WIRED		EMERGENCY LIGHT FIXTURE DESIGNATION
HVAC	HEATING, VENTILATING, AIR CONDITIONING	WG	WIRE GUARD WET LOCATION	● ●	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE		
HP	HEAT PUMP	WP	WEATHER PROOF				
				┃ ┃ Ψ	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED	R	LIGHTING CONTROL RELAY
					QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED	C	LIGHTING CONTROL ENCLOSED CONTACTOR
				φ	RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE	TS	TIME SWITCH
					RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE),	L CM	
				VERT. HORIZ.	SEE PLAN FOR TYPE, FLOOR-MOUNTED		
					SURFACE RACEWAY SYSTEM	LCP	LIGHTING CONTROL PANEL
		X I Y PICA		ATS	AUTOMATIC TRANSFER SWITCH	INV-1	EMERGENCY LIGHTING INVERTER, TYPE 1
FEET	ONE-WAY BASED ON SINGLE PHASE	FEET	T ONE-WAY BASED ON SINGLE PHASE		SWITCHBOARD / SWITCHGEAR	\diamond	WALL-MOUNTED OCCUPANCY SENSOR
20A C	IRCUIT, 75% LOAD, 100% P.F., IN STEEL	30	DA CIRCUIT, 75% LOAD, 100% P.F., IN				
					FANELDOARD		CEILING-MOUNTED OCCUPANCY SENSOR
VOLTAGE #	112 AWG #10 AWG #8 AWG #6 AWG #4 AWG	VOLTAG	E #10 AWG #8 AWG #6 AWG #4 AWG	Т	TRANSFORMER	PC	WALL-MOUNTED PHOTOCELL FOR ON/OFF CONTR
120	60 100 150 245 385	120	60 100 150 245		MOTOR CONTROL CENTER	PC	CEILING-MOUNTED PHOTOCELL FOR ON/OFF CON
208	100 170 265 425 670 135 230 355 565 890	208	<u>100</u> 170 265 425 135 230 355 565	l l fi	EMERGENCY STOP STATION, REFER TO DETAIL FOR REQUIREMENTS.	PS	WALL-MOLINTED PHOTOSENSOR FOR DAYLIGHT I
480	240 400 615 980	480	240 400 615 980				
	· · · · · · · · · · · · · · · · · · ·		I		AUTOMATIC DOOR OPERATOR PUSH BUTTON	PS	CEILING-MOUNTED PHOTOSENSOR FOR DAYLIGH
FEET 20A C	T ONE-WAY BASED ON THREE PHASE, IRCUIT, 75% LOAD, 100% P.F., IN STEEL	FEE 30A C	T ONE-WAY BASED ON THREE PHASE, IRCUIT, 75% LOAD, 100% P.F., IN STEEL		ON/OFF PUSH BUTTON		POLE-MOUNTED SITE/AREA FIXTURE
	CONDUIT, 3% VOLTAGE DROP		CONDUIT, 3% VOLTAGE DROP	8	THREE-FUNCTION PUSH BUTTON	4-P	SELF-CONTAINED EMERGENCY LIGHTING UNIT
							NOTE: NOT ALL SYMBOLS ARE NECESSAF
208	12 AVVG #10 AVVG #8 AVVG #6 AVVG #4 AWG 120 200 305 490 775	208	#ΤΟ ΑΥΥΟ #δ ΑΥΥΟ #δ ΑΨΟ #δ AWG #4 AWG 120 200 305 490				
480	275 460 710 1,130	480	275 460 710 1,130		JUNCTION BOX		
					METER		
				(ī)	THERMOSTAT ROUGH-IN		

С

ENCLOSED CONTROL CONTACTOR

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

	COMMUNICATIONS SYMBOL LEGEND
Δ	
¥	COMMUNICATIONS OUTLET ROUGH-IN
(a)	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
 3	CONDUIT SLEEVE FOR COMMUNICATIONS CABLING, 2" DIA. OR EQU TYP. UNLESS NOTED OTHERWISE. IN FIRE-RATED OR SMOKE-TIGH PROVIDE CABLE PATHWAY PENETRATION DEVICE(S) PER SECTION
<u>(S1)</u>	LOUDSPEAKER, CEILING-MOUNTED, TYPE 1
S1	LOUDSPEAKER, WALL-MOUNTED, TYPE 1
CS	INTERCOM SYSTEM CALL STATION BUTTON
VC	VOLUME CONTROL FOR AUDIO SYSTEM, PAGING, OR INTERCOM LO
C 1	SECONDARY CLOCK, CEILING-MOUNTED, TYPE 1
C1	SECONDARY CLOCK, WALL-MOUNTED, TYPE 1
B O	SIGNALING BELL
	NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

CABLING, 2" DIA. OR EQUIV. FREE AREA E-RATED OR SMOKE-TIGHT WALLS, I DEVICE(S) PER SECTION 27 05 28.

PAGING, OR INTERCOM LOUDSPEAKERS

YPE 1

SC

SC1

ID

UD

UD

CR

CR M

XXXXX

ACS

IDS

PSU

CARD READER

POWER SUPPLY UNIT

CARD READER, MULLION-MOUNTED

ACCESS CONTROL SYSTEM EQUIPMENT

INTRUSION DETECTION SYSTEM EQUIPMENT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

GEND	FIRE ALARM SYMBOL LEGEND				
	Ē	MANUAL PULL STATION			
	A	AUDIBLE NOTIFICATION APPLIANCE, WALL-MOUNTED			
		VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED			
	AM A	AUDIBLE/VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED			
ANCY SENSOR	A	AUDIBLE NOTIFICATION APPLIANCE, CEILING-MOUNTED			
ANCY SENSOR AND DIMMER	AV	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.			
	S	SMOKE DETECTOR			
NG CONTROL SWITCH SCHEDULE		HEAT DETECTOR			
		DUCT SMOKE DETECTOR			
2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY)	(S)	FIRE PROTECTION FLOW SWITCH			
2: DOUBLE-POLE, 3: THREE-WAY, 4: FOUR-WAY)		FIRE PROTECTION TAMPER SWITCH			
		ELECTROMAGNETIC DOOR HOLD-OPEN DEVICE			
INDICATED SPACE	R	ADDRESSABLE RELAY FOR FIRE ALARM CONTROL			
	63	PRESSURE SWITCH			
	C	CARBON MONOXIDE DETECTOR			
A'	NAC	NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY			
	FAA	FIRE ALARM REMOTE ANNUNCIATOR			
	FACP	FIRE ALARM CONTROL PANEL			
E UNLESS OTHERWISE NOTED,	\$ _{RTS}	KEYED TEST SWITCH AND REMOTE INDICATOR FOR DUCT SMOKE DETECTOR			
LE UNLESS OTHERWISE NOTED,	Ę	FIRE PROTECTION OR ALARM BELL			
		NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED			
S FACE ORIENTATION					
	EL	ECTRONIC SAFETY / SECURITY SYMBOL LEGEND			
TROL RELAY	DC	DOOR CONTACT			
	EL	ELECTRONIC LATCH			
	ES	ELECTRONIC STRIKE			
	К	INTRUSION DETECTION KEYPAD			
	IC	INTERCOM STATION			
	sc T	WALL-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH-IN			

CEILING-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH IN

WALL-MOUNTED SURVEILLANCE CAMERA, TYPE 1

CEILING-MOUNTED SURVEILLANCE CAMERA, TYPE 1

WALL-MOUNTED INFRARED MOTION DETECTOR

CEILING-MOUNTED INFRARED MOTION DETECTOR

WALL-MOUNTED ULTRASONIC MOTION DETECTOR

CEILING-MOUNTED ULTRASONIC MOTION DETECTOR

ACCESS CONTROL DOOR TAG, REFER TO HARDWARE SCHEDULE(S) IN SECTION 08 71 00 AND/OR SECTION 28 10 00 FOR FURTHER DETAILED REQUIREMENTS

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

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

UNIT E

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

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ဟ NO \vdash C. RENO 0 ÔH AND C Ś PUBLIC S DITION Q Ш ARY HUDSONVIL ENT ΕN 111 ISSUANCES 10.04.2022 BIDS & CONSTRUCTION DRAWN KSS REVIEWED LCT 5-5769 PROJECT NO. NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATA BASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF GMB COPYRIGHT © 2022 ALL RIGHTS RESERVED _____ UNIT 'D' POWER & COMMUNICATIONS PLAN E2.1D

	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)	

MECH MEZZANINE POWER & COMMNICATIONS 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.
- 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

\bigcirc	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 8"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.

UNIT E

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HUDSONVIL

ISSUANCES 10.04.2022 BIDS & CONSTRUCTION 12.05.2022 BULLETIN 001 02.16.2023 BULLETIN 003

10.27.2022 ADDENDUM 001 11.02.2022 ADDENDUM 002

DRAWN KSS REVIEWED LCT

PROJECT NO.

5-5769

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UNIT 'E' POWER & COMMUNICATIONS PLAN

E2.1E

7 E7.01

CATEGORY 6 CABLES TO MDF/IDF

EMERGENCY LIGHTING AUTOMATIC LOAD CONTROL RELAY 1" = 1'-0"

TYPICAL CLASSROOM VIDEO PROJECTOR MOUNTING DETAIL

VIDEO PROJECTOR

PARK ELEMENTARY ADDITIONS AND RENOVATIONS HUDSONVILLE PUBLIC SCHOOLS

5525 PARK AVENUE HUDSONVILLE, MICHIGAN

GENERAL	. INFORMATION
G0.01	GENERAL NOTES DIMENSIONS AND LEGEND
G1.01	CODE COMPLIANCE FIRST FLOOR PLAN

G1.01

2	IV	11	
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C0.00	OVERALL EXISTING SITE SURVEY
C0.01	OVERALL EXISTING SITE SURVEY
C0.02	OVERALL EXISTING SITE SURVEY
C1.01	DEMOLITION PLAN
C2.01	SITE PLAN
C3.01	GRADING PLAN
C4.01	UTILITY PLAN
C6.01	LANDSCAPE PLAN
C7.01	S.E.S.C. PLAN
C8.01	SITE DETAILS
C8.02	SITE DETAILS

STRUCTURAL

S0.01	STRUCTURAL GENERAL INFORMATION
S0.02	STRUCTURAL SCHEDULES
S0.03	SNOW DRIFT PLAN
S0.04	MASONRY REINFORCING PLAN
S1.1A	UNIT 'A' DEMOLITION PLAN
S2.1A	UNIT 'A' FOUNDATION PLAN
S2.1B	UNIT 'B' FOUNDATION PLAN
S3.1A	UNIT 'A' ROOF FRAMING PLAN
S3.1B	UNIT 'B' ROOF FRAMING PLAN
S3.2A	UNIT 'A' HIGH ROOF FRAMING PLAN
S7.01	STRUCTURAL FOUNDATION DETAILS
S7.02	STRUCTURAL FRAMING DETAILS
S7.03	STRUCTURAL FRAMING DETAILS

	ΤΙΡΛΙ
Δ1 1Δ	LINIT 'A' FIRST FLOOR DEMOLITION PLAN
Δ1 1Β	
A1.1D	UNIT 'C' FIRST ELOOR DEMOLITION PLAN
A2 1A	LINIT 'A' FIRST FLOOR AND GYM MEZZANINE PLANS
A2 1B	UNIT 'B' FIRST FLOOR PLAN
A2.1C	UNIT 'C' FIRST FLOOR PLAN
A2.1D	UNIT 'D' FIRST FLOOR PLAN
A2.30	OVERALL ROOF PLAN
A2.80	ENLARGED PLANS
A3.1A	UNIT 'A' FIRST FLOOR REFLECTED CEILING PLAN
A3.1B	UNIT 'B' FIRST FLOOR REFLECTED CEILING PLAN
A3.1C	UNIT 'C' FIRST FLOOR REFLECTED CEILING PLAN
A3.1D	UNIT 'D' FIRST FLOOR REFLECTED CEILING PLAN
A4.01	EXTERIOR ELEVATIONS
A5.01	DOOR & FRAME SCHEDULE
A6.01	BUILDING SECTIONS
A6.02	BUILDING SECTIONS
A6.03	BUILDING SECTIONS
A6.04	BUILDING SECTIONS
A6.10	WALL SECTIONS
A6.11	WALL SECTIONS
A6.12	WALL SECTIONS
A6.13	WALL SECTIONS
A7.01	ARCHITECTURAL WALL DETAILS
A7.02	WALL DETAILS
A7.03	ROOF DETAILS
A7.04	DOOR, WINDOW AND LOUVER DETAILS
A7.05	DETAILS
A8.01	INTERIOR ELEVATIONS
A8.02	INTERIOR ELEVATIONS AND DETAILS
ADDENDUM 001-A9.01	ROOM SIGNAGE
A9.1A	UNIT 'A' FIRST FLOOR FINISH PLAN
A9.1B	UNIT 'B' FIRST FLOOR FINISH PLAN
A9.1C	UNIT 'C' FIRST FLOOR FINISH PLAN
A9.1D	UNIT 'D' FIRST FLOOR FINISH PLAN

P1.1B	UNIT 'B' PLUMBING DEMOLITION I
P2.0A	UNIT 'A' PLUMBING FOUNDATION
P2.0B	UNIT 'B' PLUMBING FOUNDATION
P2.1A	UNIT 'A' FIRST FLOOR PLUMBING
P2.1B	UNIT 'B' FIRST FLOOR PLUMBING
MECHANI	CAL
M0.01	MECHANICAL GENERAL INFORMA
M1.1A	UNIT 'A' FIRST FLOOR MECHANIC
M1.1B	UNIT 'B' FIRST FLOOR MECHANIC
M1.1C	UNIT 'C' FIRST FLOOR MECHANIC
M1.1D	UNIT 'D' FIRST FLOOR MECHANIC
M2.1A	UNIT 'A' FIRST FLOOR AND GYM N
M2.1B	UNIT 'B' FIRST FLOOR HVAC PLAN
M2.1C	UNIT 'C' FIRST FLOOR HVAC PLAN
M2.1D	UNIT 'D' FIRST FLOOR HVAC PLAN
M3.1A	UNIT 'A' FIRST FLOOR AND MEZZ
M3.1B	UNIT 'B' FIRST FLOOR HYDRONIC
M3.1C	UNIT 'C' FIRST FLOOR HYDRONIC
M3.1D	UNIT 'D' FIRST FLOOR HYDRONIC
M3.80	ENLARGED HYDRONIC PLANS
M7.01	MECHANICAL DETAILS
M7.02	MECHANICAL DETAILS
M8.01	OVERALL CONTROL PLAN
M8.02	MECHANICAL AND CONTROL DIA
M8.03	MECHANICAL AND CONTROL DIA
M9.01	MECHANICAL SCHEDULES
M9.02	MECHANICAL SCHEDULES

PLUMBING

P0.01

P1.1A

ELECTRICA	L
E0.01	ELECTRICAL SYMBOL LEGE
E1.1A	UNIT 'A' ELECTRICAL DEMO
E1.1B	UNIT 'B' ELECTRICAL DEMO
E1.1C	UNIT 'C' ELECTRICAL DEMO
E1.1D	UNIT 'D' ELECTRICAL DEMO
E2.1A	UNIT 'A' POWER & COMMUN
E2.1B	UNIT 'B' POWER & COMMUN
E2.1C	UNIT 'C' POWER & COMMUN
E2.1D	UNIT 'D' POWER & COMMUN
E3.1A	UNIT 'A' LIGHTING PLANS
E3.1B	UNIT 'B' LIGHTING PLAN
E3.1C	UNIT 'C' LIGHTING PLAN
E3.1D	UNIT 'D' LIGHTING PLAN
E4.01	EXISTING POWER DISTRIBUTE
E4.02	POWER DISTRIBUTION ONE
E5.01	POWER DISTRIBUTION EQU
E5.02	POWER DISTRIBUTION EQU
E5.10	LIGHTING FIXTURE, CONTR
E7.01	ELECTRICAL DETAILS
E7.02	COMMUNICATIONS DETAIL
ES1.01	SITE ELECTRICAL DEMOLIT
ES2.01	SITE ELECTRICAL PLAN

CONSTRUCTION MANAGER

OWNER

HUDSONVILLE PUBLIC SCHOOLS 3886 VAN BUREN STREET, HUDSONVILLE, MI 49426 P. 616.669.1740 WWW.HUDSONVILLEPUBLICSCHOOLS.ORG

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BIDS & CONSTRUCTION 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

ARCHITECT + ENGINEER

GMB ARCHITECTURE + ENGINEERING 85 EAST EIGHTH STREET, SUITE 200, HOLLAND, MI 49423 P. 616.796.0200 WWW.GMB.COM

UMBING GENERAL INFORMATION UNIT 'A' PLUMBING DEMOLITION PLAN PLAN N PLAN I PLAN G PLAN B PLAN

> 1ATION CAL DEMOLITION PLAN CAL DEMOLITION PLAN CAL DEMOLITION PLANS CAL DEMOLITION PLANS MEZZANINE HVAC PLANS NS ANINE HYDRONIC PLANS C PLAN C PLANS C PLANS

AGRAMS AGRAMS

GENDS & GENERAL NOTES OLITION PLAN OLITION PLAN IOLITION PLAN IOLITION PLAN JNICATIONS PLANS JNICATIONS PLAN JNICATIONS PLAN JNICATIONS PLAN

BUTION ONE-LINE DIAGRAM NE-LINE DIAGRAM UIPMENT SCHEDULES QUIPMENT SCHEDULES ROL & ENERGY SCHEDULES

ITION PLAN

	ELECTRICAL A	BBREVIATION	3		POWER SYMBOL LEGEND		LIGHTING SYMBOL LEGEND
AFF	ABOVE FINISHED FLOOR	INTLK	INTERLOCK	5	THREE PHASE MOTOR CONNECTION, 5 HORSEPOWER (EXAMPLE)	\$	SINGLE POLE TOGGLE SWITCH
ACC	ACCESSORY	JCT		(1/2)	SINGLE PHASE MOTOR CONNECTION, 1/2 HORSEPOWER (EXAMPLE)	\$ 2	DOUBLE POLE TOGGLE SWITCH
ADO AHU	AUTOMATIC DOOR OPERATOR AIR HANDLING UNIT	JB KW	JUNCTION BOX KILOWATT			d a	
ATS	AUTOMATIC TRANSFER SWITCH	KWH			HVAC CONTROL DAWIPER ACTUATOR CONNECTION	₩3	
BKR BOB	BREAKER BOTTOM OF BOX	LBL	LABEL		HVAC SMOKE DAMPER ACTUATOR CONNECTION	\$ 4	FOUR-WAY TOGGLE SWITCH
BOD	BOTTOM OF DECK	LT			HVAC COMBINATION FIRE/SMOKE DAMPER ACTUATOR CONNECTION	\$os	SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR
BOS BP	BOTTOM OF STRUCTURE BREAKER PANEL	LCM	LIGHTING CONTROL MODULE		SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE	\$osd	SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR AND DIMMER
BLDG	BUILDING	LCN	LIGHTING CONTROL NARRATIVE			d_	
CAP CLG	CAPACITY CEILING	MAX	MAXIMUM		SAFETY SWITCH DISCONNECTING MEANS, FUSIBLE	ə D	WALL-BOX DIMMER SWITCH
CKT		MBJ MCC	MAIN BONDING JUMPER MOTOR CONTROL CENTER		COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS	\$D3	THREE-WAY WALL-BOX DIMMER SWITCH
СВ	CONDUIT	MIN	MINIMUM		VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS	\$⊤	ELECTRONIC INTERVAL TIMER SWITCH
		MTS NEC	MANUAL TRANSFER SWITCH NATIONAL ELECTRICAL CODE		MOTOR STARTER	\$ ₽	LIGHT SWITCH WITH PILOT LIGHT
CONST	CONSTRUCTION	NEG	NEGATIVE (-)	¢_			
CONTR	CONTRACT (OR)	NC NO	NORMALLY CLOSED	\$₽⊦	BOX-COVER FUSIBLE DISCONNECT SWITCH	\$C	AND SPECIFICATIONS FOR DETAILS.
CT	CURRENT TRANSFORMER	N/A		\$ ™	MANUAL MOTOR CONTROLLER	\$ _{DT}	DOUBLE-THROW (MAINTAINED) LIGHT SWITCH
E.C. FGC	ELECTRICAL CONTRACTOR	NL	NIGHT LIGHT	\$	POWER SWITCH, REFER TO LIGHTING SYMBOL LEGEND FOR SIMILAR SWITCH TYPES	\$ к	KEY-OPERATED SWITCH (SUFFIX DESIGNATION NONE: SINGLE POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: F
EHD	ELECTRIC HAND DRYER	OCPD PC	OVERCURRENT PROTECTIVE DEVICE		DIRECT ELECTRICAL CONNECTION	S,	LOCKING SWITCH
ELEC EWC	ELECTRIC (AL) ELECTRIC WATER COOLER	POS	POSITIVE (+)				(SUFFIX DESIGNATION NONE: SINGLE-POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: F
EM	EMERGENCY	PWR P & L	POWER POWER & LIGHTING	Ψ	SINGLE NEMA 5-20R RECEPTACLE		TOUCHSCREEN PANEL
ENT	EN IRANCE EQUAL	S	SURFACE	φ	SINGLE NEMA 5-20R RECEPTACLE, CEILING-MOUNTED	LPA-X	CIRCUIT NUMBER FOR LIGHT FIXTURES WITHIN INDICATED SPACE
EQUIP EST	EQUIPMENT	SBJ S.B.O.	SYSTEM BONDING JUMPER SUPPLIED BY OTHERS		SINGLE NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED		WALL-MOUNTED LIGHTING FIXTURE, TYPE 'A'
EF	EXHAUST FAN	SP	SINGLE POLE	φ	DUPLEX NEMA 5-20R RECEPTACLE	A	RECESSED LIGHTING FIXTURE, TYPE 'A'
ETR EX	EXISTING TO REMAIN EXISTING	SPKR	SPEAKER	Φε	"F" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX		
F	FLUSH	SPEC SSBJ	SPECIFICATION SUPPLY-SIDE BONDING JUMPER				SURFACE-MOUNTED LIGHTING FIXTURE, TIPE A
FA FSE	FIRE ALARM FOOD SERVICE EQUIPMENT	SUB		ΨGF	GFCI" NOTATION: GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE		TRACK LIGHTING
FP FL R	FIRE PROOF / FIRE PROTECTION	TEL	TELEPHONE	₽s	"S" NOTATION: SURFACE-MOUNTED	A A	
FLUOR	FLUORESCENT	T'STAT XFMR	THERMOSTAT TRANSFORMER	₽wL	"WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER		SINGLE FACE EXIT SIGN, TYPE "X1" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION
GEC GEN	GROUNDING ELECTRODE CONDUCTOR GENERATOR	UG		φ	DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED		DOUBLE FACE EXIT SIGN, TYPE "X2" IN SCHEDULE UNLESS OTHERWISE NOTED,
GFCI GRD	GROUND FAULT CIRCUIT INTERRUPTER	UH	UNIT HEATER		DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED		SHADING INDICATES FACE ORIENTATION
HORIZ	HORIZONTAL	UNO VERT	UNLESS NOTED OTHERWISE VERTICAL	0			WALL-MOUNTED EXIT SIGN, SHADING INDICATES FACE ORIENTATION
HTG	HEATER	W/ W/O	WITH WITHOUT	π			EMERGENCY LIGHT FIXTURE DESIGNATION
HV HVAC	HEATING / VENTILATING HEATING, VENTILATING, AIR CONDITIONING	WG WI	WIRE GUARD		DUFLEA INLIWA 5-2011 NEGEF FAGLE, OFLIT-WINED		
HOA HP	HAND - OFF - AUTOMATIC HEAT PUMP	WP	WEATHER PROOF		QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE		EMERGENCY LIGHTING AUTOMATIC LOAD CONTROL RELAY
					QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED	R	LIGHTING CONTROL RELAY
					QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED	C	LIGHTING CONTROL ENCLOSED CONTACTOR
				φ	RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE	TS	TIME SWITCH
					RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE, FLOOR-MOUNTED	LCM	LIGHTING CONTROL MODULE
					2. SURFACE RACEWAY SYSTEM	LCP	LIGHTING CONTROL PANEL
	MAXIMUM CONDUCTOR LENGTHS	S FOR TYPICAL	BRANCH CIRCUITS	ATS	AUTOMATIC TRANSFER SWITCH		
							EWERGENCT LIGHTING INVERTER, TIPE I
FEET 20A CI	ONE-WAY BASED ON SINGLE PHASE, RCUIT, 75% LOAD, 100% P.F., IN STEEL	FEET 30A	ONE-WAY BASED ON SINGLE PHASE, \ CIRCUIT, 75% LOAD, 100% P.F., IN		MANUAL TRANSFER SWITCH	₩ 1	WALL-MOUNTED OCCUPANCY SENSOR
	CONDUIT, 3% VOLTAGE DROP	STI	EEL CONDUIT, 3% VOLTAGE DROP		SWITCHBOARD / SWITCHGEAR		CEILING-MOUNTED OCCUPANCY SENSOR
CIRCUIT	12 AWG #10 AWG #8 AWG #6 AWG #4 AWG	CIRCUIT VOLTAGE	#10 AWG #8 AWG #6 AWG #4 AWG		PANELBOARD	PC	WALL-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
120	60 100 150 245 385	120	60 100 150 245	Т	TRANSFORMER	PC	CEILING-MOUNTED PHOTOCELL FOR ON/OFF CONTROL
208	100 170 265 425 670 135 230 355 565 890	208	100 170 265 425 135 230 355 565		MOTOR CONTROL CENTER	PS	WALL-MOLINTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL
480	240 400 615 980	480	240 400 615 980		EMERGENCY STOP STATION REFER TO DETAIL FOR REQUIREMENTS		
FFFT		FFFT					CEILING-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTRO
PEET 20A CI	CINE-WAT DAGED ON THREE PHASE, RCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT 3% VOLTAGE DROP	FEET 30A CIF	CINE-WAT DAGED UN THREE PHASE, RCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT 3% VOLTAGE DROP		AUTOMATIC DOOR OPERATOR PUSH BUTTON		POLE-MOUNTED SITE/AREA FIXTURE
	CONDUCTOR SIZE		CONDUCTOR SIZE		ON/OFF PUSH BUTTON		
OLTAGE #1	2 AWG #10 AWG #8 AWG #6 AWG #4 AWG	VOLTAGE	#10 AWG #8 AWG #6 AWG #4 AWG	8	THREE-FUNCTION PUSH BUTTON		NUTE: NUT ALL SYMBULS ARE NECESSARILY USED
208 480	120 200 305 490 775 275 460 710 1.130	208 480	120 200 305 490 275 460 710 1,130	FB1	FLOORBOX, TYPE 1		
I		J L	1 1 1 1		JUNCTION BOX		
					METER		
	· · · · · · · · · · · · · · · · · · ·						
	COMMUN	ICATIONS SYM	BOL LEGEND				

ELECTRICAL ABBREVIATIONS					POWER SYMBOL LEGEND		LIGHTING SYMBOL LE		
				(5	J	THREE PHASE MOTOR CONNECTION, 5 HORSEPOWER (EXAMPLE)		s	SINGLE POLE TOGGLE SWITCH
AFF ACC	ABOVE FINISHED FLOOR ACCESSORY	INTLK JCT	INTERLOCK JUNCTION		, ,			\$2	
ADO		JB KW	JUNCTION BOX		2)	SINGLE PHASE MOTOR CONNECTION, 1/2 HORSEPOWER (EXAMPLE)			
AHU	AUTOMATIC TRANSFER SWITCH	КШ	KILOWATT HOUR			HVAC CONTROL DAMPER ACTUATOR CONNECTION		\$ 3	THREE-WAY TOGGLE SWITCH
BKR	BREAKER	KO LBL	KNOCK OUT LABEL		SD	HVAC SMOKE DAMPER ACTUATOR CONNECTION		\$ 4	FOUR-WAY TOGGLE SWITCH
BOB BOD	BOTTOM OF BOX BOTTOM OF DECK	LT	LIGHT		, F/S	HVAC COMBINATION FIRE/SMOKE DAMPER ACTUATOR CONNECTION		\$os	SINGLE POLE SWITCH WITH INTEGRAL OCCU
BOS	BOTTOM OF STRUCTURE	LC LCM	LIGHTING CONTROL LIGHTING CONTROL MODULE		/			đ _{a sa}	
BP BLDG	BREAKER PANEL BUILDING	LCN	LIGHTING CONTROL NARRATIVE		ጉ	SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE		⊅osd	SINGLE POLE SWITCH WITH INTEGRAL OCCU
CAP	CAPACITY	LTG MAX	LIGHTING MAXIMUM		Դ	SAFETY SWITCH DISCONNECTING MEANS, FUSIBLE		\$ D	WALL-BOX DIMMER SWITCH
CKT	CIRCUIT	MBJ	MAIN BONDING JUMPER		≤h	COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS		\$ D3	THREE-WAY WALL-BOX DIMMER SWITCH
СВ		MCC MIN	MOTOR CONTROL CENTER MINIMUM		Դ	VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS		\$ ⊤	ELECTRONIC INTERVAL TIMER SWITCH
СОММ	COMMUNICATIONS	MTS	MANUAL TRANSFER SWITCH		7			¢.	
CONN		NEC	NATIONAL ELECTRICAL CODE NEGATIVE (-)			MOTOR STARTER		\$ P	LIGHT SWITCH WITH PILOT LIGHT
CONTR	CONTRACT (OR)	NC		\$	F	BOX-COVER FUSIBLE DISCONNECT SWITCH		\$ c	LIGHTING CONTROL SWITCH, REFER TO LIGH AND SPECIFICATIONS FOR DETAILS.
CLL CT	CONTRACT LIMIT LINE CURRENT TRANSFORMER	NO N/A	NORMALLY OPEN	\$	M	MANUAL MOTOR CONTROLLER		\$ DT	DOUBLE-THROW (MAINTAINED) LIGHT SWITCH
E.C.	ELECTRICAL CONTRACTOR	NIC		s s		POWER SWITCH. REFER TO LIGHTING SYMBOL LEGEND FOR SIMILAR SWITCH TYPES		¢	KEY-OPERATED SWITCH
EGC EHD	EQUIPMENT GROUNDING CONDUCTOR ELECTRIC HAND DRYER	OCPD	OVERCURRENT PROTECTIVE DEVICE			· · · , · · · · · · · · · · · · · ·		UK .	(SUFFIX DESIGNATION NONE: SINGLE POLE
ELEC	ELECTRIC (AL)	PC POS	PHOTOCELL / PHOTOCONTROL POSITIVE (+)		9	DIRECT ELECTRICAL CONNECTION		\$∟	(SUFFIX DESIGNATION NONE: SINGLE-POLE
EWC EM	ELECTRIC WATER COOLER EMERGENCY	PWR	POWER	φ φ)	SINGLE NEMA 5-20R RECEPTACLE		TP	TOUCHSCREEN PANEL
ENT	ENTRANCE	P&L S	POWER & LIGHTING SURFACE	¢)	SINGLE NEMA 5-20R RECEPTACLE, CEILING-MOUNTED		LPA-X	CIRCUIT NUMBER FOR LIGHT FIXTURES WITH
EQ EQUIP	EQUIPMENT	SBJ	SYSTEM BONDING JUMPER		9				
EST	ESTIMATE	S.B.O. SP	SUPPLIED BY OTHERS SINGLE POLE		4	SINGLE NEIMA 3-20K RECEPTACLE, FLOOR-MOUNTED			WALL-WOONTED LIGHTING TIXTORE, TIPE A
EF	EXISTING TO REMAIN	SPD	SURGE PROTECTION DEVICE	H)	DUPLEX NEMA 5-20R RECEPTACLE		A	RECESSED LIGHTING FIXTURE, TYPE 'A'
EX	EXISTING	SPKR SPEC	SPEAKER SPECIFICATION	¶ ¶	PE	"E" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX		A	SURFACE-MOUNTED LIGHTING FIXTURE, TYPE
F	FIRE ALARM	SSBJ	SUPPLY-SIDE BONDING JUMPER		GFCI	"GFCI" NOTATION: GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE			
FSE		SUB SWBD	SWITCHBOARD	יי מ) e				TRACK LIGHTING
FLR	FLOOR	TEL T'STAT	TELEPHONE	Π					SINGLE FACE EXIT SIGN TYPE "X1" IN SCHEDI
FLUOR		XFMR	TRANSFORMER	H	WL	"WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER			SHADING INDICATES FACE ORIENTATION
GEN	GENERATOR	UG	UNDERGROUND UNDERWRITERS LABORATORIES	4	þ	DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED			DOUBLE FACE EXIT SIGN, TYPE "X2" IN SCHED
GFCI GRD	GROUND FAULT CIRCUIT INTERRUPTER GROUND	UH	UNIT HEATER		D	DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED			SHADING INDICATES FACE ORIENTATION
HORIZ	HORIZONTAL	UNO VERT	UNLESS NOTED OTHERWISE VERTICAL						WALL-MOUNTED EXIT SIGN, SHADING INDICAT
HTR HTG	HEATER HEATING	W/	WITH	¹	ſ	DUPLEX NEMA 5-20R RECEPTACLE, CONNECTED TO STANDBY POWER BRANCH CIRCUIT			
HV	HEATING / VENTILATING	W/O WG	WITHOUT WIRE GUARD	¶	P	DUPLEX NEMA 5-20R RECEPTACLE, SPLIT-WIRED			
HVAC HOA	HEATING, VENTILATING, AIR CONDITIONING HAND - OFF - AUTOMATIC	WL		€	₽	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE			EMERGENCY LIGHTING AUTOMATIC LOAD CO
HP	HEAT PUMP	WP	WEATHER PROOF		⊨	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED		R	LIGHTING CONTROL RELAY
						QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED			
					2 2	RECEPTACI E OTHER THAN NEMA 5-20R (MAY BE MUI TI-POI E OR MUI TI-PHASE)			LIGHTING CONTROL ENCLOSED CONTACTOR
				⁴	,	SEE PLAN FOR TYPE		TS	TIME SWITCH
						RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE, FLOOR-MOUNTED		LCM	LIGHTING CONTROL MODULE
					HORIZ.	SURFACE RACEWAY SYSTEM		LCP	LIGHTING CONTROL PANEL
	MAXIMUM CONDUCTOR LENGTHS F	OR TYPICA	BRANCH CIRCUITS	AT	s	AUTOMATIC TRANSFER SWITCH			
					-			INV-1	EMERGENCY LIGHTING INVERTER, TYPE 1
FEET	ONE-WAY BASED ON SINGLE PHASE,	FEET	ONE-WAY BASED ON SINGLE PHASE,	MT	S	MANUAL TRANSFER SWITCH		♥	WALL-MOUNTED OCCUPANCY SENSOR
204 0	CONDUIT, 3% VOLTAGE DROP	S	FEEL CONDUIT, 3% VOLTAGE DROP			SWITCHBOARD / SWITCHGEAR		♦	CEILING-MOUNTED OCCUPANCY SENSOR
		CIRCUIT			-	PANELBOARD		PC	
120	12 AWG #10 AWG #8 AWG #6 AWG #4 AWG 60 100 150 245 385	120	F #10 AWG #8 AWG #6 AWG #4 AWG 60 100 150 245						
208	100 170 265 425 670	208	100 170 265 425					PC	CEILING-MOUNTED PHOTOCELL FOR ON/OFF
277	135 230 355 565 890	277	135 230 355 565			MOTOR CONTROL CENTER		PS	WALL-MOUNTED PHOTOSENSOR FOR DAYLIG
480	240 400 615 980	480	240 400 615 980		ì	EMERGENCY STOP STATION, REFER TO DETAIL FOR REQUIREMENTS.		PS	CEILING-MOUNTED PHOTOSENSOR FOR DAYI
FEET	ONE-WAY BASED ON THREE PHASE,	FEET	ONE-WAY BASED ON THREE PHASE,	т D	Ì	AUTOMATIC DOOR OPERATOR PUSH BUTTON			POLE-MOUNTED SITE/AREA FIXTURE
20A C	IRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP	30A C	IRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP		-				. SEE MOORTED OTEMICATIVIONE
CIRCUIT	CONDUCTOR SIZE	CIRCUIT	CONDUCTOR SIZE		2	UN/OFF PUSH BUILION			
VOLTAGE #1	12 AWG #10 AWG #8 AWG #6 AWG #4 AWG	VOLTAG	E #10 AWG #8 AWG #6 AWG #4 AWG			THREE-FUNCTION PUSH BUTTON			
208	120 200 305 490 775 275 460 710 1 130	208	120 200 305 490 275 460 710 1 130	FB	1	FLOORBOX, TYPE 1			
100		400			6	JUNCTION BOX			
					~				
					リ	METER			
	00144144] [@)	THERMOSTAT ROUGH-IN			

R

С

RELAY

ENCLOSED CONTROL CONTACTOR

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

	COMMUNICATIONS SYMBOL LEGE
Ŧ	COMMUNICATIONS OUTLET ROUGH-IN
(\mathbf{Y})	COMMUNICATIONS OUTLET, CEILING-MOUNTED
	COMMUNICATIONS OUTLET, FLOOR-MOUNTED
	CEILING-MOUNTED VIDEO PROJECTOR
	COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED
	COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED
	COMMUNICATIONS EQUIPMENT RACK, WALL-MOUNTED
E3	CONDUIT SLEEVE FOR COMMUNICATIONS CABLING, 2" DI/ UNLESS NOTED OTHERWISE. IN FIRE-RATED AND/OR SM TO SPECIFICATIONS FOR ACCEPTABLE FIRESTOP AND SM
(5) (1)	LOUDSPEAKER, CEILING-MOUNTED, PROVIDE SINGLE-GA CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINA" COMMUNICATION CONTRACTOR
(§)	CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINA COMMUNICATION CONTRACTOR
CS	INTERCOM SYSTEM CALL STATION BUTTON
VC	VOLUME CONTROL FOR AUDIO SYSTEM, PAGING, OR INTE
\odot	SECONDARY CLOCK, CEILING-MOUNTED, PROVIDE SINGL CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINA COMMUNICATION CONTRACTOR
Ç	SECONDARY CLOCK, WALL-MOUNTED, PROVIDE SINGLE- CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINA COMMUNICATION CONTRACTOR
B	SIGNALING BELL
	NOTE: NOT ALL SYMBOLS ARE NECESSARILY US

CR

CR M

XXXXX

ACS

IDS

PSU

CARD READER

CARD READER, MULLION-MOUNTED

POWER SUPPLY UNIT

ACCESS CONTROL SYSTEM EQUIPMENT

INTRUSION DETECTION SYSTEM EQUIPMENT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

ACCESS CONTROL DOOR TAG, REFER TO HARDWARE SCHEDULE(S) IN SECTION 08 71 00 AND OWNER'S ACCESS CONTROL VENDOR FOR FURTHER DETAILED REQUIREMENTS

TYPICAL MOUNTING HEIGHTS FOR WALL DEVICES, EQUIPMENT, & FIXTURES NOT TO SCALE

OOR-MOUNTED 2-POST

OOR-MOUNTED 4-POST

CABLING, 2" DIA. OR EQUIV. FREE AREA TYP. TED AND/OR SMOKE BARRIER WALLS, REFER RESTOP AND SMOKE SEAL PRODUCTS. IDE SINGLE-GANG FLUSH BOX WITH 3/4" G; COORDINATE WITH OWNER'S

E SINGLE-GANG FLUSH BOX WITH 3/4" ING; COORDINATE WITH OWNER'S

AGING, OR INTERCOM LOUDSPEAKERS PROVIDE SINGLE-GANG FLUSH BOX WITH 3/4" ; COORDINATE WITH OWNER'S OVIDE SINGLE-GANG FLUSH BOX WITH 3/4" G; COORDINATE WITH OWNER'S

CESSARILY USED

		FIRE ALARM SYMBOL LEGEND
	Ē	MANUAL PULL STATION
	چ	AUDIBLE NOTIFICATION APPLIANCE, WALL-MOUNTED
		VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
	EV EV	AUDIBLE/VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
		AUDIBLE NOTIFICATION APPLIANCE, CEILING-MOUNTED
	AV	AUDIBLE/VISUAL NOTIFICATION APPLIANCE, CEILING-MOUNTED
	$\overline{\mathbf{V}}$	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.
	(3)	SMOKE DETECTOR
	(H)	HEAT DETECTOR
	Ø	DUCT SMOKE DETECTOR
UR-WAY)	ß	FIRE PROTECTION FLOW SWITCH
	(S)	FIRE PROTECTION TAMPER SWITCH
		ELECTROMAGNETIC DOOR HOLD-OPEN DEVICE
	R	ADDRESSABLE RELAY FOR FIRE ALARM CONTROL
	ß	PRESSURE SWITCH
	C	CARBON MONOXIDE DETECTOR
	NAC	NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY
	FAA	FIRE ALARM REMOTE ANNUNCIATOR
	FACP	FIRE ALARM CONTROL PANEL
	\$ _{rts}	KEYED TEST SWITCH AND REMOTE INDICATOR FOR DUCT SMOKE DETECTOR
	Ę	FIRE PROTECTION OR ALARM BELL
		NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED
		ECTRONIC SAFETY / SECORITY SYMBOL LEGEND
	DC	DOOR CONTACT
	EL	ELECTRONIC LATCH
	ES	ELECTRONIC STRIKE
	К	INTRUSION DETECTION KEYPAD
	IC	INTERCOM STATION
	sc	WALL-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH-IN
	SC	CEILING-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH IN
	SC1	WALL-MOUNTED SURVEILLANCE CAMERA, TYPE 1
	SC1	CEILING-MOUNTED SURVEILLANCE CAMERA, TYPE 1
		WALL-MOUNTED INFRARED MOTION DETECTOR
		CEILING-MOUNTED INFRARED MOTION DETECTOR
	UD	WALL-MOUNTED ULTRASONIC MOTION DETECTOR
		CEILING-MOUNTED ULTRASONIC MOTION DETECTOR

	CONTRACTOR; SUCH COSTS SHALL BE INCLUDED IN BID. SURFACE-MOUNTED CO ACCEPTABLE WHERE EXPOSED TO VIEW IN SPACES OTHER THAN DEDICATED ME ROOMS.
4.	"LOW-VOLTAGE" CONTROLS, COMMUNICATIONS, AND SAFETY/SECURITY CABLING CONTRACTORS INSTALLING CABLING WHERE APPROVED FOR EXPOSED INSTALL/ CABLES AFTER PAINTING HAS BEEN COMPLETED OR PROVIDE TEMPORARY PROT UNTIL PAINTING HAS BEEN COMPLETED. PROVIDE TEMPORARY PROTECTION OF PRIOR TO PAINTING EXISTING AREAS. PAINTED CABLES SHALL BE REPLACED AT NEGLIGENT CONTRACTOR.
5.	METAL CLAD CABLE MAY BE USED FOR FIXTURE WHIPS IN LENGTHS OF 6 FEET OF ACCESSIBLE SUSPENDED CEILING SYSTEM ONLY. OTHERWISE, METAL CLAD OR OF TYPES SHALL NOT BE USED UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEE THESE CONTRACT DOCUMENTS THAT ALL INSTALLED BRANCH CIRCUITS CONSIST RACEWAY AND CONDUCTORS ALLOWING REMOVAL AND REPLACEMENT OF WIRIN FUTURE UPGRADES. REFER TO SPECIFICATIONS FOR EXCEPTIONS.
6.	CIRCUIT WIRING FOR ARTICLE 700 EMERGENCY SYSTEMS AND ARTICLE 708 CRITI POWER SYSTEMS SHALL BE INSTALLED IN SEPARATE CONDUITS/RACEWAYS AND INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT PER NEC REQUIREMENTS.
7.	ALL FEEDERS AND BRANCH CIRCUITS SHALL CONTAIN AN EQUIPMENT GROUNDIN ACCORDING TO THE NEC RACEWAYS INCLUDING CONDUITS, BOXES, WIREWAYS, CONSIDERED AN ACCEPTABLE GROUND.
8.	CONDUITS AND CABLING SHALL NOT BE INSTALLED WITHIN 4" OF ROOF DECK, EX SERVE ROOF-MOUNTED ITEMS AND ONLY WHEN THE CONDUIT OR CABLE IS ROUT SUCH EQUIPMENT FROM BELOW. CLEARANCE SHALL BE PERMITTED TO BE REDU SUPPLEMENTAL METAL FRAMING MEMBERS PROVIDE AN EFFECTIVE BARRIER BE AND ANY CONDUIT/CABLING.
9.	SUPPLEMENTAL METAL FRAMING SHALL BE PROVIDED FOR SUSPENSION POINTS BETWEEN STRUCTURAL MEMBERS (JOISTS, TRUSSES, BEAMS, ETC.) IN OPEN/VISI CEILING OR SUPPORT COLUMN AREAS. METAL FRAMING SHALL SPAN ACROSS TH FLANGE OF OVERHEAD STRUCTURAL MEMBERS FOR BOTH STRUCTURAL AND AES SPECIFIC EXCEPTIONS SHALL BE COORDINATED IN WRITING WITH THE ARCHITEC
10.	CONDUIT INSTALLED WITHIN INACCESSIBLE CONSTRUCTION SHALL BE 3/4" MINIM
11.	FEEDERS SHOWN ON DRAWINGS ARE SCHEMATIC ONLY. CONDUIT RUNS SHALL C SPECIFICATIONS AND CONTAIN BENDS THAT ARE NO GREATER THAN 90 DEGREES ABOVE GRADE SHALL BE RUN PARALLEL TO, OR PERPENDICULAR WITH, BUILDING ARCHITECTURAL LINES.
12.	CONTRACTOR(S) SHALL VERIFY COLOR/FINISH OF WIRING DEVICES, DEVICE FACE RACEWAY SYSTEMS, AND/OR MULTI-OUTLET ASSEMBLIES WITH ARCHITECT/ENGIN SPECIFIED.
13.	ELECTRICAL CONTRACTOR SHALL REFER TO ARCHITECTURAL REFLECTED CEILIN ADDITIONAL INFORMATION REGARDING LIGHTING FIXTURE MOUNTING LOCATIONS CEILING FINISHES.
14.	ELECTRICAL CONTRACTOR SHALL ADJUST LIGHTING FIXTURE LOCATIONS IN MEC ACCOMMODATE MECHANICAL EQUIPMENT, DUCTWORK, AND RELATED FIELD CON
15.	CONTRACTOR(S) SHALL BE RESPONSIBLE TO REVIEW INTERIOR ELEVATION SHEE DEVICE BOXES. COORDINATE LOCATIONS SO THAT NO DEVICES ARE INSTALLED MILLWORK, VISUAL DISPLAY BOARDS, MIRRORS, CUSTOM GRAPHICS, SIGNAGE, E
16.	ELECTRICAL CONTRACTOR SHALL REVIEW TOILET EQUIPMENT SHOP DRAWINGS A DETAILS/ELEVATIONS FOR CORRECT DEVICE BOX ROUGH-IN LOCATION OF HAND
17.	ELECTRICAL CONTRACTOR SHALL COORDINATE WITH PLUMBING CONTRACTOR A WATER COOLER / BOTTLE FILLER SHOP DRAWINGS FOR MOUNTING HEIGHT AND O OF PLUMBING EQUIPMENT POWER CONNECTIONS. READILY ACCESSIBLE GFCI PF PROVIDED FOR THE BRANCH CIRCUIT(S) SUPPLYING ALL SUCH UNITS PER NEC RE
18.	REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR DETAILED INFORMATION RE AND CONTROL. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEW ITEMS AS SPECIFICALLY LISTED AND ASSIGNED ON MECHANICAL EQUIPMENT SCH DISCONNECT SWITCHES, VARIABLE FREQUENCY DRIVES, STARTERS, TIMERS, SW
19.	ELECTRICAL CONTRACTOR SHALL CONFIRM THE LOCATION OF THE EXHAUST FAM MECHANICAL EQUIPMENT SCHEDULES BY REFERRING TO MECHANICAL/HVAC PLA
20.	REFER TO ROOF PLANS FOR EXACT LOCATIONS OF ROOF-TOP MECHANICAL EQUI
21.	PROVIDE FLUSH SINGLE-GANG BOXES IN WALLS FOR HVAC / TEMPERATURE CONTONE PER OCCUPIABLE ROOM OR SPACE. INSTALL 3/4" CONDUIT RACEWAY FROM CORRESPONDING TEMPERATURE CONTROL SYSTEM DEVICE OR CONTROLLED UN MECHANICAL DRAWINGS FOR PROPOSED LOCATIONS AND COORDINATE WITH ME TEMPERATURE CONTROLS CONTRACTOR'S SHOP DRAWINGS.
22.	CABINET UNIT HEATERS MAY HAVE LINE-VOLTAGE THERMOSTATS SUPPLIED BY M CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. REFER TO ME SCHEDULE.
23.	DIVISION 26 CONTRACTOR SHALL PROVIDE CONDUIT SLEEVES WITH APPROPRIAT CONTROLS AND ELECTRONIC SAFETY/SECURITY CABLING THROUGH WALLS AND SHALL BE COORDINATED WITH CABLING REQUIREMENTS.
24.	SECTION 27 05 28 CONTRACTOR SHALL PROVIDE DEDICATED CONDUIT SLEEVES V BUSHINGS THROUGH WALLS AND FLOORS FOR DIV. 27 COMMUNICATIONS AND DIV CABLING. SLEEVE SIZE SHALL BE MINIMUM 2" DIA. OR EQUIVALENT FREE AREA UN OTHERWISE. SPECIFIED CABLE PATHWAY PENETRATION DEVICES SHALL BE SUB SLEEVES WHERE THERE IS A REQUIRED RATING IN THE CONSTRUCTED ASSEMBL
25.	BUILDING SYSTEMS CABLING SHALL BE SLEEVED WHERE CABLES PASS THROUGH SHALL PASS THROUGH OR OVER THE TOP OF WALL CONSTRUCTION WITHOUT TH DIVISION 26 CONTRACTOR SHALL PROVIDE SLEEVES (UNLESS OTHERWISE ASSIG WITH ARCHITECTURAL TRADES DURING THE WALL CONSTRUCTION PROCESS. TH APPLIES TO EXISTING CABLING IN FOOTPRINT OF ANY NEW WALLS; PROVIDE SPLI CANNOT BE DISCONNECTED. FIELD-VERIFY QUANTITIES AND LOCATIONS, OR COO ALLOWANCES FOR SLEEVES WITH PROJECT ADMINISTRATIVE REQUIREMENTS.

ELECTRICAL GENERAL NOTES

LOCAL AUTHORITY HAVING JURISDICTION WHERE THE WORK IS PERFORMED.

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.

WALL TAG & HEIGHT DIAGRAM 3/8" = 1'-0"

		COLD-F		ON-LOAD BEARING	G SCHEDULE			(
	DEPTH	GAUGE (33 KSI)	FLANGE WIDTH	IDENTIFICATION AISI S100/S200	LOCATION / USE		Rough Opening	
	2 1/2"	20	1 1/4"	250S125-30	BULKHEADS & MISC. FRAMING		6'-0" MAX.	HE
ISTS	3 5/8" 6"	20 18	1 1/4" 1 5/8"	362S125-30 600S162-43	INTERIOR WALLS & BULKHEADS			JA
IOL & SOU	3 5/8" 6"	20 18	1 5/8" 1 5/8"	362S162-33 600S162-43	INTERIOR JAMBS		10'-0" MAX.	JA
ST	6"	16	1 5/8"	600S162-54	EXTERIOR WALLS		12'-0" MAX.	H
								JΑ
	2 1/2"	20	1 1/4"	250T125-30	BULKHEADS & MISC. FRAMING	ALL HEA		ERS
	3 5/8"	20	1 1/4"	362T125-30	INTERIOR WALLS & BULKHEADS		BASED OF	N 12'
IRACK	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			
۲T)	7/8"	20	N/A	087F125-33	WHERE NOTED	1		
RING (HA	1 1/2"	20	N/A	150F125-33	WHERE NOTED			
FUR								
NOTE:	ALL MEN	MBERS IN TH	IS SCHEDULE N SPAN A MA	ARE SIZED FOR MAXIM	UM 15' TALL WALLS, NOTE THAT 6"	1		
	SEE CO	LD-FORMED	METAL HEAD	ER SCHEDULE FOR SPE	CIFIC JAMB & HEADER REQUIREMENTS			

BARRIER FREE ADA DIMENSIONS 1/4" = 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
- 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
- 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.

ARCHITECT

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.
- 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

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

- 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
- 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.
- 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.

ABBR	EV	IATIONS	
A.D.A.	=	AMERICANS WITH DISABILITY ACT	MFR.
A.F.F.	=	ABOVE FINISHED FLOOR	MAX.
ALT.	=	ALTERNATE	M.B.
ALUM.	=	ALUMINUM	M.B.C.
BD.	=	BOARD	MECH.
B.F.	=	BARRIER FREE	MIN.
BATT.	=	BATTEN INSULATION	MISC.
B.O.	=	BOTTOM OF	M.J.
BRG.	=	BEARING	M.O.
C.J.	=	CONTROL JOINT	MTL.
CLG.	=	CEILING	N.I.C.
CONC.	=	CONCRETE	NOM.
CONT.	=	CONTINUOUS	0.C.
CONF.	=	CONFERENCE	OPP.
CORR.	=	CORRIDOR	P.LAM
DIA.	=	DIAMETER	P.T.
DIM.	=	DIMENSION	REQ.
DW.	=	DISHWASHER	REINF.
D.F.	=	DRINKING FOUNTAIN	R.D.
DN.	=	DOWN	SIM.
DS.	=	DOWNSPOUT	SPEC.
EQ.	=	EQUAL	STD.
EL.	=	ELEVATION	STOR.
EX.	=	EXISTING	S.S.
EXP.	=	EXPANSION	Τ.
F.D.	=	FLOOR DRAIN	T.B.
F.E.	=	FIRE EXTINGUISHER	T&G
F.E.C.	=	FIRE EXTINGUISHER CABINET	T.O.F.
F.E.R.C.	=	FIRE EXT. RECESSED CABINET	T.O.M.
F.E.S.C.	=	FIRE EXT. SEMI-RECESSED CABINET	T.O.W.
FIN.	=	FINISHED	TYP.
FLR.	=	FLOOR	U.N.O.
GA.	=	GAUGE	V.I.F.
GYP.	=	GYPSUM BOARD	VERT.
H.D.	=	HAND DRYER	VEST.
HORIZ.	=	HORIZONTAL	W/
H.S.S.	=	HOLLOW STRUCT. SECTION	W.W.F.
ISO.	=	ISOCYANURATE	

INSUL. = INSULATION

MANUFACTURER
MAXIMUM
MARKER BOARD
MICHIGAN BUILDING CODE
MECHANICAL
MINIMUM
MISCELLANEOUS
MASONRY JOINT
MASONRY OPENING
METAL
NOT IN CONTRACT
NOMINAL
ON CENTER
OPPOSITE
PLASTIC LAMINATE
PRESSURE TREATED
REQUIRED
REINFORCING
ROOF DRAIN
SIMILAR TO
SPECIFICATION
STANDARD
STORAGE
STAINLESS STEEL
TOILET
TACK BOARD
TONGUE AND GROOVE
TOP OF FOOTING
TOP OF MASONRY
TOP OF WALL
TYPICAL
UNLESS NOTED OTHERWISE
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CONSTRUCTION

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03.23.2023 BIDS &

DRAWN MEE REVIEWED TGD

PROJECT NO.

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GENERAL NOTES DIMENSIONS AND LEGENDS

G0.01

1" = 30'-0"

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				WATER CLOSETS		LAVATORIES				
NO.	CLASSIFICATION	OCCUPANCY	DESCRIPTION	MALE	FEMALE	MALE	FEMALE	BATHTUBS/ SHOWERS	DRINKING FOUNTAINS	OTHER
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,	1 PER 125	1 PER 65	1 PER 200	1 PER 150	N/A	1 PER 1000	1 SERVICE SINK
	(302 OCCUPANTS)		MEDIA CENTER	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
				REQUIRED 4	REQUIRED 4	REQUIRED 4	REQUIRED 4			
	(400 STUDENTS 90 STAFF)							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 ADDITIONA	L B.F. UNISEX	6 ADDITIONA	L B.F. UNISEX			

A.	FIRE DEPARTM
В.	FIRE STOP ALL THE CEILING,

- REQUIREMENTS.

- BUILDING # BUILDING 1 - FIRE ARE BUILDING 1 - FIRE ARE BUILDING 2 - FIRE ARE BUILDING 2 - FIRE ARE

TOTALS:

GENERAL CODE NOTES:

IMENT ACCESS AND WATER SUPPLY SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF VERTICAL

LL INTERCONNECTIONS BETWEEN VERTICAL AND HORIZONTAL SPACES AND CONCEALED WALL SPACES AT , 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

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	F		13 180 SE	LEVEL 2 2 552 SE	10.628 SE
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, 2,778 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 ENGINEERED. 90-MINUTE SELF-CLOSING DOORS. GLAZING ONLY A AND TESTED AS A WALL. GLAZED OPENINGS ARE PERMITED IF RA ASTM E119 AND SECTION 716.2 (IBC) IN MAXIMUM SIZE TESTED.
+ + + + + +	2-HR FIRE BARRIER (IBC SECTION 707 / NFPA 101 - 8.3) FIRE BARRIER (2-HOUR FIRE RESISTANCE RATING REQUIRED). INS SLAB TO UNDERSIDE OF ROOF DECK ABOVE. 90-MINUTE SELF-CLO SQUARE INCHES MAXIMUM DOOR VISION PANEL). GLAZED OPENIN 2-HOUR RATED, PER ASTM E119 AND TABLE 716.5 (IBC) AND TABLE OPENING SHALL BE LESS THAN 25% OF THE COMMON CORRIDOR V
← 1-HR FB	1-HR FIRE BARRIER (IBC SECTION 707 / NFPA 101 - 8.3) FIRE BARRIER (1-HOUR FIRE RESISTANCE RATING REQUIRED). INS SLAB TO UNDERSIDE OF ROOF DECK ABOVE. OPENING SHALL BE L THE WALL. OPENING PROTECTIVES DEPEND ON TYPE OF ASSEMB (IBC) AND TABLE 8.3.4.2 (NFPA 101).
	(CORRIDOR) FIRE BARRIER (IBC SECTION 707 / NFPA 101 - 8.3) CORRIDOR FIRE BARRIER (1-HOUR FIRE RESISTANCE RATING REQ FROM FLOOR SLAB TO UNDERSIDE OF ROOF DECK ABOVE. 20-MINI DOORS. GLAZED OPENINGS ARE PERMITTED IF 3/4-HOUR RATED, F THE MAXIMUM SIZE TESTED. OPENING SHALL BE LESS THAN 25% C CORRIDOR WALL PER ROOM.
1-HR SB	SMOKE BARRIER (IBC SECTION 709 / NFPA 101 - 8.5) SMOKE BARRIER (1-HOUR FIRE RESISTANCE RATING REQUIRED). I INTO COMPARTMENTS TO RESTRICT MOVEMENT OF SMOKE. INSTA TO UNDERSIDE OF ROOF DECK ABOVE 20-MINUTE SELF-CLOSING (ACTIVATED LABEL DOORS. GLAZED OPENINGS ARE PERMITTED IF PER ASTM E119 IN THE MAXIMUM SIZE TESTED. OPENING SHALL BI 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 SI DECK OR SOLID CEILING ABOVE. GLAZED OPENINGS ARE PERMITT REQUIRED) "PER NFPA 101 14.3.6(2)(B) SELF-CLOSING DOORS PER REQUIRED FOR NORMALLY OCCUPIED CLASSROOMS"
64" w.	BUILDING EXIT WITH EGRESS WIDTH
$\langle 46 \rangle$	OCCUPANT LOAD
	DENOTES FIRE RESISTANCE RATING OF OPENING PROTECTIVE (IN
P	DENOTES PANIC HARDWARE DEVICE ON EACH DOOR LEAF
FE	FIRE EXTINGUISHER
Ġ.	"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 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, GYMNASIUM): 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
 C. 2010 FAAD DIM MATCHING CORDINACE 20' DEAD-END MAXIMUM TRAVEL IN CORRIDOR. 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.
- 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) * lf) = 14,500 + (14,500 * 0.79) = 25,995 GSF

DEMOLITION NOTES

·	NOTIFY CONSTRUCTION MANAGER OF SUSPECTED AREA SO PROPER ABAT (UNDER A SEPARATE ASBESTOS ABATEMENT CONTRACT AS NEGOTIATED E
•	ALL MASONRY BLOCK AND BRICK WALLS TO BE REMOVED MUST BE TOOTHI MASONRY, UNLESS NOTED OTHERWISE ON DRAWINGS.
•	DEMOLITION CONTRACTOR IS TO PROVIDE TEMPORARY SHORING AND BRA ROOF/FLOOR STRUCTURE AS REQUIRED UNTIL PERMANENT WALLS & LINTE REFER TO STRUCT. & ARCH. DWGS. FOR BEARING CONDITIONS.
•	ALL TRADES ARE TO COORDINATE ANY DEMOLITION, CAPPING OR ABANDON MECHANICAL, ELECTRICAL, PLUMBING OR ARCHITECTURAL ITEMS.
•	ALL ITEMS TO BE SAVED AND/OR RELOCATED ARE TO BE STORED IN A PRODAMAGE WILL OCCUR TO THESE ITEMS DURING THEIR STORAGE PERIOD.
•	ALL DEMOLITION WHICH DAMAGES ADJACENT SURFACES IS TO BE REPAIRE EXISTING SURFACE DAMAGED (MATERIALS & FINISHES) AND ALL REPAIR WO COORDINATED WITH NEW CONSTRUCTION. FOR NEW OPENINGS IN EXISTIN NEW LINTELS W/ MASONRY CONTRACTOR.
•	PATCH WALLS & ROOF TO MATCH EXISTING CONSTRUCTION BEHIND REMOVE EXHAUST FANS, INTAKE HOODS & CABINET HEATERS. VERIFY SEQUENCE OF CONSTRUCTION MANAGER. SEE MECHANICAL AND ELECTRICAL DEMO SHE FLOOR OPENINGS TO BE PATCHED.
•	ALL TRADES ARE TO COORDINATE THE REMOVAL OF EXISTING LOOSE EQUI AND/OR OWNER. ADDITIONAL EQUIPMENT FOUND THAT IS NOT NOTED ON I BE REMOVED AS PART OF GENERAL DEMOLITION AFTER VERIFICATION WIT
<u>(01</u>)	REMOVE EXISTING WALL INCLUDING DOORS, WINDOWS, BORROWED LITES, FURNISHINGS ATTACHED TO WALL OR PORTION OF EXISTING WALL AS SHO BELOW FLOOR SLAB) AND AS REQUIRED FOR NEW CONSTRUCTION. FLOOR REQUIRED TO RECEIVE NEW FLOOR MATERIAL. WALL SURFACE TO BE PATH NEW WALL FINISH. SEE MECHANICAL & ELECTRICAL DEMOLITION NOTES FO UNBRACED SECTIONS OF WALL OR ROOF AS REQUIRED.
(02)	REMOVE EXISTING BORROWED LITE OR DOOR & DOOR FRAME. (DOOR LINTE OTHERWISE NOTED ON PLAN -SEE STRUCTURAL FOR ADDITIONAL INFORM/ ARE TO REMAIN, PROTECT FRAMES FROM DAMAGE. SAND AND PREP FOR N SECTION 09 90 00 SEE DOOR SCHEDULE FOR REQUIRED NEW DOORS AND
(03)	SAW CUT AND REMOVE FLOOR OR PORTION OF EXISTING FLOOR SLAB AS S FLOOR PLAN. EXCAVATE, FILL & COMPACT SOIL AS REQUIRED FOR NEW SI MECHANICAL/ ELECTRICAL DEMOLITION NOTES FOR RELATED ITEMS & LOCA MATCH EXIST. ELEVATION. SEE STRUCTURAL FOR ADDITIONAL INFORMATION
(04)	REMOVE EXISTING CASEWORK/MILLWORK, COUNTER TOPS & BACK SPLASH REQUEST.
(05)	REMOVE EXISTING SUSPENDED/PLASTER CEILING-INCLUDING ALL FRAMING USED TO SUPPORT THAT CEILING. REPLACE PER REFL. CEILING PLANS.
(06)	SEE MECHANICAL DEMOLITION NOTES FOR REMOVAL OF EXIST. PLUMBING/ SINKS, WATER CLOSETS, URINALS, FIN TUBE, MECH. DUCTWORK, UNIT VEN
(07)	REMOVE EXISTING WINDOW, WINDOW WALL WITH ALUMINUM FRAMING WIT WINDOW, FRAME, SILL & GLAZING INCLUDING ALL EXISTING WOOD BLOCKIN WINDOWS TO ROOF AND/OR MASONRY TIES AT BRICK PIERS AND SIDE WAL
(08)	REMOVE EXISTING EQUIPMENT OR FURNISHINGS SECURED TO FLOOR, WAL REUSE BY OWNER.
(09)	REMOVE EXISTING CHALK, TACK OR WHITE BOARD. REMOVE ALL GLUE RES BOARD AND PREPARE SURFACE FOR NEW FINISH MATERIALS WHERE REQU
(10)	REMOVE EXISTING FLOOR COVERING AND BASE, INCLUDING ALL GLUE RESI FLOORS & WALLS AND PREPARE SURFACE FOR NEW FINISH MATERIALS, IN AND/OR SELF-LEVELING COMPOUND AS REQUIRED. WALL & FLOOR SURFAC MATERIAL & PATCH TO MATCH EXISTING.
$\langle 11 \rangle$	REMOVE PORTION OF EXISTING ROOF & STRUCTURE (AS SHOWN ON DEMOI TEMPORARY WEATHER PROTECTION AS NEEDED AROUND PERIMETER OF F PROVIDE TEMPORARY SHORING & BRACING AS REQUIRED.
$\langle 12 \rangle$	REMOVE EXISTING TOILET PARTITION, DISPENSERS AND/OR TOILET ACCES SURFACES TO RECEIVE NEW FINISHES.
(13)	REMOVE EXISTING LOCKERS AND LOCKER BASE. CUT SLOPED LOCKER TO RE-USE/RELOCATE EXISTING END PANEL AS REQUIRED. REVISE & PREPAR
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(15)	REMOVE EXISTING TERRAZZO FLOORING, CONCRETE SLAB AND COVED BAS SCHEDULE FOR NEW FLOORING.

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

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UNIT B

UNIT A

DEMOLITION CONTRACTOR IS TO STOP WORK IMMEDIATELY IN AREA IF ASBESTOS IS ENCOUNTERED. TEMENT CAN BE DONE. BY OWNER.)

THED TO RECEIVE NEW

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NMENT OF EXISTING OPER MANNER SO NO

IRED TO MATCH THE WORK IS TO BE TING WALLS, COORDINATE

OVAL OF WALL LOUVERS,

E OF REMOVAL W/ HEETS FOR WALL, ROOF & UIPMENT WITH ARCHITECT

N DEMOLITION PLAN SHALL ITH ARCHITECT/OWNER. S, AND ANY EQUIPMENT OR OWN ON FLOOR PLAN (MIN. 4" R SURFACE TO BE PATCHED AS

ATCHED AS REQUIRED TO RECEIVE FOR RELATED ITEMS. SUPPORT TEL TO REMAIN UNLESS

IATION). WHERE DOOR FRAMES NEW PAINT FINISH UNDER D FRAMES OR ONLY NEW DOORS. SHOWN OR DIMENSIONED ON W SLAB- COORDINATE WITH LOCATIONS. INSTALL NEW SLAB TO ATION REGARDING SLAB REMOVAL.

H. SAVE ITEMS AT OWNER'S G, TILES, TEES, HANGERS & WIRES

MECHANICAL (i.e. LAVATORIES, NTS, ETC.)

TH METAL PANELS BELOW NG AND FRAMING ABOVE LLS.

ALL OR CEILING AND STORE FOR ESIDUE, ETC. FROM BLOCK BEHIND QUIRED.

ESIDUE, MUDBEDS, ETC. FROM , INCLUDING GRINDING, PATCHING FACE TO RECEIVE NEW FINISH

DLITION PLAN). PROVIDE ROOF REMOVAL AS REQUIRED.

ESSORIES AND REPAIR ADJACENT OP & BASE AS NECESSARY.

RE FOR NEW FINISHES. DECK, HANGERS AND ALL LL MATERIALS AND FINISH. BASE. REFER TO ROOM FINISH

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WALL TO BE DEMOLISHED

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DEMOLITION NOTES

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DRAWN MEE REVIEWED TGD

PROJECT NO. 5-5798

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UNIT 'A' FIRST FLOOR DEMOLITION PLAN





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
 - DEMOLITION TAG: SEE DEMOLITION NOTES
- ROOM NAME EXISTING ROOM FINISH INFORMATION: FLOOR FINISH ROOM NAME, FLOORING TYPE, CEILING TYPE

DEMOLITION NOTES

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- 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. REMOVE EXISTING BORROWED LITE OR DOOR & DOOR FRAME. (DOOR LINTEL TO REMAIN UNLESS
- $\langle 0^2 \rangle$ 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. SAW CUT AND REMOVE FLOOR OR PORTION OF EXISTING FLOOR SLAB AS SHOWN OR DIMENSIONED ON
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<u>(06</u>)	SEE MECHANICAL DEMOLITION NOTES FOR REMOVAL OF EXIST. PLUMBING/MECHANICAL (i.e. LAVATORIES, SINKS, WATER CLOSETS, URINALS, FIN TUBE, MECH. DUCTWORK, UNIT VENTS, ETC.)
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(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.
$\langle 11 \rangle$	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.
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$\langle 14 \rangle$	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.

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



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ISSUANCES 03.23.2023 BIDS & CONSTRUCTION DRAWN MEE REVIEWED TGD 5-5798 PROJECT NO. NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATA BASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF GMB COPYRIGHT © 2023 ALL RIGHTS RESERVED -----UNIT 'B' FIRST FLOOR DEMOLITION PLAN



UNIT D

UNIT C

KEYPLAN





 $\langle xx \rangle$ ROOM NAME FLOOR FINISH CEILING FINISH



UNIT 'C' FIRST FLOOR DEMOLITION PLAN

[DEMOLITION LEGEND
•	EXISTING WALL TO BE DEMOLISHED
•	PORTION OF EXISTING WALL TO BE DEMOLISHED
•	EXISTING OBJECT TO BE DEMOLISHED
l Í	AREA OF FLOOR CUTTING
•	EXISTING WALLS TO REMAIN
	EXISTING OBJECTS TO REMAIN
	DEMOLITION TAG: SEE DEMOLITION NOTES
- - 1	EXISTING ROOM FINISH INFORMATION: ROOM NAME, FLOORING TYPE, CEILING TYPE

DEMOLITION NOTES

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•	ALL TRADES ARE TO COORDINATE ANY DEMOLITION, CAPPING OR ABANDONMENT OF EXISTING MECHANICAL, ELECTRICAL, PLUMBING OR ARCHITECTURAL ITEMS.
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•	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.
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02 REMOVE EXISTING BORROWED LITE OR DOOR & DOOR FRAME. (DOOR LINTEL TO REIVAIN ONLESS OTHERWISE NOTED ON PLAN -SEE STRUCTURAL FOR ADDITIONAL INFORMATION). WHERE DOOR FRAMES REMOVE EXISTING BORROWED LITE OR DOOR & DOOR FRAME. (DOOR LINTEL TO REMAIN UNLESS

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UNBRACED SECTIONS OF WALL OR ROOF AS REQUIRED.

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- 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.
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- 12 SURFACES TO RECEIVE NEW FINISHES.
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S 0 \triangleleft S RENOV HOOL C AND Ň PUBLIC DITIONS Ш \cap 'ARY HUDSONVIL EMENT, ISSUANCES 03.23.2023 BIDS & CONSTRUCTION DRAWN MEE REVIEWED TGD 5-5798 PROJECT NO. NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATA BASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN UNIT B PERMISSION OF GMB COPYRIGHT © 2023 ALL RIGHTS RESERVED UNIT A _____ UNIT 'C' FIRST FLOOR DEMOLITION PLAN A1.1C





D	EMOLITION 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

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•	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/

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.

CONSTRUCTION MANAGER. SEE MECHANICAL AND ELECTRICAL DEMO SHEETS FOR WALL, ROOF &

- 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. 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.
- REMOVE EXISTING CASEWORK/MILLWORK, COUNTER TOPS & BACK SPLASH. SAVE ITEMS AT OWNER'S (04) REQUEST. REMOVE EXISTING SUSPENDED/PLASTER CEILING-INCLUDING ALL FRAMING, TILES, TEES, HANGERS & WIRES (05) USED TO SUPPORT THAT CEILING. REPLACE PER REFL. CEILING PLANS.
 O6
 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. REMOVE EXISTING EQUIPMENT OR FURNISHINGS SECURED TO FLOOR, WALL OR CEILING AND STORE FOR REUSE BY OWNER. $\fbox{09} \qquad \text{Remove existing chalk, tack or white board. Remove all glue residue, etc. from block behind board and prepare surface for New Finish materials where required.}$ 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. REMOVE PORTION OF EXISTING ROOF & STRUCTURE (AS SHOWN ON DEMOLITION PLAN). PROVIDE 11 TEMPORARY WEATHER PROTECTION AS NEEDED AROUND PERIMETER OF ROOF REMOVAL AS REQUIRED. PROVIDE TEMPORARY SHORING & BRACING AS REQUIRED. REMOVE EXISTING TOILET PARTITION, DISPENSERS AND/OR TOILET ACCESSORIES AND REPAIR ADJACENT 12 SURFACES TO RECEIVE NEW FINISHES. REMOVE EXISTING LOCKERS AND LOCKER BASE. CUT SLOPED LOCKER TOP & BASE AS NECESSARY. 13/ RE-USE/RELOCATE EXISTING END PANEL AS REQUIRED. REVISE & PREPARE FOR NEW FINISHES.
- REMOVE EXISTING MEZZANINE INCLUDING ALL SUPPORT FRAMING, FLOOR DECK, HANGERS AND ALL Additional related materials. Repair wall to match adjacent wall materials and finish.
- REMOVE EXISTING TERRAZZO FLOORING, CONCRETE SLAB AND COVED BASE. REFER TO ROOM FINISH (15) SCHEDULE FOR NEW FLOORING.
- REMOVE EXISTING BASKETBALL BACKBOARD AND ALL RELATED HANGERS, FASTENERS AND FRAMING TO (16) STRUCTURE ABOVE.



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UNIT D

UNIT C



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

5/8" GYP. BOARD BOTH SIDES 6" LIGHT GA. FULL HEIGHT OF WALL. WALLS TO BOTTOM

CMU WALL SEE FLOOR PLANS FOR REQUIRED

BRICK AND CMU WALL W/ 2" SPRAY APPLIED INSULATION SEE FLOOR PLANS FOR REQUIRED WALL REINFORCING. NOMINAL DIMENSIONS GIVEN. SEE WALL SECTIONS FOR ADDITIONAL

- SEE ROOF PLAN FOR ADDITIONAL INFORMATION 0 4 36' UNIT B UNIT A



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UNIT 'A' FIRST FLOOR AND GYM MEZZANINE PLANS







-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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UNIT 'B' FIRST FLOOR PLAN







UNIT B

UNIT A



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UNIT 'C' FIRST FLOOR PLAN

A2.1C



WALL LEGEND

GENERAL FLOOR PLAN NOTES:



UNIT B

UNIT A

1. DIMENSIONS GIVEN ARE TO THE FACE OF MASONRY UNITS OR TO THE FINISHED FACE OF METAL STUD PARTITION WALLS.



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_____ UNIT 'D' FIRST FLOOR PLAN

















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GENERAL REFLECTED CEILING NOTES:

- 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" 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.

	REFL	ECTED CEILING LEGEND
ACT1 — +10' - 0" —	- Ceiling Type - 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 OTHEF 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
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	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 OTHEF SUPPORT: SUSPENSION SYSTEM OR METAL STUD FR/ 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. E.J.		CONTROL JOINT EXPANSION JOINT
		CUT TILE
$\square($	\supset	RECESSED LIGHT FIXTURE
	\supset	SURFACE / PENDANT MOUNT LIGHT FIXTURE
		MECHANICAL SUPPLY DIFFUSER / RETURN GRILLE / EXHAUST GRILLE / LINEAR SLOT DIFFUSER
\otimes	2	EXIT SIGN (CEILING OR WALL-MOUNTED)
	s	ELECTRICAL DEVICES (CEILING OR WALL-MOUNTED)
NOTE: REFER ELECTRICAL/T GENERAL COO ANY/ALL DISC	TO STRUCTURAL, ECHNOLOGY FOR DRDINATION, NOT A REPENCIES	PLUMBING/FIRE PROTECTION, MECHANICAL, AND MORE DETAILED SYMBOL LEGENDS. SHOWN FOR ALL SYMBOLS ARE INDICATED. NOTIFY ARCHITECT OF

A. CONTRACTOR SHALL FOLLOW GRID PATTERN ESTABLISHED ON THE REFLECTED CEILING PLAN.

SS SHOWN OTHERWISE

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UNIT D

UNIT C

KEYPLAN



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UNIT 'A' FIRST FLOOR REFLECTED CEILING PLAN







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.

	REFL	ECTED CEILING LEGEND
ACT1	-Ceiling Type 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 OTHERWI 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 OTHERWI SUPPORT: SUSPENSION SYSTEM OR METAL STUD FRAMI 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. E.J.		CONTROL JOINT EXPANSION JOINT
		CUT TILE
	3	RECESSED LIGHT FIXTURE
	\supset	SURFACE / PENDANT MOUNT LIGHT FIXTURE
		MECHANICAL SUPPLY DIFFUSER / RETURN GRILLE / EXHAUST GRILLE / LINEAR SLOT DIFFUSER
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NOTE: REFER 1 ELECTRICAL/TE GENERAL COO ANY/ALL DISCR	TO STRUCTURAL, ECHNOLOGY FOR RDINATION, NOT A REPENCIES	PLUMBING/FIRE PROTECTION, MECHANICAL, AND MORE DETAILED SYMBOL LEGENDS. SHOWN FOR ALL SYMBOLS ARE INDICATED. NOTIFY ARCHITECT OF

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TILE SYSTEM ILKHEAD NLESS SHOWN OTHERWISE M OR METAL STUD FRAMING ERWISE



UNIT D

UNIT C

KEYPLAN



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UNIT 'B' FIRST FLOOR REFLECTED CEILING PLAN

A3.1B







- 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.

	REFL	ECTED CEILING LEGEND
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	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 OTHERW SUPPORT: SEE DETAILS
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$ \begin{array}{c} & \int_{-\infty}^{\infty} \int$	GYP1	GYPSUM BOARD CEILING OR BULKHEAD C.J. SPACED 30' - 0" O.C. MAX. UNLESS SHOWN OTHERW SUPPORT: SUSPENSION SYSTEM OR METAL STUD FRAM 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. E.J.		CONTROL JOINT EXPANSION JOINT
		CUT TILE
	2	RECESSED LIGHT FIXTURE
	C	SURFACE / PENDANT MOUNT LIGHT FIXTURE
		MECHANICAL SUPPLY DIFFUSER / RETURN GRILLE / EXHAUST GRILLE / LINEAR SLOT DIFFUSER
\otimes	₽ 2	EXIT SIGN (CEILING OR WALL-MOUNTED)
$\otimes \boxtimes$ (S	ELECTRICAL DEVICES (CEILING OR WALL-MOUNTED)
NOTE: REFER ELECTRICAL/I GENERAL COO ANY/ALL DISC	TO STRUCTURAL, TECHNOLOGY FOR DRDINATION, NOT / REPENCIES	PLUMBING/FIRE PROTECTION, MECHANICAL, AND MORE DETAILED SYMBOL LEGENDS. SHOWN FOR ALL SYMBOLS ARE INDICATED. NOTIFY ARCHITECT OF

UNIT C

A. CONTRACTOR SHALL FOLLOW GRID PATTERN ESTABLISHED ON THE REFLECTED CEILING PLAN.

LESS SHOWN OTHERWISE

JLKHEAD NLESS SHOWN OTHERWISE I OR METAL STUD FRAMING RWISE





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C.



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UNIT 'C' FIRST FLOOR REFLECTED CEILING PLAN

A3.1C





	REFL	ECTED CEILING LEGEND
ACT1	-Ceiling Type 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 OTHER 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 OTHERV SUPPORT: SUSPENSION SYSTEM OR METAL STUD FRAI 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. E.J.		CONTROL JOINT EXPANSION JOINT
		CUT TILE
	\supset	RECESSED LIGHT FIXTURE
	\supset	SURFACE / PENDANT MOUNT LIGHT FIXTURE
		MECHANICAL SUPPLY DIFFUSER / RETURN GRILLE / EXHAUST GRILLE / LINEAR SLOT DIFFUSER
\otimes	2	EXIT SIGN (CEILING OR WALL-MOUNTED)
	s	ELECTRICAL DEVICES (CEILING OR WALL-MOUNTED)

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.

EACH SIDE.

GENERAL REFLECTED CEILING NOTES:

- 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.

UNIT C

UNIT D

UNIT B

UNIT A

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

AT A CHANGE IN CORRIDOR

ESS SHOWN OTHERWISE

HEAD ESS SHOWN OTHERWISE OR METAL STUD FRAMING



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UNIT 'D' FIRST FLOOR REFLECTED CEILING PLAN

A3.1D











EAST ELEVATION MAIN ENTRY

	8" HIGH, 3" DEEP DIMENSIONAL L SIGN, GOTHAM BOLD TYPEFACE BRONZE ANODIZED FINISH CONCRETE WALL CAP	ETTER , DARK	
			FIRST_FLOOR 100' - 0"



MECHANICAL

BRICK B-

— DOOR, SEE PLAN AND SCHEDULE



1

A4.01



NORTHWEST PERSPECTIVE



SOUTHEAST PERSPECTIVE







,RK

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EXTERIOR ELEVATIONS



	DOOR & FRAME SCHEDULE UNIT 'D'										
	Z DETAILS										
DOOR NUMBER	DOOR SIZE	DOOR TYPE	FRAME TYPE	FIRE RATING	HDWR SET NO.	ELEC. HARDWARE	REMOVABLE MULLI	HEAD	JAMB	SILL	REMARKS
D					<u> </u>						
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		





						DOOR	& FRA	ME SCHEDULE	UNIT 'B'	
							N		DETAILS	SILL
DOOR NUMBER	DOOR SIZE	DOOR TYPE	FRAME TYPE	FIRE RATING	HDWR SET NO.	ELEC. HARDWARE	REMOVABLE MULLI	HEAD	JAMB	SILL
В										
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					



						DOOR					
							N		DETAILS		
DOOR NUMBER	DOOR SIZE	DOOR TYPE	FRAME TYPE	FIRE RATING	HDWR SET NO.	ELEC. HARDWARE	REMOVABLE MULLI	HEAD	JAMB	SILL	REMA
A A112A	3' 0" x 7' 2" x 1 3/4"	H02	01H								REMOVE DOOR AND FR
س					44			0/07.04	0/17.04		NEW OPENING. REUSE
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. (2.4.)	VV01	05H	45	11	-		5/A7.04	5/A7.04	-	
A115A	3. 0" X 7. 2" X 1 3/4" (5-4")	W01	05H	45	11			5/A7.04	5/A7.04	-	IPLOCK
A110A	PR. 4 U X / 2 X I 3/4	103		90	02			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	
A11/D	$3 0 \times 7 2 \times 13/4$				04			5/47.04	2003/A7.04	1/A7.04	
A110A	$30 \times 72 \times 13/4$	W01	010		16			5/A7.04	5/7.04		
A119A	$3' 0'' \times 7' 2'' \times 13/4'' (3-4')$	W01	011	45	15	-		5/A7.04	5/7.04		
A120A	$3' 0 \times 7' 2'' \times 1.3/4''$	A01	011	43	04			8/47.04	2/47 0/	1/47.04	
Δ120A	PR 3'0" x 7' 2" x 1 3/4"	W01	02H	45	10			5/47.04	5/7 04	1/7/.04	
Δ122Δ	PR 3'0" x 7' 2" x 1 3/4"	W03	0211	45	06	-	-	5/47.04	5/7.04		IB LOCK
A122A	PR 3'0" x 7' 2" x 1 3/4"	A01	021		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	-	
A124A	3' 0" x 7' 2" x 1 3/4" (6'-8")	W01	05H	45	11	-		5/A7 04	5/A7 04	-	
A125A	3' 0" x 7' 2" x 1 3/4" (6'-8")	W01	05H	45	11	-		5/A7.04	5/A7.04	-	
A126A	3' 0" x 7' 2" x 1 3/4"	W07	01H	45	10	-		5/A7.04	5/A7.04	-	
A127A	3' 0" x 7' 2" x 1 3/4"	W07	01H	45	10	-		5/A7.04	5/A7.04	-	
A128A	3' 0" x 7' 2" x 1 3/4"	W07	01H	45	10	-		5/A7.04	5/A7.04	-	
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
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		4.1			8/A7.04	2/A7.04		



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A5.01











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-----BUILDING SECTIONS



FIR<u>ST</u> FL<u>OOR</u> 100' - 0"

<u>GYM MEZZ.</u> 112' - 0"

FIRST FLOOR 100' - 0"

3IM 360://5-5798 Hudsonville Park Elementary Additions & Remodeling/5-5798A 2019.rvt

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____GY<u>M MEZZ.</u>______ FI<u>RS</u>T F<u>LOOR</u> 100' - 0" S Ο RENOVA⁻ SCHOOLS AND PUBLIC DITIONS ш \cap HUDSONVILL 4 ELEMENTARY ISSUANCES 03.23.2023 BIDS & CONSTRUCTION DRAWN MEE REVIEWED TGD PROJECT NO. 5-5798 NO PART OF THIS DRAWING MAY BE USED OR REPRODUCED IN ANY FORM OR BY ANY MEANS, OR STORED IN A DATA BASE OR RETRIEVAL SYSTEM, WITHOUT PRIOR WRITTEN PERMISSION OF GMB COPYRIGHT © 2023 ALL RIGHTS RESERVED -----BUILDING SECTIONS A6.02











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BUILDING SECTIONS





JJ BUILDING SECTION JJ A6.04 1/4" = 1'-0"





LL BUILDING SECTION LL A6.04 1/4" = 1'-0"





MM BUILDING SECTION MM A6.04 1/4" = 1'-0"





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BUILDING SECTIONS

A6.04

























A121 GYM NORTH

1/4" = 1'-0"

(<u>2</u> (A8.02)



A121 GYM EAST

1/4" = 1'-0"



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22.	PROTECT ALL FINISHES DURING CONSTRUCTION.	



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UNIT 'A' FIRST FLOOR FINISH PLAN





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

	FINISH SYMBOLS :			FINISH LEGEND :
	ROOM NAME CPT1 Flooring transition WALL FINISH VCT1 VCT1		ACT1	ACOUSTICAL CEILING TILE MFR: USG STYLE: RADAR CLIMA PLUS 2210 COLOR: WHITE SIZE: 24" 24" X 5/8" CRID: DONN DYDWI
	FINISH KEYNOTES :		AWP1	ACOUSTICAL WALL PANEL MFR: ARMSTRONG STYLE: TECTUM WALL PANEL COLOR: FIELD PAINTED SEE ELEVATIONS
01 02 03	MANUAL ROLLER SHADE LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION MOTORIZED ROLLER SHADES LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION PAINT EXISTING HM/WOOD DOOR FRAME P2; INTERIOR ROOM SIDE ONLY		AWP2	SIZE: 27°L X 27°W X 2°D ACOUSTICAL WALL PANEL MFR: KINETICS OR EQUAL STYLE: IMPACT RESISTANT WALL PANEL COLOR: AWP2A: DESIGNTEX GAMUT - FINCA AWP2B: DESIGNTEX GAMUT - PEW AWP2C: DESIGNTEX GAMUT - NAVY
			CG1	SIZE: 27"L X 27"W X 2"D CORNER GUARD STAINI ESS STEEL CORNER GUARD
			CT1 CT2	CARPET TILE MFR: INTERFACE STYLE: AE312 COLOR: 105410 IRON/ ACCENT SIZE: 50 CM X 50 CM INSTALLATION: QUARTER TURN CARPET TILE MFR: SHAW CONTRACT STYLE: FAMILIAR TILE 5T235 COLOR: RAINSTORM 35535
			CT3	SIZE: 9 IN X 36 IN INSTALLATION: ASHLAR CARPET TILE MFR: INTERFACE STYLE: STEP REPEAT SR899 COLOR: 104941 ONYX
			CPT1	SIZE: 50 CM X 50 CM INSTALLATION: MONOLITHIC CARPET TILE (ROLLED GOODS) MFR: TARKETT STYLE: 2ND POWER 04987
			CTW1	COLOR: IRON SAND 71622 SIZE: 6'W ROLLED GOODS CERAMIC TILE WALL MFR: DALTILE STYLE: COLOR WHEEL LINEAR COLOR: NAVY
			LVT1	SIZE: 4 X 12 INCHES INSTALLATION: 1/3 BRICK OFFSET, FULL HEI LUXURY VINYL TILE MFR: INTERFACE STYLE: BRUSHED LINES A016 COLOR: GALENA A01604
			P1	SIZE: 25 CM X 1 M PAINT (GENERAL) MFR: BENJAMIN MOORE COLOR: MATCH EXISTING GENERAL WALL W
			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 EXP
			PL1	PLASTIC LAMINATE MFR: WILSONART COLOR: CRISP LINEN
			PL2	PLASTIC LAMINATE MFR: FORMICA COLOR: AGED ASH
			RAF1 RB1	RESILIENT ATHLETIC FLOORING MFR: GERFLOR STYLE: TARAFLEX SPORT M PLUS COLOR: MAPLE DESIGN RUBBER BASE
				MRF: JOHNSONITE STYLE: 4"H, 120' ROLLS COLOR: MATCH EXT. BUILDING COLOR
			SC1 SS1	SEALED CONCRETE MECHANICAL ROOM FLOOR COATING STAINLESS STEEL
			SSM1	SOLID SURFACE MATERIAL MFR: DUPONT STYLE: CORIAN COLOR: ARROWROOT
				GENERAL FINISH NOTES
		1. 2.	ALL AREA RECEIVE IT IS THE SURFACE RECOMM	S OF CARPET, LVT, SEALED CONCRETE, OR OTH RUBBER BASE; U.N.O. ON FINISH PLANS. RESPONSIBILITY OF ALL TRADES TO COORDINAT S TO RECEIVE FINISH PRODUCT. CONSULT WITH ENDED PRACTICES.
		3. 4.	ALL REDU INSTALL 4 CASEWOR	ICERS TO COORDINATE APPROPRIATELY WITH A " H. RUBBER BASE (RB) AT CASEWORK TOE KICA RK, AND VERTICAL SUPPORTS.
		5. 6.	SEE SPEC	CIFICATIONS FOR RESILIENT ACCESSORY INFOR
		7. 8		D WINDOW FRAMES TO BE PAINTED P2; U.N.O.
		9.	TO BE PA FACE & U NOTED OI	NDERSIDE OF BULKHEADS TO BE PAINTED P1; UNITERIOR ELEVATIONS, CEILING
		10. 11.	REFER TO DESIGNAT) CEILING PLANS & CEILING SPECIFICATIONS FO TIONS AND ACT TYPES.) INTERIOR ELEVATION SHEETS FOR MORE DETA
		12.	FINISH INI	FORMATION. TILE INSTALLATIONS SHOULD BE FULL HEIGHT; SE ON INTERIOR ELEVATIONS
		13.	WHERE M THE CENT	ATERIALS TRANSITION AT DOOR THRESHOLD, T FER OF THE DOOR IN THE CLOSE POSITION.
		14.	MECHANI PAINT EXI OTHERWI	CAL & ELECTRICAL ROOM FINISHES: AS A TYPIC POSED STRUCTURE, DO NOT PROVIDE WALL BA SE ON FINISH PLANS.
		15.	WHERE S 90 00 PAIN	EALED CONCRETE (SC). IS SPECIFIED, REFER TO NTING, FOR SYSTEM TYPE.
		16. 17.	REFER TO ALL PAIN STEM AND	D SPECIFICATIONS FOR ALL PAINT TYPES. TED WALLS IN TOILET ROOMS, KITCHENS, LOCKE D MAKERSPACES SHALL RECEIVE EPOXY PAINT.
		18.	CONTRAC	TOR SHALL COORDINATE THE INSTALLATION OF NT, INCLUDED DIMENSIONS OF SUCH AS THEY R
		19. 20.	REMOVE, WALLS IN	SALVAGE AND RE-INSTALL EXISTING ROOM SIG AREAS OF WORK, TYP. AND SALVAGE ALL WALL MOUNTED FURNISHING
		21.	PAINTING DO NOT P	. COORDINATE SALVAGE AND RE-INSTALLATION AINT OVER EXISTING GLAZED FACE BLOCK OR E
		22.	PROTECT	ALL FINISHES DURING CONSTRUCTION.



XPOSURE

THER RESILIENT FLOORING TO

NATE PREPARATION OF H MANUFACTURERS

H ABUTTING MATERIAL HEIGHT. ICKS, INSIDE OF FLOORLESS ORMATION.

EMS INTENDED TO RECEIVE FIELD

AND OTHER MISC. EXPOSED ITEMS ILING PLANS OR FINISH PLANS. ; U.N.O. ON FINISH PLANS OR

OR SPECIAL CEILING

ETAILED PAINT AND INTERIOR IT; UNLESS NOTED OR SHOWN

TRANSITION SHOULD OCCUR AT

PICAL; PAINT WALLS, DO NOT BASE. TYPICAL UNLESS NOTED

TO SPECIFICATION SECTION 09

CKER ROOMS, SCIENCE ROOMS, N OF OWNER FURNISHED Y RELATE TO THEIR OWN WORK.

IGNAGE PRIOR TO PAINTING IGS AND ARTWORK PRIOR TO ON WITH OWNER.

R EXPOSED BRICK, U.N.O.



UNIT D

UNIT C

, M M



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UNIT 'B' FIRST FLOOR FINISH PLAN







	FINISH SYMBOLS :	FINISH LEGEND :
	ROOM NAME CPT1 Floor Floor Floor WALL FINISH VCT1 VCT1 FLOOR FINISH BASE FINISH VCT1	ACT1 ACOUSTICAL CEILING TILE MFR: USG STYLE: RADAR CLIMA PLUS 2210 COLOR: WHITE SIZE: 24" 24" X 5/8" GRID: DONN DX/DWI
	FINISH KEYNOTES :	AWP1 ACOUSTICAL WALL PANEL MFR: ARMSTRONG STYLE: TECTUM WALL PANEL COLOR: FIELD PAINTED SEE ELEVATIONS
	01MANUAL ROLLER SHADE LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION02MOTORIZED ROLLER SHADES LOCATION. PROVIDE FULL WIDTH OF WINDOW ASSEMBLY AT EACH LOCATION REFER TO SPECIFICATION03PAINT EXISTING HM/WOOD DOOR FRAME P2; INTERIOR ROOM SIDE ONLY	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: 105410 IRON/ ACCENT SIZE: 50 CM X 50 CM INSTALLATION: OLIAPTER 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
LS 12 12 12 12 130 14130 130 14130 150 150 150 150 150 150 150 15		LVT1 LUXURY VINYL TILE MFR: INTERFACE STYLE: BRUSHED LINES A016 COLOR: GALENA A01604 SIZE: 25 CM X 1 M
CTOPS: PL1 CABS: PL2		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
CABS: PL2		PL1 PLASTIC LAMINATE MFR: WILSONART
NTION		COLOR: CRISP LINEN PL2 PLASTIC LAMINATE MFR: FORMICA
		COLOR: AGED ASH RAF1 RESILIENT ATHLETIC FLOORING
A128 P1		STYLE: TARAFLEX SPORT M PLUS COLOR: MAPLE DESIGN
CT1 RB1		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 :
		 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.
		 ALL REDUCERS TO COORDINATE APPROPRIATELY WITH ABUTTING MATERIAL HEIGHT. INSTALL 4" H. RUBBER BASE (RB) AT CASEWORK TOF KICKS. INSIDE OF FLOORI ESS.
		 INSTALL 4 TH ROBBERGAGE (RB) AT CASE WORK TOE REROR, INSIDE OF FEORRESS CASEWORK, AND VERTICAL SUPPORTS. SEE SPECIFICATIONS FOR RESILIENT ACCESSORY INFORMATION. PAINT ALL EXPOSED MECHANICAL AND ELECTRICAL ITEMS INTENDED TO RECEIVE FIELD PAINT TO MATCH ADJACENT SURFACES; U.N.O.
		 DOOR AND WINDOW FRAMES TO BE PAINTED P2; U.N.O. EXPOSED CEILINGS, DECK, DUCTWORK, STRUCTURE AND OTHER MISC. EXPOSED ITEMS TO BE DAINTED UN OF ON INTERIOR ELEVATIONS OF INTO DE ENVIOLEMENTS.
		 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.
		 REFER TO INTERIOR ELEVATION SHEETS FOR MORE DETAILED PAINT AND INTERIOR FINISH INFORMATION. ALL WALL THE INISTALLATION OF CLUB HERE FOR MORE DETAILED PAINT AND INTERIOR
		 ALL WALL THE 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 00 00 DAINTING FOR SYSTEM TYPE.
		16. REFER TO SPECIFICATIONS FOR ALL PAINT TYPES.
		 ALL PAINTED WALLS IN TOILET ROOMS, KITCHENS, LOCKER ROOMS, SCIENCE ROOMS, STEM AND MAKERSPACES SHALL RECEIVE EPOXY PAINT. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF OWNER FURNISHED EQUIPMENT, INCLUDED DIMENSIONS OF SUCH AS THEY RELATE TO THEIR OWN WORK. REMOVE, SAI VAGE AND RE-INSTALL EXISTING ROOM SIGNAGE PRIOR TO BAINTING
		20. REMOVE AND SALVAGE ALL WALL MOUNTED FURNISHINGS AND ARTWORK PRIOR TO PAINTING
		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



E PREPARATION OF MANUFACTURERS



UNIT C



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_____ UNIT 'C' FIRST FLOOR FINISH PLAN

A9.1C



FINISH S	YMBOLS :				FINISH LEGEND :
ROOM NAME WALL FINISH CP FLOOR FINISH VC BASE FINISH	T1 X	FLOORING TRANSITION		ACT1	ACOUSTICAL CEILING TILE MFR: USG STYLE: RADAR CLIMA PLUS 2210 COLOR: WHITE SIZE: 24" 24" X 5/8"
FINISH KE	EYNOTES :			AWP1	GRID: DONN DX/DWL ACOUSTICAL WALL PANEL MFR: ARMSTRONG STYLE: TECTUM WALL PANEL COLOR: FIELD PAINTED SEE FLEVATIONS
01MANUAL ROLLER SHADE LOCATION ASSEMBLY AT EACH LOCATION REF02MOTORIZED ROLLER SHADES LOCA WINDOW ASSEMBLY AT EACH LOCA03PAINT EXISTING HM/WOOD DOOR FF	. PROVIDE FULL V ER TO SPECIFICA TION. PROVIDE F TION REFER TO S RAME P2; INTERIO	VIDTH OF WINDOW NTION ULL WIDTH OF SPECIFICATION OR ROOM SIDE ONLY		AWP2	SIZE: 27"L X 27"W X 2"D ACOUSTICAL WALL PANEL MFR: KINETICS OR EQUAL STYLE: IMPACT RESISTANT WALL PANEL COLOR: AWP2A: DESIGNTEX GAMUT - FINCH 3 AWP2B: DESIGNTEX GAMUT - PEWTEF
				CG1 CT1	AWP2C: DESIGNTEX GAMUT - NAVY 34 SIZE: 27"L X 27"W X 2"D CORNER GUARD STAINLESS STEEL CORNER GUARD 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
				СТЗ	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
					MFR: DALTILE STYLE: COLOR WHEEL LINEAR COLOR: NAVY SIZE: 4 X 12 INCHES INSTALLATION: 1/3 BRICK OFFSET, FULL HEIGH
				P1	MRE: INTERFACE STYLE: BRUSHED LINES A016 COLOR: GALENA A01604 SIZE: 25 CM X 1 M PAINT (GENERAL)
				P2	MFR: BENJAMIN MOORE COLOR: MATCH EXISTING GENERAL WALL WHI PAINT (TRIM) MFR: SHERWIN WILLIAMS COLOR: SW7674 PEPPERCORN
				P3 P4	PAINT (ACCENT) MFR: BENJAMIN MOORE COLOR: HC-10 STUART GOLD PAINT (ACCENT) MFR: SHERWIN WILLIAMS COLOR: SW7019 GAUNTLET GRAY
				P5 PC1	PAINT (ACCENT) MFR: SHERWIN WILLIAMS COLOR: SW6244 NAVAL POLISHED CONCRETE COLOR: NATURAL
				PL1 PL2	PLASTIC LAMINATE MFR: WILSONART COLOR: CRISP LINEN PLASTIC LAMINATE MER: FORMICA
				RAF1	MFR: FURMICA COLOR: AGED ASH RESILIENT ATHLETIC FLOORING MFR: GERFLOR STYLE: TARAFLEX SPORT M PLUS COLOR: MAPLE DESIGN
				RB1 SC1	RUBBER BASE MRF: JOHNSONITE STYLE: 4"H, 120' ROLLS COLOR: MATCH EXT. BUILDING COLOR SEALED CONCRETE MECHANICAL ROOM FLOOR COATING
				SS1 SSM1	STAINLESS STEEL SOLID SURFACE MATERIAL MFR: DUPONT STYLE: CORIAN COLOR: ARROWROOT
					GENERAL FINISH NOTES
			1. 2.	ALL AREAS RECEIVE RU IT IS THE RE SURFACES RECOMMEN	OF CARPET, LVT, SEALED CONCRETE, OR OTHER JBBER BASE; U.N.O. ON FINISH PLANS. ESPONSIBILITY OF ALL TRADES TO COORDINATE I TO RECEIVE FINISH PRODUCT. CONSULT WITH M. IDED PRACTICES.
			3. 4.	ALL REDUCI	ERS TO COORDINATE APPROPRIATELY WITH ABU H. RUBBER BASE (RB) AT CASEWORK TOE KICKS, AND VERTICAL SUPPORTS
			5.	SEE SPECIF	ICATIONS FOR RESILIENT ACCESSORY INFORMA
			6.		XPOSED MECHANICAL AND ELECTRICAL ITEMS IN ATCH ADJACENT SURFACES; U.N.O. WINDOW FRAMES TO BE PAINTED P2: U.N.O.
			8.	EXPOSED C TO BE PAIN	EILINGS, DECK, DUCTWORK, STRUCTURE AND O TED; U.N.O. ON INTERIOR ELEVATIONS, CEILING P
			9.	FACE & UNE NOTED ON I	DERSIDE OF BULKHEADS TO BE PAINTED P1; U.N. INTERIOR ELEVATIONS.
			10.	REFER TO C DESIGNATIO	CEILING PLANS & CEILING SPECIFICATIONS FOR S DNS AND ACT TYPES.
			11.		NTERIOR ELEVATION SHEETS FOR MORE DETAILS IRMATION.
			13.	OTHERWISE	E ON INTERIOR ELEVATIONS. TERIALS TRANSITION AT DOOR THRESHOLD, TRAI
			14.	THE CENTER MECHANICA PAINT EXPO	R OF THE DOOR IN THE CLOSE POSITION. AL & ELECTRICAL ROOM FINISHES: AS A TYPICAL; DSED STRUCTURE. DO NOT PROVIDE WALL BASE.
			15.	OTHERWISE WHERE SEA	LED CONCRETE (SC). IS SPECIFIED, REFER TO SI
			16.	90 00 PAINT REFER TO S	ING, FOR SYSTEM TYPE. SPECIFICATIONS FOR ALL PAINT TYPES.
			17.	ALL PAINTE	D WALLS IN TOILET ROOMS, KITCHENS, LOCKER I MAKERSPACES SHALL RECEIVE EPOXY PAINT.
			18.		OR SHALL COORDINATE THE INSTALLATION OF ON , INCLUDED DIMENSIONS OF SUCH AS THEY RELA
			19.	REMOVE, SA	ALVAGE AND RE-INSTALL EXISTING ROOM SIGNA REAS OF WORK, TYP.
			20.	PAINTING. C	CORDINATE SALVAGE AND RE-INSTALLATION WI
			22.	PROTECT A	LL FINISHES DURING CONSTRUCTION.



SURE

R RESILIENT FLOORING TO

E PREPARATION OF MANUFACTURERS

UTTING MATERIAL HEIGHT. S, INSIDE OF FLOORLESS

IATION. INTENDED TO RECEIVE FIELD

OTHER MISC. EXPOSED ITEMS 3 PLANS OR FINISH PLANS. N.O. ON FINISH PLANS OR

SPECIAL CEILING

LED PAINT AND INTERIOR

UNLESS NOTED OR SHOWN ANSITION SHOULD OCCUR AT

L; PAINT WALLS, DO NOT E. TYPICAL UNLESS NOTED

SPECIFICATION SECTION 09

R ROOMS, SCIENCE ROOMS, OWNER FURNISHED ELATE TO THEIR OWN WORK. AGE PRIOR TO PAINTING

S AND ARTWORK PRIOR TO WITH OWNER. KPOSED BRICK, U.N.O.



UNIT D

UNIT C



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_____ UNIT 'D' FIRST FLOOR FINISH PLAN

A9.1D

ELECTRICAL ABBREVIATIONS			3		POWER SYMBOL LEGEND		LIGHTING SYMBOL LEGEND		
AFF	ABOVE FINISHED FLOOR	INTLK	INTERLOCK	5	THREE PHASE MOTOR CONNECTION, 5 HORSEPOWER (EXAMPLE)	\$	SINGLE POLE TOGGLE SWITCH		
ACC	ACCESSORY	JCT		(1/2)	SINGLE PHASE MOTOR CONNECTION, 1/2 HORSEPOWER (EXAMPLE)	\$ 2	DOUBLE POLE TOGGLE SWITCH		
ADO AHU	AUTOMATIC DOOR OPERATOR AIR HANDLING UNIT	JB KW	JUNCTION BOX KILOWATT			d.			
ATS	AUTOMATIC TRANSFER SWITCH	KWH			HVAC CONTROL DAWIPER ACTUATOR CONNECTION	₩3			
BKR BOB	BREAKER BOTTOM OF BOX	LBL	LABEL		HVAC SMOKE DAMPER ACTUATOR CONNECTION	\$ 4	FOUR-WAY TOGGLE SWITCH		
BOD	BOTTOM OF DECK	LT			HVAC COMBINATION FIRE/SMOKE DAMPER ACTUATOR CONNECTION	\$os	SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR		
BOS BP	BOTTOM OF STRUCTURE BREAKER PANEL	LCM	LIGHTING CONTROL MODULE		SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE	\$osd	SINGLE POLE SWITCH WITH INTEGRAL OCCUPANCY SENSOR AND DIMMER		
BLDG	BUILDING	LCN	LIGHTING CONTROL NARRATIVE			d_			
CAP CLG	CAPACITY CEILING	MAX	MAXIMUM		SAFETY SWITCH DISCONNECTING MEANS, FUSIBLE	ə D	WALL-BOX DIMMER SWITCH		
CKT		MBJ MCC	MAIN BONDING JUMPER MOTOR CONTROL CENTER		COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS	\$D3	THREE-WAY WALL-BOX DIMMER SWITCH		
СВ	CONDUIT	MIN	MINIMUM		VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS	\$⊤	ELECTRONIC INTERVAL TIMER SWITCH		
		MTS NEC	MANUAL TRANSFER SWITCH NATIONAL ELECTRICAL CODE		MOTOR STARTER	\$ ₽	LIGHT SWITCH WITH PILOT LIGHT		
CONST	CONSTRUCTION	NEG	NEGATIVE (-)	¢_					
CONTR	CONTRACT (OR)	NC NO	NORMALLY CLOSED	\$₽⊦	BOX-COVER FUSIBLE DISCONNECT SWITCH	\$C	AND SPECIFICATIONS FOR DETAILS.		
CT	CURRENT TRANSFORMER	N/A		\$ ™	MANUAL MOTOR CONTROLLER	\$ _{DT}	DOUBLE-THROW (MAINTAINED) LIGHT SWITCH		
E.C. FGC	ELECTRICAL CONTRACTOR	NL	NIGHT LIGHT	\$	POWER SWITCH, REFER TO LIGHTING SYMBOL LEGEND FOR SIMILAR SWITCH TYPES	\$ к	KEY-OPERATED SWITCH (SUFFIX DESIGNATION NONE: SINGLE POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: F		
EHD	ELECTRIC HAND DRYER	OCPD PC	OVERCURRENT PROTECTIVE DEVICE		DIRECT ELECTRICAL CONNECTION	S,	LOCKING SWITCH		
ELEC EWC	ELECTRIC (AL) ELECTRIC WATER COOLER	POS	POSITIVE (+)				(SUFFIX DESIGNATION NONE: SINGLE-POLE, 2: DOUBLE-POLE, 3: THREE-WAY, 4: F		
EM	EMERGENCY	PWR P & L	POWER POWER & LIGHTING	Ψ	SINGLE NEMA 5-20R RECEPTACLE		TOUCHSCREEN PANEL		
ENT	EN IRANCE EQUAL	S	SURFACE	φ	SINGLE NEMA 5-20R RECEPTACLE, CEILING-MOUNTED	LPA-X	CIRCUIT NUMBER FOR LIGHT FIXTURES WITHIN INDICATED SPACE		
EQUIP EST	EQUIPMENT	SBJ S.B.O.	SYSTEM BONDING JUMPER SUPPLIED BY OTHERS		SINGLE NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED		WALL-MOUNTED LIGHTING FIXTURE, TYPE 'A'		
EF	EXHAUST FAN	SP	SINGLE POLE	φ	DUPLEX NEMA 5-20R RECEPTACLE	A	RECESSED LIGHTING FIXTURE, TYPE 'A'		
ETR EX	EXISTING TO REMAIN EXISTING	SPKR	SPEAKER	Φε	"F" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX				
F	FLUSH	SPEC SSBJ	SPECIFICATION SUPPLY-SIDE BONDING JUMPER				SURFACE-MOUNTED LIGHTING FIXTURE, TIPE A		
FA FSE	FIRE ALARM FOOD SERVICE EQUIPMENT	SUB		ΨGF	GFCI" NOTATION: GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE		TRACK LIGHTING		
FP FL R	FIRE PROOF / FIRE PROTECTION	TEL	TELEPHONE	₽s	"S" NOTATION: SURFACE-MOUNTED	М			
FLUOR	FLUORESCENT	T'STAT XFMR	THERMOSTAT TRANSFORMER	₽wL	"WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER		SINGLE FACE EXIT SIGN, TYPE "X1" IN SCHEDULE UNLESS OTHERWISE NOTED, SHADING INDICATES FACE ORIENTATION		
GEC GEN	GROUNDING ELECTRODE CONDUCTOR GENERATOR	UG		φ	DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED		DOUBLE FACE EXIT SIGN, TYPE "X2" IN SCHEDULE UNLESS OTHERWISE NOTED,		
GFCI GRD	GROUND FAULT CIRCUIT INTERRUPTER	UH	UNIT HEATER		DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED		SHADING INDICATES FACE ORIENTATION		
HORIZ	HORIZONTAL	UNO VERT	UNLESS NOTED OTHERWISE VERTICAL	0			WALL-MOUNTED EXIT SIGN, SHADING INDICATES FACE ORIENTATION		
HTG	HEATER	W/ W/O	WITH WITHOUT	π			EMERGENCY LIGHT FIXTURE DESIGNATION		
HV HVAC	HEATING / VENTILATING HEATING, VENTILATING, AIR CONDITIONING	WG WI	WIRE GUARD		DUFLEA INLIWA 5-2011 NEGEF FAGLE, OFLIT-WINED				
HOA HP	HAND - OFF - AUTOMATIC HEAT PUMP	WP	WEATHER PROOF		QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE		EMERGENCY LIGHTING AUTOMATIC LOAD CONTROL RELAY		
					QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED	R	LIGHTING CONTROL RELAY		
					QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED	C	LIGHTING CONTROL ENCLOSED CONTACTOR		
				φ	RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE	TS	TIME SWITCH		
					RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE, FLOOR-MOUNTED	LCM	LIGHTING CONTROL MODULE		
					2. SURFACE RACEWAY SYSTEM	LCP	LIGHTING CONTROL PANEL		
	MAXIMUM CONDUCTOR LENGTHS	S FOR TYPICAL	BRANCH CIRCUITS	ATS	AUTOMATIC TRANSFER SWITCH				
							EWERGENCT LIGHTING INVERTER, TIPE I		
FEET 20A CI	ONE-WAY BASED ON SINGLE PHASE, RCUIT, 75% LOAD, 100% P.F., IN STEEL	FEET 30A	ONE-WAY BASED ON SINGLE PHASE, \ CIRCUIT, 75% LOAD, 100% P.F., IN		MANUAL TRANSFER SWITCH	₩ 1	WALL-MOUNTED OCCUPANCY SENSOR		
	CONDUIT, 3% VOLTAGE DROP	STI	EEL CONDUIT, 3% VOLTAGE DROP		SWITCHBOARD / SWITCHGEAR		CEILING-MOUNTED OCCUPANCY SENSOR		
CIRCUIT	12 AWG #10 AWG #8 AWG #6 AWG #4 AWG	CIRCUIT VOLTAGE	#10 AWG #8 AWG #6 AWG #4 AWG		PANELBOARD	PC	WALL-MOUNTED PHOTOCELL FOR ON/OFF CONTROL		
120	60 100 150 245 385	120	60 100 150 245	Т	TRANSFORMER	PC	CEILING-MOUNTED PHOTOCELL FOR ON/OFF CONTROL		
208	100 170 265 425 670 135 230 355 565 890	208	100 170 265 425 135 230 355 565		MOTOR CONTROL CENTER	PS	WALL-MOLINTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTROL		
480	240 400 615 980	480	240 400 615 980		EMERGENCY STOP STATION REFER TO DETAIL FOR REQUIREMENTS				
FFFT		FFFT					CEILING-MOUNTED PHOTOSENSOR FOR DAYLIGHT HARVESTING DIMMING CONTRO		
PEET 20A CI	CINE-WAT DAGED ON THREE PHASE, RCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT 3% VOLTAGE DROP	FEET 30A CIF	CINE-WAT DAGED UN THREE PHASE, RCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT 3% VOLTAGE DROP		AUTOMATIC DOOR OPERATOR PUSH BUTTON		POLE-MOUNTED SITE/AREA FIXTURE		
	CONDUCTOR SIZE		CONDUCTOR SIZE		ON/OFF PUSH BUTTON				
OLTAGE #1	2 AWG #10 AWG #8 AWG #6 AWG #4 AWG	VOLTAGE	#10 AWG #8 AWG #6 AWG #4 AWG	8	THREE-FUNCTION PUSH BUTTON		NUTE: NUT ALL SYMBULS ARE NECESSARILY USED		
208 480	120 200 305 490 775 275 460 710 1.130	208 480	120 200 305 490 275 460 710 1,130	FB1	FLOORBOX, TYPE 1				
I		J L	1 1 1 1		JUNCTION BOX				
					METER				
	· · · · · · · · · · · · · · · · · · ·								
	COMMUN	ICATIONS SYM	BOL LEGEND						

ELECTRICAL ABBREVIATIONS					POWER SYMBOL LEGEND			LIGHTING SYMBOL LE		
				(5	J	THREE PHASE MOTOR CONNECTION, 5 HORSEPOWER (EXAMPLE)		\$	SINGLE POLE TOGGLE SWITCH	
AFF ACC	ABOVE FINISHED FLOOR ACCESSORY	INTLK JCT	INTERLOCK JUNCTION		, ,			\$2		
ADO		JB KW	JUNCTION BOX		2)	SINGLE PHASE MOTOR CONNECTION, 1/2 HORSEPOWER (EXAMPLE)				
AHU	AUTOMATIC TRANSFER SWITCH	КШ	KILOWATT HOUR			HVAC CONTROL DAMPER ACTUATOR CONNECTION		\$ 3	THREE-WAY TOGGLE SWITCH	
BKR	BREAKER	KO LBL	KNOCK OUT LABEL		SD	HVAC SMOKE DAMPER ACTUATOR CONNECTION		\$ 4	FOUR-WAY TOGGLE SWITCH	
BOB BOD	BOTTOM OF BOX BOTTOM OF DECK	LT	LIGHT		, F/S	HVAC COMBINATION FIRE/SMOKE DAMPER ACTUATOR CONNECTION		\$os	SINGLE POLE SWITCH WITH INTEGRAL OCCU	
BOS	BOTTOM OF STRUCTURE	LC LCM	LIGHTING CONTROL LIGHTING CONTROL MODULE		/			đ _{a sa}		
BP BLDG	BREAKER PANEL BUILDING	LCN	LIGHTING CONTROL NARRATIVE		ጉ	SAFETY SWITCH DISCONNECTING MEANS, NOT FUSIBLE		⊅osd	SINGLE POLE SWITCH WITH INTEGRAL OCCU	
CAP	CAPACITY	LTG MAX	LIGHTING MAXIMUM		Դ	SAFETY SWITCH DISCONNECTING MEANS, FUSIBLE		\$ D	WALL-BOX DIMMER SWITCH	
CKT	CIRCUIT	MBJ	MAIN BONDING JUMPER		≤h	COMBINATION MOTOR STARTER AND FUSIBLE DISCONNECTING MEANS		\$ D3	THREE-WAY WALL-BOX DIMMER SWITCH	
СВ		MCC MIN	MOTOR CONTROL CENTER MINIMUM		Դ	VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECTING MEANS		\$ ⊤	ELECTRONIC INTERVAL TIMER SWITCH	
COMM	COMMUNICATIONS	MTS	MANUAL TRANSFER SWITCH		7			¢.		
CONN		NEC	NATIONAL ELECTRICAL CODE NEGATIVE (-)			MOTOR STARTER		\$ P	LIGHT SWITCH WITH PILOT LIGHT	
CONTR	CONTRACT (OR)	NC		\$	F	BOX-COVER FUSIBLE DISCONNECT SWITCH		\$ c	LIGHTING CONTROL SWITCH, REFER TO LIGH AND SPECIFICATIONS FOR DETAILS.	
CLL CT	CONTRACT LIMIT LINE CURRENT TRANSFORMER	NO N/A	NORMALLY OPEN	\$	M	MANUAL MOTOR CONTROLLER		\$ DT	DOUBLE-THROW (MAINTAINED) LIGHT SWITCH	
E.C.	ELECTRICAL CONTRACTOR	NIC		s s		POWER SWITCH. REFER TO LIGHTING SYMBOL LEGEND FOR SIMILAR SWITCH TYPES		¢	KEY-OPERATED SWITCH	
EGC EHD	EQUIPMENT GROUNDING CONDUCTOR ELECTRIC HAND DRYER	OCPD	OVERCURRENT PROTECTIVE DEVICE			· · · , · · · · · · · · · · · · · ·		UK .	(SUFFIX DESIGNATION NONE: SINGLE POLE	
ELEC	ELECTRIC (AL)	PC POS	PHOTOCELL / PHOTOCONTROL POSITIVE (+)		9	DIRECT ELECTRICAL CONNECTION		\$∟	(SUFFIX DESIGNATION NONE: SINGLE-POLE	
EWC EM	ELECTRIC WATER COOLER EMERGENCY	PWR	POWER	φ φ)	SINGLE NEMA 5-20R RECEPTACLE		TP	TOUCHSCREEN PANEL	
ENT	ENTRANCE	P&L S	POWER & LIGHTING SURFACE	¢)	SINGLE NEMA 5-20R RECEPTACLE, CEILING-MOUNTED		LPA-X	CIRCUIT NUMBER FOR LIGHT FIXTURES WITH	
EQ EQUIP	EQUIPMENT	SBJ	SYSTEM BONDING JUMPER		9					
EST	ESTIMATE	S.B.O. SP	SUPPLIED BY OTHERS SINGLE POLE		4	SINGLE NEIMA 3-20K RECEPTACLE, FLOOR-MOUNTED			WALL-WOONTED LIGHTING TIXTORE, TIPE A	
EF	EXISTING TO REMAIN	SPD	SURGE PROTECTION DEVICE	H)	DUPLEX NEMA 5-20R RECEPTACLE		A	RECESSED LIGHTING FIXTURE, TYPE 'A'	
EX	EXISTING	SPKR SPEC	SPEAKER SPECIFICATION	¶ ¶	PE	"E" NOTATION: REPLACE EXISTING WIRING DEVICE USING EXISTING OUTLET BOX		A	SURFACE-MOUNTED LIGHTING FIXTURE, TYPE	
F	FIRE ALARM	SSBJ	SUPPLY-SIDE BONDING JUMPER		GFCI	"GFCI" NOTATION: GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE				
FSE		SUB SWBD	SWITCHBOARD	יי מ) e				TRACK LIGHTING	
FP	FLOOR	TEL T'STAT	TELEPHONE	Π					SINGLE FACE EXIT SIGN TYPE "X1" IN SCHEDI	
FLUOR		XFMR	TRANSFORMER	H	WL	"WL" NOTATION: PROVIDE WEATHER RESISTANT (WR) GFCI RECEPTACLE WITH EXTRA-DUTY WHILE-IN-USE WET LOCATION COVER			SHADING INDICATES FACE ORIENTATION	
GEN	GENERATOR	UG	UNDERGROUND UNDERWRITERS LABORATORIES	4	þ	DUPLEX NEMA 5-20R RECEPTACLE, CEILING-MOUNTED			DOUBLE FACE EXIT SIGN, TYPE "X2" IN SCHED	
GFCI GRD	GROUND FAULT CIRCUIT INTERRUPTER GROUND	UH	UNIT HEATER		D	DUPLEX NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED			SHADING INDICATES FACE ORIENTATION	
HORIZ	HORIZONTAL	UNO VERT	UNLESS NOTED OTHERWISE VERTICAL						WALL-MOUNTED EXIT SIGN, SHADING INDICAT	
HTR HTG	HEATER HEATING	W/	WITH	¹	ſ	DUPLEX NEMA 5-20R RECEPTACLE, CONNECTED TO STANDBY POWER BRANCH CIRCUIT				
HV	HEATING / VENTILATING	W/O WG	WITHOUT WIRE GUARD	¶ ¶	P	DUPLEX NEMA 5-20R RECEPTACLE, SPLIT-WIRED				
HVAC HOA	HEATING, VENTILATING, AIR CONDITIONING HAND - OFF - AUTOMATIC	WL		€	₽	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE			EMERGENCY LIGHTING AUTOMATIC LOAD CO	
HP	HEAT PUMP	WP	WEATHER PROOF		⊨	QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, CEILING-MOUNTED		R	LIGHTING CONTROL RELAY	
						QUADRUPLEX (DOUBLE DUPLEX) NEMA 5-20R RECEPTACLE, FLOOR-MOUNTED				
					2 2	RECEPTACI E OTHER THAN NEMA 5-20R (MAY BE MUI TI-POI E OR MUI TI-PHASE)			LIGHTING CONTROL ENCLOSED CONTACTOR	
				¥	,	SEE PLAN FOR TYPE		TS	TIME SWITCH	
						RECEPTACLE OTHER THAN NEMA 5-20R (MAY BE MULTI-POLE OR MULTI-PHASE), SEE PLAN FOR TYPE, FLOOR-MOUNTED		LCM	LIGHTING CONTROL MODULE	
					HORIZ.	SURFACE RACEWAY SYSTEM		LCP	LIGHTING CONTROL PANEL	
	MAXIMUM CONDUCTOR LENGTHS F	OR TYPICA	BRANCH CIRCUITS	AT	s	AUTOMATIC TRANSFER SWITCH				
					-			INV-1	EMERGENCY LIGHTING INVERTER, TYPE 1	
FEET	ONE-WAY BASED ON SINGLE PHASE,	FEET	ONE-WAY BASED ON SINGLE PHASE,	MT	S	MANUAL TRANSFER SWITCH		♥	WALL-MOUNTED OCCUPANCY SENSOR	
204 0	CONDUIT, 3% VOLTAGE DROP	S	FEEL CONDUIT, 3% VOLTAGE DROP			SWITCHBOARD / SWITCHGEAR		♦	CEILING-MOUNTED OCCUPANCY SENSOR	
		CIRCUIT			-	PANELBOARD		PC		
120	12 AWG #10 AWG #8 AWG #6 AWG #4 AWG 60 100 150 245 385	120	F #10 AWG #8 AWG #6 AWG #4 AWG 60 100 150 245							
208	100 170 265 425 670	208	100 170 265 425					PC	CEILING-MOUNTED PHOTOCELL FOR ON/OFF	
277	135 230 355 565 890	277	135 230 355 565			MOTOR CONTROL CENTER		PS	WALL-MOUNTED PHOTOSENSOR FOR DAYLIG	
480	240 400 615 980	480	240 400 615 980		ì	EMERGENCY STOP STATION, REFER TO DETAIL FOR REQUIREMENTS.		PS	CEILING-MOUNTED PHOTOSENSOR FOR DAYI	
FEET	ONE-WAY BASED ON THREE PHASE,	FEET	ONE-WAY BASED ON THREE PHASE,	т D	Ì	AUTOMATIC DOOR OPERATOR PUSH BUTTON			POLE-MOUNTED SITE/AREA FIXTURE	
20A C	IRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP	30A C	IRCUIT, 75% LOAD, 100% P.F., IN STEEL CONDUIT, 3% VOLTAGE DROP		-				. SEE MOORTED OTEMICATIVIONE	
CIRCUIT	CONDUCTOR SIZE	CIRCUIT	CONDUCTOR SIZE		2	UN/OFF PUSH BUILION				
VOLTAGE #1	12 AWG #10 AWG #8 AWG #6 AWG #4 AWG	VOLTAG	E #10 AWG #8 AWG #6 AWG #4 AWG			THREE-FUNCTION PUSH BUTTON				
208	120 200 305 490 775 275 460 710 1 130	208	120 200 305 490 275 460 710 1 130	FB	1	FLOORBOX, TYPE 1				
UUT		400			0	JUNCTION BOX				
					~					
					リ	METER				
	00144144] [@)	THERMOSTAT ROUGH-IN				

R

С

RELAY

ENCLOSED CONTROL CONTACTOR

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

	COMMUNICATIONS SYMBOL LEGE
Ŧ	COMMUNICATIONS OUTLET ROUGH-IN
(\mathbf{Y})	COMMUNICATIONS OUTLET, CEILING-MOUNTED
	COMMUNICATIONS OUTLET, FLOOR-MOUNTED
	CEILING-MOUNTED VIDEO PROJECTOR
	COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED
	COMMUNICATIONS EQUIPMENT RACK, FLOOR-MOUNTED
	COMMUNICATIONS EQUIPMENT RACK, WALL-MOUNTED
E3	CONDUIT SLEEVE FOR COMMUNICATIONS CABLING, 2" DI/ UNLESS NOTED OTHERWISE. IN FIRE-RATED AND/OR SM TO SPECIFICATIONS FOR ACCEPTABLE FIRESTOP AND SM
(5) (1)	LOUDSPEAKER, CEILING-MOUNTED, PROVIDE SINGLE-GA CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINA" COMMUNICATION CONTRACTOR
(§)	CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINA COMMUNICATION CONTRACTOR
CS	INTERCOM SYSTEM CALL STATION BUTTON
VC	VOLUME CONTROL FOR AUDIO SYSTEM, PAGING, OR INTE
\odot	SECONDARY CLOCK, CEILING-MOUNTED, PROVIDE SINGL CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINA COMMUNICATION CONTRACTOR
Ç	SECONDARY CLOCK, WALL-MOUNTED, PROVIDE SINGLE- CONDUIT STUBBED TO ACCESSIBLE CEILING; COORDINA COMMUNICATION CONTRACTOR
B	SIGNALING BELL
	NOTE: NOT ALL SYMBOLS ARE NECESSARILY US



CR

CR M

XXXXX

ACS

IDS

PSU

CARD READER

CARD READER, MULLION-MOUNTED

POWER SUPPLY UNIT

ACCESS CONTROL SYSTEM EQUIPMENT

INTRUSION DETECTION SYSTEM EQUIPMENT

NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED

ACCESS CONTROL DOOR TAG, REFER TO HARDWARE SCHEDULE(S) IN SECTION 08 71 00 AND OWNER'S ACCESS CONTROL VENDOR FOR FURTHER DETAILED REQUIREMENTS

TYPICAL MOUNTING HEIGHTS FOR WALL DEVICES, EQUIPMENT, & FIXTURES NOT TO SCALE

OOR-MOUNTED 2-POST

OOR-MOUNTED 4-POST

CABLING, 2" DIA. OR EQUIV. FREE AREA TYP. TED AND/OR SMOKE BARRIER WALLS, REFER RESTOP AND SMOKE SEAL PRODUCTS. IDE SINGLE-GANG FLUSH BOX WITH 3/4" G; COORDINATE WITH OWNER'S

E SINGLE-GANG FLUSH BOX WITH 3/4" ING; COORDINATE WITH OWNER'S

AGING, OR INTERCOM LOUDSPEAKERS PROVIDE SINGLE-GANG FLUSH BOX WITH 3/4" ; COORDINATE WITH OWNER'S OVIDE SINGLE-GANG FLUSH BOX WITH 3/4" G; COORDINATE WITH OWNER'S

CESSARILY USED

		FIRE ALARM SYMBOL LEGEND
	Ē	MANUAL PULL STATION
	چ	AUDIBLE NOTIFICATION APPLIANCE, WALL-MOUNTED
		VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
	EV EV	AUDIBLE/VISUAL NOTIFICATION APPLIANCE, WALL-MOUNTED
	A	AUDIBLE NOTIFICATION APPLIANCE, CEILING-MOUNTED
	AV	AUDIBLE/VISUAL NOTIFICATION APPLIANCE, CEILING-MOUNTED
	$\overline{\mathbf{V}}$	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.
	(3)	SMOKE DETECTOR
	(H)	HEAT DETECTOR
	Ø	DUCT SMOKE DETECTOR
UR-WAY)	ß	FIRE PROTECTION FLOW SWITCH
	(S)	FIRE PROTECTION TAMPER SWITCH
		ELECTROMAGNETIC DOOR HOLD-OPEN DEVICE
	R	ADDRESSABLE RELAY FOR FIRE ALARM CONTROL
	ß	PRESSURE SWITCH
	C	CARBON MONOXIDE DETECTOR
	NAC	NOTIFICATION APPLIANCE CIRCUIT POWER SUPPLY
	FAA	FIRE ALARM REMOTE ANNUNCIATOR
	FACP	FIRE ALARM CONTROL PANEL
	\$ _{rts}	KEYED TEST SWITCH AND REMOTE INDICATOR FOR DUCT SMOKE DETECTOR
	Ę	FIRE PROTECTION OR ALARM BELL
		NOTE: NOT ALL SYMBOLS ARE NECESSARILY USED
		ECTRONIC SAFETY / SECORITY SYMBOL LEGEND
	DC	DOOR CONTACT
	EL	ELECTRONIC LATCH
	ES	ELECTRONIC STRIKE
	К	INTRUSION DETECTION KEYPAD
	IC	INTERCOM STATION
	sc	WALL-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH-IN
	SC	CEILING-MOUNTED SURVEILLANCE CAMERA COMMUNICATIONS ROUGH IN
	SC1	WALL-MOUNTED SURVEILLANCE CAMERA, TYPE 1
	SC1	CEILING-MOUNTED SURVEILLANCE CAMERA, TYPE 1
		WALL-MOUNTED INFRARED MOTION DETECTOR
		CEILING-MOUNTED INFRARED MOTION DETECTOR
	UD	WALL-MOUNTED ULTRASONIC MOTION DETECTOR
		CEILING-MOUNTED ULTRASONIC MOTION DETECTOR

	CONTRACTOR; SUCH COSTS SHALL BE INCLUDED IN BID. SURFACE-MOUNTED CO ACCEPTABLE WHERE EXPOSED TO VIEW IN SPACES OTHER THAN DEDICATED ME ROOMS.
4.	"LOW-VOLTAGE" CONTROLS, COMMUNICATIONS, AND SAFETY/SECURITY CABLING CONTRACTORS INSTALLING CABLING WHERE APPROVED FOR EXPOSED INSTALL/ CABLES AFTER PAINTING HAS BEEN COMPLETED OR PROVIDE TEMPORARY PROT UNTIL PAINTING HAS BEEN COMPLETED. PROVIDE TEMPORARY PROTECTION OF PRIOR TO PAINTING EXISTING AREAS. PAINTED CABLES SHALL BE REPLACED AT NEGLIGENT CONTRACTOR.
5.	METAL CLAD CABLE MAY BE USED FOR FIXTURE WHIPS IN LENGTHS OF 6 FEET OF ACCESSIBLE SUSPENDED CEILING SYSTEM ONLY. OTHERWISE, METAL CLAD OR OF TYPES SHALL NOT BE USED UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEE THESE CONTRACT DOCUMENTS THAT ALL INSTALLED BRANCH CIRCUITS CONSIST RACEWAY AND CONDUCTORS ALLOWING REMOVAL AND REPLACEMENT OF WIRIN FUTURE UPGRADES. REFER TO SPECIFICATIONS FOR EXCEPTIONS.
6.	CIRCUIT WIRING FOR ARTICLE 700 EMERGENCY SYSTEMS AND ARTICLE 708 CRITI POWER SYSTEMS SHALL BE INSTALLED IN SEPARATE CONDUITS/RACEWAYS AND INDEPENDENT OF ALL OTHER WIRING AND EQUIPMENT PER NEC REQUIREMENTS.
7.	ALL FEEDERS AND BRANCH CIRCUITS SHALL CONTAIN AN EQUIPMENT GROUNDIN ACCORDING TO THE NEC RACEWAYS INCLUDING CONDUITS, BOXES, WIREWAYS, CONSIDERED AN ACCEPTABLE GROUND.
8.	CONDUITS AND CABLING SHALL NOT BE INSTALLED WITHIN 4" OF ROOF DECK, EX SERVE ROOF-MOUNTED ITEMS AND ONLY WHEN THE CONDUIT OR CABLE IS ROUT SUCH EQUIPMENT FROM BELOW. CLEARANCE SHALL BE PERMITTED TO BE REDU SUPPLEMENTAL METAL FRAMING MEMBERS PROVIDE AN EFFECTIVE BARRIER BE AND ANY CONDUIT/CABLING.
9.	SUPPLEMENTAL METAL FRAMING SHALL BE PROVIDED FOR SUSPENSION POINTS BETWEEN STRUCTURAL MEMBERS (JOISTS, TRUSSES, BEAMS, ETC.) IN OPEN/VISI CEILING OR SUPPORT COLUMN AREAS. METAL FRAMING SHALL SPAN ACROSS TH FLANGE OF OVERHEAD STRUCTURAL MEMBERS FOR BOTH STRUCTURAL AND AES SPECIFIC EXCEPTIONS SHALL BE COORDINATED IN WRITING WITH THE ARCHITEC
10.	CONDUIT INSTALLED WITHIN INACCESSIBLE CONSTRUCTION SHALL BE 3/4" MINIM
11.	FEEDERS SHOWN ON DRAWINGS ARE SCHEMATIC ONLY. CONDUIT RUNS SHALL C SPECIFICATIONS AND CONTAIN BENDS THAT ARE NO GREATER THAN 90 DEGREES ABOVE GRADE SHALL BE RUN PARALLEL TO, OR PERPENDICULAR WITH, BUILDING ARCHITECTURAL LINES.
12.	CONTRACTOR(S) SHALL VERIFY COLOR/FINISH OF WIRING DEVICES, DEVICE FACE RACEWAY SYSTEMS, AND/OR MULTI-OUTLET ASSEMBLIES WITH ARCHITECT/ENGIN SPECIFIED.
13.	ELECTRICAL CONTRACTOR SHALL REFER TO ARCHITECTURAL REFLECTED CEILIN ADDITIONAL INFORMATION REGARDING LIGHTING FIXTURE MOUNTING LOCATIONS CEILING FINISHES.
14.	ELECTRICAL CONTRACTOR SHALL ADJUST LIGHTING FIXTURE LOCATIONS IN MEC ACCOMMODATE MECHANICAL EQUIPMENT, DUCTWORK, AND RELATED FIELD CON
15.	CONTRACTOR(S) SHALL BE RESPONSIBLE TO REVIEW INTERIOR ELEVATION SHEE DEVICE BOXES. COORDINATE LOCATIONS SO THAT NO DEVICES ARE INSTALLED MILLWORK, VISUAL DISPLAY BOARDS, MIRRORS, CUSTOM GRAPHICS, SIGNAGE, E
16.	ELECTRICAL CONTRACTOR SHALL REVIEW TOILET EQUIPMENT SHOP DRAWINGS A DETAILS/ELEVATIONS FOR CORRECT DEVICE BOX ROUGH-IN LOCATION OF HAND
17.	ELECTRICAL CONTRACTOR SHALL COORDINATE WITH PLUMBING CONTRACTOR A WATER COOLER / BOTTLE FILLER SHOP DRAWINGS FOR MOUNTING HEIGHT AND O OF PLUMBING EQUIPMENT POWER CONNECTIONS. READILY ACCESSIBLE GFCI PF PROVIDED FOR THE BRANCH CIRCUIT(S) SUPPLYING ALL SUCH UNITS PER NEC RE
18.	REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR DETAILED INFORMATION RE AND CONTROL. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEW ITEMS AS SPECIFICALLY LISTED AND ASSIGNED ON MECHANICAL EQUIPMENT SCH DISCONNECT SWITCHES, VARIABLE FREQUENCY DRIVES, STARTERS, TIMERS, SW
19.	ELECTRICAL CONTRACTOR SHALL CONFIRM THE LOCATION OF THE EXHAUST FAM MECHANICAL EQUIPMENT SCHEDULES BY REFERRING TO MECHANICAL/HVAC PLA
20.	REFER TO ROOF PLANS FOR EXACT LOCATIONS OF ROOF-TOP MECHANICAL EQUI
21.	PROVIDE FLUSH SINGLE-GANG BOXES IN WALLS FOR HVAC / TEMPERATURE CONTONE PER OCCUPIABLE ROOM OR SPACE. INSTALL 3/4" CONDUIT RACEWAY FROM CORRESPONDING TEMPERATURE CONTROL SYSTEM DEVICE OR CONTROLLED UN MECHANICAL DRAWINGS FOR PROPOSED LOCATIONS AND COORDINATE WITH ME TEMPERATURE CONTROLS CONTRACTOR'S SHOP DRAWINGS.
22.	CABINET UNIT HEATERS MAY HAVE LINE-VOLTAGE THERMOSTATS SUPPLIED BY M CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. REFER TO ME SCHEDULE.
23.	DIVISION 26 CONTRACTOR SHALL PROVIDE CONDUIT SLEEVES WITH APPROPRIAT CONTROLS AND ELECTRONIC SAFETY/SECURITY CABLING THROUGH WALLS AND SHALL BE COORDINATED WITH CABLING REQUIREMENTS.
24.	SECTION 27 05 28 CONTRACTOR SHALL PROVIDE DEDICATED CONDUIT SLEEVES V BUSHINGS THROUGH WALLS AND FLOORS FOR DIV. 27 COMMUNICATIONS AND DIV CABLING. SLEEVE SIZE SHALL BE MINIMUM 2" DIA. OR EQUIVALENT FREE AREA UN OTHERWISE. SPECIFIED CABLE PATHWAY PENETRATION DEVICES SHALL BE SUB SLEEVES WHERE THERE IS A REQUIRED RATING IN THE CONSTRUCTED ASSEMBL
25.	BUILDING SYSTEMS CABLING SHALL BE SLEEVED WHERE CABLES PASS THROUGH SHALL PASS THROUGH OR OVER THE TOP OF WALL CONSTRUCTION WITHOUT TH DIVISION 26 CONTRACTOR SHALL PROVIDE SLEEVES (UNLESS OTHERWISE ASSIG WITH ARCHITECTURAL TRADES DURING THE WALL CONSTRUCTION PROCESS. TH APPLIES TO EXISTING CABLING IN FOOTPRINT OF ANY NEW WALLS; PROVIDE SPLI CANNOT BE DISCONNECTED. FIELD-VERIFY QUANTITIES AND LOCATIONS, OR COO ALLOWANCES FOR SLEEVES WITH PROJECT ADMINISTRATIVE REQUIREMENTS.

ELECTRICAL GENERAL NOTES

LOCAL AUTHORITY HAVING JURISDICTION WHERE THE WORK IS PERFORMED.

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.







BUILDING/SITE. PROGRESSES. DEMOLISHED. OWNER RECYCLING FACILITY. OWNER. PLANS.







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















UNIT 'C' ELECTRICAL DEMOLITION PLAN

- RECYCLING FACILITY.

- PLANS.
- JUNCTION BOXES TO MATCH EXISTING.









- 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. 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

UNIT D





UNIT 'A' POWER & COMMUNICATIONS PLAN

(^z∎)_

MECH MEZZANINE POWER & COMMUNICATIONS PLAN



UNIT B

UNIT A

NOTES
OMMUNICATIONS
OMMUNICATIONS
OMMUNICATIONS
D RELOCATED VFD, S REQUIRED TO MAKE
GROUNDING TION, INTERCONNECT
M AT SERVICE DERIVED SYSTEM PER ITS.
OX BEHIND AUDIO ITER RACK WHILE ED CONDUITS ARE NOT IDES RACK. STUB AN VE ACCESSIBLE
DR CONNECTION TO TY DEVICE, E BACKBOX.
SIUM, KEY-OPERATED 13, WIRED PER RUCTIONS.
CUIT TO PANEL AS
ECTOR AND EXTEND
RAL RECEPTACLES
OARD INTO EXISTING



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ISSUANCES 03.23.2023 BIDS & CONSTRUCTION

DRAWN KSS REVIEWED MCK

PROJECT NO.

5-5798

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UNIT 'A' POWER & COMMUNICATIONS PLANS





UNIT 'B' POWER & COMMUNICATIONS PLAN





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. DAMPER. PROVIDE FIRE ALARM DUCT SMOKE DETECTOR WITHIN 5 FEET OF EACH DAMPER (UNLESS COVERED BY ANOTHER DUCT DETECTOR WITHIN 5 FEET). 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. 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.

TECHNOLOGY DEPT .:

D. AUDIO-VIDEO SYSTEM FOR GYMNASIUM

E. ACCESS CONTROL SYSTEM F. VIDEO SURVEILLANCE SYSTEM

POWER & COMMUNICATION GENERAL NOTES

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. A. NETWORK ELECTRONICS (SWITCHES, ACCESS POINTS, ETC.) B. VOIP TELEPHONE SYSTEMS C. CLASSROOM AUDIO-VIDEO EQUIPMENT AND INSTRUCTIONAL TECHNOLOGY

UNIT B UNIT A

UNIT C



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DRAWN KSS REVIEWED MCK

PROJECT NO. 5-5798

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UNIT 'B' POWER & COMMUNICATIONS PLAN

E2.1B









- 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. 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.
- 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.
- 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.) 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

\bigcirc	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 DEMOLISHED PANEL THAT REMAIN AFTER SELECTIVE DEMOLITION TO NEW CIRCUIT BREAKERS IN THIS PANEL.





UNIT D

UNIT C



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UNIT 'C' POWER & COMMUNICATIONS PLAN

E2.1C





 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.

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 PÓWER. 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.)

D. AUDIO-VIDEO SYSTEM FOR GYMNASIUM

E. ACCESS CONTROL SYSTEM

F. VIDEO SURVEILLANCE SYSTEM



UNIT D UNIT C

UNIT B

UNIT A

7. CONSOLIDATE ALL POWER SUPPLIES REQUIRED FOR ELECTRONIC DOOR HARDWARE (REF. SECTION 08 71 00) TO CENTRAL LOCATION(S) ADJACENT TO

B. VOIP TELEPHONE SYSTEMS C. CLASSROOM AUDIO-VIDEO EQUIPMENT AND INSTRUCTIONAL TECHNOLOGY



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UNIT 'D' POWER & COMMUNICATIONS PLAN

E2.1D





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TYPE "E1" AUTOMATIC LOAD CONTROL RELAY

TYPICAL WIRING. VERIFY WITH EQUIPMENT MANUFACTURER. VERIFY VOLTAGE (120 OR 277) AT ALL REQUIRED LOCATIONS PRIOR TO ORDERING.

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ELECTRICAL DETAILS





WITH 'AV-IN' ACTIVATION







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

TYPICAL COMMUNICATIONS OUTLET FOR VIDEO SURVEILLANCE CAMERA

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



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ACCESSIBLE CEILING SPACE

FLOOR

TYPICAL TERMINATION MODULE FRONT: TIA RJ-45 8-POS. SEE LEGEND FOR USE/COLOR



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COMMUNICATIONS DETAILS



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SECTION 08 71 00 - DOOR HARDWARE

(BULLETIN 007)

1 GENERAL

1.1 SUMMARY

- A. Scope of Work: This Section describes all finish hardware required to complete the work as indicated on the Drawings and specified herein. Provide all trim attachments and fastening specified or required for proper and complete installation.
- B. Related Sections:
 - 1. Section 08 11 13: Hollow Metal Doors and Frames
 - 2. Section 08 14 16: Flush Wood Doors
 - 3. Section 08 43 13: Aluminum Entrances and Storefronts

1.2 SUBMITTALS

- A. Product Data, Shop Drawings, Samples:
 - 1. General: Comply with the provisions of Section 01 33 00.
 - 2. Product Data: Within 15 calendar days after award of the Contract, submit:
 - a. Complete materials list of all items proposed to be furnished and delivered under this Section.
 - (1) Identify each hardware item by manufacturer, the manufacturer's catalog number, and the location of the item in the work.
 - (2) Make the list in form suitable for ready checking by the Architect.
 - b. Manufacturer's specifications, catalog cuts, and other data required to demonstrate compliance with specified requirements.

Approval of the hardware list by the Architect/Engineer shall not relieve the Contractor from the responsibility for furnishing all required finish hardware.

- 3. Samples: Within 15 calendar days after being so requested by the Architect/Engineer, deliver to the Architect/Engineer samples of each finish hardware item.
- 4. Templates: In a timely manner to ensure orderly progress of the work, deliver templates or physical samples of the approved finish hardware items to pertinent manufacturers of interfacing items such as door and frame.

1.3 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Qualifications of Manufacturers: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect/Engineer.
 - 2. Qualification of Suppliers: The supplier shall have a qualified representative readily available to the Architect/Engineer, and/or Owner on short notice for consultation and service during the execution of this work and the warranty period.
 - 3. Qualification of Installers: Use adequate numbers of skilled workmen who are trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods needed for proper performance of this Section.
- B. Regulatory Requirements & References: Fire Rated Openings: Comply with the requirements of Underwriter's Laboratories, Inc.
- C. Pre-Installation Conference: Prior to the installation of hardware, manufacturer's representatives for locksets, closers, and exit devices shall arrange and hold a jobsite meeting to instruct the installing contractor's personnel on the proper installation of their respective


products. A letter of compliance, indicating when this meeting is held and who is in attendance, shall be sent to the Architect and Owner.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Packing and Shipping: Individually package each units of finish hardware, complete with proper fastening and appurtenances, clearly marked on the outside to indicate the contents and specific locations in the work.
- B. Protection: Use all means necessary to protect materials of this Section before, during, and after delivery to the job site and to protect the work and materials of all other trades.
- C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect/Engineer and at no additional cost to the owner.
- D. Deliveries:
 - 1. Stockpile all items sufficiently in advance to ensure their availability and make all necessary deliveries in a timely manner to ensure orderly progress of the total work.
 - 2. All hardware shall be delivered to a destination as directed by the Construction Manager with sufficient time in advance for proper inspection in order not to delay the scheduled completion date.
 - 3. The Construction Manager shall provide a lockable room with ample shelving for the storage of hardware. Upon receipt of the hardware, the Finish Hardware supplier shall unpack and place on the shelves all hardware in order of item and/or door numbers.

1.5 SEQUENCING AND SCHEDULING

Coordinate all work with job site superintendent and all applicable trades.

1.6 WARRANTY

- A. Provide a written warranty in approved form in compliance with the related requirements of the General Conditions, covering all Finish Hardware furnished under this Section against defects in manufacturing and workmanship for a minimum of two (2) years from the final acceptance of the building.
- B. Any material failing to comply with the above guarantee shall be removed and replaced with satisfactory material at the Finish Hardware supplier's expense, including the necessary labor for removing and replacing.
- C. During the Warranty Period, the Finish Hardware supplier shall, upon request, make prompt adjustments, repairs or replacements as required to any hardware installed under this contract, other than normal maintenance service.

2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

Product	Specified	Acceptable Alternates
Continuous Hinges	lves	Select, Pemko
Hinge	lves	McKinney, Stanley
Flush Bolts	lves	Trimco, Rockwood
Power Transfer	Von Duprin EPT10	Securitron
Electrified Hinge (PoE)	McKinney (Provided by Integrator)	No Substitution
Wire Harness (PoE)	McKinney (Provided by Integrator)	No Substitution
Cylindrical Locks	Yale 5400LN Series	No Substitution
Mortise Locks	Yale 8800 Series	No Substitution
Electronic Locks	Corbin-Russwin IN220 (Provided by Integrator)	No Substitution



Keys and Cylinders

Exit Devices Electric Strikes (PoE) Door Closers Push/Pull & Kick Plates Stops Overhead Stops Seals and Thresholds Magnetic Hold-Opens Auto Operators Power Supplies Yale G Keyway

Yale 7000 Series Trine 4000 Series LCN 4040XP Series Ives Ives Glynn-Johnson Zero LCN SEM Series LCN 4600 Series Von Duprin PS900 Series No Substitution (Owners Key System) No Substitution No Substitution Trimco, Rockwood Trimco, Rockwood No Substitution NGP, Reese, Pemko Rixson, ABH No Substitution Securitron

2.2 MATERIALS

- A. General:
 - 1. Proprietary Products: References to specific proprietary products are used to establish minimum standards of utility and quality. Unless otherwise approved by the Architect/Engineer, provide only the specific products. Design is based on the materials specified. Other materials may be considered by the Architect/Engineer in accordance with the provisions of Section 01 33 00.
 - 2. Fasteners:
 - a. Furnish all finish hardware with all necessary screws, bolts, and other fasteners of suitable size and type to anchor the hardware in position for long life under hard use.
 - b. Furnish fastenings where necessary with expansion shields, toggle bolts, sex bolts, and other anchors approved by the Architect/Engineer, according to the materials to which the hardware is to be applied and the recommendations of the hardware manufacturer.
 - c. All fastenings shall harmonize with the hardware as to materials and finish.
 - 3. Finishes of all hardware shall match the finish of the locksets. Take special care to coordinate all of the various manufactured items furnished under this Section, to ensure acceptably uniform finish.

4. Through-bolt door closers on all wood doors.

- B. Keying: All lock shall be master keyed as directed by the Architect and Owner to the Owners Existing Yale key system. Supply 3 keys per lock, 6 master keys for each master key group and 3 grand master keys.
- C. Tools and Manuals: With the delivery of permanent keys, deliver to the Owner one complete set of adjustment tools and one set of maintenance manuals for locksets, latchsets, closers, and panic devices.
- D. <u>Provide Special Product Configurable Code (SPAR05493) for all Yale 7100 Series</u> <u>Exit Devices specified with Corbin-Russwin IN220 Electronic Exit Device Trim.</u> <u>Must be included in purchase orders as well.</u>
- E. <u>Corbin Russwin IN220 electronic lock, McKinney electrified hinge and McKinney</u> wire harness for PoE applications to be provided by Access Control Integrator as listed in hardware sets.

3 EXECUTION

3.1 INSTALLATION

- A. Install the materials in strict accordance with the manufacturer's recommendations and schedules.
- B. All doors should swing as far as conditions allow. When mounting door closers, use the mounting that allows doors to swing to the wall or floor bumper. Do not stop the door with the



closer arm unless the arm is designed specifically to stop the door. when mounting closers designed with arms to stop the door or overhead door stops, always mount them to allow the door to swing as far as conditions will permit.

- C. Anchor all screws with Loc-Tite to assure permanence of attachment.
- D. All doors and hardware to be left in proper working order and cleaned.
- E. Special Hardware Instructions:
 - 1. Wall stops WS33 are to be mounted on the wall up at the top of the door and as far out on the latch edge as conditions allow. The sloped side is to face up, preventing anyone or anything to hang on them.
 - 2. Wall stop & holds WH45 are to be mounted the same as the WS33.

3.2 ADJUSTING AND CLEANING

- A. Final inspections shall be made by the Architect and Finish Hardware Supplier. They shall report any installation adjustments that are to be made to have all hardware in perfect working order. The Finish Hardware Supplier shall verify the keying to the Architect to insure proper location of locksets and cylinders. All closers shall be checked and adjusted for closing.
- B. Prior to final acceptance of the installation, the Finish Hardware Supplier shall make a final inspection to verify that all corrections have been made and that all hardware items are in good working condition.

4 HARDWARE SCHEDULE

Hardware Group No. 01

For use on Door #(s): E116A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112HD	628	IVE
2	EA	PUSH/PULL BAR	9103EZHD-10"-NO	630- 316	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP EDA	689	LCN
2	EA	BLADE STOP SPACER	4040XP-61 (AS REQ'D)	689	LCN
			WEATHERSTRIP BY DOOR/FRAME MANUFACTURER		



For use on Door #(s): E101B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112HD		628	IVE
2	EA	PUSH/PULL BAR	9103EZHD-10"-NO		630- 316	IVE
2	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	SURF. AUTO OPERATOR	4642 WMS	×	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61 (AS REQ'D)		689	LCN
1	EA	ACTUATOR, WALL MOUNT	8310-853T	×	630	LCN
1	EA	FLUSH MOUNT BOX	8310-867F			LCN
			WEATHERSTRIP BY DOOR/FRAME MANUFACTURER			

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

BOTH ACTUATOR BUTTONS ARE ENABLED WHEN THE OPERATOR IS TURNED ON. PUSHING EITHER ENABLED ACTUATOR BUTTON WILL CAUSE THE AUTOMATIC OPERATOR TO MOMENTARILY OPEN THE DOOR. FREE EGRESS AT ALL TIMES.

Hardware Group No. 03

For use on Door #(s):

E108A

Each to have:

E107A

QIY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5	626	IVE
1	EA	PRIVACY LOCK W/INDICATOR	PBR 8802FL IND	626	YAL
1	EA	SURFACE CLOSER	4040XP RW/PA - PULL-SIDE	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	488S	BK	ZER



For use on Door #(s): E202A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		652	IVE
1	EA	ELECTRIFIED HINGE (HW)	73696 POE - PROVIDED BY INTEGRATOR	×	652	MCK
1	EA	ELECTRONIC LOCK (PoE)	CL33134-PZD-IN220-IP-B-LC - PROVIDED BY INTEGRATOR	×	626	C-R
1	EA	CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM - COORDINATE WITH OWNER		626	YAL
1	EA	SURFACE CLOSER	4040XP SCUSH		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	94212/3 X 94217 - PROVIDED BY INTEGRATOR	×		MCK

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



For use on Door #(s):

E103A E109A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	ELECTRIFIED HINGE (HW)	73696 POE - PROVIDED BY INTEGRATOR	N	652	MCK
1	EA	ELECTRONIC LOCK (PoE)	CL33134-PZD-IN220-IP-B-LC - PROVIDED BY INTEGRATOR	N	626	C-R
1	EA	CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM - COORDINATE WITH OWNER		626	YAL
1	EA	SURFACE CLOSER	4040XP RW/PA - PULL-SIDE		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	EA	GASKETING	488S		BK	ZER
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	94212/3 X 94217 - PROVIDED BY INTEGRATOR	×		MCK

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



For use on Door #(s):

E110A E121A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	ELECTRIFIED HINGE (HW)	73696 POE - PROVIDED BY INTEGRATOR	N	652	MCK
1	EA	ELECTRONIC LOCK (PoE)	CL33134-PZD-IN220-IP-B-LC - PROVIDED BY INTEGRATOR	N	626	C-R
1	EA	CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM - COORDINATE WITH OWNER		626	YAL
1	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP ST-1630		689	LCN
1	EA	TOP JAMB MTG PLATE	4040XP-18TJ		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	GASKETING	488S		BK	ZER
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	94212/3 X 94217 - PROVIDED BY INTEGRATOR	×		MCK

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



For use on Door #(s): E120A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
5	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	ELECTRIFIED HINGE (HW)	73696 POE - PROVIDED BY INTEGRATOR	×	652	MCK
1	SET	CONST LATCHING BOLT	FB51P/FB61P (AS REQ'D)		630	IVE
1	EA	DUST PROOF STRIKE	DP2		626	IVE
1	EA	ELECTRONIC LOCK (PoE)	CL33134-PZD-IN220-IP-B-LC - PROVIDED BY INTEGRATOR	×	626	C-R
1	EA	CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM - COORDINATE WITH OWNER		626	YAL
1	EA	COORDINATOR	COR X FL		628	IVE
2	EA	OH STOP	100S		630	GLY
2	EA	SURFACE CLOSER	4040XP ST-1630		689	LCN
2	EA	TOP JAMB MTG PLATE	4040XP-18TJ		689	LCN
1	EA	MEETING STILE	8217S		BK	ZER
1	EA	GASKETING	488S		BK	ZER
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	94212/3 X 94217 - PROVIDED BY INTEGRATOR	×		MCK

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



For use on Door #(s):

C112	2A	E102A	E105A	E106A	E118A			
Each to	o have:							
QTY		DESCRIPTION		CATALOG NUMBEI	R		FINISH	MFR
2	EA	HINGE		5BB1HW 4.5 X 4.5 I	NRP		652	IVE
1	EA	ELECTRIFIED HIN (HW)	IGE	73696 POE - PROVIDED BY IN	TEGRATOR	×	652	MCK
1	EA	ELECTRONIC LOC	CK (PoE)	CL33134-PZD-IN22 - PROVIDED BY IN	0-IP-B-LC TEGRATOR	×	626	C-R
1	EA	CYLINDER		KEYED TO OWNEF SYSTEM - COORDINATE WI	RS YALE KEY		626	YAL
1	EA	SURFACE CLOSE	R	4040XP RW/PA - PUSH-SIDE			689	LCN
1	EA	KICK PLATE		8400 10" X 2" LDW	B-CS		630	IVE
1	EA	WALL STOP		WS406/407CCV			630	IVE
1	EA	GASKETING		488S			BK	ZER
1	EA	POE WIRE HARNE (HINGE TO LOCK HINGE TO CEILIN	ESS X G)	94212/3 X 94217 - PROVIDED BY IN	TEGRATOR	N		MCK

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



For use on Door #(s): E201A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		630	IVE
1	EA	INSTITUTIONAL LOCK	PB 5430LN - KEYED TO OWNERS YALE KEY SYSTEM, COORDINATE WITH OWNER		626	YAL
1	EA	ELECTRIC STRIKE (PoE)	4200RS (FAIL-SAFE)	×	630	TRN
1	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61 (AS REQ'D)		689	LCN
1	EA	DOOR SWEEP	8192AA		AA	ZER
1	EA	THRESHOLD	566A		А	ZER
2	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	×		
1	EA	DOOR CONTACT	679-05HM	N	BLK	SCE
1	EA	POWER SUPPLY	PS902 900-FA - COORDINATE POWER SUPPLY REQUIREMENTS W/SECURITY PROVIDER WEATHERSTRIP BY DOOR/FRAME MANUFACTUREB	×		VON

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

DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO EITHER READER WILL MOMENTARILY UNLOCK THE ELECTRIC STRIKE ALLOWING ACCESS. DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG. DOOR TO REMAIN UNLOCKED UPON LOSS OF POWER OR ACTIVATION OF THE FIRE ALARM.



For use on Door #(s): E119A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112HD	628	IVE
2	EA	MANUAL FLUSH BOLT	FB458	626	IVE
1	EA	STOREROOM LOCK	PB 5405LN - KEYED TO EXISTING	626	YAL
2	EA	OH STOP & HOLDER	100H	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61 (AS REQ'D)	689	LCN
2	EA	DOOR SWEEP	8192AA	AA	ZER
1	EA	THRESHOLD	566A	А	ZER
2	EA	DOOR CONTACT	679-05HM	🖌 BLK	SCE
			WEATHERSTRIP BY		
			DOOR/FRAME		
			MANUFACTURER		

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

DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG.

GMB

Hardware Group No. 11

For use on Door #(s): E114A E115A

Each to have:

QT Y		DESCRIPTION	CATALOG NUMBER	FINISH	<mark>MFR</mark>
2 1	EA EA	HINGE ELECTRIFIED HINGE	5BB1HW 4.5 X 4.5 NRP 73696 POE	652 ✓ 652	<mark>IVE</mark> MCK
1	EA	(HW) ELECTRONIC EXIT	- PROVIDED BY INTEGRATOR CORBIN-RUSSWIN IN220 - PSA	<mark>⊮</mark> 626	C-R
	EA		- PROVIDED BY INTEGRATOR	620	VAL
•			SPAR05493	620	
<u>1</u>	EA	CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM	<u>626</u>	YAL
1	EA	SURFACE CLOSER	4040XP RW/PA - PUSH-SIDE	<mark>689</mark>	LCN
1	<mark>EA</mark>	KICK PLATE	8400 10" X 2" LDW B-CS	<mark>630</mark>	<mark>IVE</mark>
1	<mark>EA</mark>	WALL STOP	WS406/407CCV	<mark>630</mark>	IVE
<u>1</u>	<mark>EA</mark>	GASKETING	<u>488S</u>	<mark>BK</mark>	<u>ZER</u>
<mark>3</mark>	<mark>EA</mark>	SILENCER	SR64	<mark>GRY</mark>	IVE
1	<mark>EA</mark>	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	94212/3 X 94217 - PROVIDED BY INTEGRATOR	*	MCK

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



For use on Door #(s):

E117A E117B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
5	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		652	IVE
1	EA	ELECTRIFIED HINGE (HW)	73696 POE - PROVIDED BY INTEGRATOR	×	652	MCK
1	EA	FIRE RATED REMOVABLE MULLION	M200F-102S		689	YAL
1	EA	ELECTRONIC EXIT DEVICE TRIM (PoE)	CORBIN-RUSSWIN IN220 - PSA LEVER - PROVIDED BY INTEGRATOR	*	626	C-R
1	EA	FIRE EXIT HARDWARE	7150F-ECK1		630	YAL
1	EA	FIRE EXIT HARDWARE	7150F-ECK1-SPAR05493		630	YAL
1	EA	CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM - COORDINATE WITH OWNER		626	YAL
2	EA	SURFACE CLOSER	4040XP EDA		689	LCN
2	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
2	EA	FIRE/LIFE WALL MAG	SEM7850 (COORDINATE VOLTAGE AS REQ'D)	×	689	LCN
1	EA	MEETING STILE	8217S		BK	ZER
1	EA	GASKETING	488S		BK	ZER
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	94212/3 X 94217 - PROVIDED BY INTEGRATOR	×		MCK

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

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

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



For use on Door #(s): E116B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112HD EPT		628	IVE
2	EA	POWER TRANSFER	EPT10	×	689	VON
1	EA	REMOVABLE MULLION	KRM200-102S		689	YAL
1	EA	ELEC PANIC HARDWARE	7150-B-634F-ECK1-LESS DOGGING	×	630	YAL
1	EA	ELEC PANIC HARDWARE	7150-MELR-B-632F-ECK1-LESS DOGGING	×	630	YAL
1	EA	MORTISE CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM - COORDINATE WITH OWNER		626	YAL
1	EA	RIM CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM - COORDINATE WITH OWNER		626	YAL
2	EA	OH STOP	100S		630	GLY
2	EA	SURFACE CLOSER	4040XP EDA		689	LCN
2	EA	BLADE STOP SPACER	4040XP-61 (AS REQ'D)		689	LCN
2	EA	DOOR SWEEP	8192AA		AA	ZER
1	EA	THRESHOLD	655A		А	ZER
1	EA	MULLION SEAL	8780N		BK	ZER
1	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	×		
2	EA	DOOR CONTACT	679-05HM	×	BLK	SCE
1	EA	POWER SUPPLY	PS902 900-2RS - COORDINATE POWER SUPPLY REQUIREMENTS W/SECURITY PROVIDER WEATHERSTRIP BY DOOR/FRAME MANUFACTURER	N		VON

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

DOORS NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH ALLOWING ACCESS. THE REQUEST TO EXIT FEATURE OF THE DEVICES TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACTS DURING VALID EGRESS. DOOR CONTACTS MONITOR WHETHER THE DOORS ARE OPENED, CLOSED OR HELD OPEN TOO LONG. DOORS TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.



For use on Door #(s): E117C

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112HD EPT		628	IVE
2	EA	POWER TRANSFER	EPT10	N	689	VON
1	EA	REMOVABLE MULLION	KRM200-102S		689	YAL
1	EA	ELEC PANIC HARDWARE	7150-B-634F-ECK1-LESS DOGGING	×	630	YAL
1	EA	ELEC PANIC HARDWARE	7150-MELR-B-632F-ECK1-LESS DOGGING	×	630	YAL
1	EA	MORTISE CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM - COORDINATE WITH OWNER		626	YAL
1	EA	RIM CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM - COORDINATE WITH OWNER		626	YAL
2	EA	OH STOP & HOLDER	100H		630	GLY
2	EA	SURFACE CLOSER	4040XP EDA		689	LCN
2	EA	BLADE STOP SPACER	4040XP-61 (AS REQ'D)		689	LCN
2	EA	DOOR SWEEP	8192AA		AA	ZER
1	EA	THRESHOLD	655A		Α	ZER
1	EA	MULLION SEAL	8780N		BK	ZER
1	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	×		
2	EA	DOOR CONTACT	679-05HM	×	BLK	SCE
1	EA	POWER SUPPLY	PS902 900-2RS - COORDINATE POWER SUPPLY REQUIREMENTS W/SECURITY PROVIDER WEATHERSTRIP BY DOOR/FRAME MANUFACTURER	N		VON

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

DOORS NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY RETRACT THE PANIC DEVICE LATCH ALLOWING ACCESS. THE REQUEST TO EXIT FEATURE OF THE DEVICES TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACTS DURING VALID EGRESS. DOOR CONTACTS MONITOR WHETHER THE DOORS ARE OPENED, CLOSED OR HELD OPEN TOO LONG. DOORS TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.



For use on Door #(s): E101A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	CONT. HINGE	112HD EPT		628	IVE
2	EA	POWER TRANSFER	EPT10	×	689	VON
1	EA	REMOVABLE MULLION	KRM200-102S		689	YAL
1	EA	ELEC PANIC HARDWARE	7150-MELR-B-634F-ECK1-LESS DOGGING	×	630	YAL
1	EA	ELEC PANIC HARDWARE	7150-MELR-B-S-632F-ECK1- LESS DOGGING	N	630	YAL
1	EA	MORTISE CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM - COORDINATE WITH OWNER		626	YAL
1	EA	RIM CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM - COORDINATE WITH OWNER		626	YAL
2	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	SURF. AUTO OPERATOR	4642 WMS	×	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61 (AS REQ'D)		689	LCN
1	EA	WEATHER RING	8310-801			LCN
1	EA	RELAY/DOOR SEQUENCER	8310-845	×		LCN
1	EA	ACTUATOR, WALL MOUNT	8310-853T	×	630	LCN
1	EA	ACTUATOR, WALL MOUNT	8310-855 - SHARED W/DOOR E101B	×	630	LCN
2	EA	FLUSH MOUNT BOX	8310-867F			LCN
2	EA	DOOR SWEEP	8192AA		AA	ZER
1	EA	THRESHOLD	655A		А	ZER
1	EA	MULLION SEAL	8780N		BK	ZER
1	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	×		
2	EA	DOOR CONTACT	679-05HM	×	BLK	SCE
1	EA	POWER SUPPLY	PS902 900-4RL - COORDINATE POWER SUPPLY REQUIREMENTS W/SECURITY PROVIDER WEATHERSTRIP BY DOOR/FRAME	×		VON

MANUFACTURER



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

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

DEVICES ARE ALSO CAPABLE OF BEING ELECTRONICALLY DOGGED DOWN FOR CERTAIN TIMES OF THE DAY VIA THE ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE. PUSHING EITHER AUTO OPERATOR ACTUATOR WILL SIGNAL AUTO OPERATOR TO MOMENTARILY OPEN THE DOOR.

THE REQUEST TO EXIT FEATURE OF THE DEVICES TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACTS DURING VALID EGRESS. DOOR CONTACTS MONITOR WHETHER THE DOORS ARE OPENED, CLOSED OR HELD OPEN TOO LONG. DOORS TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.



For use on Door #(s): E104A

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	CONT. HINGE	112HD		628	IVE
1	EA	PANIC HARDWARE	7100-632F-ECK1-LESS DOGGING		630	YAL
1	EA	RIM CYLINDER	KEYED TO OWNERS YALE KEY SYSTEM - COORDINATE WITH OWNER		626	YAL
1	EA	ELECTRIC STRIKE	4850-PoE	×	630	TRN
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	BLADE STOP SPACER	4040XP-61 (AS REQ'D)		689	LCN
1	EA	WALL STOP	WS406/407CVX		630	IVE
1	EA	DOOR SWEEP	8192AA		AA	ZER
1	EA	THRESHOLD	655A		А	ZER
1	EA	CARD READER	PROVIDED BY SECURITY CONTRACTOR	×		
1	EA	DOOR CONTACT	679-05HM	×	BLK	SCE
1	EA	MOTION SENSOR	SCANII WEATHERSTRIP BY DOOR/FRAME MANUFACTURER	~	BLK	SCE

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

DOOR NORMALLY CLOSED AND LOCKED VIA ACCESS CONTROL SYSTEM. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY UNLOCK THE ELECTRIC STRIKE ALLOWING ACCESS. THE MOTION SENSOR TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACT DURING VALID EGRESS. DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG. DOOR TO REMAIN LOCKED WITH LOSS OF POWER OR ACTIVATION OF LOCKDOWN SYSTEM. FREE EGRESS AT ALL TIMES.



For use on Door #(s): E114B E115B E118B

Each to have:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	7150-ECK1-LESS DOGGING	630	YAL
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	BLADE STOP SPACER	4040XP-61 (AS REQ'D)	689	LCN
1	EA	DOOR SWEEP	8192AA	AA	ZER
1	EA	THRESHOLD	566A	Α	ZER
1	EA	DOOR CONTACT	679-05HM	💉 BLK	SCE
			WEATHERSTRIP BY		
			DOOR/FRAME		
			MANUFACTURER		

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

DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG.

Hardware Group No.18

For use on Door #(s): E113A

Each to	<mark>o have:</mark>				
QT Y		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
8	<mark>EA</mark>	HINGE	5BB1HW 5 X 4.5 NRP	<mark>652</mark>	<mark>IVE</mark>
2	EA	FIRE EXIT HARDWARE	7160F-PB628F-LBR-ECK1 <mark>- AUXILIARY FIRE LATCH (AS</mark> REQ'D)	<mark>630</mark>	YAL
<mark>2</mark>	<mark>EA</mark>	SURFACE CLOSER	4040XP RW/PA - PUSH-SIDE	<mark>689</mark>	LCN
<mark>2</mark>	<mark>EA</mark>	KICK PLATE	<mark>8400 10" X 1" LDW B-CS</mark>	<mark>630</mark>	<mark>IVE</mark>
2	EA	FIRE/LIFE WALL MAG	SEM7850 (COORDINATE VOLTAGE AS REQ'D) - EXTENSION RODS (AS REQ'D)	689 689	LCN
1	<mark>EA</mark>	MEETING STILE	<mark>8217S</mark>	<mark>BK</mark>	ZER
1	<mark>EA</mark>	GASKETING	<mark>488S</mark>	<mark>BK</mark>	ZER



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

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

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

END OF SECTION



SECTION 08 71 00 - DOOR HARDWARE (ADDENDUM 001)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
 - 1. Swinging doors.
 - 2. Sliding doors.
 - 3. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Electromechanical door hardware.
 - 3. Automatic operators.
 - 4. Cylinders specified for doors in other sections.
- C. Related Sections:
 - 1. Division 08 Section "Hollow Metal Doors and Frames".
 - 2. Division 08 Section "Flush Wood Doors".
 - 3. Division 08 Section "Aluminum-Framed Entrances and Storefronts".
 - 4. Division 28 Section "Access Control Hardware Devices".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC International Building Code.
 - 3. NFPA 70 National Electrical Code.
 - 4. NFPA 80 Fire Doors and Windows.
 - 5. NFPA 101 Life Safety Code.
 - 6. NFPA 105 Installation of Smoke Door Assemblies.
 - 7. UL/ULC and CSA C22.2 Standards for Automatic Door Operators Used on Fire and Smoke Barrier Doors and Systems of Doors.
 - 8. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:
 - 1. ANSI/BHMA Certified Product Standards A156 Series.
 - 2. UL10C Positive Pressure Fire Tests of Door Assemblies.
 - 3. ANSI/UL 294 Access Control System Units.
 - 4. UL 305 Panic Hardware.
 - 5. ANSI/UL 437- Key Locks.

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.



- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 - 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Warranty information for each product.
 - 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Shop Drawings: Details of electrified access control hardware indicating the following:
 - 1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
 - a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
 - b. Complete (risers, point-to-point) access control system block wiring diagrams.
 - c. Wiring instructions for each electronic component scheduled herein.
 - 2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.
- D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- E. Informational Submittals:
 - 1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.
- F. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.



1.4 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
- C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
 - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
 - 2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- F. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
 - 1. Function of building, purpose of each area and degree of security required.
 - 2. Plans for existing and future key system expansion.
 - 3. Requirements for key control storage and software.
 - 4. Installation of permanent keys, cylinder cores and software.
 - 5. Address and requirements for delivery of keys.
- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
 - Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
 - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 - 3. Review sequence of operation narratives for each unique access controlled opening.
 - 4. Review and finalize construction schedule and verify availability of materials.
 - 5. Review the required inspecting, testing, commissioning, and demonstration procedures



I. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.
- C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.
 - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
 - 1. Ten years for mortise locks and latches.
 - 2. Five years for exit hardware.
 - 3. Twenty five years for manual overhead door closer bodies.
 - 4. Five years for motorized electric latch retraction exit devices.
 - 5. Two years for electromechanical door hardware, unless noted otherwise.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.



PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
- B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
 - 1. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
 - 1. Quantity: Provide the following hinge quantity:
 - a. Two Hinges: For doors with heights up to 60 inches
 - b. Three Hinges: For doors with heights 61 to 90 inches
 - c. Four Hinges: For doors with heights 91 to 120 inches
 - d. For doors with heights more than 120 inchesprovide 4 hinges, plus 1 hinge for every 30 inchesof door height greater than 120 inches
 - 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
 - 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 - 4. Hinge Options: Comply with the following:
 - a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
 - 5. Manufacturers:
 - a. Ives (IV).
 - b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK).
 - c. Stanley (ST).
- B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cutouts.
 - 1. Manufacturers:
 - a. Ives (IV).
 - b. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).



2.3 POWER TRANSFER DEVICES

- A. Electrified Quick Connect Transfer Hinges: Provide electrified transfer hinges with Molex[™] standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets with a 1-year warranty. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
 - 1. Manufacturers:
 - a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) QC (# wires) Option.
- B. Electrified Quick Connect Data Transfer Hinges: Provide combined electrified power and Ethernet data transfer hinges with Molex[™] standardized plug connectors to accommodate electrified functions with a 1-year warranty as specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
 - Data transfer hinges feature two 6-position and two 4-position Molex connectors, 9 multistrand wires; 2 twisted pairs (26 AWG), 4 straight conductors (28 gauge) and 1 straight conductor (22 AWG) with concealed plug connectors eliminating the need for separate or exposed wiring. Rated 350 mA continuous @ 48 volts DC nominal, the hinge is capable of two PoE wiring configurations:
 - a. Power over Data (5 wire): Power and Data supplied together over the 2 twisted 26 AWG) pairs. The 22 AWG conductor is used for the earth ground connection.
 - b. Data with Power over Spares (9 wire): Data over 2 twisted (26 AWG) pairs with Power over spare pairs 94 straight 28 AWG conductors). The 22 Awg conductor is used for earth ground connection.
 - 2. Manufacturers:
 - a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) PoE Series.
- C. Concealed Quick Connect Electric Data Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified access control door hardware. Furnish with Molex[™] or RJ-45 standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
 - 1. Manufacturers:
 - a. Securitron (SU) CEPT-C5E Series.
- D. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.
 - 1. Manufacturers:
 - a. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) QC-C Series.
 - b. McKinney Products; ASSA ABLOY Architectural Door Accessories (MK) PoE Series.
 - c. No Substitution.

2.4 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified.



- 1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
- 2. Furnish dust proof strikes for bottom bolts.
- 3. Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
- 4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
- 5. Manufacturers:
 - a. Ives (IV).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
- B. Coordinators: ANSI/BHMA A156.3 certified door coordinators consisting of active-leaf, holdopen lever and inactive-leaf release trigger. Model as indicated in hardware sets.
 - 1. Manufacturers:
 - a. Ives (IV).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
- C. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
 - 1. Push/Pull Plates: Minimum .050 inchthick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
 - 2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
 - 3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
 - 4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
 - 5. Manufacturers:
 - a. Ives (IV).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
 - c. Trimco (TR).

2.5 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
- C. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:
 - 1. Threaded mortise cylinders with rings and cams to suit hardware application.
 - 2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 - 3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
 - 4. Tubular deadlocks and other auxiliary locks.
 - 5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 - 6. Keyway: Manufacturer's Standard.
- D. Keying System: Match existing Yale Key System.



- E. Keying System: Each type of lock and cylinders to be factory keyed.
 - 1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
 - 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
 - 3. Existing System: Key locks to existing Yale system as directed by the Owner.
- F. Key Quantity: Provide the following minimum number of keys:
 - 1. Change Keys per Cylinder: Two (2)
 - 2. Master Keys (per Master Key Level/Group): Five (5).
 - 3. Construction Keys (where required): Ten (10).
 - 4. Construction Control Keys (where required): Two (2).
 - 5. Permanent Control Keys (where required): Two (2).
- G. Key Registration List (Bitting List):
 - 1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
 - 2. Provide transcript list in writing or electronic file as directed by the Owner.

2.6 MECHANICAL LOCKS AND LATCHING DEVICES

- A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.
 - Where specified, provide status indicators with highly reflective color and wording for "locked/unlocked" or "vacant/occupied" with custom wording options if required. Indicator to be located above the cylinder with the inside thumb-turn not blocking the visibility of the indicator status. Indicator window size to be a minimum of 2.1" x 0.6" with a curved design allowing a 180 degree viewing angle with protective covering to prevent tampering.
 - 2. Manufacturers:
 - a. Yale (YA) 8800FL Series.
 - b. No Substitution.
- B. Cylindrical Locks. ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed.
 - 1. Locks shall meet or exceed the requirements of ANSI/BHMA A156.2 Series 4000, Grade 1 with all standard trims, as follows:
 - a. Cycle Test: ANSI/BHMA A156.2 Grade 1 requirements with no lever sag.
 - b. Abusive Locked Lever Torque: Exceed 3,100 in-lb with no entry; lock to maintain egress functionality in compliance with BHMA certification requirements.
 - c. Offset Lever Pull: Exceed 1,600 lbs with no entry (8 times ANSI/BHMA A156.2 requirements).
 - d. Latch Retraction with Preload: Exceed 100 lb preload while maintaining ANSI/BHMA requirements for operation in warped doors (2 times ANSI/BHMA A156.2 requirements).
 - 2. Vertical Impact: Exceed 100 vertical impacts (20 times ANSI/BHMA A156.2 requirements).
 - 3. Furnish with solid cast levers, standard 2 3/4" backset, and 1/2" (3/4" at rated paired openings) throw brass or stainless steel latchbolt.
 - 4. Locks are to be non-handed and fully field reversible.
 - 5. Manufacturers:
 - a. Yale (YA) 5400LN Series



b. No Substitution.

2.7 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
 - 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 - 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 - 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
 - 4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
 - 1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 - 2. Strikes for Bored Locks and Latches: BHMA A156.2.
 - 3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
 - 4. Dustproof Strikes: BHMA A156.16.

2.8 ELECTRIC STRIKES

- A. Surface Mounted Rim Electric Strikes: Surface mounted rim exit device electric strikes tested to ANSI/BHMA A156.31, Grade 1, and UL Listed for both Burglary Resistance and for use on fire rated door assemblies. Construction includes internally mounted solenoid with two heavy-duty, stainless steel locking mechanisms operating independently to provide tamper resistance. Strikes tested for a minimum of 500,000 operating cycles. Provide strikes with 12 or 24 VDC capability supplied standard as fail-secure unless otherwise specified. Option available for latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike. Strike requires no cutting to the jamb prior to installation.
 - 1. Manufacturers:
 - a. HES (HS) 9400/9500/9600/9700/9800 Series.
- B. Provide electric strikes with in-line power controller and surge suppressor by the same manufacturer as the strike with the combined products having a five year warranty.

2.9 CONVENTIONAL EXIT DEVICES

- A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
 - 1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
 - 2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
 - 3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
 - 4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.



- 5. Flush End Caps: Provide flush end caps made of architectural metal in the same finish as the devices as in the Hardware Sets. Plastic end caps will not be acceptable.
- 6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
 - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
 - b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
- 7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
- 8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
- 9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
- 10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
- 11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.
 - 1. Manufacturers:
 - a. Corbin Russwin Hardware (RU) ED4000 / ED5000 Series.
 - b. Yale (YA) 7000 Series.
 - c. As indicated in hardware sets.

2.10 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

- 1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
- 2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
- 3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
- 4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
- 5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
- 6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.
- B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.
 - 1. Manufacturers:



- a. LCN Closers (LC) 4040 Series.
- b. No Substitution.

2.11 SURFACE MOUNTED CLOSER HOLDERS

- A. Electromagnetic Door Holders: Certified ANSI A156.15 electromagnetic door holder/releases with a minimum 20 to 40 pounds holding power and single coil construction able to accommodate.12VDC, 24VAC, 24VDC and 120VAC. Coils to be independently wound, employing an integral fuse and armatures to include a positive release button.
 - 1. Manufacturers:
 - a. LCN Door Closers (LC) SEM7800 Series.
 - b. Rixson (RF) 980/990 Series.

2.12 ARCHITECTURAL TRIM

- A. Door Protective Trim
 - 1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
 - 2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
 - 3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
 - 4. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:
 - a. Stainless Steel: 300 grade, 050-inch thick.
 - 5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
 - 6. Manufacturers:
 - a. Ives (IV).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).

2.13 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 - 1. Manufacturers:
 - a. Ives (IV).
 - b. Rockwood Products; ASSA ABLOY Architectural Door Accessories (RO).
- C. Overhead Door Stops and Holders: ANSI/BHMA A156.8, Grade 1 Certified Products Directory (CPD) listed overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.
 - 1. Manufacturers:
 - a. Rixson Door Controls (RF).
 - b. Glynn Johnson (GL).



2.14 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
 - 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
 - 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NPFA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
 - 1. Pemko Products; ASSA ABLOY Architectural Door Accessories (PE).
 - 2. Zero (ZE).
 - 3. National Guard Products (NG).

2.15 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.16 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 **PREPARATION**

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.



3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
 - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 - 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
 - 1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.



3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
 - 1. Quantities listed are for each pair of doors, or for each single door.
 - 2. The supplier is responsible for handing and sizing all products.
 - 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
 - 4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.
 - B. Refer to Section 08 06 71, Door Hardware Sets, for hardware sets.
- C. Manufacturer's Abbreviations:
 - 1. MK McKinney
 - 2. PE Pemko
 - 3. SU Securitron
 - 4. RO Rockwood
 - 5. RU Corbin Russwin
 - 6. OT Other
 - 7. YA Yale
 - 8. HS HES
 - 9. RF Rixson
 - 10. SG Securitech Group

PART 4 - DOOR HARDWARE SETS

Doors: A122B, B104B

<u>Set: 1.0</u>

2 1 2	Continuous Hinge Removable Mullion Rim Exit Device, Exit Only	CFM-SLF-HD1 KRM200 7150 ECK1 Less Dogging	630	PE YA YA	087100 087100 087100	
1	Mortise Cylinder	Keyed to Owner's Yale Key System	626	YA	087100	
2	Conc Overhead Stop	1-x36	630	RF	087100	
2	Surface Closer	4040XP EDA	689	LC	087100	
1	Threshold	2001AT MSES25SS		ΡE	087100	
1	Weatherstrip	Integral to door/frame assembly		OT	08 4113	
2	Sweep	345ANB TKSP		ΡE	087100	
2	Door Position Switch	DPS-M	ΒK	SU	087100	4

GMB

Notes:

Exit Only. Free egress at all times. Door position switches monitors door open/closed/propped.

Set: 2.0

Doors: B103A

2 1 1 1	Continuous Hinge Removable Mullion Rim Exit Device, Exit Only Rim Exit Device, Nightlatch	CFM-HD1 KRM200 7150 ECK1 Less Dogging 7150 632F ECK1 Less Dogging	630 630	PE YA YA YA	087100 087100 087100 087100
1	Rim Cylinder	Match Owner's Yale Key System	626	YA	087100
1	Mortise Cylinder	Keyed to Owner's Yale Key System	626	YA	087100
2	Conc Overhead Stop	1-x36	630	RF	087100
2	Surface Closer	4040XP EDA	689	LC	087100
2	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Threshold	2001AT MSES25SS		ΡE	087100
1	Gasketing	S88BL		PE	087100
1	Astragal	S772C		PE	087100
2	Sweep	345ANB TKSP		ΡE	087100

Notes:

Exit Only. Free egress at all times. Door position switches monitors door open/closed/propped.

Set: 3.0

Doors: A117A, A138A

1	Continuous Hinge	CFM-SLF-HD1		PE	087100	
1	Fixed Aluminum Mullion	Provided with section 084113		OT	084113	
1	Rim Exit Device, Nightlatch	7150 632F ECK1 Less Dogging	630	YA	087100	
1	Rim Cylinder	Match Owner's Yale Key System	626	YA	087100	
1	Electric Strike	9700	630	HS	087100	4
1	SMART Pac Bridge Rectifier	2005M3		HS	087100	4
1	Conc Overhead Stop	1-x36	630	RF	087100	
1	Surface Closer	4040XP EDA	689	LC	087100	
1	Threshold	2001AT MSES25SS		PE	087100	
1	Weatherstrip	Integral to door/frame assembly		ОТ	08 4113	
1	Sweep	345ANB TKSP		PE	087100	
1	ElectroLynx Harness	QC-C1500P (electric strike to J-Box)		MK	087100	4
1	Door Position Switch	DPS-M	BK	SU	087100	4
1	Motion Sensor	Provided by Security Contractor		ОТ	281300	4



1 Card Reader

Provided by Security Contractor

Notes:

Door normally closed and locked. Presenting valid credential to the reader momentarily releases strike allowing access. Motion sensor to shunt door monitoring upon egress. Free egress at all times. Fail-secure.

<u>Set: 4.0</u>

Doors: A117B, A120A, A133B, A134B, A138B

1	Continuous Hinge	CFM-SLF-HD1		PE	087100	
1	Rim Exit Device, Exit Only	7150 ECK1 Less Dogging	630	YA	087100	
1	Conc Overhead Stop	1-x36	630	RF	087100	
1	Surface Closer	4040XP EDA	689	LC	087100	
1	Threshold	2001AT MSES25SS		PE	087100	
1	Weatherstrip	Integral to door/frame assembly		OT	08 4113	
1	Sweep	345ANB TKSP		PE	087100	
1	Door Position Switch	DPS-M	BK	SU	087100	4

Notes:

Doors: A201A

Exit only. No outside operation. Free egress at all times.

Set: 4.1

	1 Continuous Hinge	CFM-SLF-HD1		PE 087100
1	1 Storeroom Lock	PB5405LN	626	YA 087100
	1 Surface Closer	4040XP EDA	689	LC 087100
1	1 Wall Stop	406	US32D	RO 087100
1	1 Threshold	2001AT MSES25SS		PE 087100
1	1 Weatherstrip	Integral to door/frame assembly		OT 08 4113
	1 Sweep	345ANB TKSP		PE 087100
1	1 Door Position Switch	DPS-M	BK	SU 087100
	Λ			

<u></u>
4

Notes:

Key side on mechanical mezzanine. Free ingress at all times.

<u>Set: 5.0</u>

Hinge (heavy weight) 6 T4A3786 US26D MK 087100 2 Electric Power Transfer CEPT-C5E 630 SU 087100 4 1 Removable Mullion RU 908BKM 087100 IN220 Rim Exit 1 ED5200AN B PR9133ET-IN220 630 RU 281500 4 **B BIPS** 1 IN220 Rim Exit ED5200AN B PR9134ET-IN220 630 RU 281500 4

Doors: A139A


	B BIPS				
Mortise Cylinder	Match Owner's Yale Key System	626	YA	087100	
Rim Cylinder	Match Owner's Yale Key System	626	YA	087100	
Surface Closer	4040XP EDA	689	LC	087100	
Surface Closer	4040XP SCUSH	689	LC	087100	
Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100	
Wall Stop	406	US32D	RO	087100	
Gasketing	S88BL		PE	087100	
Astragal	S772C		ΡE	087100	
ElectroLynx Harness	PoE-C1500P (power transfer to J-		MK	087100	4
	Box)				
ElectroLynx Harness	PoE-C (power transfer to lock)		MK	087100	4
	Mortise Cylinder Rim Cylinder Surface Closer Surface Closer Kick Plate Wall Stop Gasketing Astragal ElectroLynx Harness ElectroLynx Harness	B BIPSMortise CylinderMatch Owner's Yale Key SystemRim CylinderMatch Owner's Yale Key SystemSurface Closer4040XP EDASurface Closer4040XP SCUSHKick PlateK1050 10" high CSK BEVWall Stop406GasketingS88BLAstragalS772CElectroLynx HarnessPoE-C1500P (power transfer to J-Box)ElectroLynx HarnessPoE-C (power transfer to lock)	B BIPSMortise CylinderMatch Owner's Yale Key System626Rim CylinderMatch Owner's Yale Key System626Surface Closer4040XP EDA689Surface Closer4040XP SCUSH689Kick PlateK1050 10" high CSK BEVUS32DWall Stop406US32DGasketingS88BLAstragalS772CElectroLynx HarnessPoE-C1500P (power transfer to J-Box)ElectroLynx HarnessPoE-C (power transfer to lock)	B BIPSMortise CylinderMatch Owner's Yale Key System626YARim CylinderMatch Owner's Yale Key System626YASurface Closer4040XP EDA689LCSurface Closer4040XP SCUSH689LCKick PlateK1050 10" high CSK BEVUS32DROWall Stop406US32DROGasketingS88BLPEAstragalS772CPEElectroLynx HarnessPoE-C1500P (power transfer to J- Box)MK	B BIPSMortise CylinderMatch Owner's Yale Key System626YA087100Rim CylinderMatch Owner's Yale Key System626YA087100Surface Closer4040XP EDA689LC087100Surface Closer4040XP SCUSH689LC087100Kick PlateK1050 10" high CSK BEVUS32DRO087100Wall Stop406US32DRO087100GasketingS88BLPE087100AstragalS772CPE087100ElectroLynx HarnessPoE-C1500P (power transfer to J- Box)MK087100Kok PlaresPoE-C (power transfer to lock)MK087100

Notes:

Doors can be locked / unlocked on schedule Presentation of valid credential at card reader unlocks electric lever allowing ingress. Free egress at all times. Fail-secure.

Set: 6.0

Doors: A122A

6	Hinge (heavy weight)	T4A3786	US26D	MK	087100	
1	Electric Power Transfer	CEPT-C5E	630	SU	087100	4
1	Removable Mullion	908BKM		RU	087100	•
1	IN220 Rim Exit	ED5200AN B PR9133ET-IN220	630	RU	281500	4
		B BIPS				•
1	Rim Exit, Exit Only	ED5200A	630	RU	281500	4
1	Mortise Cylinder	Match Owner's Yale Key System	626	YA	087100	•
1	Rim Cylinder	Match Owner's Yale Key System	626	YA	087100	
1	Surface Closer	4040XP EDA	689	LC	087100	
1	Surface Closer	4040XP SCUSH	689	LC	087100	
2	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100	
1	Wall Stop	406	US32D	RO	087100	
1	Gasketing	S88BL		PE	087100	
1	Astragal	S772C		PE	087100	
1	ElectroLynx Harness	PoE-C1500P (power transfer to J-		MK	087100	4
		Box)				•
1	ElectroLynx Harness	PoE-C (power transfer to lock)		MK	087100	4

Notes:

Doors can be locked / unlocked on schedule Presentation of valid credential at card reader unlocks electric lever allowing ingress. Free egress at all times. Fail-secure.

Set: 7.0

Doors: A139B

HUDSONVILLE PUBLIC SCHOOLS PARK ELEMENTARY ADDITIONS AND RENOVATIONS A/E PROJECT 5-5798



3	Hinge (heavy weight)	T4A3786	US26D	MK	087100	
1	Electric Power Transfer	CEPT-C5E	630	SU	087100	4
1	IN220 Rim Exit	ED5200AN B PR9134ET-IN220	630	RU	281500	4
		B BIPS				·
1	Rim Cylinder	Match Owner's Yale Key System	626	YA	087100	
1	Surface Closer	4040XP SCUSH	689	LC	087100	
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100	
1	Gasketing	S88BL		PE	087100	
1	Astragal	S772C		PE	087100	
1	ElectroLynx Harness	PoE-C1500P (power transfer to J-		MK	087100	4
		Box)				•
1	ElectroLynx Harness	PoE-C (power transfer to lock)		MK	087100	4

Notes:

Doors can be locked / unlocked on schedule Presentation of valid credential at card reader unlocks electric lever allowing ingress. Free egress at all times. Fail-secure.

Set: 8.0

Doors: A133A, A134A

3	Hinge (heavy weight)	T4A3786	US26D	MK	087100	
1	Electric Power Transfer	CEPT-C5E	630	SU	087100	4
1	IN220 Rim Exit	ED5200AN B PR9134ET-IN220	630	RU	281500	4
		B BIPS				
1	Cylinder	Match Owner's Yale Key System	626	YA	087100	
1	Surface Closer	4040XP RW/PA	689	LC	087100	
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100	
1	Electromagnetic Holder	994M	689	RF	087100	4
1	Gasketing	S88BL		ΡE	087100	•
1	ElectroLynx Harness	PoE-C1500P (power transfer to J-		MK	087100	4
		Box)				
1	ElectroLynx Harness	PoE-C (power transfer to lock)		MK	087100	4

Notes:

Doors can be held open on door / wall mounted magnetic hold open devices. Magnetic hold open devices to release at activation of fire alarm and lock down systems.

Door normally closed and locked.

Presentation of valid credential at card reader unlocks electric lock allowing ingress. Free egress at all times.

Fail-secure.

Doors: C109A

<u>Set: 9.0</u>

3 Hinge (heavy weight) T4A3786 1 Electric Power TSB-C



Transfer

HUDSONVILLE PUBLIC SCHOOLS PARK ELEMENTARY ADDITIONS AND RENOVATIONS A/E PROJECT 5-5798

GMB

1	<mark>IN220 Rim Exit</mark>	ED5200AN B PR9134ET-IN220	<mark>630</mark>	<mark>RU</mark>	<mark>281500</mark>	4
		<mark>B-BIPS</mark>				
1	<mark>Cylinder</mark>	<mark>Match Owner's Yale Key System</mark>	<mark>626</mark>	<mark>YA</mark>	<mark>087100</mark>	
<mark>4</mark>	<mark>Surface Closer</mark>	<mark>4040XP RW/PA</mark>	<mark>689</mark>	<mark>LC</mark>	<mark>087100</mark>	
<mark>1</mark>	Kick Plate	<mark>K1050 10" high CSK BEV</mark>	US32D	RO	<mark>087100</mark>	
<mark>1</mark>	Electromagnetic	<mark>994M</mark>	<mark>689</mark>	<mark>RE</mark>	<mark>087100</mark>	4
	Holder					V
1	Gasketing	S88BL		PE	<mark>087100</mark>	
<mark>4</mark>	ElectroLynx Harness	PoE C1500P (power transfer to J		<mark>MK</mark>	<mark>087100</mark>	4
		Box)				v
1	<mark>ElectroLynx Harness</mark>	PoE-C (power transfer to lock)		<mark>MK</mark>	<mark>087100</mark>	<mark>4</mark>

Notes:

Doors: A126A, A127A, A128A

Existing frame to remain. Field verify hinge props. Doors can be held open on door / wall mounted magnetic hold open devices. Magnetic hold open devices to release at activation of fire alarm and lock down systems. Door normally closed and locked. Presentation of valid credential at card reader unlocks electric lock allowing ingress. Free ogress at all times.

Set: 10.0

Hinge (heavy weight) US26D 087100 3 T4A3786 MK Electric Power CEPT-C5E 087100 1 630 SU 4 Transfer 1 Access Control Lock CL33134 PZD IN220 B BIPS LC 626 RU 281500 4 Match Owner's Yale Key System 087100 1 Cylinder 626 YA Surface Closer 4040XP RW/PA 1 689 LC 087100 **Kick Plate** K1050 10" high CSK BEV US32D 087100 RO 1 Electromagnetic 1 994M 689 RF 087100 4 Holder **S88BL** PE 087100 1 Gasketing 1 ElectroLynx Harness PoE-C1500P (power transfer to J-MK 087100 4 Box) ElectroLynx Harness PoE-C (power transfer to lock) MK 087100 1 4

Notes:

Doors can be held open on door / wall mounted magnetic hold open devices. Magnetic hold open devices to release at activation of fire alarm and lock down systems. Door normally closed and locked.

Presentation of valid credential at card reader unlocks electric lock allowing ingress. Free egress at all times.

Fail-secure.

Set: 10.1 Doors: C112A 3 Hinge (heavy weight) T4A3786 US26D MK 087100

GMB

1	Electric Power Transfer	TSB-C	630	SU	087100
	4				
1	Access Control Lock	CL33134 PZD IN220 B BIPS LC	626	RU	281500
	今				
1	Cylinder	Match Owner's Yale Key System	626	YA	<mark>087100</mark>
1	Surface Closer	4040XP RW/PA	689	LC	087100
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Electromagnetic Holder	994M	689	RF	087100
	今				
1	Gasketing	S773BL		PE	<mark>087100</mark>
1	Gasketing	S44BL		PE	087100
1	Automatic Door Bottom	DPB411AE		PE	087100
1	ElectroLynx Harness	PoE-C1500P (power transfer to J-Bo	x)	MK	087100
	少				
1	ElectroLynx Harness	PoE-C (power transfer to lock)		MK	087100
	4				

Notes:

Existing frame to remain. Field verify hinge preps. Doors can be held open on door / wall mounted magnetic hold open devices. Magnetic hold open devices to release at activation of fire alarm and lock down systems. Door normally closed and locked. Presentation of valid credential at card reader unlocks electric lock allowing ingress. Free egress at all times. Fail-secure.

Set: 11.0

Doors: A113A, A114A, A115A, A123A, A124A, A125A, A135A, A137A, A141A, A143A, A143B, D105A, D106A

3	Hinge (heavy weight)	T4A3786	US26D	MK	087100	
1	Electric Power Transfer	CEPT-C5E	630	SU	087100	4
1	Access Control Lock	CL33134 PZD IN220 B BIPS LC	626	RU	281500	4
1	Cylinder	Match Owner's Yale Key System	626	YA	087100	•
1	Surface Closer	4040XP RW/PA	689	LC	087100	
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100	
1	Gasketing	S88BL		PE	087100	
1	ElectroLynx Harness	PoE-C1500P (power transfer to J-Box)	MK	087100	4	
1	ElectroLynx Harness	PoE-C (power transfer to lock)		MK	087100	4

Notes:

Door normally closed and locked. Presentation of valid credential at card reader unlocks electric lock allowing ingress. Free egress at all times. Fail-secure.

Gasketing not required at 141A.

GMB

Set: 12.0

6 2	Hinge (heavy weight) Concealed Vertical Rod, Classroom	T4A3786 7160F 626F LBR ECK	US26D 630	MK YA	087100 087100	
2	Rim Cylinder	Match Owner's Yale Key System	626	YA	087100	
2 2 2 1 1	Surface Closer Kick Plate Electromagnetic Holder Gasketing Astragal	4040XP RW/PA K1050 10" high CSK BEV 994M S88BL S772C	689 US32D 689	LC RO RF PE PE	087100 087100 087100 087100 087100	4

Notes:

Doors to be normally held open on door / wall mounted magnetic hold open devices. Magnetic hold open devices to release at activation of fire alarm. Classroom function lever trim when doors are closed. Lock/unlock with key Free egress at all times.

Set: 13.0

Doors: A129A

6 2 2 2 2	Hinge (heavy weight) Concealed Vertical Rod, Passage Surface Closer Kick Plate	T4A3786 7160F 628F LBR ECK 4040XP RW/PA K1050 10" high CSK BEV	US26D 630 689 US32D	MK YA LC RO	087100 087100 087100 087100 087100	Λ
2	Electromagnetic Holder	994M	689	RF	087100	4
1	Gasketing	S88BL		PE	087100	
1	Astragal	S772C		PE	087100	

Notes:

Doors to be normally held open on door / wall mounted magnetic hold open devices. Magnetic hold open devices to release at activation of fire alarm. Passage lever function when doors are closed. Free egress at all times.

Set: 14.0

6 2	Hinge (heavy weight) Concealed Vertical Rod,	T4A3786 7160F LBR ECK	US26D 630	MK YA	087100 087100	
2 2	Surface Closer Kick Plate	4040XP RW/PA K1050 10" high CSK BEV	689 US32D	LC RO	087100 087100	
2 1 1	Electromagnetic Holder Gasketing Astragal	994M S88BL S772C	689	RF PE PE	087100 087100 087100	4

Notes:

Doors: A129B



Doors to be normally held open on door / wall mounted magnetic hold open devices. Magnetic hold open devices to release at activation of fire alarm. Free egress at all times.

Set: 15.0

Doors: A119B, A131A

3 1 1 1 1	Hinge (heavy weight) Storeroom Lock Surface Closer Kick Plate Wall Stop Gasketing	T4A3786 PB5405LN 4040XP RW/PA K1050 10" high CSK BEV 406 S88BL	US26D 626 689 US32D US32D	MK YA LC RO RO PE	087100 087100 087100 087100 087100 087100
Do	oors: A119A	<u>Set: 16.0</u>			
3 1	Hinge (heavy weight) Office Lock	T4A3786 PB5404LN	US26D 626	MK YA	087100 087100

1	Office Lock	PB5404LIN	626	ΥA	087100
1	Wall Stop	406	US32D	RO	087100

Sot	170
Set.	17.0

Do	ors: C105A							
3	Hinge (heavy weight)	T4A3786		US26D	MK	087100		
1 1	Classroom Lock Wall Stop	PB5408LN 406		626 US32D	YA RO	087100 087100		
Do	Doors: A132A							
3	Hinde (beavy weigh			115260	MK	087100		

3	ninge (neavy weight)	14A3700	03200	IVIN	007100
1	Classroom Lock	PB5408LN	626	YA	087100
1	Concealed OH Stop	1-x36	689	RF	087100

Doors: A121A

Set: 19.0

6	Hinge (heavy weight)	T4A3786	US26D	MK	087100
1	Flush Bolt	2845 / 2945	US26D	RO	087100
1	Dust Proof Strike	570	US26D	RO	087100
1	Classroom Lock	PB5408LN	626	YA	087100
1	Coordinator	2672	US28	RO	087100
1	Filler Bar	FB-1 / FB-2	US28	RO	087100
1	Surface Closer	4040XP EDA	689	LC	087100
1	Surface Closer	4040XP SCUSH	689	LC	087100



2	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Wall Stop	406	US32D	RO	087100
1	Gasketing	S88BL		PE	087100
1	Astragal	S772C		PE	087100

Set: 20.0

Doors: A140A

3	Hinge (heavy weight)	T4A3786	US26D	MK	087100
1	Keyed Privacy Lock	PBR8840FL V21	626	YA	087100
1	Surface Closer	4040XP RW/PA	689	LC	087100
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Wall Stop	406	US32D	RO	087100
1	Gasketing	S88BL		PE	087100

Notes: Outside lever always locked. Key retracts latchbolt.

Deadbolt operated by key outside or thumbturn inside and controls Vacant/ Occupied indicator. Anti-panic operation. Operating inside lever retracts latchbolt and deadbolt simultaneously.

Set: 21.0

Doors: A118A, A130A, A136A

3	Hinge (heavy weight)	T4A3786	US26D	MK	087100
1	Privacy Lock	PBR8802FL V21	626	YA	087100
1	Surface Closer	4040XP RW/PA	689	LC	087100
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Wall Stop	406	US32D	RO	087100
1	Gasketing	S88BL		ΡE	087100

Set: 22.0

Doors: A112A

3	Hinge (heavy weight)	T4A3786	US26D	MK	087100
1	Multi-Point Lock	47PL33	626	SG	087100
1	Roller Latch	590	626	RO	087100
1	Concealed OH Stop	1-x36	689	RF	087100
1	Gasketing	379CPK		PE	087100
1	Door Bottom	434APKL		PE	087100
1	Threshold	175A		ΡE	087100

Notes: Three-point latching. Depress lever to project bolts. Releasing lever retracts all bolts. Roller latch at top is to hold door in closed position and prevent drifting when not in use.

END OF SECTION