Technology Request for Bid

KENTWOOD
PUBLIC SCHOOLS

Communications by Design, Inc.
Proprietary Information – All Rights Reserved

SECTION 00 01 10
TABLE OF CONTENTS

END OF SECTION

SECTION 00 01 15
LIST OF DRAWINGS

File/Name *Description*

NOTE:

END OF SECTION

SECTION 00 11 16
INVITATION TO BID

PART 1 - GENERAL

1.01 WORK INCLUDED: DISTRICT TECHNOLOGY UPGRADES

A. Kentwood Public Schools (Owner) is seeking bids for purchase and installation of UPS, network, multimedia, public address, firewall, security cameras and building access associated equipment and installation. Proposed systems shall be configured and installed as described herein.

B. Project: DISTRICT TECHNOLOGY UPGRADES

C. Owner: Kentwood Public Schools
5820 Eastern SE
Kentwood, MI 49508

D. Designer: Communications by Design, Inc.

E. Sites of Work:

1. Administration Building
5820 Eastern Ave. SE
Grand Rapids, MI 49508

2. Bowen Elementary School
4453 Kalamazoo SE
Kentwood, Michigan 49508

3. Brookwood Elementary School
5465 Kalamazoo SE
Kentwood, Michigan 49508

4. Challenger Elementary School
2475 52nd Street SE
Kentwood, Michigan 49508

5. Crestwood Middle School
2674 44th Street
Kentwood, Michigan 49512

6. Crossroads Alternative High School and Community Education
28 60th SE
Kentwood, Michigan 49508

7. Discovery Elementary School
   2461 60th Street
   Kentwood, Michigan 49508

8. East Kentwood Freshman Campus
   6170 Valley Lane
   Kentwood, Michigan 49508

9. East Kentwood High School
   6230 Kalamazoo Ave
   Kentwood, Michigan 49508

10. Baseball/Softball Complex - East Kentwood High School
    6230 Kalamazoo Ave
    Kentwood, Michigan 49508

11. Football Stadium - East Kentwood High School
    6230 Kalamazoo Ave
    Kentwood, Michigan 49508

12. Endeavor Elementary School
    5757 East Paris SE
    Kentwood, Michigan 49508

13. Explorer Elementary School
    2307 68th Street SE
    Kentwood, Michigan 49508

14. Facilities and Operations
    6160 Valley Lane Dr. S.E.
    Kentwood, Michigan 49508

15. Glenwood Elementary School
    912 Silver Leaf SE
    Kentwood, Michigan 49508

16. Hamilton Elementary and Early Childhood Center
    3303 Breton SE
    Kentwood, Michigan 49508

17. Meadowlawn Elementary School
    4939 Burgis Street SE
    Kentwood, Michigan 49508

18. Pinewood Middle School
    2100 60th Street
    Kentwood, Michigan 49508

19. Special Education Building (Bowen)
    4453 Kalamazoo SE
    Kentwood, Michigan 49508

20. Special Education Building (44th Street)
    1122 44th Street SE
    Kentwood, Michigan

21. Southwood Elementary School
    630 66th SE
    Kentwood, Michigan 49508

22. Transportation Building/Bus Garage
    6150 Valley Ln. Dr. SE
    Kentwood, Michigan 49508

23. Townline Elementary School
    100 60th Street SE
    Kentwood, Michigan 49508

24. Townline Early Childhood Building
    100 60th Street SE
    Kentwood, Michigan 49508

25. Valleywood Middle School
    1110 50th Street
    Kentwood, Michigan 49508

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 the final award of project.

B. Sequence of operations shall be established by the Contractor within the guidelines established by the Owner as required to meet schedules.

C. Schedule:

1. Request for Bid Distributed: December 20, 2023

2. Pre-Bid Meeting: January 8, 2024 at 10:00am

3. Intent to Bids Due: January 9, 2024 by 5:00pm

4. Question and Clarification Deadline: January 10, 2024 at 5:00 PM

5. Public Bids Due: January 29, 2024 at 10:00am

1.03 TYPES OF BIDS

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

1.04 PRE-BID CONFERENCE

A. A pre-bid conference will be held. A discussion of the project and review of bid documents will be followed by a site review and an opportunity to ask questions. Attendance is highly encouraged for all contractors interested in bidding on any components or portions of this project. Attendance at the pre-bid conference will be a factor considered during evaluation of bids.

B. Time: January 8, 2024 at 10:00am

C. Location: Kentwood Public Schools
Administration Building – Collaboration Rooms
5820 Eastern SE
Kentwood, MI 49508

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

E. Physical building inspections of sites of work will be provided for at this time.

1.05 TIME AND PLACE OF BID RECEPTION

A. Physically sealed bids for the base bid work will be received at the district office and read aloud at a public opening. Bids arriving after the appointed time as determined by the Owner's representative conducting the public opening, shall be returned unopened. Bids will be accepted beginning forty-eight (48) hours prior to the appointed opening time provided they are in sealed packages and addressed as specified herein.

B. Bid Receipt Deadline: January 29, 2023 at 10:00am

C. Bid Opening Location: Kentwood Public Schools
Administration Building – Collaboration Rooms
5820 Eastern SE
Kentwood, MI 49508

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

1.06 EXAMINATION AND PROCUREMENT OF DOCUMENTS

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

1. Writing – 4101 Sparks Drive Grand Rapids, Michigan 49546

2. Email – rszilagy@cbdconsulting.com

1.07 BID SECURITY

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

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

1.08 OWNER'S RIGHT TO REJECT BIDS

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

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

1.09 UNIVERSAL SERVICE FUND (USF) CONDITIONS

A. IDENTIFICATION NUMBER – the service provider's USF Service Provider Identification Number (SPIN) must be included in the Bid. Direct all questions regarding the USF requirements in this document to the Universal Service Administrative Company (USAC), Schools and Libraries Division (SLD) at (888) 203-8100.

B. FUNDING REQUESTS (FY24 E-rate) - The specified products and/or services are to be provided for FY24 (July 1, 2024-June 30, 2025) and qualify for universal service discounts under the FY24 universal service support mechanism, E-rate. No invoices will be dated or paid before July 1, 2024.

C. UNIVERSAL SERVICE DISCOUNTS – The service provider contract may be conditional upon the Owner receiving universal service discounts under the FY24 universal service support mechanism, E-rate. The Owner reserves the unrestricted right to change the contract amount by adding to, and/or reducing the amount of services and/or products in order to meet budget requirements in the event the level of universal service discounts is changed. Any such

adjustments to the contract amount will be taken prior to the start of the specific work being adjusted or eliminated on a given building and/or project.

D. UNIVERSAL SERVICE DISCOUNT IMPLEMENTATION – The Owner reserves the unrestricted right to specify the filing option for the universal service discount for each product and/or service offered within the Bid: Billed Entity Applicant Reimbursement (BEAR) or Service Provider Invoice (SPI).

E. ELIGIBLE PRODUCTS AND SERVICES – The USF eligible products and/or services identified on the USAC FY24 (2024-2025) Eligible Services List, which is incorporated herein by reference, must be identified separately from any and all "ineligible" products and/or services in the Bid. Bidder shall note eligibility of items on required Schedule of Values form(s).

F. FUNDING AVAILABILITY – Owner may or may not elect to proceed with project in whole or, or in part based on multiple possible sources of funding. Approval of E-rate funding will not be the sole criteria for Owner approval to proceed with any/all/some implementation activity on or after July 1, 2024.

1.10 DEFINITIONS

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

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

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

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

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

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

END OF SECTION

SECTION 00 40 00

BID FORMS

Intent to Bid Form

Complete and submit the following form if you have interest or intend to submit a Bid for this project. Unaltered and completed forms must be received on or before 5:00 PM on January 9, 2023. Only bidders returning a completed "Intent to Bid Form" will be notified of required addenda.

Company Information

Name: _____

Address Line1: _____

Address Line2: _____

City, State and Zip Code _____

Primary Contact Information

Name: _____

Phone No.: _____

Fax. No.: _____

E-Mail Address: _____

Portions of the bid for which you will be responding:

- ☐ Section 26 33 53 – Uninterruptible Power Supplies
- ☐ Section 27 21 14 – Internet Access Controls
- ☐ Section 27 21 19 – Network Electronics
- ☐ Section 27 41 16 – Multimedia - Classrooms
- ☐ Section 27 51 16 – Public Address System
- ☐ Section 28 13 00 - Building Access System
- ☐ Section 28 23 00 - Video Monitoring System

Submit unaltered and completed form to:

Rebecca Szilagy
Communications by Design, Inc.
rszilagy@cbdconsulting.com

SEALED BID LABEL

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

BID TO: Kentwood Public Schools
Attention: Mr. Todd Bell
5820 Eastern Avenue SE
Kentwood, Michigan 49508

BID FROM: _____

_____

_____

PROJECT: DISTRICT TECHNOLOGY UPGRADES
TECHNOLOGY BID ID #3012

INCLUDING ADDENDA: Addendum No._____Dated_____
Addendum No._____Dated_____

DUE: January 29, 2024 at 10:00am

BID FORM

BID TO: Kentwood Public Schools
Attention: Mr. Todd Bell
5820 Eastern Avenue SE
Kentwood, Michigan 49508

BID FROM: _____

_____

_____

PROJECT: DISTRICT TECHNOLOGY UPGRADES
TECHNOLOGY BID #3012

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

Bid Category _____ Title_____

_____Dollars ($_____).
Said amount written above constituting the Base Bid

Bid Category _____ Title_____

_____Dollars ($_____).
Said amount written above constituting the Base Bid

Bid Category _____ Title_____

_____Dollars ($_____).
Said amount written above constituting the Base Bid

Bid Category _____ Title_____

_____Dollars ($_____).
Said amount written above constituting the Base Bid

Bid Category _____ Title_____

_____Dollars ($_____).
Said amount written above constituting the Base Bid

Bid Category _____ Title_____

_____Dollars ($_____).
Said amount written above constituting the Base Bid

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.

Mandatory Alternate – UPS Equipment - LI-ON Batteries _____

Mandatory Alternate – Internet Access Control – 24/7 – 4 Hour Warranty _____

Mandatory Alternate – Internet Access Control – Content Filtering Subscription_____

Mandatory Alternate – Network Equipment – 5-year warranty _____

Mandatory Alternate – Network Equipment – SAN switch devices _____

Voluntary Alternate – Network Equipment – 25GB backbone _____

Voluntary Alternate – Network Equipment – Dual 10Gbe IDF _____

Voluntary Alternate – Video Monitoring – Performance Warranty_____

Voluntary Alternate – Video Monitoring – Owner Provide Servers_____

Alternate A _____

Alternate B _____

PRINCIPAL SUBCONTRACTORS

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

Legal Name:_____Work Proposed_____

Legal Name:_____Work Proposed_____

Legal Name:_____Work Proposed_____

BID SECURITY:

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

_____ Dollars ($_____),

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

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

FAMILIAL DISCLOSURE:

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

EXCEPTIONS:

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

SIGNATORY AUTHORITY:

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

AGREEMENT:

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

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

Respectfully submitted,

Date: _____

Firm Name: _____

By: _____

Signed: _____

Title: _____

Official Address: _____

_____

Telephone Number: _____

Fax Number: _____

Primary Contact Email Address: _____

(If Corporation, affix Seal)

Michigan Familial Relationship Disclosure Statement

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

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

(Check only one Box Below)

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

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

Bidder	***Board or Superintendent***
_____	_____
_____	_____
_____	_____
_____	_____

Bidder Authorized Representative:

Bidder: _____

Representative's Signature: _____

Print or Type Name: _____

Representative's Title: _____

Subscribed and sworn this _____ day of _____, 2024.

In the County of _____ State of _____

By _____ Seal or Stamp:
Notary Public Signature

My commission expires on: _____

IRAN LINKED BUSINESS AFFIDAVIT

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

The undersigned, owner or authorized officer of _____ (bidder), pursuant to Michigan Public Act No. 517 of 2012, the "Iran Linked Business" requirement provided in the Kentwood Public Schools Proposals hereby represents and warrants that the bidder, including its officers, directors and employees, is not an "Iran Linked Business" within the meaning of the applicable Public Act, and that in the event bidder is awarded a contract as a result of this RFB, the bidder will not become an "Iran Linked Business" at any time during the course of performing under the contract. The bidder further acknowledges that any person who is found to have submitted a false certification is responsible for a civil penalty of not more than $250,000.00 or 2 times the amount of the contract or proposed contract for which the false certification was made, whichever is greater, the cost of the District investigation, and reasonable attorney fees, in addition to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on future Requests for Bids for three (3) years from the date that it is determined that the person has submitted the false certification.

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

Bidder:

_____
[Company Name]

_____
[Signature]

_____
[Title]

Notary:

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

_____ County, on this

_____ day of _____, 20_____.

_____
[Notary Public Signature]

My Commission expires: _____

Acting in the County of: _____

REFERENCES

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

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

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

CONTRACT EXCEPTIONS

Check one Box

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

☐ Bidder proposes the following exceptions to the Contract Documents:

Paragraph Number	***Explanation***
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

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

SCHEDULE OF VALUES/BID FORM

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

Bidder: ____Bid Division: 26 33 53

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

SCHEDULE OF VALUES/BID FORM

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

Bidder: ____Bid Division: 27 21 14

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

SCHEDULE OF VALUES/BID FORM

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

Bidder: ____Bid Division: 27 21 19

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

SCHEDULE OF VALUES/BID FORM

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

Bidder: ____Bid Division: 27 41 16

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

SCHEDULE OF VALUES/BID FORM

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

Bidder: ____Bid Division: 27 51 16

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

SCHEDULE OF VALUES/BID FORM

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

Bidder: _____Bid Division: 28 13 00

ID	*Qty*	*Part Number*	*Mfg and Description*	*Unit Cost*	*Unit Labor Cost*	*Total Proposed Cost*
			Annual rate increase materials/labor			
			Material Net Cost Mark-up %			
			Labor Rate for add work (hourly)			
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			GRAND TOTAL (Must match base bid)			

SCHEDULE OF VALUES/BID FORM

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

Bidder: _____ Bid Division:28 23 00

ID	*Qty*	*Part Number*	*Mfg and Description*	*Unit Cost*	*Unit Labor Cost*	*Total Proposed Cost*
			Annual rate increase materials/labor			
			Material Net Cost Mark-up %			
			Labor Rate for add work (hourly)			
			PROJECT MANAGEMENT			
			TRAINING			
			BONDS AND INSURANCE			
			GRAND TOTAL (Must match base bid)			

END OF SECTION

SECTION 00 21 13
INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

1.01 OWNERSHIP

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

1.02 COMPLIANCE

A. This document establishes the primary system(s) design configuration. The Bidder's bid response shall include all services, supplies, components, and equipment required to provide a complete turnkey system(s) which meets or exceeds all specifications for each given bid item being proposed.

B. Owner prefers to enter into a contract with a single bidder for all materials for completion of this project but shall consider combinations of portions of bids from various bidders. The Owner reserves the right to award portions of the project to multiple bidders who will be required to cooperate with one another in order to complete the work.

C. By their response, Bidders agree to comply with all sections, terms, conditions and/or requirements of the contract documents except as expressly noted, and specifically identified by paragraph number on the unaltered Contract Exceptions Bid Form. Exceptions to any bid sections, terms, conditions and/or requirements deemed excessive by the Owner and/or Bid Coordinator may disqualify bid.

D. In compliance with the Freedom of Information Act (FOIA), the Owner shall make bid documents available for public review after issuance of purchase order to the successful bidder/s.

E. In connection with the execution of this Contract, Contractor and any Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, or national origin.

F. Negligence in preparation, improper preparation, errors in, or omissions from Bids shall not relieve Bidder from fulfillment of any and all obligations and requirements of the Contract Documents.

G. All Bid documents and worksheets must be completed in detail and submitted together on time.

H. All documents constituting the entire present agreement shall be construed in accordance with and governed by the laws of the State of Michigan.

I. Designer shall have authority for interpretation of Contract Documents. In the event terms, provisions or any other portion of the Contract Documents is/are in dispute, Designer shall have full and final authority to interpret the Contract Documents, and such interpretation shall be final and binding.

J. In the event of a conflict between any terms or conditions in any of the documents comprising the entire present Agreement, the terms and conditions set forth in this document shall take precedence.

1.03 NOTICE AND RESPONSE

A. Upon notification of Bidder being considered as a finalist, the Bidder shall provide to the Owner and Designer, within 48 hours, a current "Dunn and Bradstreet Supplier Evaluation Report" and other documentation as may be required of finalists herein and as requested by Owner and/or Bid Coordinator.

B. Bidder shall provide timely response to all requests from Designer and/or Owner regarding clarification and/or elaboration concerning, but not limited to its Bid as may be deemed relevant by the Owner and/or Designer.

1.04 PROTECTION AND SAFETY

A. Contractor shall continuously maintain adequate protection of all Work from damage and shall protect the Owner's property from injury or loss arising in connection with the execution of the Contract. Contractor shall make good any such damage, injury or loss, except such as may be directly caused by agents or employees of the Owner. The Contractor shall adequately protect adjacent property as required by law, by the Contract Documents, or as otherwise required, to cause no damage to them during the execution of the Contract. This requirement shall also apply to structures above and below ground as conditions of the site require.

B. Contractor shall be solely responsible for, and have control over means, methods, techniques, sequences, and procedures for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the contract. Contractor shall take all necessary precautions for the safety of employees and visitors on the site of the Project and shall comply with applicable provisions of federal, state, and municipal safety laws and building codes to prevent accidents or injury to persons on, about, or adjacent to the premises where the Work is being performed. Contractor shall erect and properly maintain at all times, as required by the conditions and

progress of the Work, all necessary safeguards for the protection of workers and the community.

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

1.05 DRAWINGS DIAGRAMS AND ILLUSTRATIONS

A. Drawings, Diagrams, and Illustrations are diagrammatic in nature and indicate general arrangement and nature of systems and work included.

B. Floor plan drawings are provided to assist the contractor in preparing documentation and reports as required herein.

PART 2 - MATERIALS

2.01 VOLUNTARY ALTERNATES AND SUBSTITUTION OF SPECIFIED PRODUCTS

A. This Request for Bid describes a particular implementation. All Bids must provide pricing on the “base bid” as described herein. Voluntary alternatives providing comparable functionality with significant cost reduction and/or performance enhancement may be proposed. Voluntary alternatives are encouraged but must be identified as “Voluntary Alternates” and detailed on unaltered Bid Forms contained herein. Voluntary Alternates may be further detailed and/or explained in attachments to the unaltered Bid Forms contained herein. Exceptions to the Request for Bid specifications must be clearly noted and explained for each Voluntary Alternate proposed.

B. No substitutions of specified products may be made without specific prior authorization by Designer and Owner. Individual bid divisions herein contain particular information related to acceptable manufacturer and product requirements.

C. Trade-in, equipment/license exchanges or other return allowances may be provided as a voluntary alternate. Trade-in, exchange, or other return equipment allowances shall not be included in base bid amount.

PART 3 - EXECUTION

3.01 EXAMINATION OF DOCUMENTS AND SITE

A. Bidders shall carefully examine the Contract Documents and the construction site to obtain first-hand knowledge of existing conditions and requirements. No plea of ignorance of conditions that exist, or any other relevant matter

concerning work to be performed in the execution of work will be accepted as justification for failure to fulfill every detail of all requirements as described herein.

3.02 QUESTIONS, INTERPRETATIONS, AND ADDENDA

A. Any bidder finding discrepancies between Drawings, Specifications, and/or Bid Documents, or be in doubt as to the exact meaning of any provision or detail shall notify the Designer at once, and before the deadline for Questions and Clarifications. The Designer may then, at their option, issue Addenda clarifying same. The Designer is not responsible for oral instructions, or Bidder's/Contractor's misinterpretations of Drawings, Specifications, and/or Bid Documents.

B. The Designer reserves the right to issue Addenda at any time up to thirty-six (36) hours prior to the scheduled bid opening. All such addenda shall become, upon issuance, an inseparable part of the Specification/Contract Documents. Each bidder shall incorporate within their bid all costs for items listed in any/all Addenda and shall acknowledge receipt and identifying number of each Addendum on the Bid Form and on the outside of the sealed bid container.

C. Addenda will be forwarded to each bidder who has received a copy of the Bidding Documents and has submitted "Intent to Bid Form".

3.03 BID SECURITY, BONDS, AND INSURANCE

A. Bid Security, Performance and Payment Bonds are required on this project.

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

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

B. The selected Contractor will be required to provide a performance bond and a payment bond each in an amount equal to one hundred percent (100%) of the bid amount including any accepted alternates at the Owner's discretion.

1. The surety of the performance bond shall remain in effect until all acceptances and final contract close-out requirements herein have been executed by the Owner.

C. Contractor shall provide, prior to beginning any work at the sites, certificate of insurance for delivery to Owner indicating all required insurance coverage is in force.

1. Workers' Compensation and Employer's Liability Insurance

    a. Coverage A – Statutory

    b. Coverage B - $1,000,000 Per Accident

2. Broad Form Comprehensive General Liability Insurance (including – Premises, Elevators, Contractor's Protective Liability, Contractual, Products & Completed Operations – including Broad Form Extensions).

    a. Each Occurrence - $1,000,000

    b. General Aggregate - $2,000,000

    c. Products & Completed Operation Aggregate - $2,000,000

    d. Personal Injury & Advertising Injury - $1,000,000

    e. Fire Legal - $100,000

3. Sub-contractors Operations, Products – Completed Operations and Contractual Liabilities, plus such excess coverage as may be appropriate for the limits listed.

4. Comprehensive Automobile Liability Insurance (owned, hired, and non-owned automobiles).

    a. Bodily - $1,000,000 each Person and $1,000,000 each Occurrence

    b. Property Damage - $1,000,000

5. Furnish Owner with Contingent Liability Insurance Policy with coverage and liability limits the same as for Public Liability Insurance specified herein. Designate on policy as assured, only the Owner.

6. Furnish Owner with Contingent Property Damage Insurance Policy with coverage and liability limits the same as for Property Damage specified herein. Designate on policy as assured, only the Owner.

7. Policies shall include notification clause requiring ninety (90) days written notice to Owner in the event of policy cancellation, expiration, non-renewal, coverage reduction or other material change.

8. Contractor shall not commence work under the Contract until after all insurance required herein has been obtained and certificates for such are approved by Owner.

D. All such bonds and/or insurance shall be issued by surety licensed by the State of Michigan and acceptable to the Owner.

1. Insurance certificate(s) shall be signed by insurance agent licensed in the state of Michigan or a representative of the insurance company.

E. Contractor agrees to indemnify and hold harmless the Owner and Designer, including their agents and employees, from and against all claims, damages, losses and expenses, including, but not limited to, attorney fees arising out of, or resulting from the performance of the work to the fullest extent allowed by law on a comparison basis of fault.

3.04 MODIFICATION AND WITHDRAWL

A. Bids may be withdrawn and/or changed any time prior to the deadline for submission of bids. Bids may not be withdrawn or changed thereafter and shall be deemed a form offer continuing for ninety (90) calendar days. Bids receive after the deadline for submission will be returned unopened at the Owner's discretion.

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

3.05 CODES, ORDINANCES, REGULATIONS AND RELATED

A. All labor and materials shall be furnished and installed in strict accordance with the latest applicable codes, ordinances and regulations of any governing body having jurisdiction over this project.

B. In the event the quality of labor and materials required by the Drawings and Specifications herein exceeds requirements of current applicable codes, ordinances and regulations, the Drawings and Specifications shall take precedence.

C. In the event the quality of labor and materials required by current applicable codes, ordinances and regulations having jurisdiction over this project exceeds that of the Drawings and Specifications herein, the applicable codes, ordinances and regulations shall take precedence.

D. The Contractor shall give all notices and comply with all codes, laws, ordinances, rules, and regulations of any authority having jurisdiction, which bears on the performance of its work. This compliance includes, but is not limited to, the Michigan School Safety Initiative (PA129, PA130, PA131 and PA138) if applicable to work being performed.

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

3.06 SUB-CONTRACTOR AND MATERIAL SUPPLIER

A. The successful Bidder shall submit to the Owner and Designer a complete list of all sub-contractors and all material suppliers proposed to engage on the work. Sub-contracts shall not be awarded until after they have been approved by the Designer and Owner.

B. Finalist bidders may be required to submit additional details related to sub-contractors and suppliers within forty-eight (48) hours after the bid opening.

C. Names of any principal sub-contractors must be listed on the Bid Form.

D. All contracts made by the successful Bidder with Subcontractors shall be covered by the terms and conditions herein. The successful Bidder shall see to it that Subcontractors are fully informed in regard to these terms and conditions and shall bind all subcontractors to the same terms and conditions. Failure to do so will absolve the Owner from any liability for additional cost due to subcontractor claims for additional cost, time, or any claim(s) for additional cost by subcontractor(s).

3.07 BID RESPONSE FORMAT

A. Bidder shall provide complete Bid copies in two formats as described herein.

1. One (1) Hard copy format responses shall be in a bound tabulated format. Each response shall have tab indicators for each section.

2. One (1) Electronic copy format responses shall be submitted on a USB Drive, readable by a standard Microsoft Windows 11 workstation. Electronic media shall contain separate folders to organize response documentation as described herein. Files submitted electronically shall be ***Adobe Acrobat*** "PDF" format (SCHEDULE OF VALUES is additionally required to be on the disk in the appropriate folder as a Microsoft Excel compatible spreadsheet and as described herein).

B. All Bid Response formats shall be clearly externally marked to include, but not be limited to:

1. Bidder identification.

2. Project Owner identification.

3. Project name.

4. Bid submission date.

C. Bid Responses shall include an index containing copies/PDF of a complete index of documents comprising Bid Response. Responses shall include, but not be limited to the following tabbed/folder sections:

1. Section 1 – Forms, which shall contain copies/PDF files of all required and completed bid forms.

    a. BID FORM

    b. Michigan Familial Relationship Disclosure Statement

    c. REFERENCES

    d. CONTRACT EXCEPTIONS

    e. SCHEDULE(s) OF VALUES

    f. BID BOND

2. Section 2 – Overview, which shall contain copies/PDF files of cover letter and/or executive overview.

3. Section 3 – Submittals, which shall contain copies/PDF files of all required and voluntary submittals.

4. Section 4 – Appendices, which shall contain copies/PDF files of other reference materials Bidder wishes to or is required to submit.

3.08 AWARD OF CONTRACT

A. The material proposed to be used for the completion of work, and the competency, solvency and responsibility of bidders will receive due consideration before award of contract. In the reception of bids for this work, the Owner incurs no obligation to accept the lowest, or any bid submitted. The right to accept or reject any and all bids or portion thereof is reserved by the Owner. The Owner reserves the right to require testimonial, accounting or legal documents pertaining to the solvency of a Contractor, or any other decision factor the Owner deems appropriate, prior to award of contract.

B. Owner reserves the right to select individual components from schedule of values independent of installation as may be determined in Owners best interest. Selected bidder may be required to install selected components provided by others.

C. Issuance of a Purchase Order by Owner in response to a valid bid shall be a Notice to Proceed, and shall become part of, but not limited to, all terms, conditions, and requirements herein. Notice to Proceed shall have the full effect of contract award, and shall make all terms, conditions, requirements,

and responsibilities of Bidder binding upon issuance. Notice to Proceed, once issued, shall become an inseparable part of the contract documents herein, and constitute both Bidder and Owner's acceptance of contract.

3.09 TIME, SCHEDULES, PROJECT MANAGEMENT, MEETINGS AND PLANS

A. Time is of the essence on this project. Award of contracts for this project will be contingent on the bidder's agreement to complete the work on or before the contract completion date stated herein.

B. All Contractors will commence work in such a manner and at such a time as to expeditiously interface with the work of other Contractors and will pursue the project diligently to completion. All Contractors will work in a cooperative manner with Owner and other Contractors.

C. Contractor shall appoint an overall Project Manager acceptable to Owner, with skills and experience deemed appropriate by the Owner for the scope and size of the project. Project Manager shall be responsible for the scheduling of all Contractor resources and attending all project meetings. Upon notification of Bidder being considered a finalist, the Bidder shall submit professional resume of proposed Project Manager within forty-eight (48) hours.

1. Project meetings shall be conducted at Owner's selected and identified location weekly and at Owner's and/or Designer's discretion.

2. Within five (5) days of Notice to Proceed (issuance of a Purchase Order by the Owner), Contractor's Project Manager shall provide to the Owner a critical flow path in the form of a "Gantt Chart" (or equivalent) indicating the proposed sequence of events and approximate beginning and completion dates in accordance with, compliance to, and coordinated with requirements herein.

3. Changes of the Project Manager during the project shall not be acceptable without prior written approval from the Owner.

4. It is the responsibility of the Contractor's Project Manager to schedule work, work out issues, ensure that all required products and services are delivered according to schedule and attend to any other matters required by the Owner in the interest of professional and timely completion of the project.

5. The appointed Project Manager, or a designee acceptable to the Owner, shall be in attendance of all project meetings throughout the term of the project. Failure to do so may be considered a material breach of contract.

6. After a ten (10) business day notice, the Owner reserves the right to request a new Project Manager, when it appears that, in the Owner's sole

discretion, the Project Manager is not fulfilling the full responsibilities of the position. Failure by Contractor to provide adequate Project Manager meeting requirements of the Owner, may result in Contract termination.

3.10 CHANGES IN THE WORK

A. No changes in work with the effect of either increasing or decreasing in the project value shall be made without specific and prior authorization by the Owner and Designer.

B. Owner, without invalidating the contract and without notice to any surety, may at any time order extra work or make changes by altering, adding to or deducting from the work, the Contract Sum being adjusted accordingly. All such work shall be authorized by a written Change Order approved by Owner and Contract Designer. Upon receipt of such an order Contractor shall promptly proceed with the work involved. All such work shall be executed under the conditions of the original Contract. Owner authorized change order(s) may be issued at any time prior to Contract close out.

C. When so directed, Contractor shall promptly submit an itemized estimate and a unit price for performing or deleting such extra or changed work as may be contemplated. Any extensions or reductions of the contract time associated with extra or changed work shall be identified at the time Contractor submits such documentation.

D. At the Owner's discretion, adjustments in the Contract Sum shall be determined by one or more of the following methods:

1. By mutual acceptance of a lump sum cost, including overhead and profit, itemized and supported by sufficient substantiating data to permit evaluation.

2. By unit prices stated in the Contract Documents including, but not limited to, Schedule of Values.

3. By unit prices mutually agreed upon.

3.11 PAYMENT REQUESTS AND PAYMENTS

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

B. All contract and change order invoices shall be sent directly to Contract Designer.

C. A 10% retainage shall be held back on all payment requests, including, but not limited to hardware, software, change orders and services, until final

completion and close out of the project or project phase as determined by Owner and Designer.

D. Contractors are required to submit all invoices on approved AIA Payment Request Forms or other billing format pre-approved by Contract Designer. Each AIA Payment Request Form shall be accompanied by a properly completed, executed, and notarized Waiver of Lien which shall be in a format and contain verbiage approved by Owner.

E. The Contract Designer and Owner shall process payment requests on a monthly schedule and in accordance with their respective established processes and procedures. Payments will be made by the Owner based only on AIA Request Forms having been previously certified, audited and approved by Contract Designer and accompanied by acceptable Waiver of Lien.

END OF SECTION

SECTION 00 65 00
CONTRACT CLOSE OUT

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Provide an orderly and efficient transfer of the completed work to Owner.

B. Details affecting work of this Section includes but is not limited to all other Sections herein and all related Contract Documents.

C. Activities relative to Contract close-out are described in, but not limited to, this and other Sections of this document.

1.02 SUBSTANTIAL COMPLETION

A. "Substantial Completion" shall be defined as:

1. All responsibilities of Contractor for all provisions and requirements of all divisions and sections of complete Contract herein, and as amended, are properly and fully completed, or properly, accurately and acceptably provisioned for.

2. All systems, equipment, facilities, services, programming and/or components required by all divisions and sections of complete Contract are fully operational, acceptable, and useful to the Owner for their intended purposes.

B. Prior to requesting inspection by Designer to certify Substantial Completion, Contractor shall use adequate means to assure the Work is completed in accordance with the specified requirements and is ready for such inspection.

PART 2 - MATERIALS

2.01 NOT USED FOR THIS SECTION

PART 3 - EXECUTION

3.01 PROCEDURES

A. Contractor shall submit a written request to Designer indicating they have achieved Substantial Completion of Work.

B. Within a reasonable time after receipt of the request, Designer will inspect Work to determine status of completion.

C. Should Designer determine the Work is not substantially complete:

1. Designer promptly will so notify Contractor, in writing giving reasons therefore and providing sufficient details to allow Contractor to make corrective actions.

2. Contractor shall then expeditiously remedy the deficiencies and notify Designer in writing when ready for re-inspection.

3. Designer will re-inspect the Work.

4. Excessive re-inspections of Work may result in fees being assessed Contractor.

D. Should Designer concur the Work is substantially complete:

1. Designer will prepare a letter of Substantial Completion.

2. Designer will submit the letter to Owner and Contractor.

3. Contract shall be deemed “Closed Out” for retainage purposes.

4. Final Acceptance of the system shall be deemed complete.

END OF SECTION

SECTION 26 33 53
UNINTERRUPTABLE POWER SUPPLIES

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

A. Work described in this specification section pertains to supply and installation of new uninterruptable power supply (UPS) units for Kentwood Public Schools.

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

C. Contractor shall configure, supply, connect, test, document, train Owner representatives and warrant a fully operational and compliant system, complete and with full functionality as specified herein.

D. Contractor shall coordinate installation with other contractors, Architect and the Owner as is appropriate.

E. Contractor shall provide service rates for additional services not specified herein for Owner consideration. Rates shall be provided for the duration of the warranty period. Owner will consider rate structures for additional services outside of the base contract as a factor in determining contract award.

1.02 WARRANTY

A. Complete installation shall be free from defect and/or failure for a period of five (5) years. Any replacement, upgrade or fix, including labor for any non-conforming, unsupportable or non-operational part of the system shall be fixed and/or replaced at no cost to the Owner.

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

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

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

C. On site services provided under the warranty shall be performed by personnel or representatives of Contractor as herein defined and located within physical proximity to provide response levels deemed acceptable to Owner.

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

1.03 STORAGE OF MATERIALS

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

B. It shall be the Contractor's responsibility to secure all equipment including material to be installed as part of the contract. No changes shall be made to the contract due to loss or theft of equipment and/or materials not officially accepted by the Owner.

C. Formal receipt of the materials shall not be completed by the Owner until completion of project closeout. The Contractor shall be responsible for all equipment until time of closeout as provided for herein.

1.04 SUBMITTALS

A. Submittals shall consist of, but not be limited to, technical cut sheets and detailed information pamphlets on all components of the system to be installed. All cut sheets and submittals shall be distinctly marked to highlight the actual part number of the item being submitted for approval with Bid Proposals.

B. Shop drawings and diagrams shall be submitted by Bidder for approval by Architect with Bid Proposals.

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

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

C. Contractor shall provide proof of manufacturer support by photocopy of certification and letter of support from major component manufacturers for this specific project with Bid Proposals.

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

1. The Owner and/or Architect may notify Contractor of any offending situations under this provision allowing Contractor up to forty-eight (48) hours to correct the situation prior to taking other corrective action.

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

1.05 REFERENCE SPECIFICATIONS

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

1. EIA/TIA Commercial and Administration Standards

2. FCC – All Applicable Rules and Regulations

3. IEEE

4. MOSHA Safety Standards

5. NEC

6. UL

1.06 CONTRACTOR

A. The Contractor shall accept complete responsibility for the installation, certification and support of the system. Contractor shall be an authorized vendor of all major components.

B. All work shall be performed and supervised by Project Managers, Engineers and/or Technicians who are qualified to install system and perform related tests as recommended by the manufacturer and in accordance with the manufacturer's best practices and methods.

C. Project Managers, Engineers and Technicians employed on this project shall be properly and fully trained and qualified by the manufacturer on the installation and testing of the equipment and systems to be installed.

D. The Contractor shall have a proven track record in relevant similar system configuration and installation. This must be shown by the inclusion of references of at least three (3) projects involving the installation of similar systems completed by the Contractor in the prior two (2) years on unaltered forms with the sealed Bid Proposal as provided herein. Bid Proposal Form(s) may be duplicated as required in order to provide adequate space to list required number of reference installations for each division Bidder is responding to.

PART 2 - PRODUCTS

2.01 Supply most current version of all products provided.

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

B. Proposed components shall have been field tested and proven in actual use.

C. Prior and/or old versions of products, unless specifically approved and documented by Architect and/or Owner shall not be acceptable.

D. In cases where a newer version of hardware or software is available at the time of installation, Contractor shall request clarification from Architect on which version is to be used.

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

2.03 Administration access shall be protected by unique and secure log on.

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 Acceptable Manufacturers (in alphabetical order)

A. APC

B. EATON

C. LIEBERT/VERTIV

D. Or Equal.

2.06 UNINTERUPTABLE POWER SUPPLIES (UPS) UNITS -TYPE A

A. Line Interactive Uninterruptable Power Supplies shall be provided and installed in locations identified in Appendix A, meeting or exceed the following required feature sets, specifications and/or standards:

1. 3000VA/2700W Capacity

2. Each unit shall include specific rack mount kit

3. Units shall protect all active components from power surges, sags and/or spikes in the power system.

B. Each unit shall attach to Owner’s existing Ethernet network using standard 10/100/1000 port and provide alerting and management tools.

C. Where individual units cannot be installed in Owner racks, units shall be securely and permanently mounted on walls in communication closets by Contractor. Contractor shall supply all materials and labor for a safe, secure and permanent wall mounting of UPS unit adjacent to wall mounted communication cabinet or rack.

D. UPS equipment shall be SNMP manageable and be connected to a dedicated Ethernet port in each wire center (IDF/MDF).

E. UPS equipment shall be installed and mounted as space, location details, and Owner standards dictate.

F. Input connection shall be NEMA L5-30P

G. Full UPS monitoring and management software shall be included providing, but not limited to, the following features:

1. Battery Condition

2. Power Quality

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

2.07 UNINTERUPTABLE POWER SUPPLIES (UPS) UNITS -TYPE B

A. Line Interactive Uninterruptable Power Supplies shall be provided and installed in locations identified in Appendix A, meeting or exceed the following required feature sets, specifications and/or standards:

1. 2000VA/1800W Capacity

2. Each unit shall include specific rack mount kit

3. Units shall protect all active components from power surges, sags and/or spikes in the power system.

B. Each unit shall attach to Owner's existing Ethernet network using standard 10/100/1000 port and provide alerting and management tools.

C. Where individual units cannot be installed in Owner racks, units shall be securely and permanently mounted on walls in communication closets by Contractor. Contractor shall supply all materials and labor for a safe, secure and permanent wall mounting of UPS unit adjacent to wall mounted communication cabinet or rack.

D. UPS equipment shall be SNMP manageable and be connected to a dedicated Ethernet port in each wire center (IDF/MDF).

E. UPS equipment shall be installed and mounted as space, location details, and Owner standards dictate.

F. Input connection shall be NEMA 5-20P

G. Full UPS monitoring and management software shall be included providing, but not limited to, the following features:

1. Battery Condition

2. Power Quality

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

2.08 UNINTERUPTABLE POWER SUPPLIES (UPS) UNITS -TYPE C

A. Line Interactive Uninterruptable Power Supplies shall be provided and installed in locations identified in Appendix A, meeting or exceed the following required feature sets, specifications and/or standards:

1. 1500VA/1350W Capacity

2. Each unit shall include specific rack mount kit

3. Units shall protect all active components from power surges, sags and/or spikes in the power system.

B. Each unit shall attach to Owner's existing Ethernet network using standard 10/100/1000 port and provide alerting and management tools.

C. Where individual units cannot be installed in Owner racks, units shall be securely and permanently mounted on walls in communication closets by Contractor. Contractor shall supply all materials and labor for a safe, secure and permanent wall mounting of UPS unit adjacent to wall mounted communication cabinet or rack.

D. UPS equipment shall be SNMP manageable and be connected to a dedicated Ethernet port in each wire center (IDF/MDF).

E. UPS equipment shall be installed and mounted as space, location details, and Owner standards dictate.

F. Input connection shall be NEMA 5-20P

G. Full UPS monitoring and management software shall be included providing, but not limited to, the following features:

1. Battery Condition

2. Power Quality

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

H. UPS ENVIRONMENTAL MONITORING EQUIPMENT AND MONITORING SOFTWARE

1. Each UPS device supplied by Contractor shall include environmental monitoring equipment to allow the tracking and monitoring of temperature and humidity of each MDF/IDF location.

2. Contractor shall supply all necessary software to allow tracking and monitoring of temperature and humidity from a single application interface. On premise, hybrid or cloud-based software are acceptable.

3. Contractor shall initially configure all environmental monitoring equipment to alert appropriate support staff via email when thresholds are reached. Contractor shall include all necessary equipment and labor to make fully functional.

4. Contractor shall include all necessary licensing for term of warranty.

I. MANDATORY ALTERNATE – LI-ON BATTERY DEVICES

1. Contractor shall supply alternative pricing for LI-ON in lieu of specified lead acid battery technology.

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 $5,000.00 for contract services related to Owner directed infrastructure upgrades.

PART 3 - EXECUTION

3.01 PREPARATION

A. Contractor shall conduct detailed system overview and examination with Architect verifying equipment and material locations as well as mounting and placement requirements prior to commencement of other installation activities.

B. Contractor shall ensure all submittals and shop drawings have been provided to, and approval has been obtained from Architect prior to commencement of any final installation activities.

3.02 DEMOLITION

A. Contractor will coordinate with Owner regarding removal and disposal of all existing batter devices. All battery devices not identified by Owner to be retained shall be removed and properly disposed of by Contractor. All retained devices shall be transported to Owner identified location for disposition by KPS technology personal. Device removal and disposal will include all battery devices, accessories and equipment.

3.03 INSTALLATION

A. Contractor shall conduct a pre-installation walkthrough of all IT closet locations to prepare for existing mounting condition.

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.

C. Contractor shall conduct an initial programming meeting with the Owner and designer to review content available and planned, as well as establish schedule for project completion.

D. 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.

E. Each UPS device shall be connected to central equipment using standard category 6 ethernet cabling provided by Contractor. Contractor shall supply ethernet patch cables at both the closet and device location for each UPS device to Owner provided network equipment, cable shall not exceed 15' in length. Cable color shall be coordinated with Owner and/or designer.

1. Contractor shall be responsible for cross connecting UPS equipment in data closet and reporting back switch and switch port locations to Owner for programming.

F. The Contractor shall furnish, set in place, and install all equipment necessary for a fully compliant and operational system as specified herein. Such materials shall include all items necessary for full and final operation of the system. The installation process includes, but is not limited to the following:

1. Inventory receipt of all components and equipment.

2. Storage of all equipment and components until such time those items are installed according to the specifications.

3. Transport equipment to the Owner's installation location(s).

4. Assemble, install, configure and test all equipment and components, maintaining accurate inventory records and status documents and discarding packaging.

5. Collect all information necessary to accurately program all system devices to the Owner's intended use and need.

G. 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.

H. Worksites include the following:

I. Sites of Work:

1. Administration Building
   5820 Eastern Ave. SE
   Grand Rapids, MI 49508

2. Bowen Elementary School
   4453 Kalamazoo SE
   Kentwood, Michigan 49508

3. Brookwood Elementary School
   5465 Kalamazoo SE
   Kentwood, Michigan 49508

4. Challenger Elementary School
   2475 52nd Street SE
   Kentwood, Michigan 49508

5. Crestwood Middle School
   2674 44th Street
   Kentwood, Michigan 49512

6. Crossroads Alternative High School and Community Education
   28 60th SE
   Kentwood, Michigan 49508

7. Discovery Elementary School
   2461 60th Street
   Kentwood, Michigan 49508

8. East Kentwood Freshman Campus
   6170 Valley Lane
   Kentwood, Michigan 49508

9. East Kentwood High School
   6230 Kalamazoo Ave
   Kentwood, Michigan 49508

10. Baseball/Softball Complex - East Kentwood High School
    6230 Kalamazoo Ave
    Kentwood, Michigan 49508

11. Football Stadium - East Kentwood High School
    6230 Kalamazoo Ave
    Kentwood, Michigan 49508

12. Endeavor Elementary School
    5757 East Paris SE
    Kentwood, Michigan 49508

13. Explorer Elementary School
    2307 68th Street SE
    Kentwood, Michigan 49508

14. Facilities and Operations
    6160 Valley Lane Dr. S.E.
    Kentwood, Michigan 49508

15. Glenwood Elementary School
    912 Silver Leaf SE
    Kentwood, Michigan 49508

16. Hamilton Elementary and Early Childhood Center
    3303 Breton SE
    Kentwood, Michigan 49508

17. Meadowlawn Elementary School
    4939 Burgis Street SE
    Kentwood, Michigan 49508

18. Pinewood Middle School
    2100 60th Street
    Kentwood, Michigan 49508

19. Special Education Building (Bowen)
    4453 Kalamazoo SE
    Kentwood, Michigan 49508

20. Special Education Building (44th Street)
    1122 44th Street SE
    Kentwood, Michigan

21. Southwood Elementary School
    630 66th SE
    Kentwood, Michigan 49508

22. Transportation Building/Bus Garage
    6150 Valley Ln. Dr. SE
    Kentwood, Michigan 49508

23. Townline Elementary School
    100 60th Street SE
    Kentwood, Michigan 49508

24. Townline Early Childhood Building
    100 60th Street SE
    Kentwood, Michigan 49508

25. Valleywood Middle School
    1110 50th Street
    Kentwood, Michigan 49508

3.04 TESTING

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

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

C. Testing Procedures

1. Prior to system "turn-up", Contractor shall submit a written request to Architect indicating they have completed full and final configuration of the system, and are ready to have system integrity and functionality tested.

2. Within reasonable time after receipt of request, Architect will provide a test schedule and coordinate testing date(s) with Owner and Contractor.

3. Should Architect determine the Work is not acceptably configured or not of adequate integrity:

    a. Architect promptly will so notify Contractor, giving reasons therefore and providing sufficient details to allow Contractor to make corrective actions.

    b. Contractor shall then expeditiously remedy the deficiencies and notify Architect in writing when ready for re-testing.

    c. Architect will schedule re-test of the Work.

    d. Excessive re-testing of Work may result in fees being assessed Contractor.

4. Should Architect and Owner concur the Work is configured properly and system integrity is as required:

    a. Architect will review Contractors detailed “turn-up” plan, and upon finding it acceptable issue a memorandum of Testing Completion to Owner and Contractor after which system “turn-up” can proceed.

3.05 DOCUMENTATION

A. Contractor shall provide Owner as-built drawings and manuals of all equipment installed, warranty and maintenance information and other information the Contractor, Architect and/or Owner deem necessary. Documentation shall also be provided in a digital format in file formats and on media as specified by Owner and/or Architect.

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

    1. Equipment description.

    2. Equipment make.

    3. Model number.

    4. Software release.

    5. Date installed.

    6. Manufacturer's warranty.

    7. Maintenance contract terms.

    8. Verification of maintenance contract engagement.

9. Telephone numbers for service and support.

10. Detailed technical support and service procedure instructions.

11. All product (hardware and software) manuals and manufacturer supplied documentation, including, but not limited to owner manuals, system administrator manuals and configuration guides. Where number of duplicate copies for particular manual or documentation item could be reasonably considered excessive, Contractor shall request direction from Owner and Architect.

12. Photocopy of original invoice listing make and model for all components and equipment from individual manufacturer(s), distribution source(s), or authorized agent(s) to establish manufacturer warranty start date for potential use after end of contract warranty provisions.

13. System Configuration Report.

14. Complete inventory of installed hardware and system software. Hardware inventory shall include, but not be limited to, model numbers, serial number, physical installation location and software/firmware options.

15. Complete record of all system and administrative passwords for full operation and administration of all system components and operations.

3.06 TRAINING

A. Contractor shall provide physical on-site training for the Owner designated system administrator(s). Owner shall designate up to two (2) system administrators to be trained. Training shall be a minimum of one (1), two (2) hour session(s) in length, at the convenience of the Owner personnel, and of sufficient duration to satisfactorily complete training on all system administration functions including, but not limited to:

1. Basic configuration and system administration of the installed system

2. Basic trouble shooting of the installed system and components including diagnostic and problem resolution actions.

3. System back-up and restore functions and procedures for all system parameters and configurations.

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

5. System database updates and maintenance.

6. Review standard system reports

7. Review temperature and environmental trends and adjust alerting.

3.07 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: Week of January 29, 2024

2. Contractor Chosen: Week of February 12, 2024

3. Work Commences: April 1, 2024

4. Substantial Completion of Project: August 1, 2024

5. Project Close-out: September 1, 2024

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

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

END OF SECTION

SECTION 27 21 14
INTERNET ACCESS CONTROLS

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

A. Work described in this specification section pertains to supply and installation of an Internet Access Control Appliance (Firewall) for Kentwood Public Schools.

B. Systems shall be fully standalone from an operational perspective and require no Owner provided equipment (other than network and power connections) to perform the specified functions.

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

D. Contractor shall configure, supply, connect, test, document, train Owner representatives and warrant a fully operational and compliant system, complete and with full functionality as specified herein.

E. Contractor shall load, populate, configure and/or establish all initial content and/or database materials for a fully operational and functional system and as specified herein.

F. Contractor shall coordinate installation with other contractors, Architect and the Owner as is appropriate.

G. Contractor shall provide service rates for additional services not specified herein for Owner consideration. Rates shall be provided for the duration of the warranty period. Owner will consider rate structures for additional services outside of the base contract as a factor in determining contract award.

1.02 WARRANTY

A. Complete installation shall be free from defect and/or failure for a period of five (5) years. Any replacement, upgrade or fix, including labor for any non-conforming, unsupportable or non-operational part of the system shall be fixed and/or replaced at no cost to the Owner.

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

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

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

C. On site services provided under the warranty shall be performed by personnel or representatives of Contractor as herein defined and located within physical proximity to provide response levels deemed acceptable to Owner.

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

1. Emergency Response of Eight (8) hours or less for matters that render twenty percent (20%) or more of the system as identified by Owner 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 substantial completion as certified by Architect and provided for herein. Delivery to work site of materials, physical removal from packaging, issuance of Contractor documents including, but not limited to invoices and/or packing slips, or any event or documentation, not specifically provided for herein, shall have no effect on Warranty or System Acceptance by Owner and/or Architect.

F. Contractor shall provide annual report to Owner for the duration of the warranty period. Such annual report shall document server activity, system performance, code and version levels, warranty service activity including, but not limited to work to maintain server hardware and extended operating systems at current and required supportable levels and overall content analytics since last report date.

G. MANDATORY ALTERNATE – 24/7 – 4 HOUR RESPONSE TIME WARRANTY

1. Contractor shall supply alternate pricing for 24/7 – 4 hour response time warranty for a five (5) year term on all Internet Access Control equipment.

1.03 STORAGE OF MATERIALS

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

B. It shall be the Contractor's responsibility to secure all equipment including material to be installed as part of the contract. No changes shall be made to the

contract due to loss or theft of equipment and/or materials not officially accepted by the Owner.

C. Formal receipt of the materials shall not be completed by the Owner until completion of project closeout. The Contractor shall be responsible for all equipment until time of closeout as provided for herein.

1.04 SUBMITTALS

A. Submittals shall consist of, but not be limited to, technical cut sheets and detailed information pamphlets on all components of the system to be installed. All cut sheets and submittals shall be distinctly marked to highlight the actual part number of the item being submitted for approval with Bid Proposals.

B. Shop drawings and diagrams shall be submitted by Bidder for approval by Architect with Bid Proposals.

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

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

C. Contractor shall provide proof of manufacturer support by photocopy of certification and letter of support from major component manufacturers for this specific project with Bid Proposals.

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

1. The Owner and/or Architect may notify Contractor of any offending situations under this provision allowing Contractor up to forty-eight (48) hours to correct the situation prior to taking other corrective action.

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

1.05 REFERENCE SPECIFICATIONS

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

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

1.06 CONTRACTOR

A. The Contractor shall accept complete responsibility for the installation, certification and support of the system. Contractor shall be an authorized vendor of all major components.

B. All work shall be performed and supervised by Project Managers, Engineers and/or Technicians who are qualified to install system and perform related tests as recommended by the manufacturer and in accordance with the manufacturer's best practices and methods.

C. Project Managers, Engineers and Technicians employed on this project shall be properly and fully trained and qualified by the manufacturer on the installation and testing of the equipment and systems to be installed.

D. The Contractor shall have a proven track record in relevant similar system configuration and installation. This must be shown by the inclusion of references of at least three (3) projects involving the installation of similar systems completed by the Contractor in the prior two (2) years on unaltered forms with the sealed Bid Proposal as provided herein. Bid Proposal Form(s) may be duplicated as required in order to provide adequate space to list required number of reference installations for each division Bidder is responding to.

PART 2 - PRODUCTS

2.01 Supply most current version of all products provided.

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

B. Proposed components shall have been field tested and proven in actual use.

C. Prior and/or old versions of products, unless specifically approved and documented by Architect and/or Owner shall not be acceptable.

D. In cases where a newer version of hardware or software is available at the time of installation, Contractor shall request clarification from Architect on which version is to be used.

2.02 Acceptable Manufactures (in alphabetical order)

A. CISCO SYSTEMS

B. FORTINET

C. PALO ALTO NETWORKS

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

2.04 Administration access shall be protected by unique and secure log on.

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

B. System administrator shall be capable of content updates and routine system maintenance functions as may be required from time to time.

C. Multiple levels of system administration shall be provided for different administrative roles.

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

2.06 INTERNET ACCESS CONTROLS

A. Contractor shall supply, configure, install, program and provide a dedicated district Internet Access Control Appliance to support staff and student internet access for all related functions and content.

B. System shall be configured and installed to meet or exceed all of the following requirements:

1. Base bid proposal shall include all necessary equipment, licensing and labor for an ACTIVE/PASSIVE high availability configuration.

2. 99.982% uptime for Internet Access Control (Based on ANSI/TIA-942)

3. Less than 250 microsecond latency for internet connections of 5Gbs

4. Network Connectivity:

a. Sixteen (16) 10G-Base-T Ethernet SFP+ Ports

5. 50 million Concurrent TCP Sessions

6. 400,000 New TCP Sessions/Second
7. 8Gbps SSL-VPN Throughput
8. 30Gbps Sustained IPS Throughput
9. 15Gbps SSL Inspection Throughput
10. 40Gbps Application Control Throughput
11. Microsoft Active Directory Integration
12. NIDS – Network monitoring and corrective actions
13. DLP – Data Loss Prevention to allow customization of policies
14. N+1 power supplies in all equipment.
15. Ability to enable subscription-based content filtering
16. Bandwidth utilization metering
    a. Per network and/or vLAN
    b. Per traffic type (ie. Facebook, Netflix, etc.)
17. Reporting for a minimum of 30 days of active logs on the device with the ability to review older logs stored off the device
18. Ability to:
    a. Detect and block exploit attempts.
    b. Identify, block and analyze malicious files.
    c. Analyze files and traffic continuously.
    d. Contain malware.
    e. Block access to objectionable content through a subscription basis
    f. Un-block selective sites through a “whitelist” function on an ad-hoc basis based on time of day or for a scheduled period.
    g. Add objectionable sites to the “blacklist” on an ad-hoc basis.
    h. Define and differentiate administrative roles on a distributed basis.
    i. Easily access logs and allow for granular log management .

19. Devices/solution that enable customizable dashboards that allow district technology staff to quickly view, understand and investigate relevant threats is highly preferred.

2.07 MANDATORY ALTERNATE – CONTENT FILTERING SUBSCRIPTION

A. Contractor shall supply alternate pricing for content filtering subscription for term of warranty.

2.08 ALLOWANCES

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

1. Allowance shall be made in the amount of $5,000.00 for contract services related to Owner directed infrastructure upgrades.

PART 3 - EXECUTION

3.01 PREPARATION

A. Contractor shall conduct detailed system overview and examination with Architect verifying equipment and material locations as well as mounting and placement requirements prior to commencement of other installation activities.

B. Contractor shall ensure all submittals and shop drawings have been provided to, and approval has been obtained from Architect prior to commencement of any final installation activities.

3.02 INSTALLATION

A. Contractor shall conduct an initial programming meeting with the Owner and designer to review content available and planned, as well as establish schedule for project completion.

B. Contractor shall attend weekly meetings with Owner and Designer throughout the course of project to provide updated progress reports and ensure completion of the project on schedule.

C. Contractor shall provide demonstration of working prototype system at various points in the project, prior to final complete system programming to ensure acceptance by Owner and Designer of approach and design details.

D. 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.

E. Best practices principles for programming and physical installation shall be used throughout the project. Manufacturers and recognizable industry organization best practice documentation shall be consulted as a reference for determination of compliance by Contractor.

F. All equipment and materials shall be installed in a neat and workmanlike manner. Physical equipment shall remain the property of Rockford Public Schools throughout and following the completion of the warranty period.

G. The Contractor shall furnish, set in place, and install all equipment necessary for a fully compliant and operational system as specified herein. Such materials shall include all items necessary for full and final operation of the system. The installation process includes, but is not limited to the following:

1. Inventory receipt of all components and equipment.

2. Storage of all equipment and components until such time those items are installed according to the specifications.

3. Transport equipment to the Owner's installation location(s).

4. Assemble, install, configure and test all equipment and components, maintaining accurate inventory records and status documents and discarding packaging.

5. Collect all information necessary to accurately program all system devices to the Owner's intended use and need.

6. Complete end user and system administrator training programs as specified herein.

H. Worksites include the following:

1. East Kentwood Freshman Campus
   6170 Valley Lane
   Kentwood, Michigan 49508

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 Architect indicating they have completed full and final configuration of the system, and are ready to have system integrity and functionality tested.

2. Within reasonable time after receipt of request, Architect will provide a test schedule and coordinate testing date(s) with Owner and Contractor.

3. Should Architect determine the Work is not acceptably configured or not of adequate integrity:

a. Architect promptly will so notify Contractor, giving reasons therefore and providing sufficient details to allow Contractor to make corrective actions.

b. Contractor shall then expeditiously remedy the deficiencies and notify Architect in writing when ready for re-testing.

c. Architect will schedule re-test of the Work.

d. Excessive re-testing of Work may result in fees being assessed Contractor.

4. Should Architect and Owner concur the Work is configured properly and system integrity is as required:

a. Architect will review Contractors detailed “turn-up” plan, and upon finding it acceptable issue a memorandum of Testing Completion to Owner and Contractor after which system “turn-up” can proceed.

3.04 DOCUMENTATION

A. Contractor shall provide Owner as-built drawings and manuals of all equipment installed, warranty and maintenance information and other information the Contractor, Architect and/or Owner deem necessary. Documentation shall also be provided in a digital format in file formats and on media as specified by Owner and/or Architect.

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

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

3.05 TRAINING

A. 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 two (2), 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 configuration and system administration of the installed system

2. Basic trouble shooting of the installed system and components including diagnostic and problem resolution actions.

3. System back-up and restore functions and procedures for all system parameters and configurations.

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

5. System database updates and maintenance.

6. Review standard system reports

B. Contractor shall provide for manufacturer certification training for installed system. Training shall be approximately one week in length and be conducted by either the manufacturer or manufacturer's certified training provider at a designated training center. All costs of training shall be complete for a single system administrator to attend the training session including, but not limited to the following:

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: Week of January 29, 2024

2. Contractor Chosen: Week of February 12, 2024

3. Work Commences: April 1, 2024

4. Substantial Completion of Project: August 1, 2024

5. Project Close-out: September 1, 2024

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

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

END OF SECTION

SECTION 27 21 29
NETWORK ELECTRONICS

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

A. Work described in this specification section pertains to Ethernet switch infrastructure upgrades to replace existing equipment for Kentwood Public Schools.

B. System shall be comprised of a network core switch at the district head end, building core consolidation switches in select remote building(s) and distribution switches (stackable) in distribution closets for connection to end devices as described herein. Switches shall be installed, configured and connected to the existing building cable plant at the Owner's discretion.

C. Contractor shall coordinate their delivery and 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 and/or extended warranty shall be provided for all components of the system.

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

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

C. On-site services provided under the warranty shall be performed by personnel or representatives of Contractor as herein defined and located within physical proximity to provide response levels deemed acceptable to Owner.

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

1. 4-hour onsite 24x7 response time warranty shall be provided on all District Core and Building Distribution switching equipment.

2. All other equipment shall include next business day (NBD) or less for matters that render twenty percent (20%) or more of the system unable to maintain normal functionality. Replacement parts for any item determined to be functioning below full design capacity shall be replaced promptly. Replacement components shall be shipped to Owner in order to arrive on the next business. Replacement components shall be shipped in advance of Owner return of non-functional components (Advance Replacement).

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

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

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

F. MANDATORY ALTERNATE - 5 YEAR WARRANTY

1. Bidder shall provide alternate to include 5-year warranty for which all terms and conditions shall remain the same, but the term is 5 years rather than the base bid term of 3 years.

1.03 STORAGE OF MATERIALS

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

B. It shall be the Contractor's responsibility to secure all equipment including material to be installed as part of the contract. No changes shall be made to the contract due to loss or theft of equipment and/or materials not officially accepted by the Owner.

C. Formal receipt of the materials shall not be completed by the Owner until completion of project closeout. The Contractor shall be responsible for all equipment until time of closeout as provided for herein.

1.04 SUBMITTALS

A. Submittals shall consist of, but not be limited to, technical cut sheets and detailed information pamphlets on all components of the system to be installed. All cut sheets and submittals shall be distinctly marked to highlight the actual part number of the item being submitted for approval with Bid.

B. Shop drawings and diagrams shall be submitted by Bidder for approval by Designer with Bid.

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

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

C. Contractor shall provide proof of manufacturer support by photocopy of certification and letter of support from major component manufacturers for this specific project with Bid.

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

1. The Owner and/or Designer may notify Contractor of any offending situations under this provision allowing Contractor up to forty-eight (48) hours to correct the situation prior to taking other corrective action.

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

E. The Contractor shall submit within ten (10) calendar days after the Notice to Proceed, a schedule that reflects the sequence of activities of the contractor's approach to the execution of and completion of the work. The schedule shall be broken into work areas to provide for a clear identification of the planned progress of the work. Included in the schedule will be a list of tasks with list of deliverables and the percentage of work completed. This schedule shall coincide with progress payments applications dates and projected amounts. All durations shown will be in working days. 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. 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. Contractor shall have offices or primary work locations for related personnel in physical proximity to sites of work that can reasonably be expected to allow service response times required for warranty and as described herein.

E. The Contractor shall have a proven track record. This must be shown by the inclusion of references of at least three (3) projects involving 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. CISCO
2. EXTREME
3. HP/ARUBA
4. RUCKUS

5. 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 Individual switches shall be capable of being fully administered from any web browser attached to the network.

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

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

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

2.08 DISTRICT CORE SWITCH

A. District Core Switch devices shall be provided and installed in locations and quantities indicated on Appendix B, meeting or exceeding the following features: port configurations and capabilities (counts are per switch):

1. Forty-eight (48) 10GB Ethernet ports per switch with appropriate SFP+ optics packages (if applicable) for building connection to:

a. Two (2) ports for connection to data center device distribution stack in KPS data center using Contractor supplied DAC interconnects.

b. Twenty-Two (22) Single Mode fiber (SM) connections to:

1. Administration Building

2. Bowen Elementary

3. Brookwood Elementary

4. Challenger Elementary
5. Crestwood Middle School
6. Crossroads Alternative and Adult High School
7. Discovery Elementary
8. East Kentwood Freshman Campus
9. East Kentwood High School
10. Endeavor Elementary
11. Explorer Elementary
12. Facilities and Operations
13. Glenwood Elementary
14. Hamilton Elementary
15. Meadowlawn Elementary
16. Pinewood Middle School
17. Special Education Building (Bowen)
18. Special Education Building (44th Street)
19. Southwood Elementary
20. Townline Elementary
21. Transportation Building
22. Valleywood Elementary

c. Two (2) ports for interconnection of the District Core Switches in a resilient configuration including all necessary DAC interconnects.

2. N+1 load balancing, hot swappable, redundant power supplies.
3. 2.5Tbps bidirectional switching capacity
4. 90,000+ MAC table size
5. RMON
6. IEEE 802.1AB LLDP

7. Jumbo frame support

8. Audio-MDIX support

9. IPv6

10. 802.3ad LACP

11. IP routing support for Static, RIP and OSPF

12. IP Multicast Routing support for PIM sparse and dense mode

13. IEEE 802.1p and IP-ToS utilizing eight (8) QoS queues

14. Bandwidth Shaping

15. Contractor shall supply all new fiber patch cables for necessary optics. Fiber patch cables will be neatly routed and not excessively long.

16. Contractor shall supply all new DAC cables for necessary connectivity. DAC cables will be neatly routed and not excessively long.

2.09 BUILDING DISTRIBUTION SWITCHES

A. Building Distribution Switch shall be provided and installed in locations and quantities indicated on Appendix B to facilitate building connection to District Core Switches over district fiber. Switch provided shall each meet or exceed the following:

1. Sixteen (16) 10GB Ethernet ports per switch with appropriate SFP+ optics packages or cabling (if applicable) for building connection to (counts are per switch):

a. DAC (Direct Attach Copper):

1. Crestwood Middle School

A. MDF – Device Distribution Stack

2. East Kentwood Freshman Campus

A. MDF – Device Distribution Stack

3. East Kentwood High School

A. MDF – Device Distribution Stack

B. MDF2 – Device Distribution Stack

4. Pinewood Middle School

    A. MDF – Device Distribution Stack

b. Multi-Mode fiber (MM) connections to:

1. Crestwood Middle School

    A. IDF1

    B. IDF2

    C. IDF3

    D. IDF4

2. East Kentwood Freshman Campus

    A. IDF2

    B. IDF3

    C. IDF400

    D. IDF500

    E. IDF6

    F. IDF7

    G. IDF8

    H. IDF9

3. East Kentwood High School

    A. IDF1

    B. IDF2

    C. IDF3

    D. IDF4

    E. IDF5

    F. IDF6

    G. IDF7

H. IDF8

I. IDF9

4. Pinewood Middle School

A. IDF-KIT

B. IDF-600

C. IDF-700

D. IDF-800

c. Single Mode fiber (SM) connections to:

1. Crestwood Middle School

A. Pat Patterson - Concession

B. Pat Patterson – Team Room

C. Pat Patterson – Press Box

2. East Kentwood Freshman Campus

A. KPS Data Center

B. IDF7 – Aux Gym

3. East Kentwood High School

A. IDF10 (Ice Arena)

B. EKHS Football Stadium (Pressbox)

C. EKHS Baseball Field (Concession)

4. Pinewood Middle School

A. IDF-Fine Arts

2. A maximum of 2:1 blocking will be permitted on 10G ports

3. N+1 load balancing, hot swappable, redundant power supplies.

4. IEEE 802.1p QoS

5. Contractor shall supply all new fiber patch cables for necessary optics. Fiber patch cables will be neatly routed and not excessively long.

6. Contractor shall supply all new DAC cables for necessary connectivity. DAC cables will be neatly routed and not excessively long.

2.10 DEVICE DISTRIBUTION SWITCHES – FULL SIZE

A. Device Distribution Switches shall be provided and installed in locations and quantities identified in Appendix B. Switches shall be installed to facilitate cross-connection of all station cables in the district. Switches provided shall meet or exceed the following:

1. Forty-Eight (48) total ports shall be provided.

a. Forty-eight (48) 10/100/1000 UTP Ethernet ports.

2. Four (4) 10Gbe SFP+ ports either internally or with a module. Contractor to include all necessary modules and SFP+ optics packages for one (1) 10Gbe connection to each stack including optics for both ends as identified:

a. Multi-Mode fiber (MM) connections to:

1. Administration Building

A. MDF – IDF1

2. Bowen Elementary

A. MDF – IDF1

3. Brookwood Elementary

A. MDF – IDF1

4. Challenger Elementary

A. MDF – IDF1 (Kitchen)

5. Crestwood Middle School

A. MDF -- IDF1

B. MDF -- IDF2

C. MDF -- IDF3

D. MDF -- IDF4

6. Discovery Elementary

A. MDF -- IDF100

B. MDF -- IDF400

7. East Kentwood Freshman Campus

A. MDF -- IDF2

B. MDF -- IDF3

C. MDF -- IDF400

D. MDF -- IDF500

E. MDF -- IDF6

F. MDF – IDF7

G. MDF -- IDF8

8. East Kentwood High School

A. MDF -- IDF1

B. MDF -- IDF2

C. MDF -- IDF3

D. MDF -- IDF4

E. MDF -- IDF5

F. MDF -- IDF6

G. MDF -- IDF7

H. MDF -- IDF8

I. MDF -- IDF9

9. East Kentwood High School Football Stadium

A. Pressbox -- ST-HC

B. Pressbox -- ST-VC

C. Pressbox -- ST-HT

D. Pressbox -- ST-VT

10. Endeavor Elementary

    A. MDF -- IDF1

    B. MDF -- IDF2

    C. MDF -- IDF3

    D. MDF -- IDF4

11. Explorer Elementary

    A. MDF -- IDF200

    B. MDF -- IDF400

    C. MDF -- IDF500

12. Glenwood Elementary

    A. MDF – IDF1

13. Hamilton Elementary

    A. MDF – IDF1

14. Meadowlawn Elementary

    A. MDF – IDF1

15. Pinewood Middle School

    A. MDF -- IDF-KIT

    B. MDF -- IDF-600

    C. MDF -- IDF-700

    D. MDF -- IDF-800

16. Southwood Elementary

    A. MDF – IDF1

17. Townline Elementary

    A. MDF -- IDF1

18. Valleywood Middle School

A. MDF -- IDF-Boiler

B. MDF -- IDF-Science

C. MDF -- IDF-CompLab

b. Single Mode fiber (SM) connections to:

1. East Kentwood High School Baseball Field

A. Concession -- FieldA

B. Concession -- FieldB

2. Townline Early Childhood Center

A. MDF -- IDF1

B. MDF -- IDF2

3. Switches shall be stackable and support at least 384 ports per stack with a single IP address

4. All cables/connectors/licensing to facilitate switches being installed separate stacks as identified in Appendix B.

5. Switches shall support uplink trunking across the stack

6. IEEE 802.1p QoS with 4 queues per port.

7. SNMPv1/v2c/v3

8. 802.1X and Protocol based VLAN support.

9. IEEE 802.3ad Link Aggregation (LACP).

10. Broadcast, Unicast and Multicast traffic suppression.

11. IGMP Snooping

12. DHCP Helper

13. IEEE 802.1X Port Based Network Access Control

14. Contractor shall supply all new fiber patch cables for necessary optics. Fiber patch cables will be neatly routed and not excessively long.

15. Power over Ethernet (PoE)

a. All Device Distribution switches provided shall be 802.3at PoE+ compliant.

b. Each switch shall have a PoE power budget of 740 Watts with a single power supply and be upgradable to a total power budget of 1480 Watts in the future with the addition of a second power supply.

c. Contractor will include **two hundred and thirteen (213)** additional hot swappable power supplies to be installed in locations identified by Owner.

2.11 HARDENED INDUSTRIAL SWITCH

A. Device Distribution Switches shall be provided and installed in locations and quantities identified in Appendix B. Switches shall be installed to facilitate cross-connection of all station cables in the district. Switches provided shall meet or exceed the following:

1. Sixteen (16) total ports shall be provided.

   a. Sixteen (16) 10/100/1000 UTP Ethernet ports.

2. One (1) 10Gbe SFP+ ports either internally or with a module. Contractor to include all necessary modules and SFP+ optics packages for one (1) 10Gbe connection to each stack including optics for both ends as identified:

   a. Single Mode fiber (SM) connections to:

      1. Crestwood Middle School

         A. MDF – PP-Team

      2. Transportation

         A. MDF -- IDF1

3. All cables/connectors/licensing to facilitate switches being installed separate stacks as identified in Appendix B.

4. Hardened IP30 rating

5. Extreme operating temperature -40 to 167 degrees Fahrenheit

6. Switches shall support uplink trunking across the stack

7. IEEE 802.1p QoS with 4 queues per port.

8. SNMPv1/v2c/v3

9. 802.1X and Protocol based VLAN support.

10. IEEE 802.3ad Link Aggregation (LACP).

11. Broadcast, Unicast and Multicast traffic suppression.

12. IGMP Snooping

13. DHCP Helper

14. IEEE 802.1X Port Based Network Access Control

15. Device to include all necessary power supplies.

16. Contractor shall supply all new fiber patch cables for necessary optics. Fiber patch cables will be neatly routed and not excessively long.

17. Power over Ethernet (PoE)

    a. All Device Distribution switches provided shall be 802.3at PoE+ compliant.

    b. Each switch shall have a PoE power budget of 480 Watts with a single power supply.

2.12 MANDATORY ALTERNATE – SAN SWITCH DEVICES

A. Contractor shall supply two (2) SAN switch devices.

1. Devices shall meet or exceed the following requirements:

    a. Twenty-four (24) port 10Gbe SFP+ ports

    b. Two (2) stacking/QSFP28 ports with appropriate cables

    c. Include five (5) year - 24/7 – four-hour response time warranty

2.13 BASIC INFRASTRUCTURE MANAGEMENT

A. Network Management shall include features such as, but not limited to:

1. Assist with deploying, onboarding and configuration of new network devices.

2. Bulk configuration, back-up and restore tools.

3. Troubleshooting tools that facilitate rapid location, isolation and repair of network problems.

4. Provide detailed performance monitoring and assist in detecting network performance anomalies and trends both in real time and historical.

5. Maintain and flexibly report network inventory, configuration details, device history and performance.

6. Assist with system firmware updates.

7. Strong preference for on-premise or hybrid cloud/on-premise solutions.

8. Contractor shall include all necessary licensing and support for cloud-based management platform for the entire term of the system warranty.

9. ICMP and SNMP v2, v3 monitoring support for generic network devices.

10. Advanced topology views.

11. User customizable dashboard views.

12. Alert notifications with customizable event triggers. Notifications to include email, syslog entry, SNMP trap or running custom script.

13. Contractor shall fully configure network management software to Owners requirements.

2.14 VOLUNTARY ALTERNATE – 25GB BACKBONE

A. Contractor shall supply alternate pricing for dual 25Gb backbone connectivity to the following:

1. Bowen Elementary

2. Brookwood Elementary

3. Challenger Elementary

4. Crestwood Middle School

5. Crossroads Alternative and Adult High School

6. Discovery Elementary

7. East Kentwood Freshman Campus

8. East Kentwood High School

9. Endeavor Elementary

10. Explorer Elementary

11. Glenwood Elementary

12. Hamilton Elementary

13. Meadowlawn Elementary

14. Pinewood Middle School

15. Southwood Elementary

16. Townline Elementary

17. Valleywood Elementary

B. Contractor shall include all necessary equipment at each level, District Core, Building Distribution and Device Distribution to make fully functional. Contractor shall include all necessary optics, licensing, accessories and labor to enable dual 25Gb connectivity functional in the locations identified.

2.15 MANDATORY ALTERNATE – DUAL 10GB IDF LOCATIONS

A. Contractor shall supply alternate pricing for dual 10GB connectivity from building MDF locations to IDF in the following locations:

1. Administration Building

2. Bowen Elementary

3. Brookwood Elementary

4. Challenger Elementary

5. Crestwood Middle School

6. Crossroads Alternative and Adult High School

7. Discovery Elementary

8. East Kentwood Freshman Campus

9. East Kentwood High School

10. Endeavor Elementary

11. Explorer Elementary

12. Glenwood Elementary

13. Hamilton Elementary

14. Meadowlawn Elementary

15. Pinewood Middle School

16. Southwood Elementary

17. Townline Elementary

18. Valleywood Elementary

B. Contractor shall include all necessary equipment at each level, Building Distribution and Device Distribution to make fully functional. Contractor shall include all necessary optics, licensing, accessories and labor to enable dual 10Gb IDF connectivity functional in the locations identified.

2.16 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 $20,000.00 for contract services related to Owner directed infrastructure upgrades.

PART 3 - EXECUTION

3.01 PREPARATION

A. Contractor shall conduct a detailed walk through of all facilities to verify mounting and physical installation requirements.

B. Contractor shall conduct a preliminary installation and configuration meeting at the convenience of the Owner to discuss Owner plans for network applications and device attachments to ensure proper final configuration for all parameters including, but not limited to:

1. VLAN and routing configuration

2. Security configuration

3. Physical layout and connection schemes and configurations

4. PoE applications intended devices.

5. Confirm switch and device naming and identification scheme.

    a. Physical labeling

    b. Electronic / configuration management information.

6. Management and problem diagnostic options.

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.

1. Additionally, a detailed installation plan shall be provided for Owner and Designer approval prior to the commencement of any final installation activities. This plan shall include, but not be limited to the following:

    a. Switch software configuration(s).

    b. Physical layout and connection schemes and configurations

3.02 DEMOLITION

A. Contractor shall remove all existing switch devices and accessories. Contractor shall transport switch devices to Owner approved location for disposition. Any devices not identified by Owner for retention shall be properly disposed of by Contractor.

3.03 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. All equipment provided by contractor shall be fully configured and installed for the Owner's applications based on an installation plan provided by Contractor and meeting approval of Owner and Designer prior to the commencement of work.

C. 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.

D. All equipment and materials shall be installed in a neat and workmanlike manner. Best practices installation principles shall be used throughout the project.

E. The Contractor shall furnish, set in place, and physically install all equipment necessary for a fully compliant and operational system as specified herein.

F. Contractor shall fully cooperate with Owner for detailed switch software/firmware configuration and system integration activities.

G. 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 at Owner designated and provided until such time those items are installed according to the specifications.

3. Transport equipment to the Owner's installation location(s).

4. Physically assemble, install, configure and test based on an approved test plan all equipment and components, maintaining accurate inventory records and status documents and discarding packaging as may be directed by Owner.

5. Label all system devices as may be appropriate and required by Owner and Designer using approved Brady labels.

6. Work includes extending connection and interconnection cables from equipment, as required, to Owner identified connection ports at all locations.

    a. Work includes the supply of fifteen hundred (1500) new patch cables and the reuse of existing patch cables for a fully functional and compliant system. Some devices may require special care and suitable tools to complete such connection or re-connection of cables.

    b. Patch cables shall not exceed ten (10) feet in length unless otherwise specified.

    c. Coordinate all patching plans and specific cable lengths used with Owner and Designer. Patch cables shall not be excessive in length for the connections made, and as such multiple lengths of cable will be required in each closet to properly and acceptably complete this portion of the work.

d. Contractor shall carefully arrange new switch devices to optimal positions for patching. If necessary, Contractor shall move existing patch panel and other devices to minimize patch cable length.

e. Patch cables shall be Category 6 cable.

f. Coordinate all patch cable color with Owner and Designer. Multiple colors shall be used to differentiate particular device types.

g. Install all patch cable in neat workman like manner including, but not limited to dressing all cable routes and slack with .5" Velcro straps.

7. Work includes removal and, at the Owner's discretion, disposal of all old and unused patch cords and wiring closet rack and switch components that will not be in use for the new systems being deployed.

8. Complete 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.

H. Sites of Work:

1. Administration Building
   5820 Eastern Ave. SE
   Grand Rapids, MI 49508

2. Bowen Elementary School
   4453 Kalamazoo SE
   Kentwood, Michigan 49508

3. Brookwood Elementary School
   5465 Kalamazoo SE
   Kentwood, Michigan 49508

4. Challenger Elementary School
   2475 52nd Street SE
   Kentwood, Michigan 49508

5. Crestwood Middle School
   2674 44th Street
   Kentwood, Michigan 49512

6. Crossroads Alternative High School and Community Education
   28 60th SE
   Kentwood, Michigan 49508

7. Discovery Elementary School
   2461 60th Street
   Kentwood, Michigan 49508

8. East Kentwood Freshman Campus
   6170 Valley Lane
   Kentwood, Michigan 49508

9. East Kentwood High School
   6230 Kalamazoo Ave
   Kentwood, Michigan 49508

10. Baseball/Softball Complex - East Kentwood High School
    6230 Kalamazoo Ave
    Kentwood, Michigan 49508

11. Football Stadium - East Kentwood High School
    6230 Kalamazoo Ave
    Kentwood, Michigan 49508

12. Endeavor Elementary School
    5757 East Paris SE
    Kentwood, Michigan 49508

13. Explorer Elementary School
    2307 68th Street SE
    Kentwood, Michigan 49508

14. Facilities and Operations
    6160 Valley Lane Dr. S.E.
    Kentwood, Michigan 49508

15. Glenwood Elementary School
    912 Silver Leaf SE
    Kentwood, Michigan 49508

16. Hamilton Elementary and Early Childhood Center
    3303 Breton SE
    Kentwood, Michigan 49508

17. Meadowlawn Elementary School
    4939 Burgis Street SE
    Kentwood, Michigan 49508

18. Pinewood Middle School
    2100 60th Street
    Kentwood, Michigan 49508

19. Special Education Building (Bowen)
    4453 Kalamazoo SE
    Kentwood, Michigan 49508

20. Special Education Building (44th Street)
    1122 44th Street SE
    Kentwood, Michigan

21. Southwood Elementary School
    630 66th SE
    Kentwood, Michigan 49508

22. Transportation Building/Bus Garage
    6150 Valley Ln. Dr. SE
    Kentwood, Michigan 49508

23. Townline Elementary School
    100 60th Street SE
    Kentwood, Michigan 49508

24. Townline Early Childhood Building
    100 60th Street SE
    Kentwood, Michigan 49508

25. Valleywood Middle School
    1110 50th Street
    Kentwood, Michigan 49508

I. 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.

J. Contractor shall fully install and configure all network infrastructure for complete, compliant and final Owner applications and requirements including all physical labeling for asset management.

3.04 TESTING

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

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

C. Testing Procedures

1. Prior to system “turn-up”, Contractor shall submit a written request to Designer indicating they have completed full and final configuration of the system, and are ready to have system integrity and functionality tested. Such request shall include a written proposed test plan for complete system functionality.

2. Within reasonable time after receipt of request and proposed test plan, Designer will provide amendment(s) to the proposed test plan, a test schedule and coordinate testing date(s) with Owner and Contractor.

3. Should Designer determine the Work is not acceptably configured or not of adequate integrity:

a. Designer promptly will so notify Contractor, giving reasons therefore and providing sufficient details to allow Contractor to make corrective actions.

b. Contractor shall then expeditiously remedy the deficiencies and notify Designer in writing when ready for re-testing.

c. Designer will schedule re-test of the Work.

d. Excessive re-testing of Work may result in fees being assessed Contractor.

4. Should Designer and Owner concur the Work is configured properly and system integrity is as required:

D. 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.

3.05 DOCUMENTATION

A. 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. Manufacturer's warranty.

6. Maintenance contract terms.

7. Verification of maintenance contract engagement.

8. Telephone numbers for service and support.

9. Detailed technical support and service procedure instructions.

10. 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.

11. 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.

12. Complete inventory of installed hardware and system software. Hardware inventory shall include, but not be limited to, model numbers, serial number, physical installation location and software/firmware options.

3.06 TRAINING

A. Contractor shall provide training for the Owner designated system administrator(s). Owner shall designate up to Two (2) administrators to be trained. Training shall be a minimum of one (2), four (4) hour session(s) in length, at the convenience of the Owner personnel, and of sufficient duration to satisfactorily complete training on all system administration functions including, but not limited to:

1. Basic trouble shooting of the installed system and components including diagnostic and problem resolution actions.

2. System back-up and restore functions and procedures for all system parameters and configurations.

3. Component replacement procedure.

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

5. Complete review and administration review and training for network management application provided.

B. Contractor shall supply manufacturer certification training for two (2) system administrators designated by Owner. Online/virtual training shall be manufacturer certified and content shall cover all material needed to allow Owner designees to sit for, and pass, basic certification (testing fees not included).

3.07 SCHEDULE, MEETINGS AND PLANS

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

B. Schedule

1. Post bid Interviews: Week of January 29, 2024

2. Contractor Chosen: Week of February 12, 2024

3. Work Commences: April 1, 2024

4. Substantial Completion of Project: August 1, 2024

5. Project Close-out: September 1, 2024

C. 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.

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 41 16
MULTIMEDIA SYSTEMS - CLASSROOMS

PART 1 - GENERAL

1.01 DESCRIPTION OF PROJECT

A. Work described in this specification section pertains to new classroom multimedia infrastructure and instructional equipment for Kentwood Public Schools.

B. Contractors shall propose Systems and/or components to be deployed using standard procedures and technology components and as specified herein. The system components shall be installed and connected to the owner's existing physical infrastructure and as specified herein.

C. Contractor shall advise, coordinate and work cooperatively with Owner representatives or owner's designee related to any configuration changes required and/or proposed for Owner's existing physical infrastructure.

D. Contractor shall work collaboratively with Owner and Designer. Work shall include but not be limited to installation of supplied equipment, removal of existing equipment and full operational capacity of system as specified herein.

E. The Contractor shall design, engineer, configure, supply, connect, test, document, train Owner representatives and warrant a fully operational and compliant system and/or component connection to the system complete and with full functionality as specified herein.

F. Contractor shall provide all transportation and delivery services in a timely manner to individual work location(s) at each site of work in preparation for installation activity.

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

1.02 WARRANTY

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

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

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

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

3. Standard manufacturer warranty duration and terms shall be identified for each component with bid as well as additional fee required for warranty duration election of each of the following terms:

   a. Three (3) year parts and labor warranty.

C. On site services provided under the warranty shall be performed by personnel or representatives of manufacturer of individual components and/or appropriately trained and certified Contractor representatives as herein defined and located within physical proximity to provide response levels deemed acceptable to Owner.

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

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

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

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

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

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

1.03 SUBMITTALS

A. Submittals shall consist of, but not be limited to, technical cut sheets and detailed information pamphlets on all components of the system to be installed. All cut sheets and submittals shall be distinctly marked to highlight the actual part number of the item being submitted for approval with Bid Proposals.

B. Shop drawings, data sheets and diagrams shall be submitted by Bidder for approval by Designer with Bid Proposals.

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

2. No work constituting final installation shall be commenced until after approval of shop drawings, data sheets and diagrams by Designer.

C. Contractor shall provide proof of manufacturer support by photocopy of certification and letter of support from major component manufacturers for this specific project with Bid Proposals.

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

1. The Owner and/or Designer may notify Contractor of any offending situations under this provision allowing Contractor up to forty-eight (48) hours to correct the situation prior to taking other corrective action.

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

E. The Contractor shall submit within ten (10) calendar days after the Notice to Proceed, a schedule that reflects the sequence of activities of the contractor's approach to the execution of and completion of the work. The schedule shall be broken into work areas to provide for a clear identification of the planned progress of the work. Included in the schedule will be a list of tasks with list of deliverables and the percentage of work completed. This schedule shall coincide with progress payments applications dates and projected amounts. All durations shown will be in working days. Applications that generate Microsoft Project compatible files shall be management tools of choice. The timeframe described in the Contractor's Schedule shall represent the Contractor's plan for organizing, directing, managing, controlling, staffing and executing the work required by the Contract Documents. The district will rely on such schedules to coordinate and otherwise plan the work of the District, other separate contractors, or the District's routine daily work.

1.04 REFERENCE SPECIFICATIONS

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

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

1.05 CONTRACTOR

A. The Contractor shall accept complete responsibility for the installation, certification and support of the system and/or components as required herein. Contractor shall be an authorized vendor of all major components.

B. All work shall be performed and supervised by Project Managers, Engineers and/or Technicians who are qualified to install specified equipment and perform related tests as recommended by the manufacturer and in accordance with the manufacturer's best practices and methods and as required herein.

C. Project Managers, Engineers and Technicians employed on this project shall be properly and fully trained and qualified by the manufacturer on the installation and testing of the equipment and systems to be installed.

D. The Contractor shall have a proven track record in comparable system supply, configuration and installation. This must be shown by the inclusion of references of at least three (3) projects involving the supply and/or installation of similar systems completed by the Contractor in the prior two (2) years with the sealed Bid Proposal as provided herein.

PART 2 - PRODUCTS

2.01 Acceptable Manufacturers

A. Acceptable manufacturers have been provided to comply with a standard for individual components associated with the specified system. Indicated components include particular models and makes currently installed and/or preferred by Owner.

B. Any system bid shall be based only on acceptable manufacturer's components.

2.02 Supply most current version of all products provided.

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

B. Proposed components shall have been field tested and proven in actual use.

C. Prior and/or old versions of products, unless specifically approved and documented by Designer and/or Owner shall not be acceptable.

D. In cases where a newer version of hardware or software is available at the time of installation, Contractor shall request clarification from Designer on which version is to be used.

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

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

2.05 All connectors and accessories not installed in conduit and installed above finished ceiling shall be plenum rated.

2.06 MULTIMEDIA INFRASTRUCTURE CABLE

A. All cable shall be factory manufactured with terminations and connector assemblies fully attached and integral to the cable to industry published quality standards and meet performance requirements specified herein.

B. Infrastructure cable to connect projector to a teacher station wall plate shall be provided.

C. Acceptable Cable:

1. HD Base-T Digital Video Cable shall be of commercial first-class quality manufacture and meet or exceed the following requirements:

a. Cable shall meet or exceed Shielded Category 6a certification.

b. Cable shall be constructed of solid 23 AWG conductors.

D. Cable shall be extended from Contractor provided faceplate to projector.

E. All cables originating from wall plate shall terminate in a service loop eight (8) feet in length at projector location or above casework location. Service loop shall be carefully connected to j-hook or similar hanger to keep off of ceiling grid.

F. Teacher workstation wall plate provided shall be constructed of commercial grade stainless steel.

1. Wall plate shall contain connection points for all specified cables

2. Two (2) data outlet locations.

3. Unpopulated data connections shall all have blank covers installed.

4. Any existing terminated category cabling should be securely locked into new plate and any existing labeling shall be transferred.

G. Contractor shall supply a stainless-steel brush plate to transition HD-Base-T digital video cable from above finished ceiling location to projector. Cables shall be neatly wrapped with white split braid sleeving for a finished installation.

H. Cable shall terminate in the following connector gender:

1. HD-Base-T Digital Video (Category 6a STP)

a. Terminate into an active HD-Base-T input on projector.

b. Terminate in a 568-compliant type female jack located on the face plate.

I. HD-Base-T 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.

2.07 MULTIMEDIA CONNECTION CABLE

A. Fully assembled infrastructure cable bundles for each classroom indicated to receive a projector shall be provided for final connection to components installed at Owner provided teacher station.

B. Acceptable Manufacturer

1. Cable shall be of commercial first-class quality manufacture.

C. All Cable shall be fifteen (15) feet in length and terminate in the following connector genders:

a. Male Shielded Category 6a cable to Contractor provided projector transmitter/control pad.

2. Coordinate power cable relationship to connection bundle with Owner and Designer.

2.08 SURGE PROTECTOR

A. All classrooms receiving new 1485Fi projection systems shall receive new surge protection power strips.

B. Contractor shall supply surge suppressed power strip installed at teacher workstation location for connection of teacher devices. Power strip shall contain six (6) grounded AC power connectors.

1. Tripp-Lite TLP615 or equal

2. Power cord should be sufficient length to support the OPE desk attached with the 15' cable bundle and be elegantly mounted at teacher desk location.

3. Coordinate power cable relationship to connection bundle for neat and fully functional installation.

2.09 WIRELESS PRESENTATION SYSTEM

A. Wireless Presentation Systems shall be provided and installed in locations as indicated in Appendix E.

B. Acceptable Manufacturers (in alphabetical order):

1. KRAMER

a. VIA GO2

2. HDMI output with support for up to 4K30Hz video streaming

3. Gigabit LAN and dual-band 802.11ac Wireless connectivity

4. 4GB Memory

5. 32GB Storage

6. 3.5mm Audio Output

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

C. Contractor shall provide all necessary licensing for cloud management of all Kramer VIA GO2 wireless presentation system. Contractor shall fully configure all Kramer VIA GO2 wireless presentation devices to be connected to Owner provide network and configured in provided cloud management system.

D. Cables and Accessories

1. All necessary mounting brackets and connectors to securely mount at projector location.

2. Work includes extending Ethernet Category 6 compliant patch cables from installed equipment, as required, to Owner identified connection ports at all locations.

    a. Patch cables shall not exceed fifteen (15) feet in length.

3. Material and labor to cross connect wireless presentation systems in communication closets to PoE switches shall be provided by Contractor using provided Category 6 patch cables.

    a. Cable lengths shall be appropriate for connections made, and not include excessive cable.

    b. Coordinate all work with Owner, Designer and other contractors prior to installation.

4. Contractor shall coordinate installation and configuration of Wireless Presentation System per manufacturer recommended guidelines. Contractor shall work collaboratively as necessary with Owner and network support resources for a complete and compliant installation.

2.10 DOCKING STATION

A. Computer docking stations shall be provided in all locations receiving a new Ultra Short Throw Interactive Projector.

B. Acceptable Manufacturer (In alphabetical order):

    1. Hewlett Packard (HP)

        a. USB-C Dock G5 – 5TW10AA#ABA

C. Contractor shall update docking station to latest firmware version at installation date.

D. Contractor shall set in place and make fully functional with Owner provided Windows laptop computer.

E. Contractor shall supply all necessary cables and accessories for a fully functional system.

2.11 ULTRA SHORT THROW INTERACTIVE PROJECTORS

A. Ultra-short throw projectors, each with accompanying projector specific mount shall be provided. Please refer to Appendix E for quantities and locations.

B. Acceptable Manufacturers (In alphabetical order):

1. EPSON

    a. BRIGHLINK 1485Fi

C. Projectors shall include full functionality of the following feature sets and/or standards in projector management software and/or remote access capability and in conjunction with proposed projectors, and shall provide for all management, configuration and control features and/or standards from a management administrative interface:

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

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

3. Projector reporting shall include, but not be limited to:

    a. Device power status (on/off).

    b. Filter status management.

    c. Source selection status.

4. Projector Control shall include, but not be limited to:

    a. Device power (on/off).

    b. Source selection.

    c. Internal or downloadable program schedule database for timed execution of projector control functions based on, but not limited to time of day and day of week.

D. Projector management software and/or access shall be installed on equipment provided at Owner discretion to be located at the owner's discretion and communicate over the existing installed infrastructure provided by others.

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

1. Slim design touch module

2. Laser display

3. 5000 Lumens

a. 16:6 Resolution

4. +/- 3-degree keystone correction.
5. Three (3) HDMI Inputs
6. 7 second power-on to image.
7. Bidirectional RS-232 serial control port.
8. Operating volume level of less than 37dB (fan).
9. Operating temperature range of 45 – 95 degrees Fahrenheit.
10. Accessible top or front panel mechanical controls including, but not limited for the following functions:
    a. Power on.
    b. Power off.
    c. Video input port selection.
11. Mechanical keypad lock out to minimize tampering with device settings
12. Ethernet connector for management, monitoring and control applications.
13. User definable power on graphic to replace factory default or manufacturer logo
14. HDBaseT port for connection of supplied transmitter/control pad.

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

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

2.12 VOICE AMPLIFICATION

A. Voice Amplification Systems shall be provided and installed in locations as indicated in Appendix E.

B. Acceptable Manufacturers

1. LIGHTSPEED
    a. 975 ACCESS

C. Major components of Voice Amplification System shall be installed at projector location.

D. Voice Amplification systems shall meet or exceed the following minimum standards:

1. DECT (1.9 GHz) communication for complete classroom coverage of two (2) microphones simultaneously.

2. Two (2) highly durable, rechargeable, battery powered, tamper resistant, impact resistant, lanyard based pendant microphones.

a. Two (2) Lightspeed volume control Flexmikes

E. Contractor shall provide one (1) shielded 3.5mm audio cable for connectivity from audio output of projector to voice amplification system installed in projector location to support a fully functional and compliant system.

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

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

H. Voice Amplification Systems shall be neatly and securely mounted at projector location. As indicated in the provided line diagram, Contractor shall supply and install audio cabling from projector output to connect to provided Voice Amplification Systems.

I. Contractor shall supply sixteen (16) Flexmikes for Owner shelf spares.

J. Contractor shall rework and reconfigure existing speaker cabling to connect to new voice lift systems. Contractor shall carefully extend existing speaker cabling to voice lift system at projector location for a fully functional system.

2.13 DOCUMENT CAMERAS

A. Document cameras shall be provided and installed in locations as indicated in Appendix E.

1. Acceptable Manufacturer(s)

a. IPEVO

1. V4K PRO ULTRA – Model CDVU-10IP

2. Document cameras shall meet or exceed the following the following requirements:

a. 8 MP Image Sensor

b. Integral Microphone

c. Integral LED Light

d. USB connectivity and power

2.14 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 Owner directed infrastructure upgrades.

PART 3 - EXECUTION

3.01 PREPARATION

A. Contractor shall conduct detailed walk-through examination with Designer, Construction Manager and Owner verifying equipment and material locations as well as mounting and placement requirements prior to commencement of other installation activities.

B. Contractor shall 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 DEMOLITION

A. Remove ALL abandoned AV cabling including VGA, Cable TV (in classroom only), unused speaker cables, shelfs, brackets and blank any open locations in all rooms receiving new AV equipment.

B. Contractor shall remove any existing equipment and transport to Owner directed site for disposition. Any equipment not retained by Owner shall be properly disposed of by Contractor.

3.03 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 (8') 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.

14. ULTRA SHORT THROW INTERACTIVE PROJECTORS

    a. Install, configure and test approved firmware configuration template including, but not limited to:

        1. Power on Image.

2. Lamp setting.

3. Firmware based Device ID (Including parameters such as: TCP/IP settings, Host Name, etc.).

4. Default port selection.

b. Contractor shall install and fully configure Epson projector management software and enable projectors for management.

c. Contractor shall install manufacturer recommended firmware during initial installation.

d. Neatly configure all cables as directed by Owner.

e. Attach projector to mount using manufacturer best practices.

f. Connect AC power using cord provided to projector.

g. Align projector with whiteboard provided by Others. Contractor shall install projector in relationship to the whiteboard to maximize the projected image and provide reliable interactive functionality.

h. Set keystone adjustment(s) as required.

i. Zoom and focus projector as required.

j. Secure all adjustment points.

15. WIRELESS PRESENTATION SYSTEM

a. Provide and connect all audio and video input and output device cables.

b. Contractor shall install manufacturer recommended firmware during initial installation.

c. Secure mounting location at projector location with provided mount to eliminate involuntary equipment movement.

d. Neatly route all cabling and secure slack.

e. Adjust balance levels for standard configuration.

f. Neatly route all cabling and secure slack.

g. Install, configure and test approved firmware configuration template including, but not limited to:

1. Power on Image.

2. Firmware based Device ID (Including parameters such as: TCP/IP settings, Host Name, etc.).

h. Collaborate and coordinate with Owner or Others to fully configure wireless presentation system to function on Owner provided network equipment.

i. Contractor shall supply, install and fully configure Kramer VIA cloud management software for a fully functional system.

16. VOICE AMPLIFICATION

a. Provide and connect all audio input and output device cables.

b. Secure mounting location at projector location with mounting screws or Velcro pads to eliminate involuntary equipment movement.

c. Neatly route all cabling and secure slack.

d. Adjust balance levels for standard configuration.

e. Neatly route all cabling and secure slack.

f. Provide and install connection from audio output on Contractor supplied projection units.

17. DOCUMENT CAMERAS

a. Connect USB cable to Owner provided teacher computer or docking station.

b. Fully cooperate with Owner for classroom workstation software installation.

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. 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.

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.

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

H. Sites of Work:

1. Brookwood Elementary School
5465 Kalamazoo SE
Kentwood, Michigan 49508

2. Crestwood Middle School
2674 44th Street
Kentwood, Michigan 49512

3. East Kentwood Freshman Campus
6170 Valley Lane
Kentwood, Michigan 49508

4. Pinewood Middle School
2100 60th Street
Kentwood, Michigan 49508

3.04 TESTING

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

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

C. Testing Procedures

1. Prior to system "turn-up", Contractor shall submit a written request 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.

3.05 DOCUMENTATION

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

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

    1. Equipment description.

    2. Equipment make.

    3. Model number.

    4. Software release.

5. Date installed.

6. Manufacturer's warranty.

7. Maintenance contract terms.

8. Verification of maintenance contract engagement.

9. Telephone numbers for service and support.

10. Detailed technical support and service procedure instructions.

11. All product (hardware and software) manuals and manufacturer supplied documentation, including, but not limited to owner manuals, system administrator manuals and configuration guides. Where number of duplicate copies for particular manual or documentation item could be reasonably considered excessive, Contractor shall request direction from Owner and Designer.

12. Photocopy of original invoice listing make and model for all components and equipment from individual manufacturer(s), distribution source(s), or authorized agent(s) to establish manufacturer warranty start date for potential use after end of contract warranty provisions.

13. CAD or Visio as built drawings/diagrams for each building.

14. System Configuration Report.

15. Complete inventory of installed hardware and system software including, but not be limited to, model numbers, Ethernet MAC address, serial numbers, physical installation location and software options.

3.06 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). Owner shall designate up to four (4) administrators to be trained. Training shall be a minimum of two (2), 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. 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.

3.07 SCHEDULE, MEETINGS AND PLANS

A. Schedule

1. Post bid Interviews: Week of January 29, 2024

2. Contractor Chosen: Week of February 12, 2024

3. Work Commences: April 1, 2024

4. Substantial Completion of Project: August 1, 2024

5. Project Close-out: September 1, 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 for the new Kentwood Public Schools Early Childhood Center. Work shall include, but not be limited to, head-end equipment, cabling, ceiling and/or wall speakers, interface units and all other components and services required for a full and operational system.

B. Owner desires to add to systems currently in operation and serving indicated locations.

1. Crestwood Middle School
2674 44th Street
Kentwood, Michigan 49512

2. East Kentwood Freshman Campus
6170 Valley Lane
Kentwood, Michigan 49508

3. Pinewood Middle School
2100 60th Street
Kentwood, Michigan 49508

C. The Contractor shall design, engineer, configure, supply, connect, test, document, and warrant a fully operational and compliant system, complete and with full functionality as specified herein.

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

1.02 WARRANTY

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

1. Owner shall be provided full operation of system functions and features during the complete warranty period incurring absolutely no costs during that time.

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

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

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

C. On site services provided under the warranty shall be performed by personnel or representatives of Contractor as herein defined and located within physical proximity to provide response levels deemed acceptable to Owner.

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

1. Four (4) hours or less for matters that render twenty percent (20%) or more of the system users unable to maintain normal productivity.

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

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

E. Bidder shall provide current monthly maintenance/service contract pricing for recommended programs for all equipment following the specified and included period as additional information. This information will be considered by Owner and Designer as part of the bid evaluation process.

F. System Warranty shall commence on date of substantial completion as certified by Designer and provided for herein. Delivery to work site of materials, connection of circuits, turn-up of system, physical removal from packaging, issuance of Contractor documents including, but not limited to invoices and/or packing slips, or any event or documentation, not specifically provided for herein, shall have no effect on Warranty or System Acceptance by Owner and/or Designer.

1.03 STORAGE OF MATERIALS

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

B. It shall be the Contractor's responsibility to secure all equipment including material to be installed as part of the contract. No changes shall be made to the contract due to loss or theft of equipment and/or materials not officially accepted by the Owner.

C. Formal receipt of the materials shall not be completed by the Owner until completion of project closeout. The Contractor shall be responsible for all equipment until time of closeout as provided for herein.

1.04 SUBMITTALS

A. Submittals shall consist of, but not be limited to, technical cut sheets and detailed information pamphlets on all components of the system to be installed. All cut sheets and submittals shall be distinctly marked to highlight the actual part number of the item being submitted for approval with Bid Proposals.

B. Shop drawings and diagrams shall be submitted by Bidder for approval by Designer with Bid Proposals.

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

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

C. Contractor shall provide proof of manufacturer support by photocopy of certification and letter of support from major component manufacturers for this specific project with Bid Proposals.

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

1. The Owner and/or Designer may notify Contractor of any offending situations under this provision allowing Contractor up to forty-eight (48) hours to correct the situation prior to taking other corrective action.

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

E. The Contractor shall submit within five (5) calendar days after the Notice to Proceed, a schedule that reflects the sequence of activities of the contractor's approach to the execution of and completion of the work. The schedule shall be broken into work areas to provide for a clear identification of the planned progress of the work. Included in the schedule will be a list of tasks with list of deliverables and the percentage of work completed. This schedule shall coincide with progress payments applications dates and projected amounts.

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

1.05 REFERENCE SPECIFICATIONS

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

1. EIA/TIA Commercial and Administration Standards
2. NEC
3. IEEE 802
4. IETF RFCs
5. FCC Emissions Ratings
6. UL
7. MOSHA Safety Standards

1.06 CONTRACTOR

A. The Contractor shall accept complete responsibility for the installation, certification, and support of the system. Contractor shall be an authorized vendor of all major components.

B. All work shall be performed and supervised by Project Managers, Engineers and/or Technicians who are qualified to install Voice Communication System and perform related tests as recommended by the manufacturer and in accordance with the manufacturer’s best practices and methods.

C. Project Managers, Engineers and Technicians employed on this project shall be properly and fully trained and qualified by the manufacturer on the installation and testing of the equipment and systems to be installed.

D. The Contractor shall have a proven track record in Public Address System configuration and installation. This must be shown by the inclusion of references of at least three (3) projects involving the installation of similar systems completed by the Contractor in the prior two (2) years on unaltered forms with the sealed Bid Proposal as provided herein.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer of major components of the included Public Address / Intercom system shall be known and leading entity in the relevant communications field, and shall have been designing, manufacturing, and installing similar systems for a period of no less than three (3) years.

1. Acceptable Manufacturers

a. ADVANCED NETWORK DEVICES

b. ATLASIED

c. SINGLEWIRE

2.02 Supply most current version of all products provided.

A. Prior and/or old versions of products, unless specifically approved and documented by Designer and/or Owner shall not be acceptable.

B. In cases where a newer version of hardware or software is available at the time of installation, Contractor shall request clarification from Designer on which version is to be used.

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

2.04 PUBLIC ADDRESS AND PROGRAM SYSTEM

A. A fully compliant public address and program system devices shall be configured and installed to service Owner's worksites listed herein.

B. New Interior PoE speakers shall be provided in locations identified on provided drawings. Quoted cost must include all materials and labor to integrate speakers into Contractor provided mass notification software.

C. New exterior, weatherproof wide-angle sound dispersion PoE exterior horn(s) shall be provided in locations identified on provided drawings. Quoted cost must include all parts and labor to integrate into Contractor provided mass notification software.

D. CENTRAL CONTROLLER

1. Contractor shall supply appropriate licensing and labor to integrate all devices into existing Singlewire Informacast Fusion system. Licensing shall be provided for term of warranty.

2. Central control software shall be configured and installed for amplification and distribution of audio programming to all areas of the facility. Owner applications may include, but will not be limited to:

    a. Emergency alerting including possible building evacuation, shelter in place and/or lock-down.

    b. System access from remote locations via either telephone and/or web browser to individual buildings for zone paging and/or alerting.

    c. System access from remote locations via web browser to allow for program changes (i.e. Regular schedule to Snow day).

3. Central control software and all attached devices shall be installed and configured to meet or exceed all of the following requirements:

    a. Interface to Voice Communication system (phone system) as primary voice input connection.

        1. Specific coded authorization shall be required to authenticate any user attempting to broadcast on the system. Codes shall originate by DTMF from voice terminals, and shall be up to four (4) tones (keys) in length.

        2. Capable of integrating with existing Shoretel phone system over SIP protocol.

    b. Interface to computer data network system over Owner provided Ethernet network.

        1. Specific password protected authorization shall be required to authenticate any user attempting to broadcast or modify programming on the system.

        2. Access shall be by standard web browser (MS Edge, Chrome, etc.) and shall not require specific application software be loaded onto access devices.

    c. System shall store pre-recorded schedule for tone generation and interface to Owner's existing time sync (NTP Server) over Ethernet. System shall broadcast school "bells".

        1. Unlimited number of schedules must be supported for each building/facility (half day, normal day, exam schedule, etc.)

    d. System shall store pre-recorded emergency alert messages matching owners existing standard in use at other facilities.

1. Broadcast of up to six (6) alarm tones, pre-recorded messages or emergency voice messages to all or selected areas of the facility.

2. Specific alarm tones shall be given priority over any other broadcast material.

e. System shall provide eight (8) additional contact closures, which when activated result in broadcast of predefined alarm tone(s) to predefined zone(s).

f. Paging system zones shall be customizable to allow complete control over paging zone output. Zones shall be easily modified using the web browser interface to add or eliminate individual classrooms, hallways, and large venue spaces from zone lists.

g. Owner provided PoE+ switches shall supply suitable power to enable intelligible audio from supplied Ethernet connected speakers.

h. System shall contain one (1) physical external interface in addition to telephone (primary voice interface) for connection to any one of a variety of music sources (including, but not limited to MP3, tuner, etc.) to be broadcast to designated zones or groups of zones. This interface shall be 3.5mm audio jack, and located in building central office to provide for building administrator convenient access.

i. System shall automatically generate and transmit a pre-announcement attention signal prior to any voice broadcast.

j. Feedback elimination precautions or system features shall be employed to suppress any audio coupling between and audio source and nearby speaker.

k. All building-based equipment shall be mounted in Owner designated rack in MDF room(s), except classroom equipment, which shall be installed in each classroom.

l. Gain control of alarms and announcements shall be individually configurable to different volume levels.

m. The unit shall operate from standard owner supplied 110 VAC power outlets within six feet (6') of required rack mounting in normal ambient climatic conditions for office communication closets.

4. Program System shall provide for, but not be limited to:

a. Integrated calendar for storage of various different programs to be scheduled

1. Normal Day
2. Half Day
3. Early Release Day
4. Exam Day
5. Delayed Start Day

b. Six (6) different tones/chimes/bells to signify class start/end/tardy etc.

c. Password protected unique User ID access to the system by individual building principals and/or secretaries to manage and administer program calendars. Such credentials shall be integrated with the Owner's existing Microsoft Active Directory for common login control across the network.

d. Separate program databases for each facility that can be manipulated/managed by that facility's specific administrative team.

5. Preference will be given to system architectures where a common central server can be used from the district's data center for control and management of building operations.

6. Contractor shall work collaboratively with Owner and other trades to fully integrate provided paging speakers and devices for building lockdown. Lockdown triggered from within Informacast will be configured to integrate with IP messaging clock devices and door access software (Genetec) via provided contact closure.

E. INTERIOR POWER OVER ETHERNET (PoE) IN-CEILING (2x2) SPEAKERS

1. Acceptable Manufacturer(s)

a. ADVANCED NETWORK DEVICES

b. ATLASIED

1. IP-22SYSMF

2. Interior Speakers shall be provided in classrooms and other common areas. Speakers are identified on provided drawings.

a. Final speaker placement shall be adjusted as needed for appropriate audio intelligibility, volume levels and ceiling obstructions and/or conditions and shall remain the responsibility of the contractor.

3. Speakers shall meet or exceed the following requirements:

    a. Square ceiling tile IP speaker (2'x 2')

    b. LED Flasher – 7 Colors

    c. Frequency response – 60 Hz – 17kHz

    d. Built-in 8 W amplifier

    e. PoE IEEE 802.3af/802.3af Type 1 Class 3 (max 12.95 W)

    f. Support for SIP integration with Voice over IP (VoIP) systems.

    g. Full multicast and broadcast support.

    h. All devices, including but not limited to, amplifiers, brackets, baffles, and Control Unit shall be mounted square and plumb and as recommended by the manufacturer and required by Owner and Architect.

    i. Each speaker shall be connected to central equipment using standard category 6 ethernet cabling provided by others. Contractor shall supply ethernet patch cables at both the closet and device location to extend provided cabling to optimal speaker location, cable shall not exceed 30'. Cable color shall be coordinated with Owner and/or designer.

    j. Contractor shall be responsible for cross connecting speakers in data closet and reporting back switch and switch port locations to Owner for programming.

    k. Each speaker shall be volume adjustable at installation to accommodate specific acoustical properties of the intended coverage area.

    l. Contractor shall include all parts and accessories for a fully functional and securely installed system using manufacturer and industry best practices.

    m. System shall produce audio at a peak level of approximately eighty-five (85) dBA at probable listener's positions.

    n. Provided speakers must be fully Singlewire Informacast and Syn-apps/Revolution compatible.

F. INTERIOR POWER OVER ETHERNET (PoE) SURFACE MOUNT SPEAKERS

1. Acceptable Manufacturer(s)
    a. ADVANCED NETWORK DEVICES
    b. ATLASIED
        1. IP-SM
2. Interior Surface Mount Speakers shall be provided in classrooms and other common areas. Speakers are identified on provided drawings.
    a. Final speaker placement shall be adjusted as needed for appropriate audio intelligibility, volume levels and ceiling obstructions and/or conditions and shall remain the responsibility of the contractor.
3. Speakers shall meet or exceed the following requirements:
    a. Surface mount IP speaker
    b. Frequency response – 60 Hz – 17kHz
    c. Built-in 8 W amplifier
    d. PoE IEEE 802.3af/802.3af Type 1 Class 3 (max 12.95 W)
    e. Support for SIP integration with Voice over IP (VoIP) systems.
    f. Full multicast and broadcast support.
    g. All devices, including but not limited to, amplifiers, brackets, baffles, and Control Unit shall be mounted square and plumb and as recommended by the manufacturer and required by Owner and Architect.
    h. Each speaker shall be connected to central equipment using standard category 6 ethernet cabling provided by others. Contractor shall supply ethernet patch cables at both the closet and device location to extend provided cabling to optimal speaker location, cable shall not exceed 30’. Cable color shall be coordinated with Owner and/or designer.
    i. Contractor shall be responsible for cross connecting speakers in data closet and reporting back switch and switch port locations to Owner for programming.
    j. Each speaker shall be volume adjusted at installation to accommodate specific acoustical properties of the intended coverage area.
    k. Each surface speaker shall include appropriate back box.

l. Contractor shall include all parts and accessories for a fully functional and securely installed system using manufacturer and industry best practices.

m. System shall produce audio at a peak level of approximately eighty-five (85) dBA at probable listener's positions.

n. Provided speakers must be fully Singlewire Informacast and Syn-apps/Revolution compatible.

G. INTERIOR POWER OVER ETHERNET (PoE) PENDANT SPEAKERS

1. Acceptable Manufacturer(s)

   a. ATLASIED

      1. IP-PM8GD-B

   b. Or Equal.

2. Pendant Speakers shall be provided in classrooms and other common areas. Speakers are identified on provided drawings.

   a. Final speaker placement shall be adjusted as needed for appropriate audio intelligibility, volume levels and ceiling obstructions and/or conditions and shall remain the responsibility of the contractor.

3. Speakers shall meet or exceed the following requirements:

   a. Pendant mount IP speaker.

   b. Frequency response – 86 Hz – 15.5kHz

   c. Built-in 9 W amplifier

   d. PoE IEEE 802af/802.af Type 1 Class 5 (max 12.95W)

   e. 105-degree dispersion

   f. Support for SIP integration with Voice over IP (VOIP) systems

   g. Full multicast and broadcast support

   h. All devices, including but not limited to, amplifiers, brackets, baffles and control units 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 using standard category 6 ethernet cabling provided by Others. Contractor shall supply ethernet patch cables at both the closet and device location to extend provided cabling to optimal speaker location, cable shall not exceed 30'. Cable color shall be coordinated with Owner and/or Designer.

j. Contractor shall be responsible for cross connecting speakers in data closet and reporting back switch and switch port locations to Owner for programming.

k. Each speaker shall be volume adjustable at installation to accommodate specific acoustical properties of the intended coverage area.

l. Contractor shall include all parts and accessories for a fully functional and securely installed system using manufacturer and industry best practices.

m. System shall produce audio at a peak level of approximately eight-five (85) dBA at probably listener's positions.

n. Provided speakers must be fully Singlewire Informacast compatible.

H. INTERIOR/EXTERIOR POWER OVER ETHERNET (PoE) HORNS

a. ATLASIED

1. IP-APX

2. Interior/Exterior Horn Speakers shall be provided in classrooms and other common areas. Speakers are identified on provided drawings.

a. Final speaker placement shall be adjusted as needed for appropriate audio intelligibility, volume levels and ceiling obstructions and/or conditions and shall remain the responsibility of the contractor.

3. Horns shall meet or exceed the following requirements:

a. Built-in 8 W Class D amplifier

b. 121dB at 25 Watts (peak)

c. PoE IEEE 802.3af/802.3af Type 1 Class 3 (max 12.95 W)

d. Support for SIP integration with Voice over IP (VoIP) systems.

e. Vandal and weather resistant.

f. Speaker to include appropriate vandal proof back box.

g. Frequency response of 600Hz – 14 kHz.

h. Each speaker shall be connected to central equipment using standard category 6 ethernet cabling provided by others. Contractor shall supply ethernet patch cables at both the closet and device location for each speaker to extend provided cabling to optimal speaker location, cable shall not exceed 30'. Cable color shall be coordinated with Owner and/or designer.

i. Contractor shall be responsible for cross connecting speakers in data closet and reporting back switch and switch port locations to Owner for programming.

j. Contractor shall include all parts and accessories for a fully functional and securely installed system using manufacturer and industry best practices.

k. Provided speakers must be fully Singlewire Informacast and Syn-apps/Revolution compatible.

I. INTERIOR IP STROBE DEVICE

a. ADVANCED NETWORK DEVICES

b. ATLASIED

c. VALCOM

d. Or Equal.

2. Interior IP Strobe Devices shall be provided in classrooms and other common areas. Speakers are identified on provided drawings.

a. Final speaker placement shall be adjusted as needed for appropriate audio intelligibility, volume levels and ceiling obstructions and/or conditions and shall remain the responsibility of the contractor.

3. Strobes shall meet or exceed the following requirements:

a. PoE IEEE 802.3af/802.3af Type 1 Class 3 (max 12.95 W)

b. Support for SIP integration with Voice over IP (VoIP) systems.

c. Vandal and weather resistant.

d. Strobes in gymnasiums shall include appropriate protective cage.

e. Strobes to include appropriate back box if necessary for a secure installation.

f. Blue lens

g. Each speaker shall be connected to central equipment using standard category 6 ethernet cabling provided by others. Contractor shall supply ethernet patch cables at both the closet and device location for each speaker to extend provided cabling to optimal speaker location, cable shall not exceed 30'. Cable color shall be coordinated with Owner and/or designer.

h. Contractor shall be responsible for cross connecting speakers in data closet and reporting back switch and switch port locations to Owner for programming.

i. Contractor shall include all parts and accessories for a fully functional and securely installed system using manufacturer and industry best practices.

j. Provided speakers must be fully Singlewire Informacast and Syn-apps/Revolution compatible.

2.05 CLOCK/SPEAKER COMBO DEVICES

A. Clock/Speaker combo devices shall be provided in locations as identified on provided drawings.

B. Acceptable Manufacturers

1. ADVANCED NETWORK DEVICES

a. IPSWDHD-MW

2. ATLASIED

C. Informacast Compatible

D. Speaker/Clock Combo shall include the following ports:

1. 1 General Purpose Output

2. Aux Audio Line-In Balanced

3. Aux Audio Line-Out Balanced

E. Contractor shall supply single sided factory assembled digital clock with integral speaker as indicated on provided drawings and specified herein.

F. Clocks shall display time during normal operation.

G. Clocks shall include all necessary hardware including back box to be surface mounted in identified locations.

H. Clocks shall function as a scrolling message board during emergency notification operation.

I. Clocks shall include all necessary hardware including back box to be surface mounted in identified locations.

J. Clocks shall meet or exceed the following:

1. Integrated flashers to draw visual attention.

2. Function fully on PoE+ Power.

3. Communicate to Owners existing NTP server

4. Fully communicate over Owner's existing ethernet network.

5. Viewable clock display shall be at least 12 inches by 3.75 inches in size.

K. Clocks shall be capable of changing the color of the display for viewer attention. Available colors shall include, but not be limited to Red, Green and Blue.

L. Clocks installed in gymnasium locations shall include protective cages.

2.06 CLASSROOM AUDIO SYSTEM AND CLOCK INTEGRATION

A. All clock/speaker combo devices installed in classroom spaces and media center shall be tied in AV Contractor supplied voice amplification system (Lightspeed 975) via line out.

B. Clock Contractor shall be responsible for supplying all necessary cabling to tie clock/speaker combination device with Lightspeed priority audio input installed at projector.

2.07 COMPONENT INTERCONNECTION

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

B. No wiring installed shall be visible unless specifically and individually approved by Owner and Designer. All wire that traverses open areas shall be installed in metal raceway of appropriate size for the number of wires installed plus twenty percent more.

1. All metal raceway shall be ordered in standard colors to as closely match the environment in which it is being installed as possible.

2. Metal raceway shall be carefully and neatly installed, to meet manufacturer recommendations and standards for professional installation.

3. Sharp edges, gaps in the covering or corners or other unprofessional workmanship characteristics of installation will not be acceptable.

C. Wiring color shall remain the same throughout the system. Colors used for coding shall be as directed by the system manufacturer, Owner, and Architect.

D. Wire shall be copper.

2.08 ALLOWANCES

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

1. Allowance shall be made in the amount of $5,000.00 for contract services related to supply, installation, and connection of contingency upgrades.

PART 3 - EXECUTION

3.01 PREPARATION

A. Contractor shall conduct detailed walk-through examination with Designer and Owner verifying equipment and material locations as well as mounting and placement requirements prior to commencement of other installation activities.

B. Contractor shall ensure all submittals and shop drawings have been provided to, and approval has been obtained from Designer prior to commencement of any final installation activities.

3.02 INSTALLATION

A. Contractor shall be familiar with the environment where work will be done as specified herein.

B. Work Areas shall be cleaned at the end of each day. All debris shall be cleared, removed, and disposed of in an approved container for the site. All

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

C. All equipment and materials shall be installed in a neat and workmanlike manner. Best practices installation principles shall be used throughout the project.

D. The Contractor shall furnish, set in place, and install all equipment necessary for a fully compliant and operational system as specified herein. The installation process includes, but is not limited to the following:

1. Inventory receipt of all components and equipment.

2. Storage of all equipment and components until such time those items are installed according to the specifications.

3. Transport equipment to the Owner's installation location(s).

4. Assemble, install, configure, and test all equipment and components, maintaining accurate inventory records and status documents and discarding packaging.

5. Collect all information necessary to accurately program all sets and/or system devices to the Owner's intended use and need.

6. Complete end user and system administrator training programs as specified herein.

7. Work shall be performed to meet local codes and industry standards, including, but not limited to:

   a. Adequate gas tube protection for outside plant cable connections.

   b. Grounding and Bonding.

8. Work includes extending cable bundles, as required, to Owner identified equipment installation locations at all locations.

9. Owner will provide contractor with permanent asset tags for each system component that exceeds $100.00 in value. Equipment installed in wiring closets will have district asset tags installed in a prominent location. Assets installed in public areas, such as staff desktop devices, will have asset tags installed in discreet but consistent area of each asset.

a. Asset number, device/component description, serial number, make, model, part-number, site, room number/name and any other critical asset information shall be recorded for Owner.

E. Worksites include the following:

1. Crestwood Middle School
   2674 44th Street
   Kentwood, Michigan 49512

2. East Kentwood Freshman Campus
   6170 Valley Lane
   Kentwood, Michigan 49508

3. Pinewood Middle School
   2100 60th Street
   Kentwood, Michigan 49508

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

1. Final determination as to the damage condition and/or repair/replacement fitness of any surface, plate or panel shall be the sole responsibility of the Designer.

2. The building and work area shall be returned to its original condition prior to final sign-off of the project.

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

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

H. Contractor shall collect, consolidate and otherwise prepare for shipping or disposal Owner's existing telecommunications system components, including, but not limited to stations, processors, cards, options, and application servers in a manner acceptable to, and consistent with, Owner's intended disposition of the items.

3.03 BALANCING

A. After installation, Contractor shall conduct a detailed walkthrough to verify optimal sound levels of installed devices.

B. Contractor shall verify eighty-five (85) dBA at probable listener's positions. Contractor shall verify dB rating with decibel meter.

1. dB readings shall be conducted in the center of each classroom, hallway and other common spaces.

C. Contractor shall supply written report with dB readings identified.

3.04 TESTING

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

3.05 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.

3.06 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 two (2), 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.

3.07 SCHEDULE, MEETINGS AND PLANS

A. Schedule

1. Post bid Interviews: Week of January 29, 2024

2. Contractor Chosen: Week of February 12, 2024

3. Work Commences: April 1, 2024

4. Substantial Completion of Project: August 1, 2024

5. Project Close-out: September 1, 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 CONTROLS

PART 0 - GENERAL

1.01 DESCRIPTION OF PROJECT

A. Work described in this specification section pertains to a new and rework of existing access control equipment for the sites listed and specified herein. All equipment will be integrated into new Genetec integrated access control system. Building access control work shall consist of three (3) categories:

1. Addition of necessary hardware, software and labor to enhance security in the identified locations, including the inclusion of door contacts and REX devices on all exterior doors of the locations provided, see Appendix G and H.

2. Complete migration of existing Lenel OnGuard door access control system to Genetec, see Appendix I.

3. Addition of necessary hardware, software and labor to enable electronic door access and security devices in new construction spaces as identified in provided documents and as specified herein, see Appendix J, K, L and M.

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. Contractor shall fully coordinate and cooperate with door hardware vendor supplying the balance of items identified in section Appendix K and M - 08 06 71 – Door Hardware Schedule as identified herein. All final connections, component integration, configuration, testing and programming functions to provide for a fully operational and functional system as specified shall remain the responsibility of Contractor selected for work in this section/division.

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

1.03 STORAGE OF MATERIALS

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

B. It shall be the Contractor's responsibility to secure all equipment including material to be installed as part of the contract. No changes shall be made to the contract due to loss or theft of equipment and/or materials not officially accepted by the Owner.

C. Formal receipt of the materials shall not be completed by the Owner until completion of project closeout. The Contractor shall be responsible for all equipment until time of closeout as provided for herein.

1.04 SUBMITTALS

A. Submittals shall consist of, but not be limited to, technical cut sheets and detailed information pamphlets on all components of the system to be installed. All cut sheets and submittals shall be distinctly marked to highlight the actual part number of the item being submitted for approval with Bid Proposals.

B. Shop drawings and diagrams shall be submitted by Bidder for approval by Designer with Bid Proposals.

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

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

C. Contractor shall provide proof of manufacturer support by photocopy of certification and letter of support from major component manufacturers for this specific project with Bid Proposals.

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

   1. The Owner and/or Designer may notify Contractor of any offending situations under this provision allowing Contractor up to forty-eight (48) hours to correct the situation prior to taking other corrective action.

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

E. The Contractor shall submit within ten (10) calendar days after the Notice to Proceed, a schedule that reflects the sequence of activities of the contractor's approach to the execution of and completion of the work. The schedule shall be broken into work areas to provide for a clear identification of the planned progress of the work. Included in the schedule will be a list of tasks with list of deliverables and the percentage of work completed. This schedule shall coincide with progress payments applications dates and projected amounts. All durations shown will be in working days. Microsoft Project is the software of choice for this schedule. The timeframe described in the Contractor's Schedule shall represent the Contractor's plan for organizing, directing, managing, controlling, staffing, and executing the work required by the

Contract Documents. Owner will rely on such schedules to coordinate and otherwise plan related work of Owner personnel, other separate contractors, or the Owner's routine daily work.

1.05 REFERENCE SPECIFICATIONS

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

1. IEEE

2. EIA/TIA Commercial and Administration Standards

3. NEC

4. FCC – All Applicable Rules and Regulations

5. UL

6. MOSHA Safety Standards

B. Bidder shall be responsible for supply, configuration and installation of components identified in Section 087100 - Door Hardware, Part 5 "Hardware Schedule".

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.

1.07 CONTRACT TERM PRICING

A. Owner intends to work exclusively with awarded Contractor during the contract warranty period related to additions, changes and/or system modifications. All such work that is not applicable to the warranty specified herein shall be conducted at rates and pricing consistent with that provided for and documented herein.

   1. Such work shall be conducted in a professional and expeditious manner consistent with best practices and industry norms.

   2. Hourly rates, including travel charges, shall remain fixed for the term of the contract except as provided for herein.

B. During the contract term, Contractor shall provide a consistent cost-plus model of fixed pricing during the contract duration, with certain audit provisions to Owner for all materials and products during the implementation and through the Warranty term of this project.

   1. Alternatively, Owner may consider a discount from current published US list prices to Owner for all materials and products from the same product family, or replacement product family, as may be introduced by Manufacturer during the implementation and through the Warranty term of this product. Bidders are encouraged to propose such pricing options and strategies in their bid documents for Owner evaluation.

   2. Owner may direct at is sole discretion, Designer to conduct a spot audit of Contractor pricing to verify compliance with agreed upon mark-up or discount models of pricing. Contractor shall fully and completely cooperate with Designer by providing all requested materials, including, but not limited to vendor invoices, vendor contract documents and other related documentation deemed relevant by Designer.

C. Owner reserves the right, with input from Designer and Contractor, to select other model(s) of materials, products, and/or equipment at their sole discretion, at any point during the contract term. Any such model change, being from the same or replacement product family, shall be accommodated by Contractor and provided at the same pricing strategy as similar and/or prior models as proposed under this contract.

D. Owner may, or may not, elect to purchase individual integrated door hardware components, as may be applicable to system expansion from Contractor or other related door vendors. Contractor shall fully cooperate with Owner decisions for related product sourcing and provide all integration service for such products as is appropriate for a fully functioning and operational system to meet the Owners needs.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturer of major components of the included Building Access Control system shall be known and leading entity in the relevant communications field, and shall have been designing, manufacturing, and installing similar systems for a period of no less than three (5) years.

B. Acceptable Manufacturers (In alphabetical order):

1. ASSA ABLOY

a. Door Interface Hardware, Electric Strike Devices, Door Contacts (or equal), REX (or equal)

2. GENETEC

a. Central Management Software

3. GENETEC/MERCURY

a. Door Controllers

4. HID

a. Credential Readers

2.02 Supply most current version of all products provided.

A. Proposed components shall have been field tested and proven in actual use.

B. Prior and/or old versions of products, unless specifically approved and documented by Designer and/or Owner shall not be acceptable.

C. In cases where a newer version of hardware or software is available at the time of installation, Contractor shall request clarification from Designer on which version is to be used.

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

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

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

2.06 System shall be of a distributed processing design with a fully distributed database including, but not limited to time, date, valid codes, access levels and related data so that each Controller makes access control decisions for that

location. If communications with central station equipment is lost, all transactions shall be buffered until the restoration of a connection to the central station.

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

2.08 Contractor shall be responsible for final and working system. Use of existing components and materials provided by others during new construction shall be integral to system configuration and cost-effective installation. Bidders are encouraged to use all compatible and working components in system solution. See schedule(s) and reference files for additional detail.

2.09 CENTRAL MANAGEMENT SOFTWARE

A. New access control hardware shall be integrated with new Genetec open platform security software for a fully functional system.

B. Contractor will supply all necessary licensing and labor to integrate new door access hardware into new Genetec system. Including all new hardware as indicated on new construction door schedule documents and all new card readers, strikes, door position indicators and REX devices in existing buildings as indicated on provided documents and as specified herein.

C. Contractor will supply all necessary licensing and labor to integrate ALL existing (Mercury) Lenel door access components into new Genetec system. Including all existing accessories for a fully functional system. Including all door release switches, door stations and all other integration enabled in the current Lenel system.

D. Contractor shall supply all necessary administration workstation licensing to connect up to thirty (30) administrative workstations for video monitoring and electronic door access control.

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

F. Contractor shall supply all necessary licensing, labor and accessories to integrate existing Medeco XT security locks in Genetec system. Contractor shall migrate and maintain all existing programming and features for a fully functional system.

G. System reporting shall include, but not limited to:

1. Access through entrance doors.

2. Attempted access per entrance.

3. Propped and unsecured door alerting.

H. All necessary licensing and labor to integrate existing Microsoft Active Directory will be provided and installed. Contractor shall work collaboratively with the Owner and Designer to implement Active Directory integration.

I. System shall provide for Owner definition of access groups, schedules and door groups that can be combined by Owners system administrator into combination of access policies for users.

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

2.10 CONTROLLER

A. Acceptable Manufacturer(s)

1. GENETEC/MERCURY

a. LP1501

B. Door controllers shall be provided in locations at all electrified door hardware locations and as identified on drawings and door hardware schedule. Contractor shall provide one door controller for each 1 or 2-leaf opening requiring electrified door hardware as identified on Section Appendix K and M 087100 door schedule and Appendix H – Existing Door Schedule.

C. Controllers are to be housed in a surface mounted lockable impact resistant enclosure to protect the controller and provide for cable termination and management in current centralized door controller location. Contractor shall provide all necessary plenum rated cables at both the closet and device location to the controller.

D. Contractor shall supply and install all necessary patch cables to connect equipment to network and in data closet location. Contractor shall cross connect equipment in data closet and report to Owner data closet, switch and port location for programming.

E. In identified locations where new controllers and doors are to be added. Controller(s) shall provide, but not be limited to:

1. LenelS2 Mercury hardware based to support multiple software vendor's systems.

2. Capable of supporting multiple types and styles of credential readers.

2.11 CREDENTIAL READERS

A. Where indicated on drawings, credential readers shall be provided that meet or exceed the following requirements:

1. HID

    a. SIGNO

2. Contractor shall supply appropriately size card reader for either wall switch or mullion mounting.

3. Read Owner supplied credentials.

4. DC powered from associated Controller.

5. Response time for passage requests of 800ms.

6. Sealed weatherproof shell enclosure rated for outdoor operation.

7. Surface mounted on exterior surface of structure for external readers.

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

9. Audible status indicator upon user prompt.

10. Range of four inches (4”).

B. See associated supplied drawings and door schedule for location and quantity.

2.12 INTEGRATED PoE HARDWARE

A. Where Owner has specified integrated hardware as identified in Section 08700 – Door Hardware, Part 5 “Hardware Schedule”, Contractor shall provide, install, configure, and attach ASSA-ABLOY Sargent IN220 Integrated Locks. Contractor shall include cables of a sufficient length to be neatly routed to a suitable location to reach Ethernet ports planned for connection to PoE integrated hardware.

2.13 CONTACT CLOSURE DEVICES

A. System shall provide sixteen (16) additional contact closures (per building), which when activated result in engagement of predefined door locking condition(s) to predefined zone(s).

2.14 DOOR INTERFACE HARDWARE (INTEGRATED COMPONENTS)

A. All controllers shall be Mercury door controllers, where new door controllers are to be provided, the door interface hardware provided by others shall meet or exceed the following:

1. 12v PoE+ controller compliant strikes will be provided by others as part of Section 08700 work and shall be integrated into the door controller installation by Contractor. In locations where electric strikes are to be added to existing doors, Contractor shall supply appropriate door strike. Selected strike shall use no more than 0.45A at 12 VDC.

    a. ASSA ABLOY

        1. 9600

        2. Or Equal.

2. Where new door controllers are to be provided and as indicated on provided door schedule and diagrams, each door controlled by the system shall be equipped with PIR REX device where applicable and shall be integrated into the door controller installation by Contractor.

    a. ASSA ABLOY

    b. RISCO

    c. Or Equal.

3. Where new door controllers are to be provided and as indicated on provided door schedule and diagrams, each door shall be equipped with magnetic DPI sensors by Contractor and shall be integrated into the door controller installation by Contractor.

    a. ASSA ABLOY

    b. NASCOM

    c. Or Equal.

4. All door strike, REX and DPI cables shall of a sufficient length to be neatly routed by Contractor supplying material, to a location suitable to reach inside controller enclosure for door(s).

2.15 HIDDEN DOOR RELEASE SWITCHES

A. Door release switches are to be provided in locations identified as indicated in supplied door schedule.

    1. Door release switches shall meet or exceed the following requirements:

        a. Alarm Controls Corp TS-18

    2. Hidden door release switches shall be programmed to provide door release capabilities for doors identified on provided drawings and a specified

herein. Contractors shall supply all necessary cabling, labor and accessories to integrate hidden door release switches with Contractor provided door controllers.

2.16 INTEGRATION

A. Contractor provided building access equipment shall be integrated with existing Singlewire Informacast system via provided contact closure device. Lockdown triggered from within Informacast system shall place building in lockdown state desired by Owner.

B. Provided Credential Readers/Door Controllers shall be integrated with door handicap operators where applicable. Contractor shall supply all labor and accessories to integrate Credential reader with handicap operators for a safe and fully functional system. Contractor shall work collaboratively with handicap operator installers to verify the following functionality:

1. External operator buttons shall only be functional in the event of a successful card read or remote door unlatch. Door operator motor should only be operable in the event of a successful card read.

2. Internal operator buttons shall be functional at all times, the door should unlock automatically.

3. Contractor to supply all hardware necessary including accessories and installation to enable this capability

C. Provided Credential Readers/Door Controllers shall be integrated with mag hold opens provided by others.

1. Mag hold open devices shall be released in the event of a lockdown.

2. Contractor shall supply all necessary licensing, cabling and installation to tie lockdown buttons with fire panel system to release mag hold open doors.

2.17 RACEWAY

A. In new construction areas, pathways are to be provided by Others. In existing locations, Contractors shall supply all necessary appropriately sized metallic raceway to fully enclose and protect all cabling.

2.18 COMPONENT INTERCONNECTION

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

B. Wiring color shall remain the same throughout the system. Colors used for coding shall be as directed by the system manufacturer, Owner and Designer.

C. Wire shall be copper.

D. Contractor shall coordinate with all relevant building trades subcontractors as well as Owner's Construction Manager to integrate and interconnect all relevant equipment, components, devices, connections and wires that may be provided by others. Refer to construction documents provided for reference.

2.19 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 $20,000.00 for contract services related to supply, installation, and connection of contingency upgrades.

PART 3 - EXECUTION

3.01 PREPARATION

A. Contractor shall conduct detailed walk-through examination with Designer and Owner verifying equipment and material locations as well as mounting and placement requirements prior to commencement of other installation activities.

B. Contractor shall ensure all submittals and shop drawings have been provided to, and approval has been obtained from Designer prior to commencement of any final installation activities.

3.02 INSTALLATION

A. Contractor shall be familiar with the environment where work will be done as specified herein and make every reasonable effort to minimize interference with Owner's or other contractor's activities.

B. Work Areas shall be cleaned at the end of each day. All debris shall be cleared, removed, and disposed of in an approved container for the site. All equipment and tools shall be removed from common areas and stored in approved, secure storage locations. Any work that may impede the general use

of the space and/or other contractor's work and cannot be removed shall be flagged and cordoned off by the Contractor prior to their departure.

C. All equipment and materials shall be installed in a neat and workmanlike manner. Best practices installation principles shall be used throughout the project.

D. The Contractor shall furnish, set in place, and install all equipment necessary for a fully compliant and operational system as specified herein. The installation process includes, but is not limited to the following:

1. Inventory receipt of all components and equipment.

2. Storage of all equipment and components until such time those items are installed according to the specifications.

3. Transport equipment to the Owner's installation location(s).

4. Assemble, install, configure, and test all equipment and components, maintaining accurate inventory records and status documents and discarding packaging.

5. Collect all information necessary to accurately program all system devices to the Owner's intended use and need.

    a. It is intended that work performed, and configurations made by contractor shall include, but is not limited to:

        1. All door control functionality and configurations shall be reviewed with the Owner and Designer prior to final configuration work.

        2. A door position switch shall be provided and installed on all new entrances and configured in the system for door position monitoring and alarming. Refer to provided door schedule for work and components that may be provided by others.

        3. Coordination with both hardware and scheduling to program momentary deactivation of magnetic hold opens associated with academic wing access doors. This may be associated with normal schedules as well as special situations including, but not limited to building lockdown.

        4. Lock/Unlock schedules configured for doors as desired by owner.

6. Label all system devices as may be appropriate and required by Owner and Designer.

7. Complete end user and system administrator training programs as specified herein.

8. Work shall be performed to meet local codes and industry standards including proper grounding and bonding of installed equipment.

E. Worksites include the following:

1. Administration Building
   5820 Eastern Ave. SE
   Grand Rapids, MI 49508

2. Bowen Elementary School
   4453 Kalamazoo SE
   Kentwood, Michigan 49508

3. Brookwood Elementary School
   5465 Kalamazoo SE
   Kentwood, Michigan 49508

4. Challenger Elementary School
   2475 52nd Street SE
   Kentwood, Michigan 49508

5. Crestwood Middle School
   2674 44th Street
   Kentwood, Michigan 49512

6. Crossroads Alternative High School and Community Education
   28 60th SE
   Kentwood, Michigan 49508

7. Discovery Elementary School
   2461 60th Street
   Kentwood, Michigan 49508

8. East Kentwood Freshman Campus
   6170 Valley Lane
   Kentwood, Michigan 49508

9. East Kentwood High School
   6230 Kalamazoo Ave
   Kentwood, Michigan 49508

10. Endeavor Elementary School
    5757 East Paris SE
    Kentwood, Michigan 49508

11. Explorer Elementary School
    2307 68th Street SE
    Kentwood, Michigan 49508

12. Facilities and Operations
    6160 Valley Lane Dr. S.E.
    Kentwood, Michigan 49508

13. Glenwood Elementary School
    912 Silver Leaf SE
    Kentwood, Michigan 49508

14. Hamilton Elementary and Early Childhood Center
    3303 Breton SE
    Kentwood, Michigan 49508

15. Meadowlawn Elementary School
    4939 Burgis Street SE
    Kentwood, Michigan 49508

16. Pinewood Middle School
    2100 60th Street
    Kentwood, Michigan 49508

17. Special Education Building (Bowen)
    4453 Kalamazoo SE
    Kentwood, Michigan 49508

18. Special Education Building (44th Street)
    1122 44th Street SE
    Kentwood, Michigan

19. Southwood Elementary School
    630 66th SE
    Kentwood, Michigan 49508

20. Transportation Building/Bus Garage
    6150 Valley Ln. Dr. SE
    Kentwood, Michigan 49508

21. Townline Elementary School
    100 60th Street SE
    Kentwood, Michigan 49508

22. Townline Early Childhood Building
    100 60th Street SE
    Kentwood, Michigan 49508

23. Valleywood Middle School
    1110 50th Street
    Kentwood, Michigan 49508

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

   1. Final determination as to the damage condition and/or repair/replacement fitness of any surface, plate or panel shall be the sole responsibility of the Designer.

   2. The building and work area shall be returned to its original condition prior to final sign-off of the project.

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

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

3.03 TESTING

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

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

C. Testing Procedures

   1. Prior to system "turn-up", Contractor shall submit a written request to Designer indicating they have completed full and final configuration of the system and are ready to have system integrity and functionality tested.

   2. Within reasonable time after receipt of request, Designer will provide a test schedule and coordinate testing date(s) with Owner and Contractor.

   3. Should Designer determine the Work is not acceptably configured or not of adequate integrity:

a. Designer promptly will so notify Contractor, giving reasons therefore and providing sufficient details to allow Contractor to make corrective actions.

b. Contractor shall then expeditiously remedy the deficiencies and notify Designer in writing when ready for re-testing.

c. Designer will schedule re-test of the Work.

d. Excessive re-testing of Work may result in fees being assessed Contractor.

4. Should Designer and Owner concur the Work is configured properly, and system integrity is as required:

a. Designer will review Contractors detailed “turn-up” plan, and upon finding it acceptable issue a memorandum of Testing Completion to Owner and Contractor after which system “turn-up” can proceed.

3.04 DOCUMENTATION

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

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

1. Equipment description.

2. Equipment make.

3. Model number.

4. Software release.

5. Date installed.

6. Manufacturer's warranty.

7. Maintenance contract terms.

8. Verification of maintenance contract engagement.

9. Telephone numbers for service and support.

10. Detailed technical support and service procedure instructions.

11. All product (hardware and software) manuals and manufacturer supplied documentation, including, but not limited to owner manuals, system administrator manuals and configuration guides. Where number of duplicate copies for particular manual or documentation item could be reasonably considered excessive, Contractor shall request direction from Owner and Designer.

12. Photocopy of original invoice listing make and model for all components and equipment from individual manufacturer(s), distribution source(s), or authorized agent(s) to establish manufacturer warranty start date for potential use after end of contract warranty provisions.

13. CAD as built drawings for each building.

14. System Configuration Report.

15. Complete inventory of installed hardware and system software. Hardware inventory shall include, but not be limited to, model numbers, serial number, physical installation location and software/firmware options.

3.05 TRAINING

A. Training shall be conducted at the Owner's discretion and at times and places convenient to Owner personnel. Prior to any training being conducted, Contractor shall provide Owner and Designer with detailed training syllabus and schedule for proposed training event. Compliant syllabus and schedule shall be provided at least ninety-six 96 hours in advance. Owner reserves the right to postpone training if syllabus and/or schedule submitted are deemed inadequate. Training shall not be conducted until such time a syllabus and schedule submitted by Contractor are found to be acceptable to Owner.

B. Contractor shall provide User/Operator Level Training for the Owner designated system operator(s). Owner shall designate up to (20) 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 basic system administrator functions.

C. Contractor shall provide physical on-site training for the Owner designated system administrator(s). Owner shall designate up to eight (8) system administrators to be trained. Training shall be a minimum of one (2), 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 access.

2. Basic configuration and system administration of the installed system

3. Basic trouble shooting of the installed system and components including diagnostic and problem resolution actions.

4. System back-up and restore functions and procedures for all system parameters and configurations.

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

6. System database updates and maintenance.

7. Review standard system reports

D. Contractor shall provide manufacturer certification training for Genetec Synergis for two (2) system administrators designated by Owner. Online/virtual training shall be for the following courses:

1. SC-STC-001 – Security Center 5.x Synergis technical certification

3.06 SCHEDULE, MEETINGS AND PLANS

A. Schedule

1. Post bid Interviews: Week of January 29, 2024

2. Contractor Chosen: Week of February 12, 2024

3. Work Commences: April 1, 2024

4. Substantial Completion of Project: April 1, 2026

5. Project Close-out: September 1, 2026

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 new and rework of existing video monitoring equipment for the sites listed and specified herein. All equipment will be integrated into new Genetec integrated access control system. Video monitoring work shall consist of two (2) categories:

1. Migration of all existing cameras to new Genetec system

2. Addition of necessary hardware, software and labor to enhance security in the identified locations, including the inclusion of new camera devices in locations in provided documents and as specified herein.

B. Contractor shall propose a System to be deployed using IEEE Ethernet technology. The system components shall be installed and connected to the owner's Ethernet infrastructure and as specified herein. System shall be of a "network" architecture using Ethernet cameras and centrally located Ethernet server(s).

1. Owner will provide adequate IEEE 802.3at 10/100/1000 Ethernet switch ports for the number of devices specified herein on existing Cisco switch infrastructure.

C. The centralized server recording equipment shall be installed in the Owner's existing datacenter.

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

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

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

1.02 WARRANTY

A. Complete installation shall be free from defect and/or failure for a period of Five (5) years. Any replacement, upgrade or fix, including labor for any non-conforming or non-operational part of the system shall be fixed and/or replaced at no cost to the Owner.

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

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

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

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

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

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

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

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

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

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

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

G. VOLUNTARY ALTERNATE: 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. Inspection of all system cameras to ensure:

    a. Domes (inside and out), lenses and shields are clean and clear of dust and debris for proper and clear image transmission.

    b. Focus of camera is correct for optimal viewing and recording of image target area within the camera view.

2. 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.

3. Application of latest versions of all applicable manufacturer firmware, software upgrades/updates and any manufacture recommended patches and/or system fixes to maintain the system in the most current configuration recommended by manufacturer.

4. Ensure all Owner documentation and record documents are updated with current and accurate information including, but not limited to camera models, serial numbers, Software and firmware versions, installation locations, recording settings (motion, FPS, resolution), Server configuration parameters and days storage available.

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

1.03 STORAGE OF MATERIALS

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

B. It shall be the Contractor's responsibility to secure all equipment including material to be installed as part of the contract. No changes shall be made to the contract due to loss or theft of equipment and/or materials not officially accepted by the Owner.

C. Formal receipt of the materials shall not be completed by the Owner until completion of project closeout. The Contractor shall be responsible for all equipment until time of closeout as provided for herein.

1.04 SUBMITTALS

A. Submittals shall consist of, but not be limited to, technical cut sheets and detailed information pamphlets on all components of the system to be installed. All cut sheets and submittals shall be distinctly marked to highlight the actual part number of the item being submitted for approval with Bid.

B. Shop drawings and diagrams shall be submitted by Bidder for approval by Designer with Bid.

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

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

C. Contractor shall provide proof of manufacturer support by photocopy of certification and letter of support from major component manufacturers for this specific project with Bid.

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

    1. The Owner and/or Designer may notify Contractor of any offending situations under this provision allowing Contractor up to forty-eight (48) hours to correct the situation prior to taking other corrective action.

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

E. The Contractor shall submit within ten (10) calendar days after the Notice to Proceed, a schedule that reflects the sequence of activities of the contractor's approach to the execution of and completion of the work. The schedule shall be broken into work areas to provide for a clear identification of the planned progress of the work. Included in the schedule will be a list of tasks with list of deliverables and the percentage of work completed. This schedule shall coincide with progress payments applications dates and projected amounts. All durations shown will be in working days. Microsoft Project is the software of choice for this schedule. The timeframe described in the Contractor's Schedule shall represent the Contractor's plan for organizing, directing, managing, controlling, staffing and executing the work required by the Contract Documents. Owner will rely on such schedules to coordinate and otherwise plan related work of Owner personnel, other separate contractors, or the Owner’s routine daily work.

1.05 REFERENCE SPECIFICATIONS

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

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

1.06 CONTRACTOR

A. The Contractor shall accept complete responsibility for the installation, certification and support of the system. Contractor shall be an authorized vendor of all major components.

B. All work shall be performed and supervised by Project Managers, Engineers and/or Technicians who are qualified to install system and perform related tests as recommended by the manufacturer and in accordance with the manufacturer's best practices and methods.

C. Project Managers, Engineers and Technicians employed on this project shall be properly and fully trained and qualified by the manufacturer on the installation and testing of the equipment and systems to be installed.

D. The Contractor shall have a proven track record in video monitoring system configuration and installation. This must be shown by the inclusion of references of at least three (3) projects involving the installation of similar systems completed by the Contractor in the prior two (2) years on unaltered forms with the sealed Bid as provided herein. Bid Form(s) may be duplicated as required in order to provide adequate space to list required number of reference installations for each division Bidder is responding to.

1.07 CONTRACT TERM PRICING

A. Owner intends to work exclusively with awarded Contractor during the contract warranty period related to additions, changes and/or system modifications. All such work that is not applicable to the warranty specified

herein shall be conducted at rates and pricing consistent with that provided for and documented herein.

1. Such work shall be conducted in a professional and expeditious manner consistent with best practices and industry norms.

2. Hourly rates, including travel charges, shall remain fixed for the term of the contract except as provided for herein.

B. During the contract term, Contractor shall provide a consistent cost-plus model of fixed pricing during the contract duration, with certain audit provisions to Owner for all materials and products during the implementation and through the Warranty term of this project.

1. Alternatively, Owner may consider a discount from current published US list prices to Owner for all materials and products from the same product family, or replacement product family, as may be introduced by Manufacturer during the implementation and through the Warranty term of this product. Bidders are encouraged to propose such pricing options and strategies in their bid documents for Owner evaluation.

2. Owner may direct at is sole discretion, Designer to conduct a spot audit of Contractor pricing to verify compliance with agreed upon mark-up or discount models of pricing. Contractor shall fully and completely cooperate with Designer by providing all requested materials, including, but not limited to vendor invoices, vendor contract documents and other related documentation deemed relevant by Designer.

C. Owner reserves the right, with input from Designer and Contractor, to select other model(s) of materials, products, and/or equipment at their sole discretion, at any point during the contract term. Any such model change, being from the same or replacement product family, shall be accommodated by Contractor and provided at the same pricing strategy as similar and/or prior models as proposed under this contract.

D. Owner may, or may not, elect to purchase individual camera devices, as may be applicable to system expansion from Contractor or other related camera vendors. Contractor shall fully cooperate with Owner decisions for related product sourcing and provide all integration service for such products as is appropriate for a fully functioning and operational system to meet the Owners needs.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturers (In alphabetical order):

1. AXIS

2. GENETEC

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 Ethernet attached cameras, camera mounting brackets and housings, patch cords and all other necessary components integrated into a common working system.

2.05 All Ethernet cabling will be provided by Others.

2.06 All necessary PoE switch devices shall be provided by Owner, with the exception of any camera device that use more than Type 2 - PoE+ power. In those cases, Contractor shall supply all necessary PoE injector devices for a fully functional system.

2.07 CENTRAL VIDEO MONITORING CONTROL SOFTWARE

A. Contractor shall provide and install Genetec Omnicast licensing for all provided devices, existing camera devices and an additional fifty (50) more cameras without additional software investment required (actual camera and mounting hardware cost excluded) for a fully functional system.

B. Contractor shall integrate all new and existing cameras and door stations into Genetec system.

C. Contractor shall enable Genetec camera mapping feature and accurately place all existing and new cameras on Owner provided maps.

D. Contractor shall update all as-built documentation for project to include locations of all existing camera devices.

E. Contractor shall integrate Genetec system with existing Active Directory system and work collaboratively to create security groups for appropriate access levels.

F. Contractor shall work collaboratively with Owner to identify and enable users and groups in provided Genetec software.

2.08 CENTRAL VIDEO MONITORING CONTROL SERVER HARDWARE

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

B. All necessary licensing and labor shall be provided to configure Streamvault devices with one (1) standby server functionality for both archiver and directory server.

C. Acceptable Manufacturers (In alphabetical order):

1. GENETEC

a. Five (5) Archiver – Streamvault – SV-4040EX-R12-144T-12-410

b. Two (2) Directory – Streamvault – SV-2030E-R6S-D480-336

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

1. Archiver

a. 2U Rack Mount

b. 12 Bays

c. 100TB VMS Usable Storage Capacity after RAID 6+1

d. Intel Xeon Silver 4410Y

e. 128 GB DDR4 RAM

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

g. 2 x 1 GbE + 2 x 10GbE

h. N+1 1100-watt power supply

i. Windows Server 2022

j. 5 Year Warranty – Next Business Day

k. One (1) archiver shall be configured in a failover capacity.

2. Directory

a. 1U Rack Mount

b. 4TB Storage Usable Storage Capacity after RAID 1

c. Intel Xeon E-2336

d. 32GB DDR4 RAM

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

f. 2 x 1 GbE + 2 x 10GbE

g. Windows Server 2022

h. N+1 350-watt power supply

i. 5 Year Warranty – Next Business Day

j. One (1) directory server shall be configured in a failover capacity.

E. MANDATORY ALTERNATE: Contractor shall supply reductive alternate pricing to install all Genetec software on Owner provided virtual servers. Contractor shall be responsible for all other requirements except providing and installation of hardware. Contractor shall work collaboratively with Owner to install Genetec software on Owner provided virtual machines. Owner shall be responsible for supply of any necessary Microsoft Server licensing.

2.09 CAMERAS

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

1. Interior Single Lens Camera (Type A)

a. Axis P3268-LV

b. Activity/motion detection

c. 0.14 lux Min illumination/light sensitivity (Color)

d. 0 lux Min illumination/light sensitivity (B/W)

e. 3840 x 2160 Image Size (8MP Resolution)

f. H.264 Compression

g. Motion JPEG Compression

h. 25fps Maximum Frame Rate at 5MP resolution

i. 10/100 Ethernet (RJ-45) connector

j. IEEE power over Ethernet 802.3at compliance

k. Internal image memory for motion-based buffering

l. Operating temperature range from -35 – +120 degrees Fahrenheit.

m. Cameras shall be installed in integrated, tamper and impact resistant, environmentally controlled dome enclosure meeting or exceeding the following requirements:

1. Optically correct acrylic or polycarbonate lower dome with integral UV protection.

2. Dust and water protection based on EN60529 standard of IP66.

3. Optically correct acrylic or polycarbonate lower dome with light loss not greater than 11.5 f-stops and integral UV protection.

4. Integral sun shroud when mounted outside.

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

6. Camera shall include all necessary mounting hardware and accessories for a fully supported installation.

7. Contractor shall include appropriate protective cage in gym location(s).

2. Exterior Single Lens Camera (Type B)

a. Axis P3268-LVE

b. Activity/motion detection

c. 0.14 lux Min illumination/light sensitivity (Color)

d. 0 lux Min illumination/light sensitivity (B/W)

e. 3840 x 2160 Image Size (8MP Resolution)

f. H.264 Compression

g. Motion JPEG Compression

h. 25fps Maximum Frame Rate at 5MP resolution

i. 10/100 Ethernet (RJ-45) connector

j. IEEE power over Ethernet 802.3at compliance

k. Internal image memory for motion-based buffering

l. Operating temperature range from -35 – +120 degrees Fahrenheit.

m. Cameras shall be installed in integrated, tamper and impact resistant, environmentally controlled dome enclosure meeting or exceeding the following requirements:

1. Optically correct acrylic or polycarbonate lower dome with integral UV protection.

2. Dust and water protection based on EN60529 standard of IP66.

3. Optically correct acrylic or polycarbonate lower dome with light loss not greater than 11.5 f-stops and integral UV protection.

4. Integral sun shroud when mounted outside.

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

6. Camera shall include all necessary mounting hardware and accessories for a fully supported installation.

3. Interior/Exterior Multidirectional – Dual Lens Camera (Type C)

a. P4707-PLVE or approved Axis equal.

b. Two (2) lenses in a single camera housing with combined horizontal angle of view of 180 degrees

c. Activity/motion detection

d. 0.17 lux at 50 IRE F1.8 minimum illumination (Color)

e. 2592x1933 Image Size per image sensor (lens) (x2)

f. H.264 Compression

g. H.265 Compression

h. 360 Degree IR

i. Object Analytics

j. Motion JPEG Compression

k. 25fps Maximum Frame Rate at full resolution

l. 10/100 Ethernet (RJ-45) connector

m. IEEE power over Ethernet (802.3at) compliance

n. Internal image memory for motion-based buffering

o. Operating temperature range from -22 – +112 degrees Fahrenheit.

p. Cameras shall be installed in integrated, tamper and impact resistant, environmentally controlled dome enclosure meeting or exceeding the following requirements:

1. Optically correct acrylic or polycarbonate lower dome with integral UV protection.

2. Dust and water protection based on EN60529 standard of IP66.

3. Integral sun shroud where installed outdoors

4. Available integrated enclosure or “Gooseneck” and “Corner” wall mount adapter to comply with installation either directly on exterior walls or to a single gang electrical box and as identified herein, providing 10/100/1000 PoE+ UTP connection for installed camera.

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

6. Camera shall include all necessary mounting hardware and accessories for a fully supported installation.

4. Interior/Exterior Multidirectional – Quad Sensor (Type D)

a. Axis P3719-PLVE

b. Four (4) lenses in a single camera housing with combined horizontal angle of view of 360 degrees

c. Activity/motion detection

d. 0.2 lux at 50 IRE F1.8 minimum illumination (Color)

e. 15 MP, 360 degree multidirectional

f. H.264 Compression

g. H.265 Compression

h. Motion JPEG Compression

i. 25fps Maximum Frame Rate at full resolution

j. 10/100 Ethernet (RJ-45) connector

k. IEEE power over Ethernet (802.3at) compliance

l. Internal image memory for motion-based buffering

m. Operating temperature range from -22 – +112 degrees Fahrenheit.

n. Cameras shall be installed in integrated, tamper and impact resistant, environmentally controlled dome enclosure meeting or exceeding the following requirements:

    1. Optically correct acrylic or polycarbonate lower dome with integral UV protection.

    2. Dust and water protection based on EN60529 standard of IP66.

    3. Integral sun shroud where installed outdoors

    4. Available integrated enclosure or “Gooseneck” and “Corner” wall mount adapter to comply with installation either directly on exterior walls or to a single gang electrical box and as identified herein, providing 10/100/1000 PoE+ UTP connection for installed camera.

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

6. Camera shall include all necessary mounting hardware and accessories for a fully supported installation.

5. Interior/Exterior Panoramic (Type E)

    a. Axis P3818-PVE

    b. 180° horizontal and 90° vertical coverage

    c. Activity/motion detection

    d. 0.16 lux Min illumination/light sensitivity (Color)

    e. 0.05 lux Min illumination/light sensitivity (B/W)

    f. 5120 x 2560 max video resolution

    g. H.264 Compression

    h. H.265 Compression

    i. Motion JPEG Compression

    j. 25fps Frame Rate at full resolution in 360-degree Overview mode

    k. 10/100 Ethernet (RJ-45) connector

    l. IEEE power over Ethernet (802.3at) compliance

    m. Internal image memory for motion-based buffering

    n. Operating temperature range from -35 – 120 degrees Fahrenheit.

    o. Cameras shall be installed in integrated, tamper and impact resistant, environmentally controlled dome enclosure meeting or exceeding the following requirements:

        1. Optically correct acrylic or polycarbonate lower dome.

        2. Dust and water protection based.

        3. Integrated enclosure mount adapter to facilitate installation either directly on walls, to a ceiling or to a single gang electrical box providing 10/100/1000 PoE+ UTP connection for installed camera.

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

5. Camera shall include all necessary mounting hardware and accessories for a fully supported installation.

B. EXISTING CAMERAS

1. Existing camera devices shall be cleaned, focused and re-aimed as necessary to ensure optimal performance.

2. All existing cameras shall be added to project as-built documentation as specified and described herein.

C. Ethernet cameras shall properly and acceptably communicate over, and attach to, Owner's standard Ethernet communications network provided by others and be powered by use of IEEE 802.3at compliance.

D. Cameras shall conform to and/or support the following certifications, features, standards and/or protocols:

1. Secure network access incorporating user ID and password protection

2. NTP

3. SNMP

4. FCC Part 15 Subpart B Class B

5. Underwriters Laboratories Listed

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

F. Each camera shall be provided with an appropriate license for operation with the Central Video Monitoring and Control Software system and include the warranty provisions for continual operation and support for the period described herein.

G. All cameras and/or camera enclosures shall be firmly and securely mounted to finished ceiling, wall, or other surfaces as required and/or specified herein to maximize coverage and minimize tampering potential. Bidder shall provide, in base bid, all mounting materials and labor to comply with mounting conditions documented herein.

2.10 ALLOWANCES

A. Contractor shall include allowances for equipment and/or other contract service reimbursements as required below in base bid lump sum amount(s). Equipment and/or contract services shall be provided and sourced at Owner's

discretion and convenience with full cooperation by Contractor, and paid for from successful bidder's contract in the amount(s) provided for herein. Any allowance amount proving to be excessive for the intended equipment and/or contract services shall be credited to the Owner against contract payment requests.

1. Allowance shall be made in the amount of $5,000.00 for contract services related to renovation and configuration of necessary infrastructure upgrades at the Owner's sole discretion.

PART 3 - EXECUTION

3.01 PREPARATION

A. Contractor shall conduct detailed walk-through examination with Designer, Construction Manager and Owner verifying equipment and material locations as well as mounting, view and placement requirements prior to commencement of other installation activities.

B. Owner and Designer shall approve a written final installation plan provided by Contractor prior to commencement of installation activity.

C. Contractor shall ensure all submittals and shop drawings have been provided to, and approval has been obtained from Designer prior to commencement of any final installation activities.

D. Contractor shall conduct walkthrough of each identified space as necessary to ensure correct location of data cabling provided by Others.

3.02 DEMOLITION

A. Contractor shall remove abandoned cameras in locations where new cameras are being installed. Any camera that is no longer part of the Genetec system will be removed and disposed of.

B. Contractor shall remove existing NVR devices from all locations after the conversion to Genetec is complete for Owner disposition. NVR devices shall be transported to Owner identified location by Contractor.

3.03 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 coordinated with Owner.

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 if penetration does not exist.

b. Where penetrations are made through fire rated walls, Contractor shall be responsible for supplying appropriate fire stop material.

E. Additional and Specific Requirements:

1. Contractor shall install all new cameras in locations indicated on appendices and detailed in related installation sections herein, and/or as directed by Owner and Designer. New equipment shall be installed and mounted to facilitate desired views and focal points.

2. Contractor shall use care and employ best industry practices to ensure mounting of new equipment is professional and appropriate.

3. Contractor shall use care and employ best industry practices to ensure installation of Owner provided repair materials, which may include, but not be limited to, ceiling tiles/pads, block/brick filler, and paint professionally and appropriately restores the surface and location vacated by prior equipment to the best possible condition.

4. Contractor shall supply and install stainless steel faceplates in all abandoned wall locations.

5. All cabling shall be removed to source including all accessories, housings, brackets and connectors.

F. Sites of Work:

1. Administration Building
   5820 Eastern Ave. SE
   Grand Rapids, MI 49508

2. Bowen Elementary School
   4453 Kalamazoo SE
   Kentwood, Michigan 49508

3. Brookwood Elementary School
   5465 Kalamazoo SE
   Kentwood, Michigan 49508

4. Challenger Elementary School
   2475 52nd Street SE
   Kentwood, Michigan 49508

5. Crestwood Middle School
   2674 44th Street
   Kentwood, Michigan 49512

6. Crossroads Alternative High School and Community Education
   28 60th SE
   Kentwood, Michigan 49508

7. Discovery Elementary School
   2461 60th Street
   Kentwood, Michigan 49508

8. East Kentwood Freshman Campus
   6170 Valley Lane
   Kentwood, Michigan 49508

9. East Kentwood High School
   6230 Kalamazoo Ave
   Kentwood, Michigan 49508

10. Football Stadium - East Kentwood High School
    6230 Kalamazoo Ave
    Kentwood, Michigan 49508

11. Endeavor Elementary School
    5757 East Paris SE
    Kentwood, Michigan 49508

12. Explorer Elementary School
    2307 68th Street SE
    Kentwood, Michigan 49508

13. Facilities and Operations
    6160 Valley Lane Dr. S.E.
    Kentwood, Michigan 49508

14. Glenwood Elementary School
    912 Silver Leaf SE
    Kentwood, Michigan 49508

15. Hamilton Elementary and Early Childhood Center
    3303 Breton SE
    Kentwood, Michigan 49508

16. Meadowlawn Elementary School
    4939 Burgis Street SE
    Kentwood, Michigan 49508

17. Pinewood Middle School
    2100 60th Street
    Kentwood, Michigan 49508

18. Special Education Building (Bowen)
    4453 Kalamazoo SE
    Kentwood, Michigan 49508

19. Special Education Building (44th Street)
    1122 44th Street SE
    Kentwood, Michigan

20. Southwood Elementary School
    630 66th SE
    Kentwood, Michigan 49508

21. Transportation Building/Bus Garage
    6150 Valley Ln. Dr. SE
    Kentwood, Michigan 49508

22. Townline Elementary School
    100 60th Street SE
    Kentwood, Michigan 49508

23. Townline Early Childhood Building
    100 60th Street SE
    Kentwood, Michigan 49508

24. Valleywood Middle School
    1110 50th Street
    Kentwood, Michigan 49508

G. 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.

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

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

3.04 TESTING

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

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

C. Testing Procedures

    1. Prior to system "turn-up", Contractor shall submit a written request to 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.

3.05 DOCUMENTATION

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

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

1. Equipment description.

2. Equipment make.

3. Model number.

4. Serial Number

5. MAC Address

6. Asset Tag Number

7. Software release.

8. Date installed.

9. Manufacturer's warranty.

10. Maintenance contract terms.

11. Verification of maintenance contract engagement.

12. Telephone numbers for service and support.

13. Detailed technical support and service procedure instructions.

14. All product (hardware and software) manuals and manufacturer supplied documentation, including, but not limited to owner manuals, system administrator manuals and configuration guides. Where number of duplicate copies for particular manual or documentation item could be reasonably considered excessive, Contractor shall request direction from Owner and Designer.

15. Photocopy of original invoice listing make and model for all components and equipment from individual manufacturer(s), distribution source(s), or authorized agent(s) to establish manufacturer warranty start date for potential use after end of contract warranty provisions.

16. CAD as built drawings for each building.

17. System Configuration Report.

18. Complete inventory of installed hardware and system software.

3.06 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 forty (40) 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 eight (8) system administrators to be trained. Training shall be a minimum of one (1), four (4) hour session(s) in length, at the convenience of the Owner personnel, and of sufficient duration to satisfactorily complete training on all system administration functions including, but not limited to:

1. Add, remove and reconfigure cameras on system.

2. Basic configuration and system administration of the installed system

3. Basic trouble shooting of the installed system and components including diagnostic and problem resolution actions.

4. System back-up and restore functions and procedures for all system parameters and configurations.

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

6. System database updates and maintenance.

7. Review standard system reports

D. Contractor shall provide manufacturer certification training for Genetec Omnicast for two (2) system administrators designated by Owner. Online/virtual training shall be for the following courses:

1. SC-OTC-001 – Security Center 5.x Omnicast technical certification

3.07 SCHEDULE, MEETINGS AND PLANS

1. Post bid Interviews: Week of January 29, 2024

2. Contractor Chosen: Week of February 12, 2024

3. Work Commences: April 1, 2024

4. Substantial Completion of Project: April 1, 2026

5. Project Close-out: September 1, 2026

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

Kentwood Public Schools

Appendix A - UPS Location Schedule

Building	Closet	3000KVA - Type A	2200KVA - Type B	1500KVA - Type C	Mounting Conditions
Administration Building	MDF		1		4 post
	IDF		1		Wall Cabinet
Bowen Elementary	MDF		1		2 post
	IDF			1	Wall Cabinet
Brookwood Elementary	MDF		1		2 post
	IDF			1	Wall Cabinet
Challenger Elementary	MDF		1		2 post
	IDF (Kitchen)			1	Wall Cabinet
Crestwood Middle School	MDF		1		2 post
	IDF1		1		Wall Rack
	IDF2		1		2 post
	IDF3		1		2 post
	IDF4			1	Wallmount
	Pat Patterson - Concession			1	Wallmount
	Pat Patterson - Team Room				
	Pat Patterson - Press Box			1	Wall Cabinet
Crossroads	MDF		1		2 post
Discovery	MDF		1		4 post
	IDF100		1		Wallmount
	IDF400		1		Wallmount
EKFC	Data Center				
	EKFC MDF		1		2 post
	IDF2		1		Wall Rack
	IDF3		1		2 post
	IDF400			1	Wallmount
	IDF500		1		Wallmount
	IDF6			1	2 post
	IDF7 - Aux Gym			1	Wall Rack
	IDF8		1		2 post
EKHS	MDF	1			2 post
	MDF2	1			4 post

	IDF1		1		2 post
	IDF2		1		2 post
	IDF3		1		4 post
	IDF4			1	2 post
	IDF5			1	Wall Rack
	IDF6		1		2 post
	IDF7	1			2 post
	IDF8			1	2 post
	IDF9			1	Wall Rack
	IDF10 (Ice Arena)			1	Wall Rack
EKHS Baseball	Baseball - Concession			1	Wallmount
	Baseball - FieldA			1	Wallmount
	Baseball - FieldB			1	Wallmount
EKHS Football Stadium	Pressbox			1	Wall Cabinet
	ST-HC			1	Wall Rack
	ST-VC			1	Wall Rack
	ST-HT			1	Wall Rack
	ST-VT			1	Wall Rack
	ST-SB				
Endeavor Elementary	MDF		1		2 post
	IDF1			1	Wall Rack
	IDF2			1	Wall Rack
	IDF3			1	Wall Rack
	IDF4		1		Wall Rack
Explorer Elementary	MDF		1		4 post
	IDF200		1		Wall Rack
	IDF400		1		Wall Rack
	IDF500			1	Wall Rack
Facilities and Operations	MDF			1	4 Post
Glenwood Elementary	MDF		1		4 post
	IDF			1	Wall Rack
Hamilton Elementary	MDF		1		4 post
	IDF		1		4 post
Meadowlawn Elementary	MDF		1		2 post
	IDF			1	Wall Cabinet

Pinewood Middle School	MDF	1			4 post
	IDF-KIT		1		Wall Cabinet
	IDF-600		1		Wall
	IDF-700		1		Wall Rack
	IDF-800		1		Wall Rack
	IDF-Fine Arts			1	Wall Cabinet
Special Education (Bowen)	MDF			1	Wall Rack
Special Education (44th Street)	MDF			1	2 post
Southwood Elementary School	MDF		1		2 post
	IDF			1	2 post
Transportation	MDF			1	4 post
	IDF				
Townline Elementary School	MDF		1		2 post
	IDF1		1		2 post
Townline Early Childhood Center	MDF		1		4 post
	IDF1			1	Wall Cabinet
	IDF2			1	Wall Cabinet
Valleywood Middle School	MDF	1			4 post
	IDF-Boiler			1	Wall Rack
	IDF-Science		1		Wall Rack
	IDF-CompLab		1		Wall Rack
		5	41	37	

Kentwood Public Schools

Appendix B - Switch Location Schedule

Building	Closet	District Core	Fiber Building Distribution Switch	Device Distribution Full 48 Port Switch	Hardened Industrial Switch
Administration Building	MDF			3	
	IDF1			3	
Bowen Elementary	MDF			5	
	IDF1			2	
Brookwood Elementary	MDF			6	
	IDF1			2	
Challenger Elementary	MDF			5	
	IDF1			1	
Crestwood Middle School	MDF		2	4	
	IDF1			5	
	IDF2			3	
	IDF3			6	
	IDF4			1	
	PP-Con			1	
	PP-Team			1	
	PP-Press			1	
Crossroads Alternative and Adult High School	MDF			5	
Discovery Elementary School	MDF			4	
	IDF100			4	
	IDF400			3	
EKFC	Data Center	2		2	

	EKFC MDF		2	5	
	IDF2			4	
	IDF3			5	
	IDF400			3	
	IDF500			3	
	IDF6			3	
	IDF7			1	
	IDF8			3	
EKHS	MDF		2	5	
	MDF2			5	
	IDF1			5	
	IDF2			4	
	IDF3			6	
	IDF4			4	
	IDF5			3	
	IDF6			5	
	IDF7			6	
	IDF8			4	
	IDF9			4	
	IDF10-Ice			1	
EKHS Baseball	BB-Con			1	
	BB-FieldA			1	
	BB-FieldB			1	
EKHS Football Stadium	ST-Press			1	
	ST-HCon			1	
	ST-VCon			1	
	ST-HTeam			1	
	ST-VTeam			1	
Endeavor Elementary	MDF			3	

	IDF1			2	
	IDF2			2	
	IDF3			2	
	IDF4			3	
Explorer Elementary	MDF			4	
	IDF200			3	
	IDF400			3	
	IDF500			2	
Facilities and Operations	MDF			2	
Glenwood Elementary	MDF			4	
	IDF1			2	
Hamilton Elementary	MDF			5	
	IDF1			3	
	IDF2			3	
Meadowlawn Elementary	MDF			6	
	IDF1			2	
Pinewood Middle School	MDF		2	6	
	IDF-KIT			3	
	IDF-600			3	
	IDF-700			3	
	IDF-800			4	
	IDF-Fine Arts			1	
Southwood Elementary School	MDF			4	
	IDF1			3	
Special Education (Bowen)	MDF			1	
Special Education (44th Street)	MDF			2	
Townline Elementary School	MDF			4	
	IDF1			4	
Transportation	MDF			2	

	IDF1				1
Townline Early Childhood Center	MDF			5	
	IDF1			2	
	IDF2			2	
Valleywood Middle School	MDF			6	
	IDF-Boiler			3	
	IDF-Science			3	
	IDF-CompLab			3	
Shelf Ready Spares (no install)				5	
		2	8	274	1

Administration

NORTH

1/8" = 1'-0"

ARCHITECTURE ◆ ENGINEERING

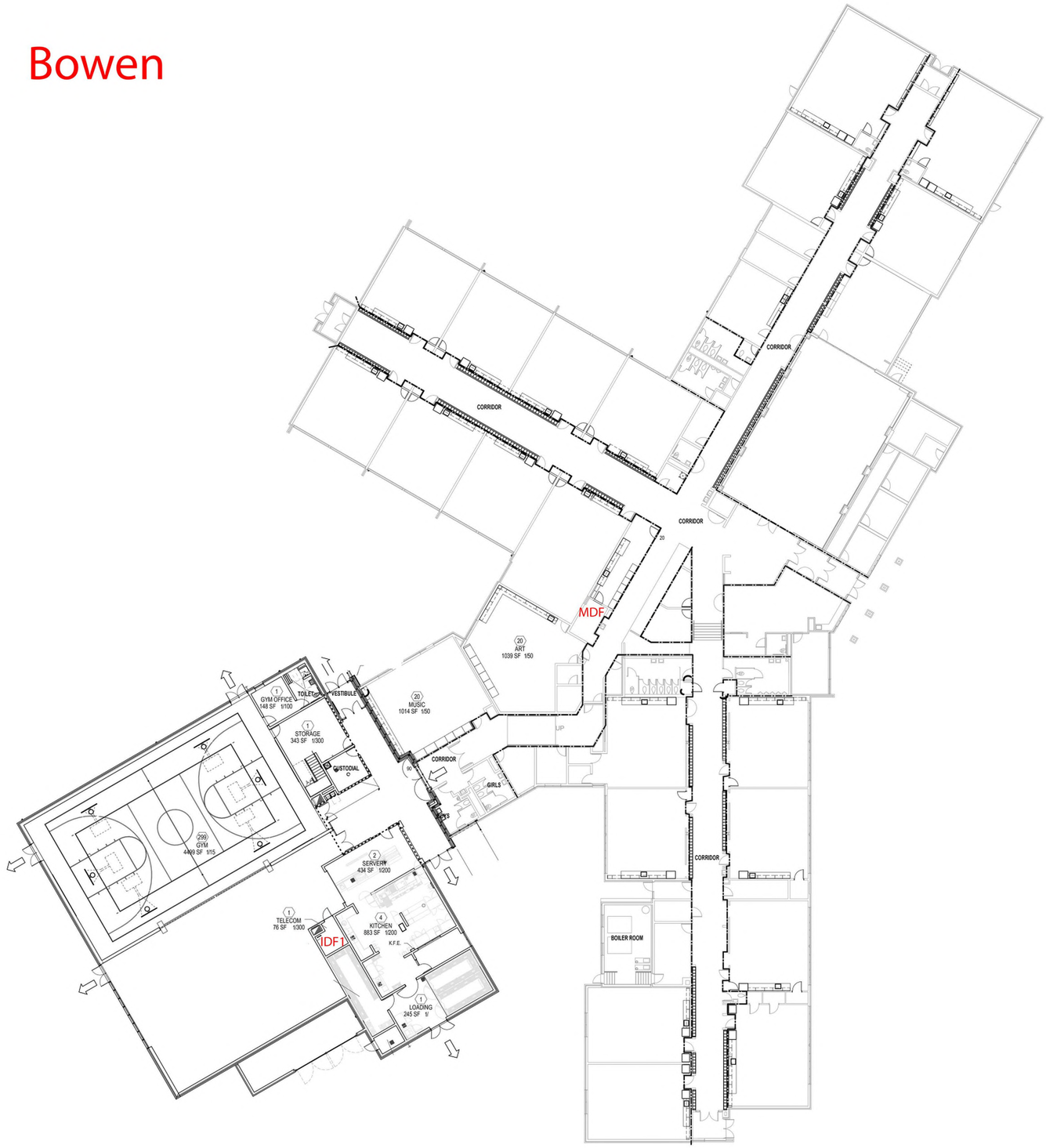
KPS
KENTWOOD
PUBLIC SCHOOLS

ADMINISTRATION COLLABORATION CENTER

KENTWOOD PUBLIC SCHOOLS

KENTWOOD, MICHIGAN

Bowen

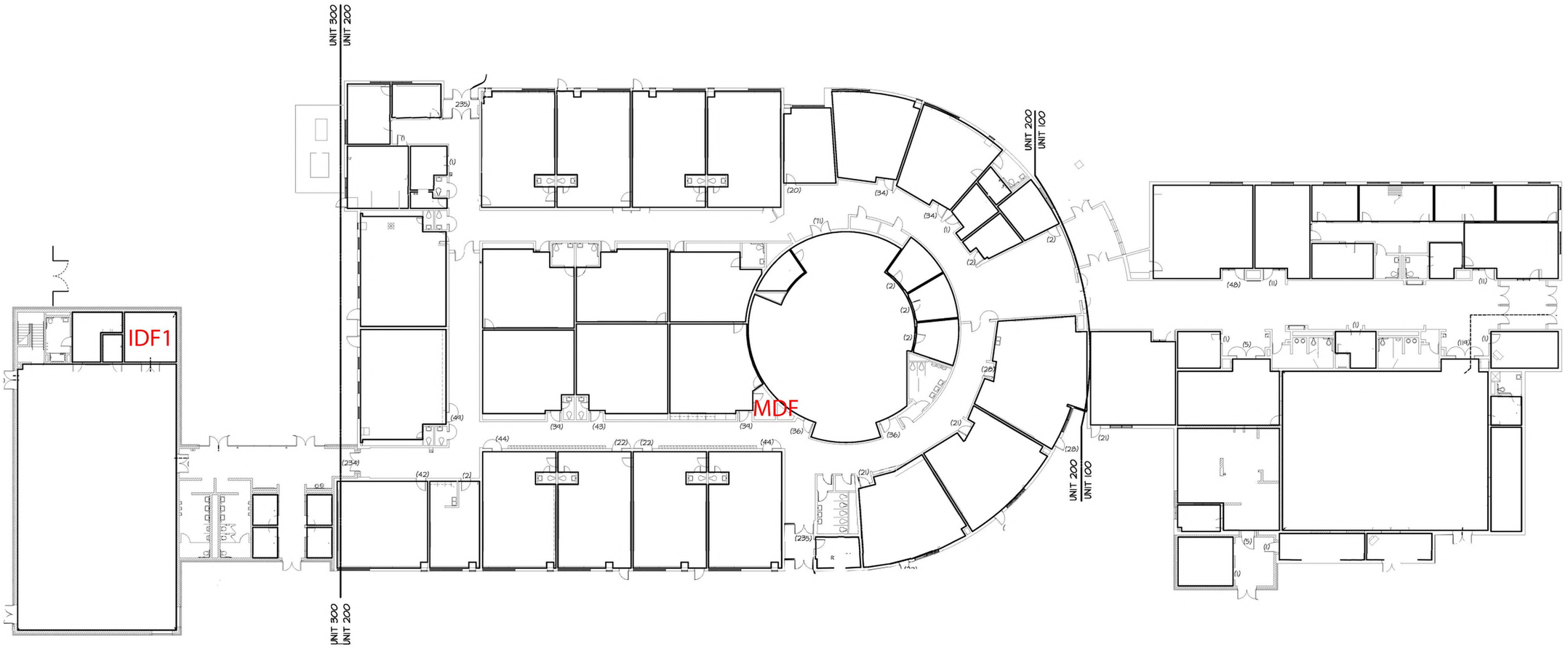


GMB
616.796.0200
WWW.GMB.COM
KPS
KENTWOOD
PUBLIC SCHOOLS

BOWEN ELEMENTARY IMPROVEMENTS
KENTWOOD PUBLIC SCHOOLS
KENTWOOD, MICHIGAN

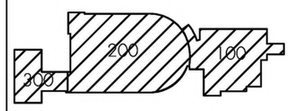
BIM 360://5-5521 Kentwood Bowen Elementary /Improvements/5-5521A 2019.rvt
9/15/2022 12:33:35 PM

Brookwood Elementary



Kentwood Public Schools
Brookwood Elementary Gym Addition
Kentwood, Michigan

KPS
Kentwood
Public Schools



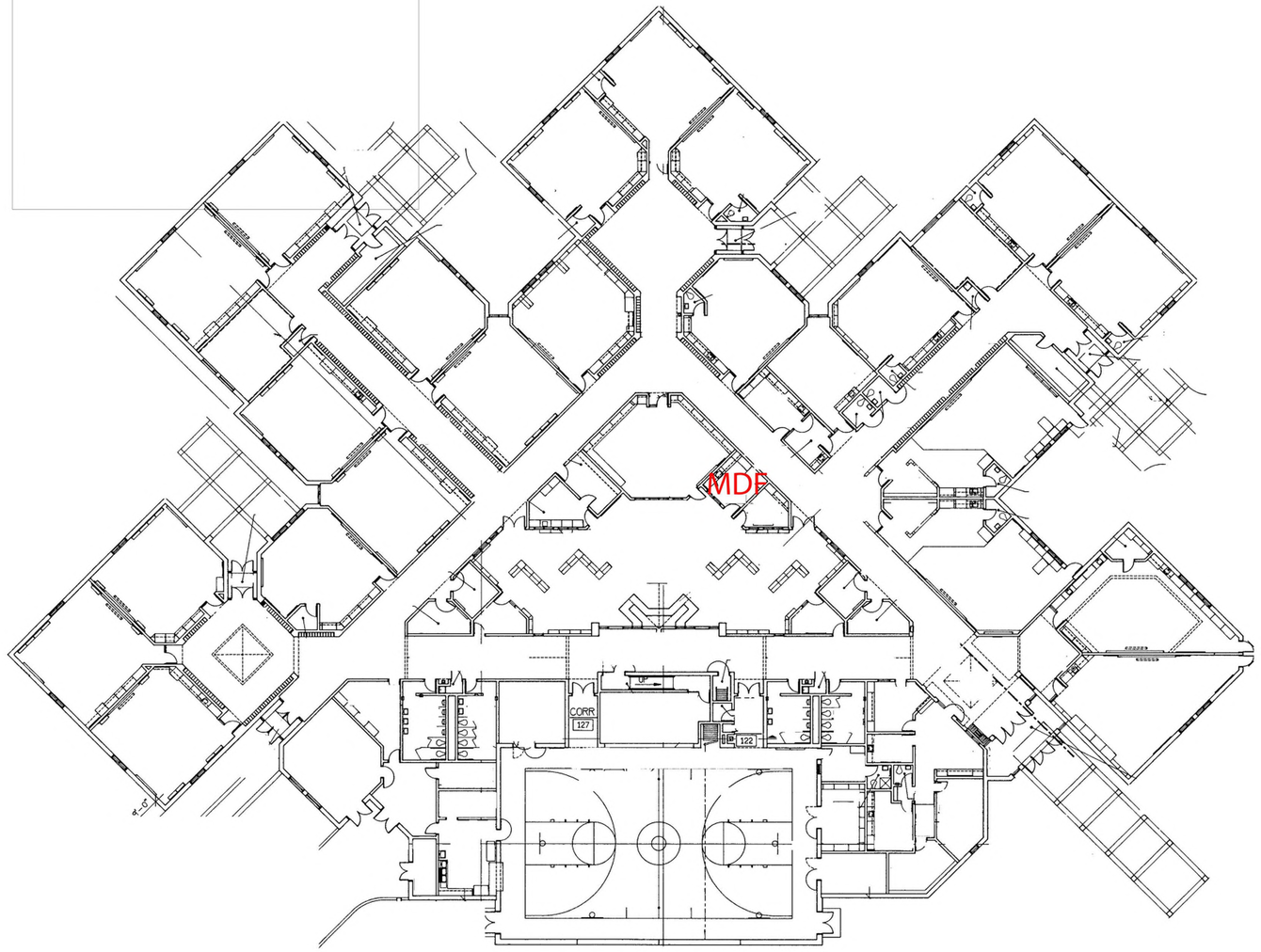
NORTH

KINGSCOTT
ASSOCIATES, INC
architecture, engineering
planning & interior design
Kalamazoo, Michigan

challenger
elementary
kentwood public
schools
kentwood, michigan

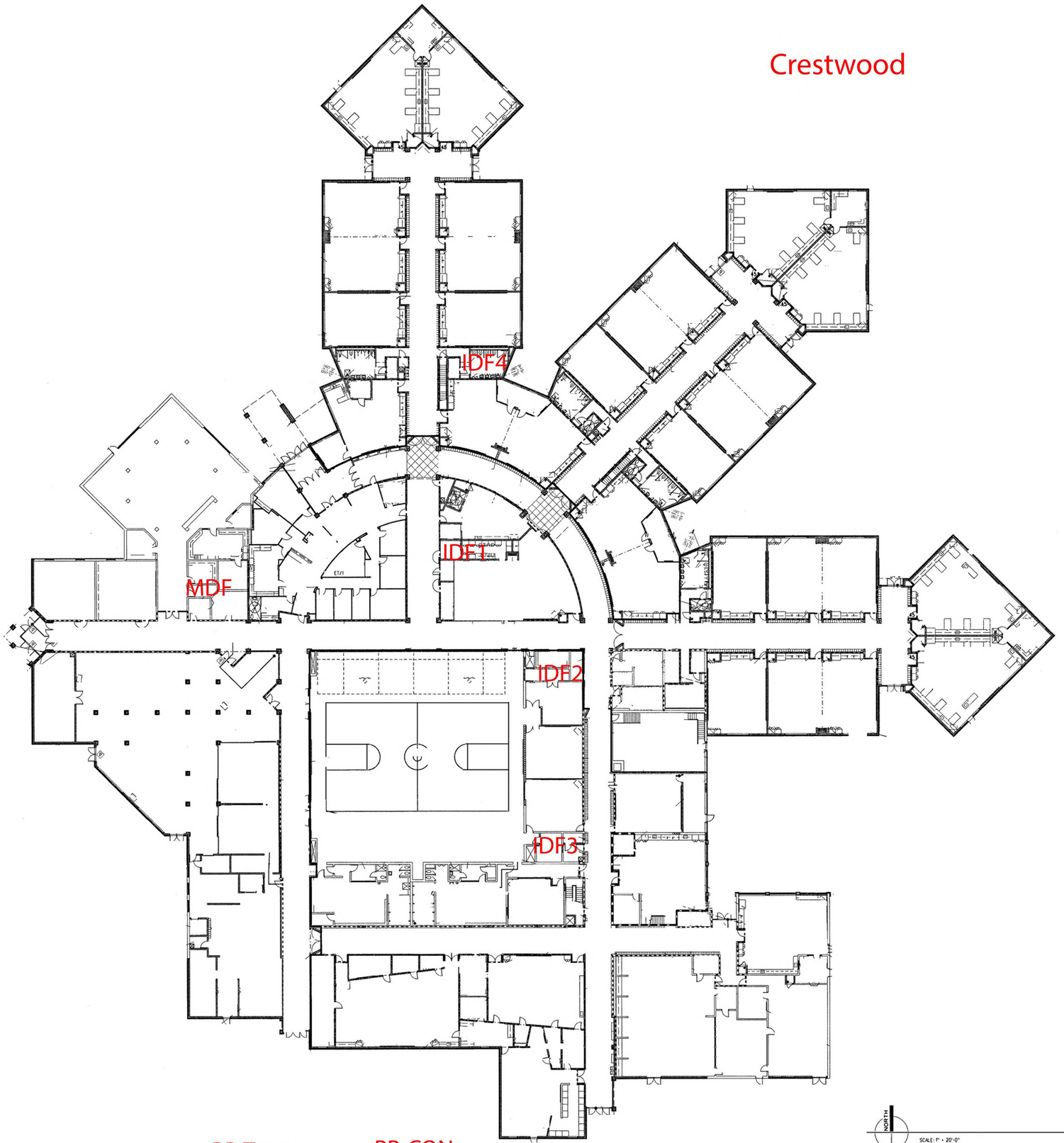
Challenger

IDF1
(Under Construction)



north

Crestwood



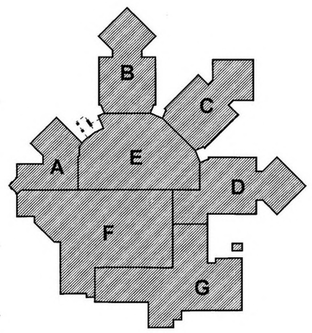
PP-Pbox

PP-Team

PP-CON

NORTH

SCALE: 1" = 20'-0"



KEY PLAN
NOT TO SCALE

GMB

GMB Architects + Engineers
401 East Eighth Street, Suite 200
Holland, MI 49423

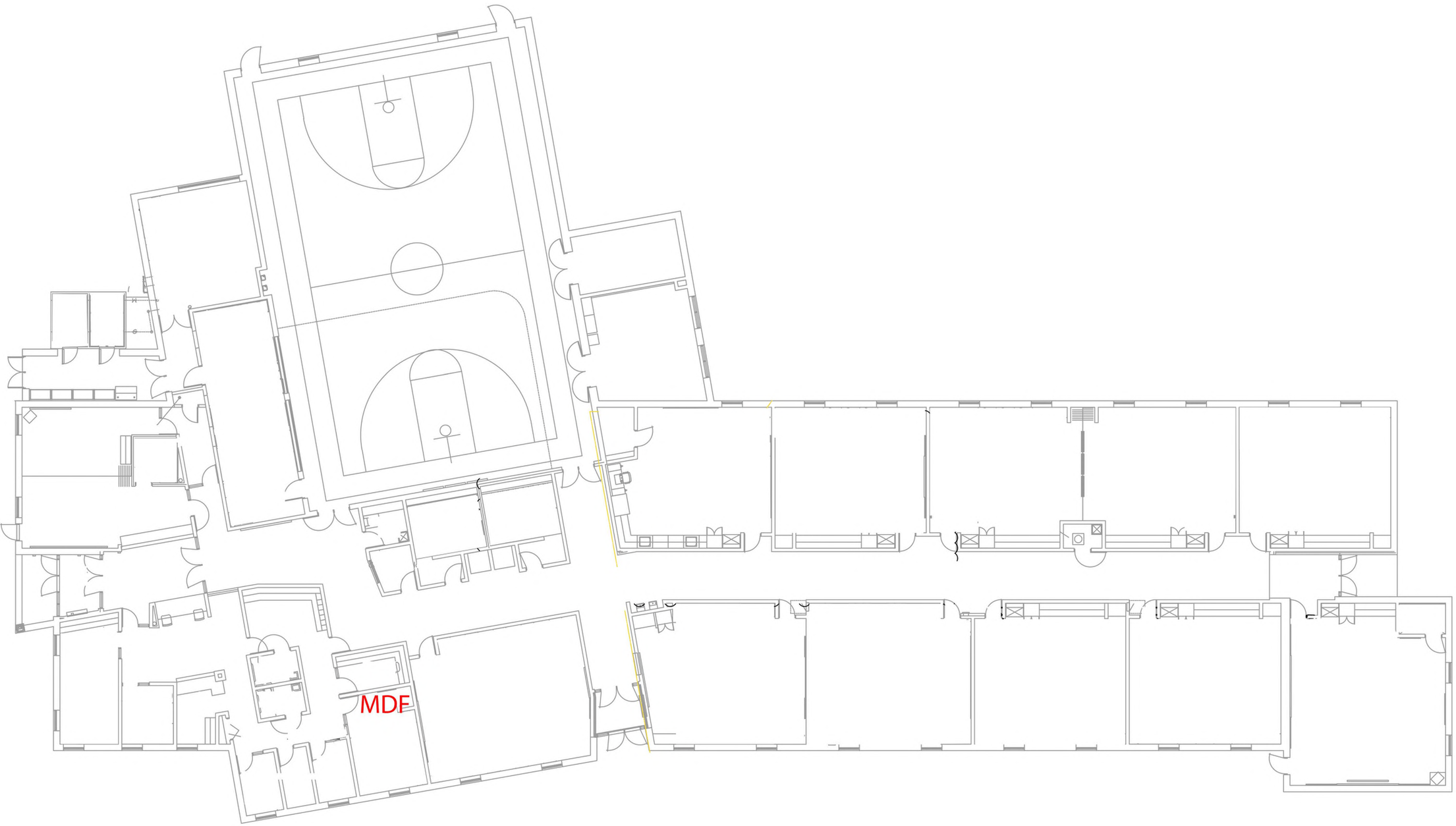
CRESTWOOD MIDDLE SCHOOL

KENTWOOD PUBLIC SCHOOLS

KENTWOOD, MICHIGAN

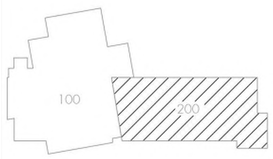
Kingscott
KALAMAZOO | GRAND RAPIDS | CHELSEA
259 East Michigan Ave., Suite 308
Kalamazoo, MI 49007-6403
P: 269.381.4880 | F: 269.381.9110
www.kingscott.com

Crossroads



Kentwood Public Schools
Crossroads Alternative High School

Kentwood, Michigan



Discovery

ARCHITECTURE ◆ ENGINEERING

KPS
KENTWOOD
PUBLIC SCHOOLS

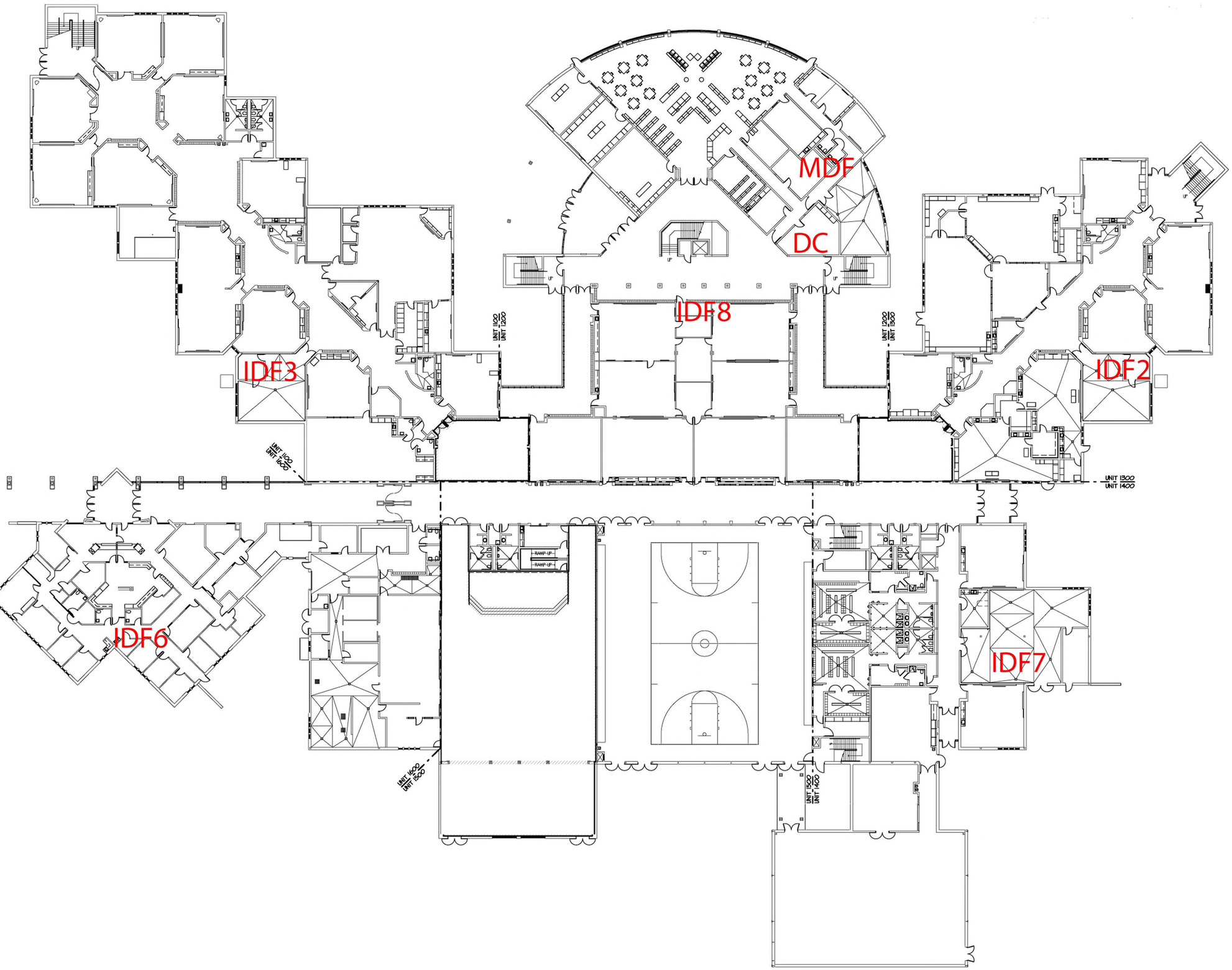
DISCOVERY ELEMENTARY
COLLABORATION CENTER

KENTWOOD PUBLIC SCHOOLS

KENTWOOD, MICHIGAN

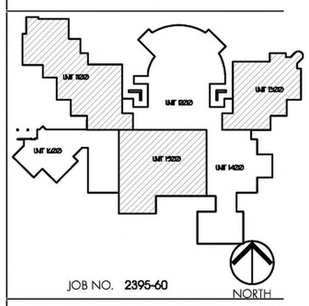
C:\Local Projects\5-3803A 2019_CENTRAL_Jake_Kamp.rvt
10/28/2019 2:12:44 PM

EKFC

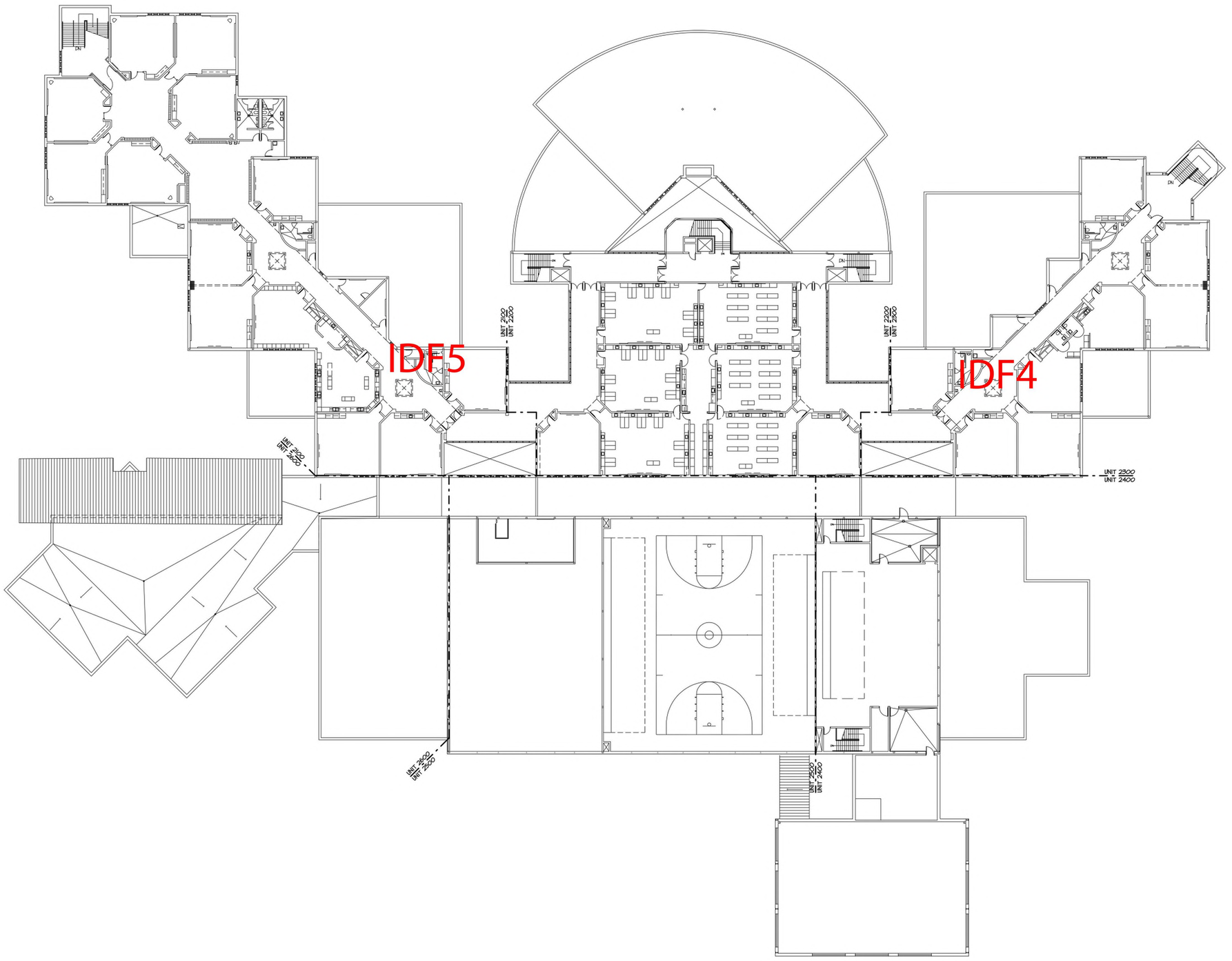


Kingscott
KALAMAZOO | GRAND RAPIDS | CHELSEA
259 East Michigan Ave., Suite 308
Kalamazoo, MI 49007-6403
P: 269.381.4880 | F: 269.381.9110
www.kingscott.com

CAFETERIA REMODELING
East Kentwood Freshman Campus
Kentwood Public Schools
Kentwood, Michigan

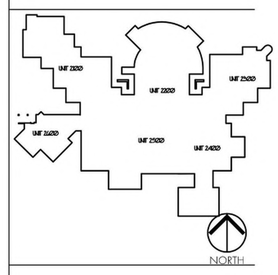


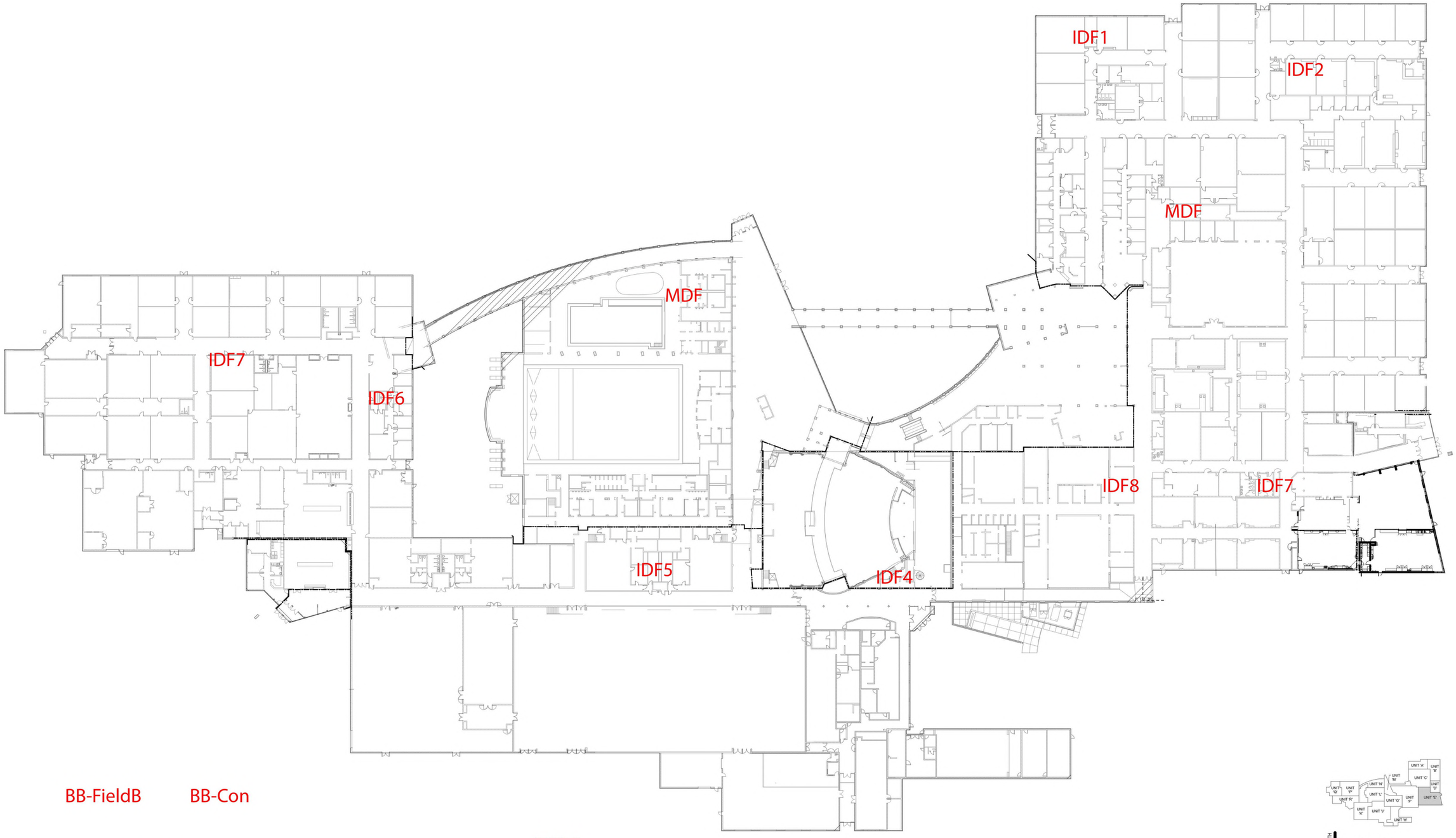
JOB NO. 2395-60

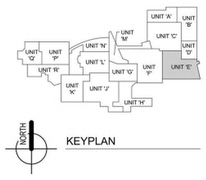


CAFETERIA REMODELING

East Kentwood Freshman Campus
Kentwood Public Schools
Kentwood, Michigan





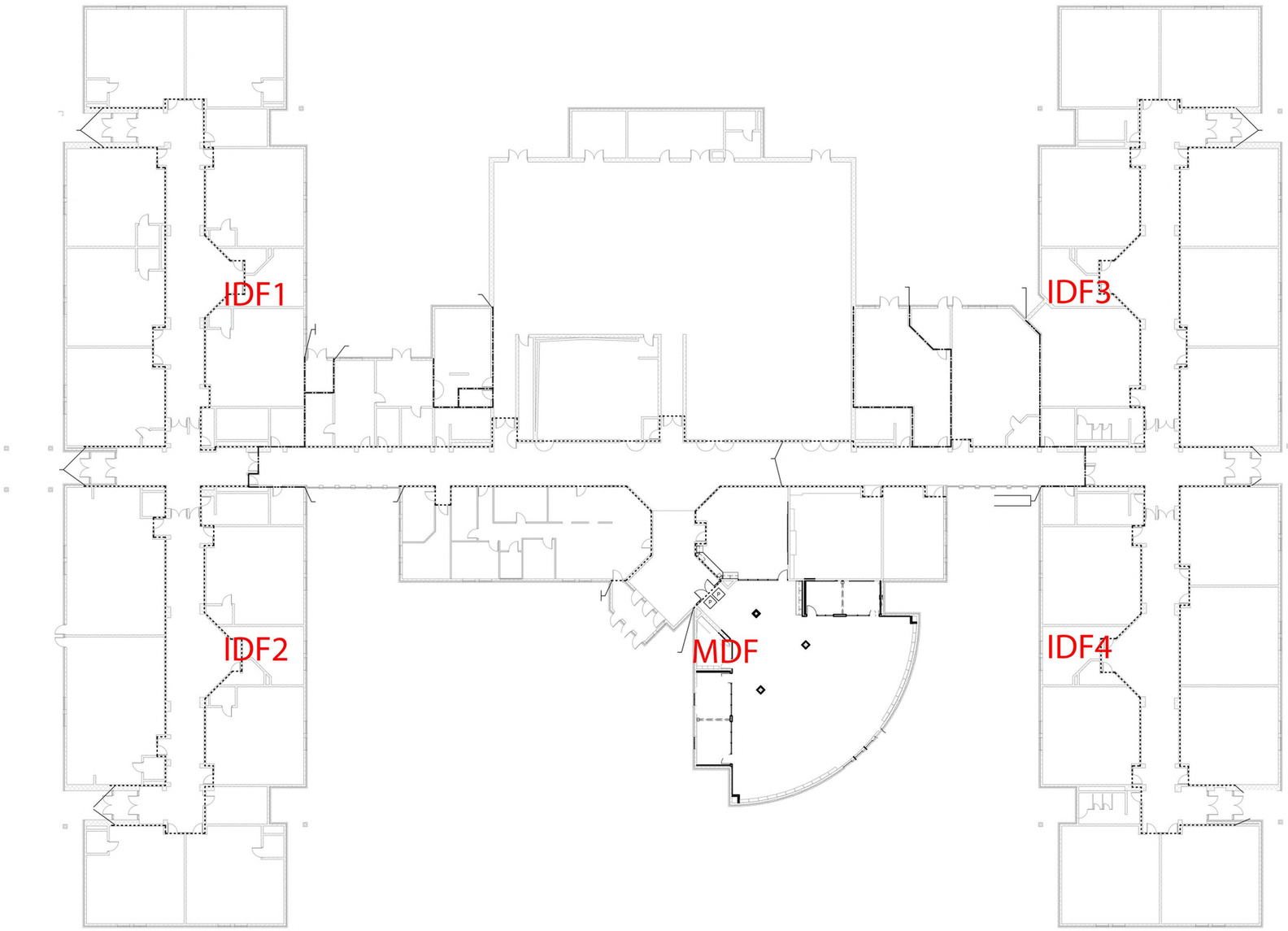


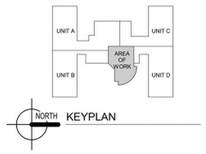
GMB
616.796.0200
www.gmb.com
KPS
KENTWOOD
PUBLIC SCHOOLS

KENTWOOD PUBLIC SCHOOLS

KENTWOOD, MICHIGAN

Endeavor





KEYPLAN

ARCHITECTURE ◆ ENGINEERING

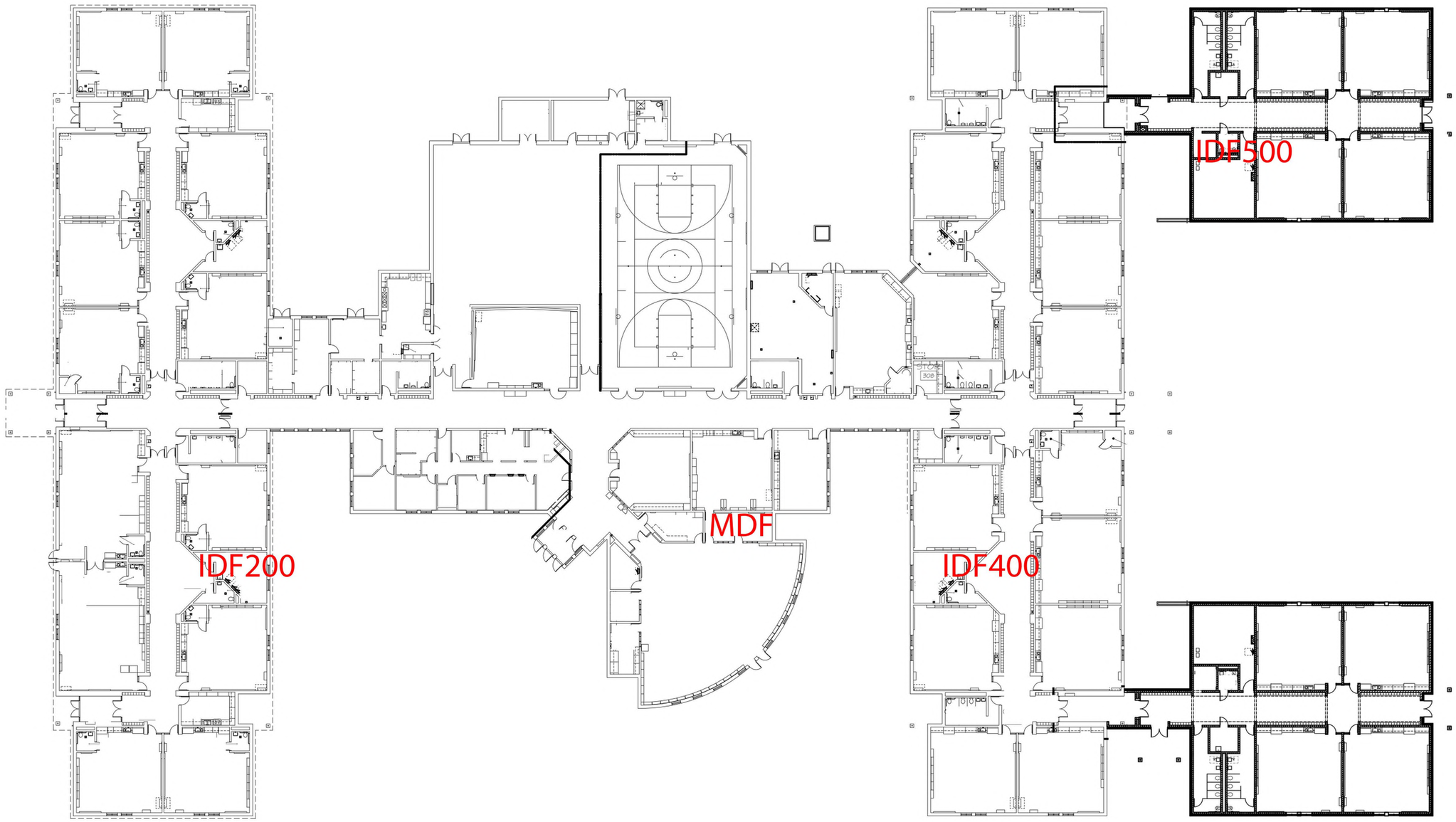
KPS KENTWOOD PUBLIC SCHOOLS

ENDEAVOR ELEMENTARY COLLABORATION CENTER

KENTWOOD PUBLIC SCHOOLS

GRAND RAPIDS, MICHIGAN

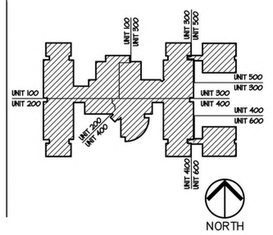
Explorer



Kingscott
KALAMAZOO | GRAND RAPIDS | CHELSEA
259 East Michigan Ave., Suite 308
Kalamazoo, MI 49007-6403
P: 269.381.4880 | F: 269.381.9110
www.kingscott.com

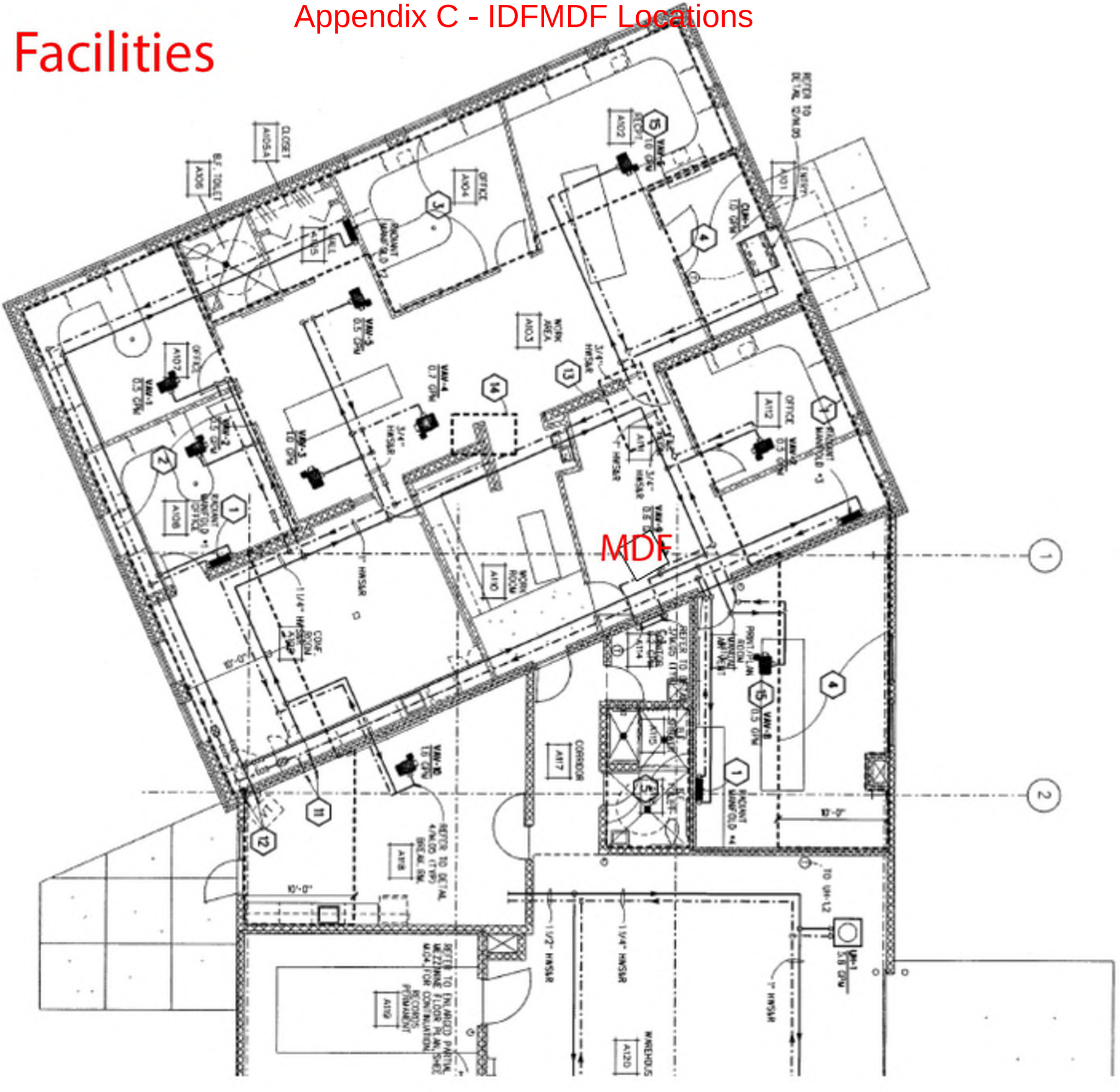
Explorer Elementary
Classroom Addition
Kentwood Public Schools
Kentwood, Michigan

KPS
Kentwood
Public Schools



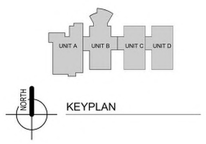
Facilities

Appendix C - IDFMDF Locations



Glenwood

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



KEYPLAN

ARCHITECTURE ◆ ENGINEERING

KPS KENTWOOD PUBLIC SCHOOLS

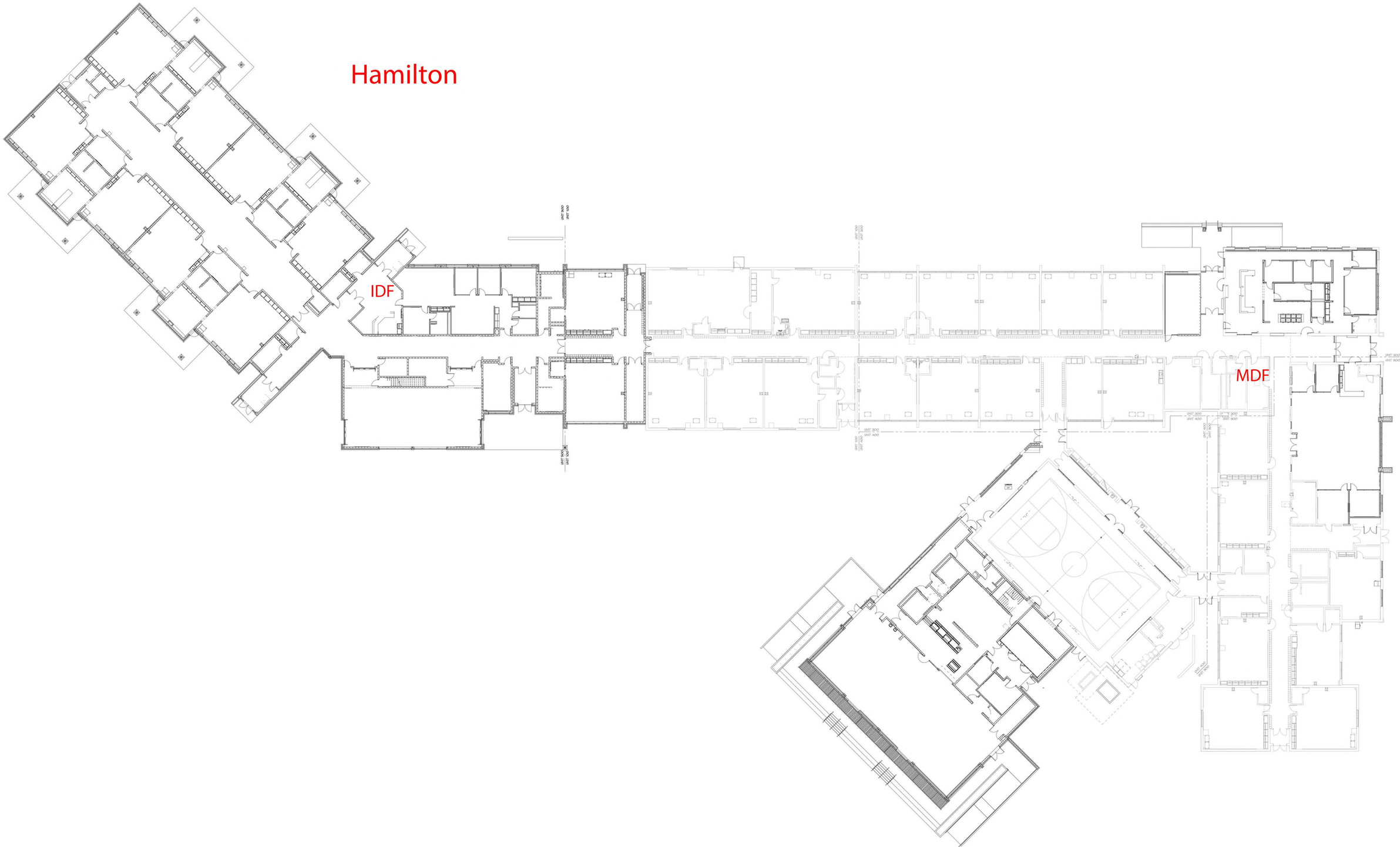
GLENWOOD ELEMENTARY - CLASSROOM ADDITION

KENTWOOD PUBLIC SCHOOLS

KENTWOOD, MICHIGAN

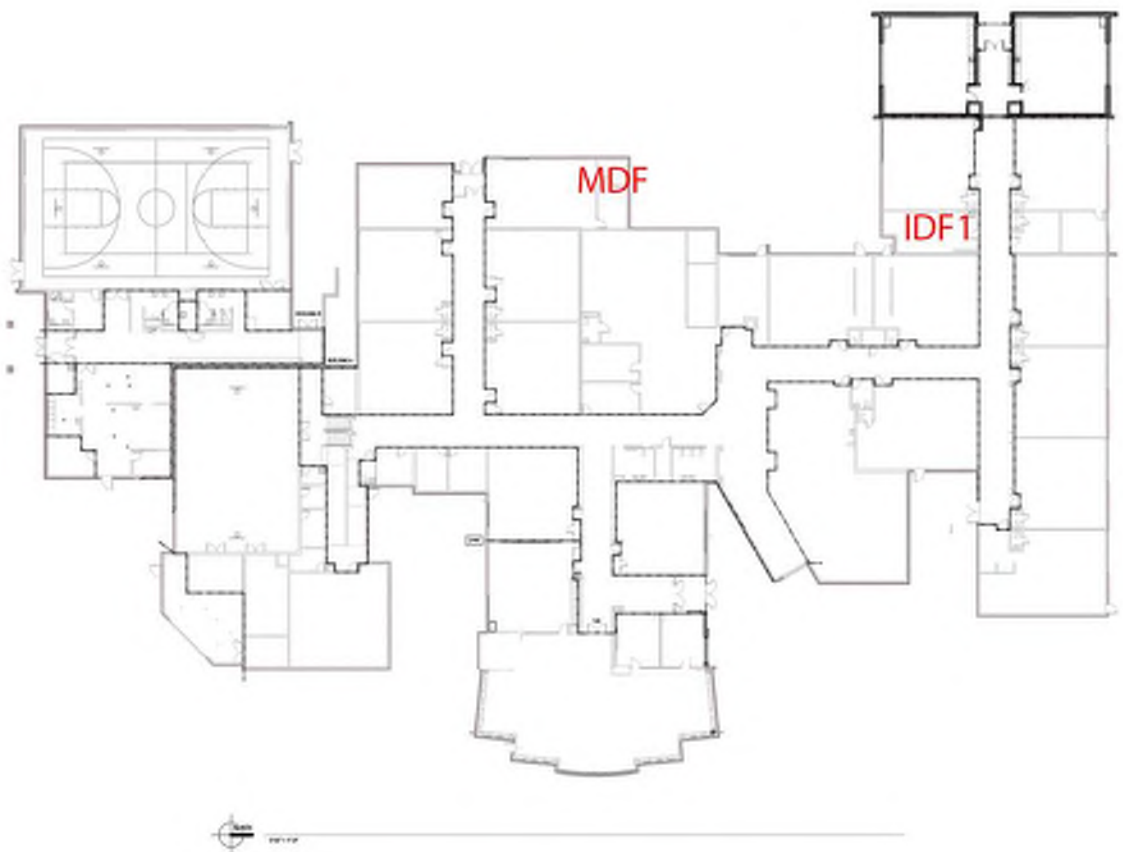
E2.01

Hamilton



Appendix C - IDFMDF Locations

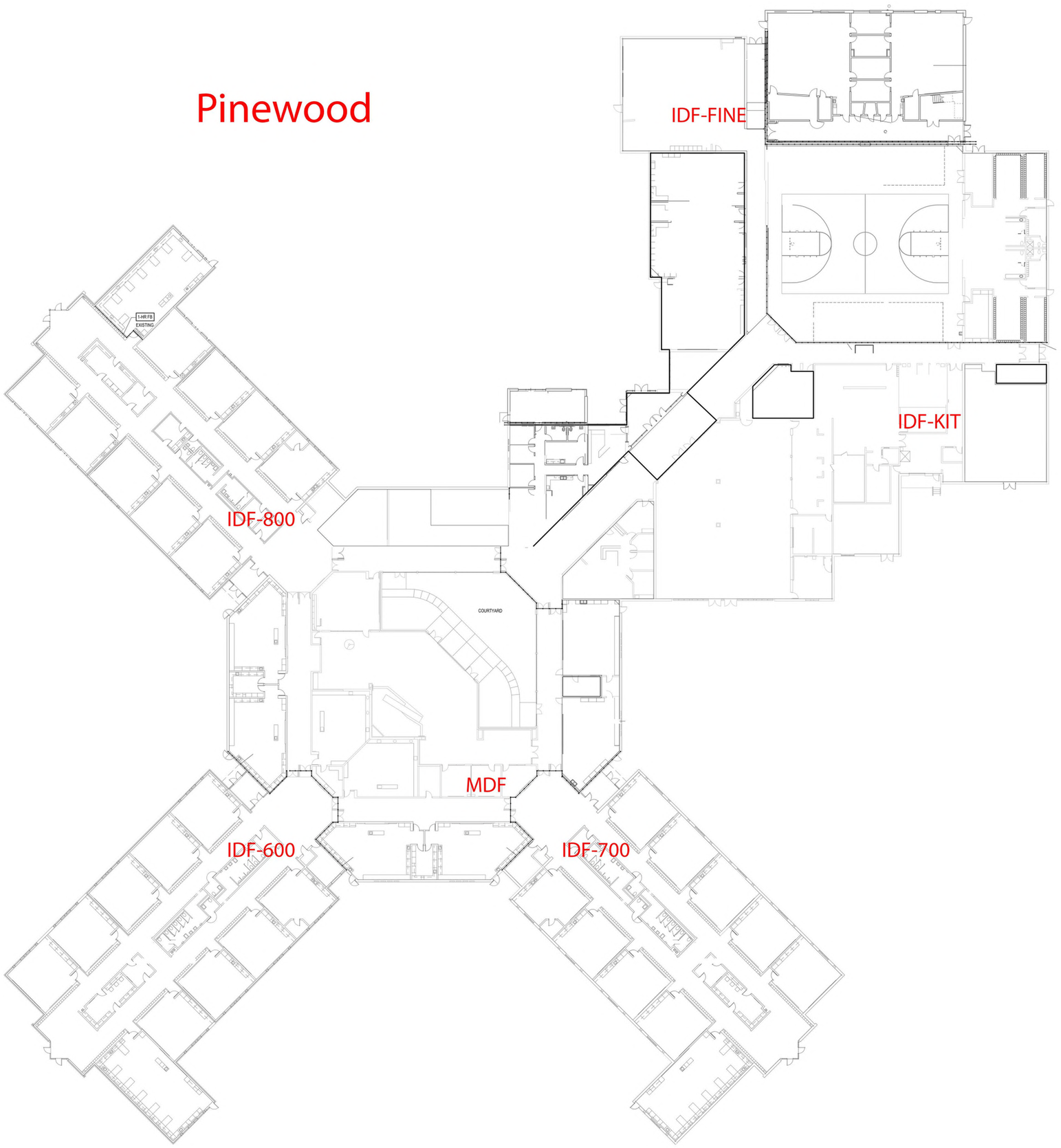
Meadowlawn



GMB

MEADOWLAWN ELEMENTARY CLASSROOM ADDITION
KENTWOOD PUBLIC SCHOOLS
KENTWOOD, MICHIGAN

Pinewood



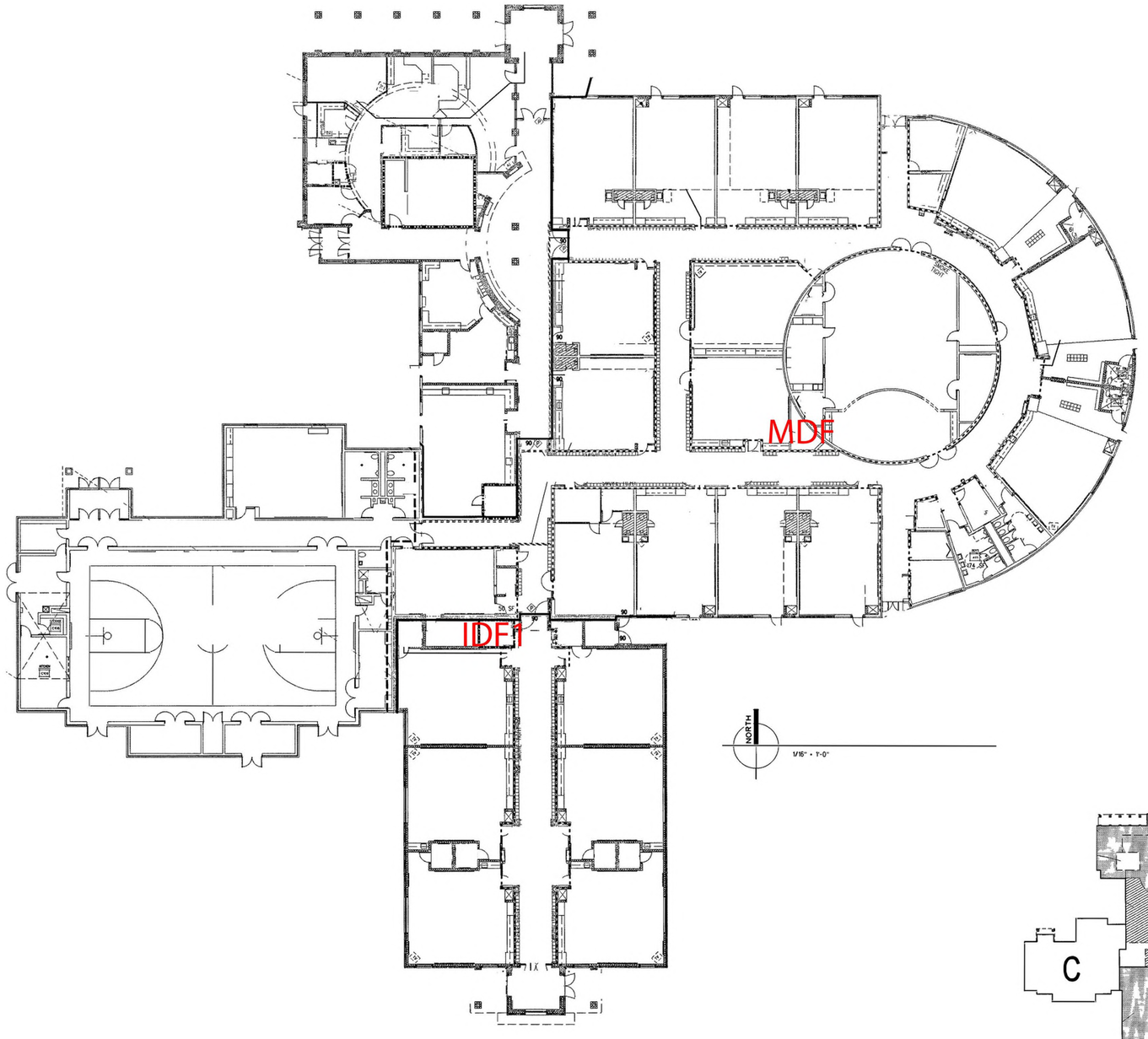
GMB
616.796.0200
WWW.GMB.COM

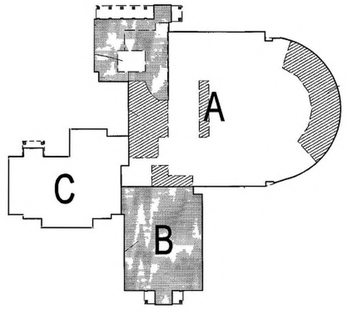
PINEWOOD MIDDLE SCHOOL IMPROVEMENTS

KENTWOOD PUBLIC SCHOOLS

KENTWOOD, MICHIGAN

Southwood

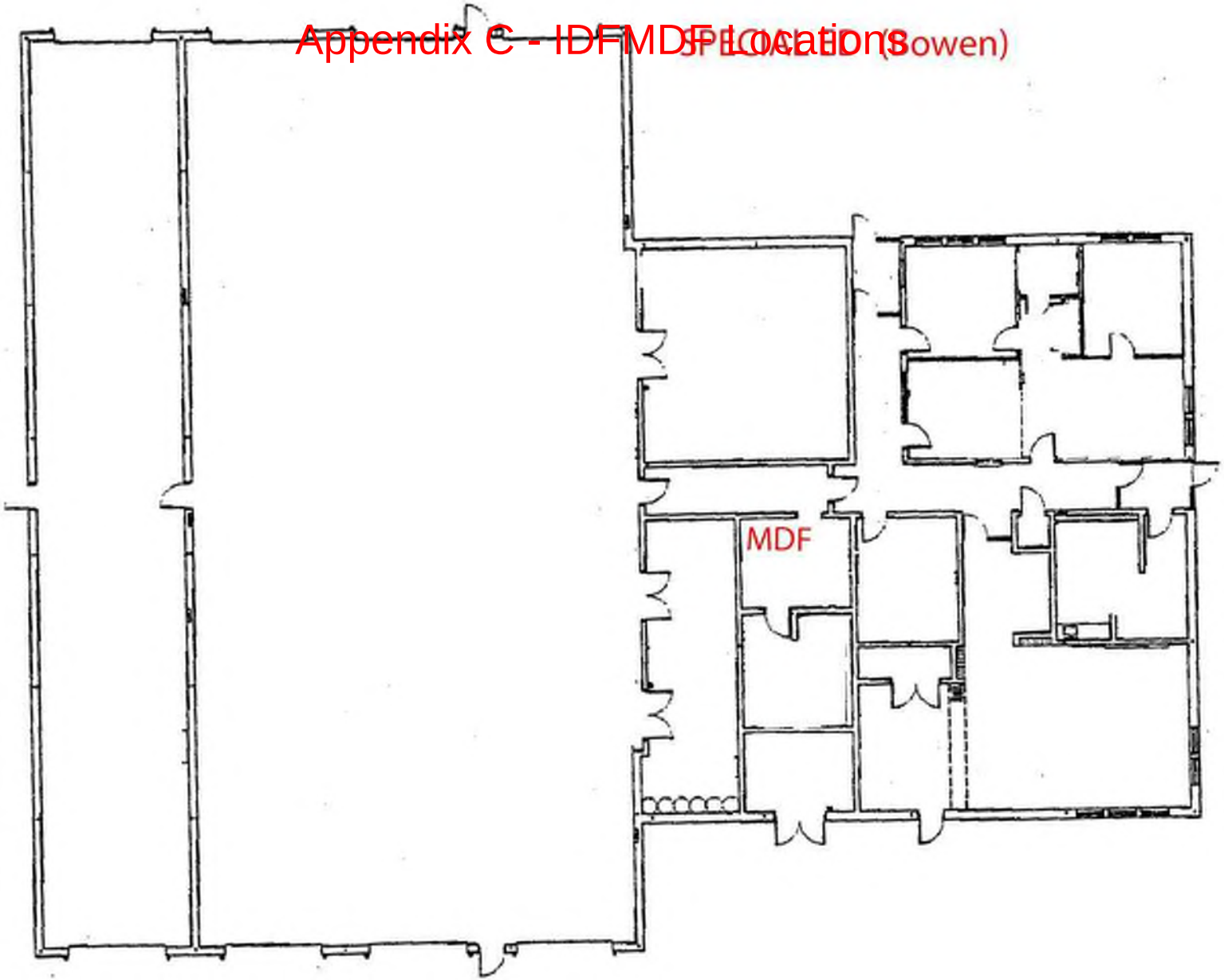




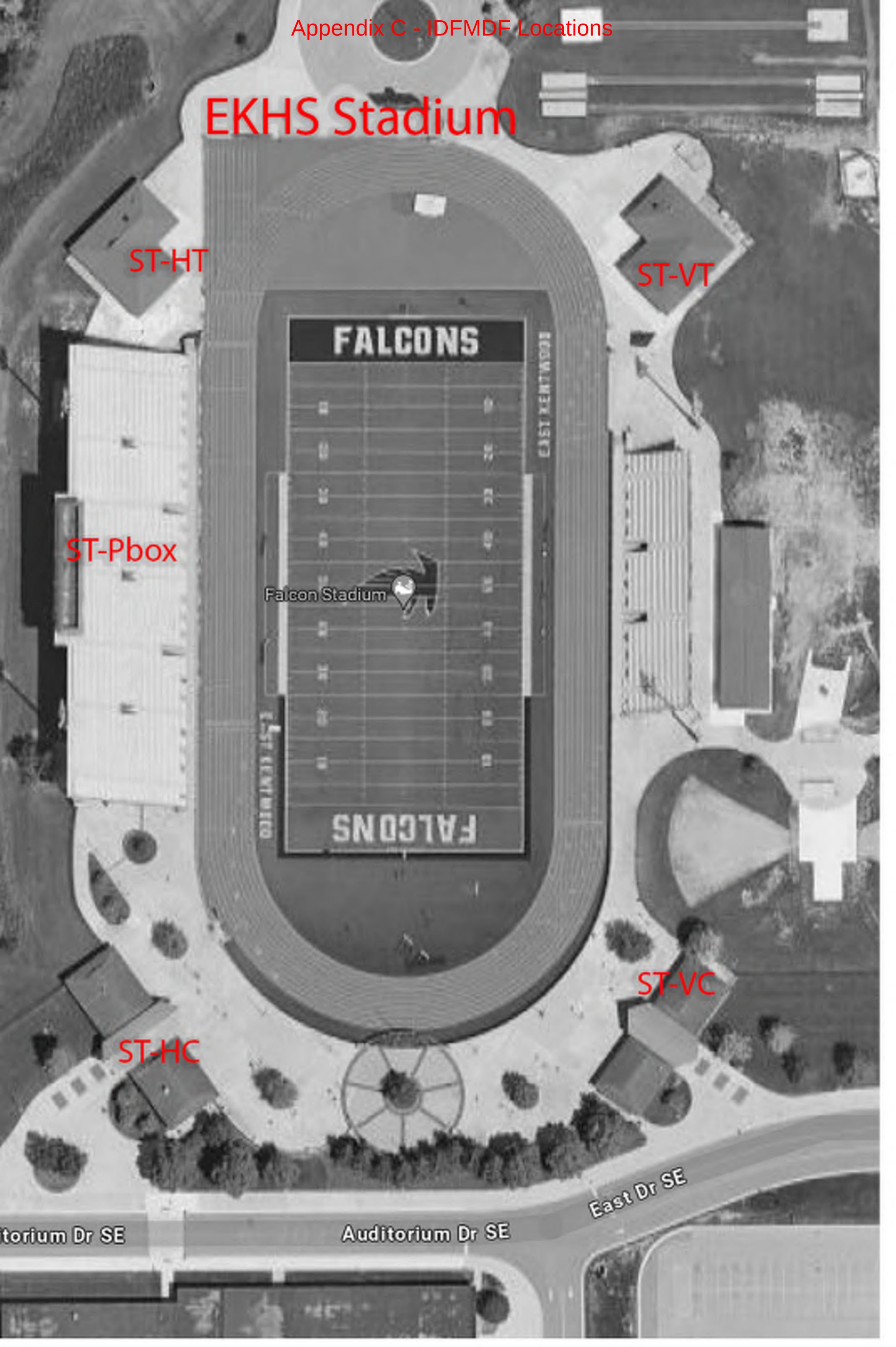
GNB Architects + Engineers
301 East Eighth Street, Suite 200
Holland, MI 49423

SOUTHWOOD ELEMENTARY
KENTWOOD PUBLIC SCHOOLS
KENTWOOD MICHIGAN

Appendix C - IDF/MDF Locations

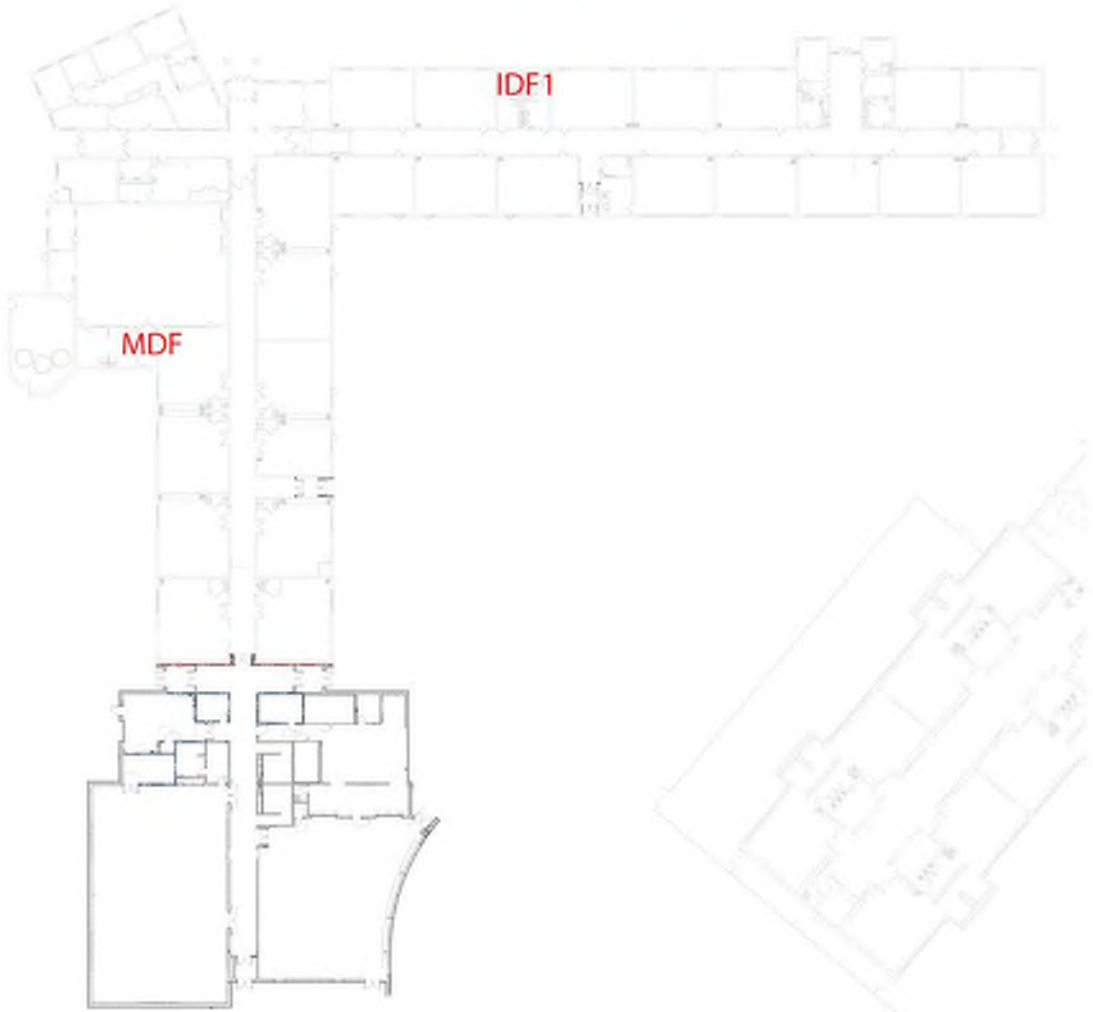


Appendix C - IDFMDF Locations



Appendix C - IDFMDF Locations

Townline



TowerPinkster
Architecture - Engineering - Interiors

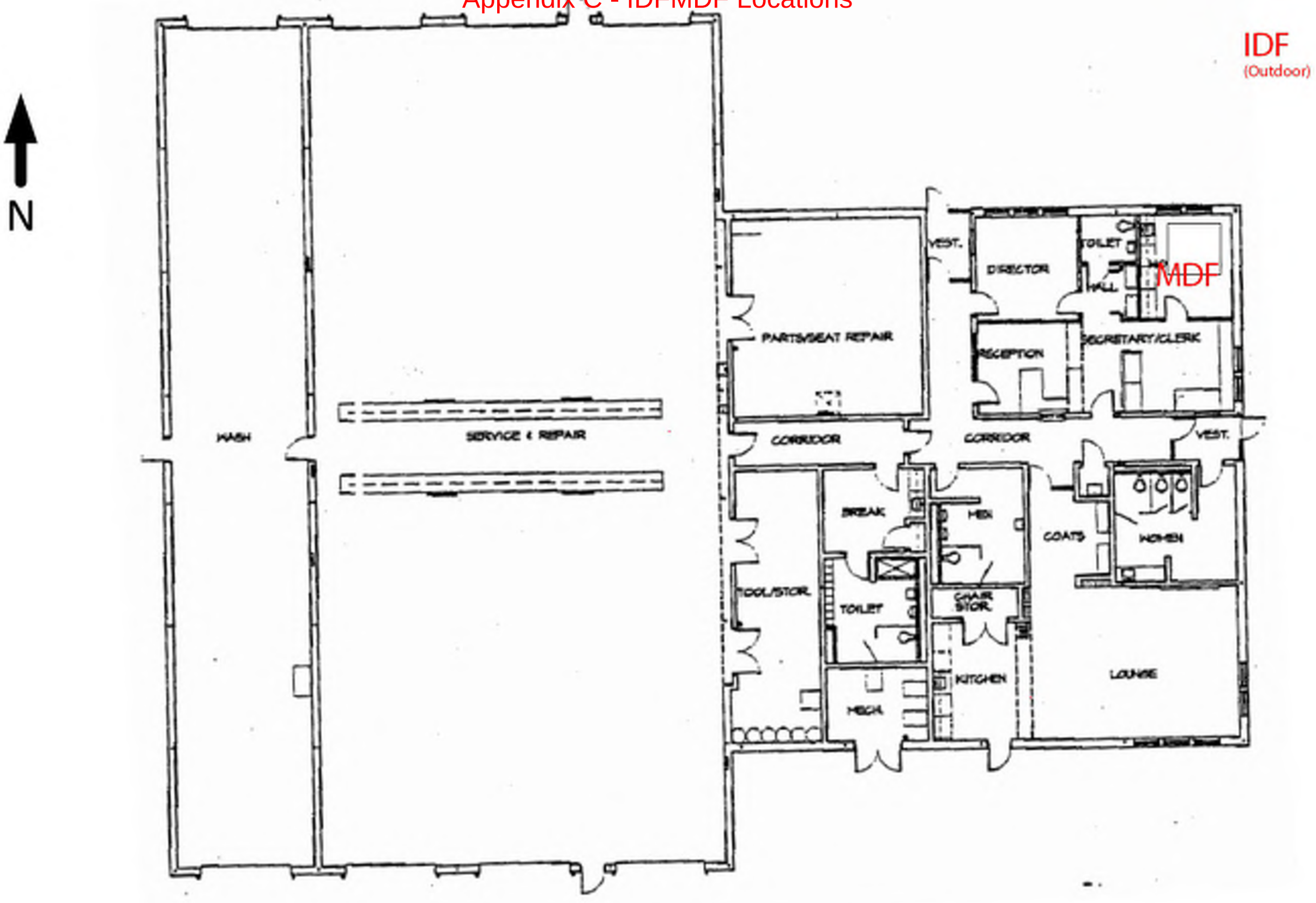
OWNER
KENTWOOD PUBLIC SCHOOLS

PROJECT TITLE
TOWNLINE ELEMENTARY ADDITION & RENOVATION

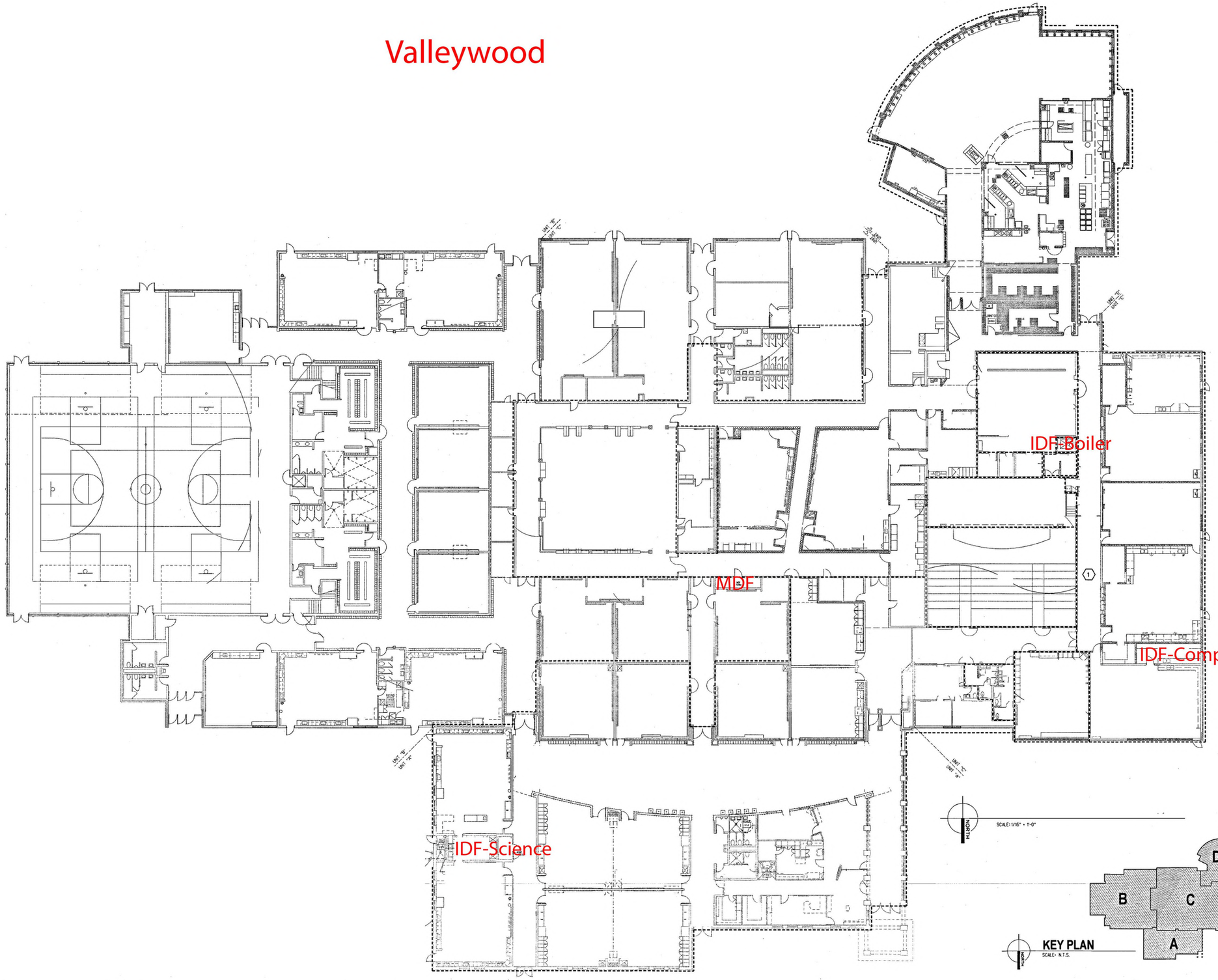
Kentwood, Michigan

TOWNLINE ELEMENTARY ADDITION

Appendix C - IDFMDF Locations



Valleywood



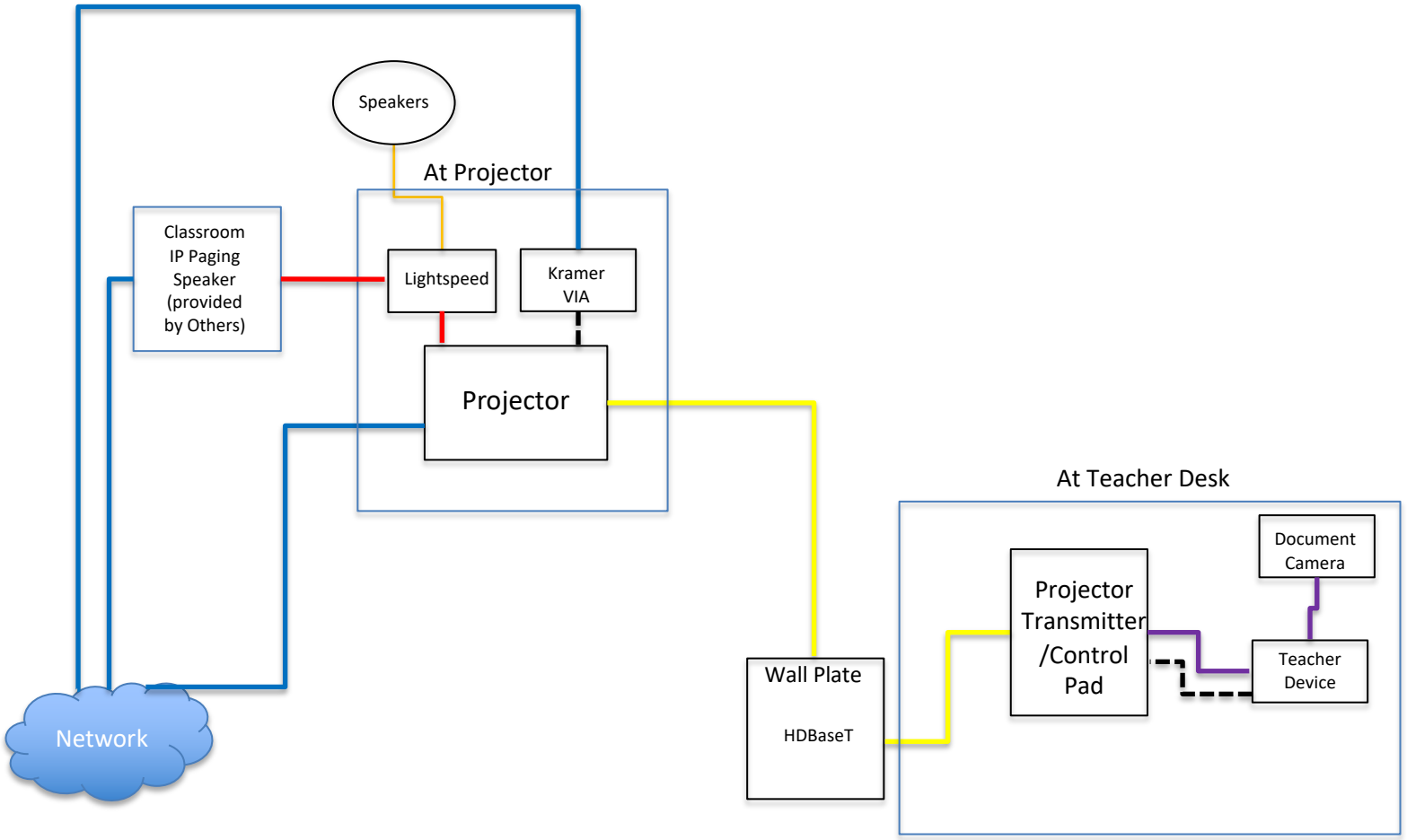
GMB Architects + Engineers
65 East Eighth Street, Suite 200
Holland, MI 49423

VALLEYWOOD MIDDLE SCHOOL ADDITIONS AND REMODELING

KENTWOOD PUBLIC SCHOOLS

KENTWOOD, MICHIGAN

Appendix D - KPS Classroom Multimedia Connection Line Diagram



Legend

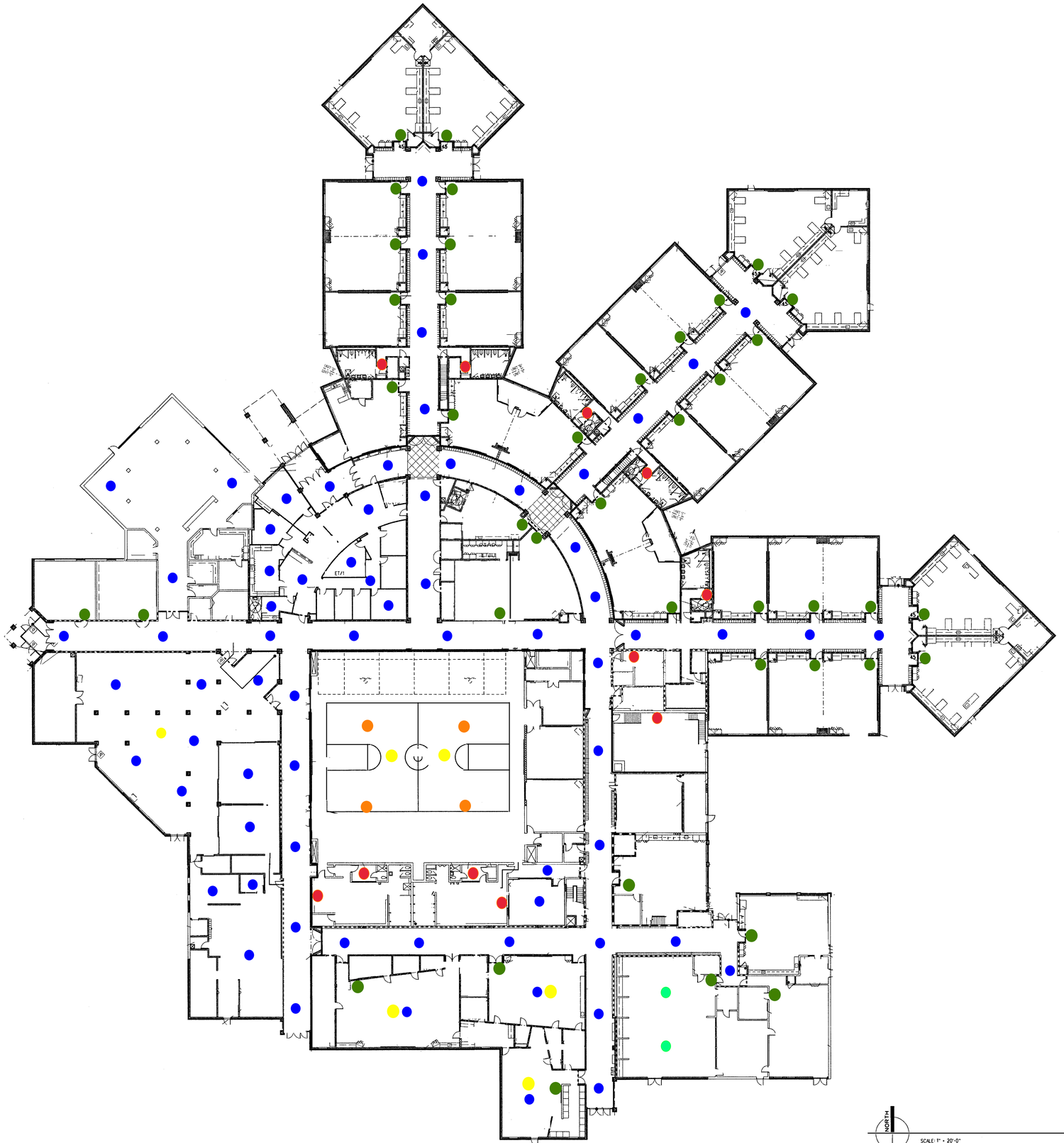
Network — Speaker Cable — USB

HDMI — Audio — Shielded Cat 6a

Kentwood Public Schools

Appendix E - AV Equipment Schedule

	Ultra Short Throw Interactive Projector	Wireless Presentation System	Voice Amplification	Document Camera
Brookwood Elementary	23	23	23	23
Freshman Campus	58	58	58	58
Crestwood Middle School	41	41	41	41
Pinewood Middle School	41	41	41	41
Miscelaneous Schools	10	10	10	10
TOTALS	**173**	**173**	**173**	**173**

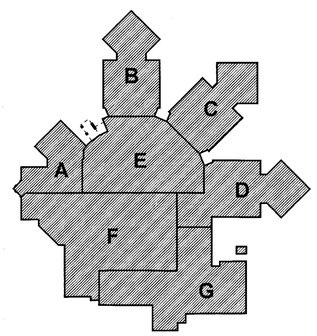


Speaker Types

- 2x2 Tile Replacement
- Surface Mount
- Clock/Speaker Combo
- Indoor/Outdoor Horn
- Strobe
- Pendant Speaker

NORTH

SCALE: 1" = 20'-0"



KEY PLAN
NOT TO SCALE

GMB Architects + Engineers
65 East Eighth Street, Suite 200
Holland, MI 49423

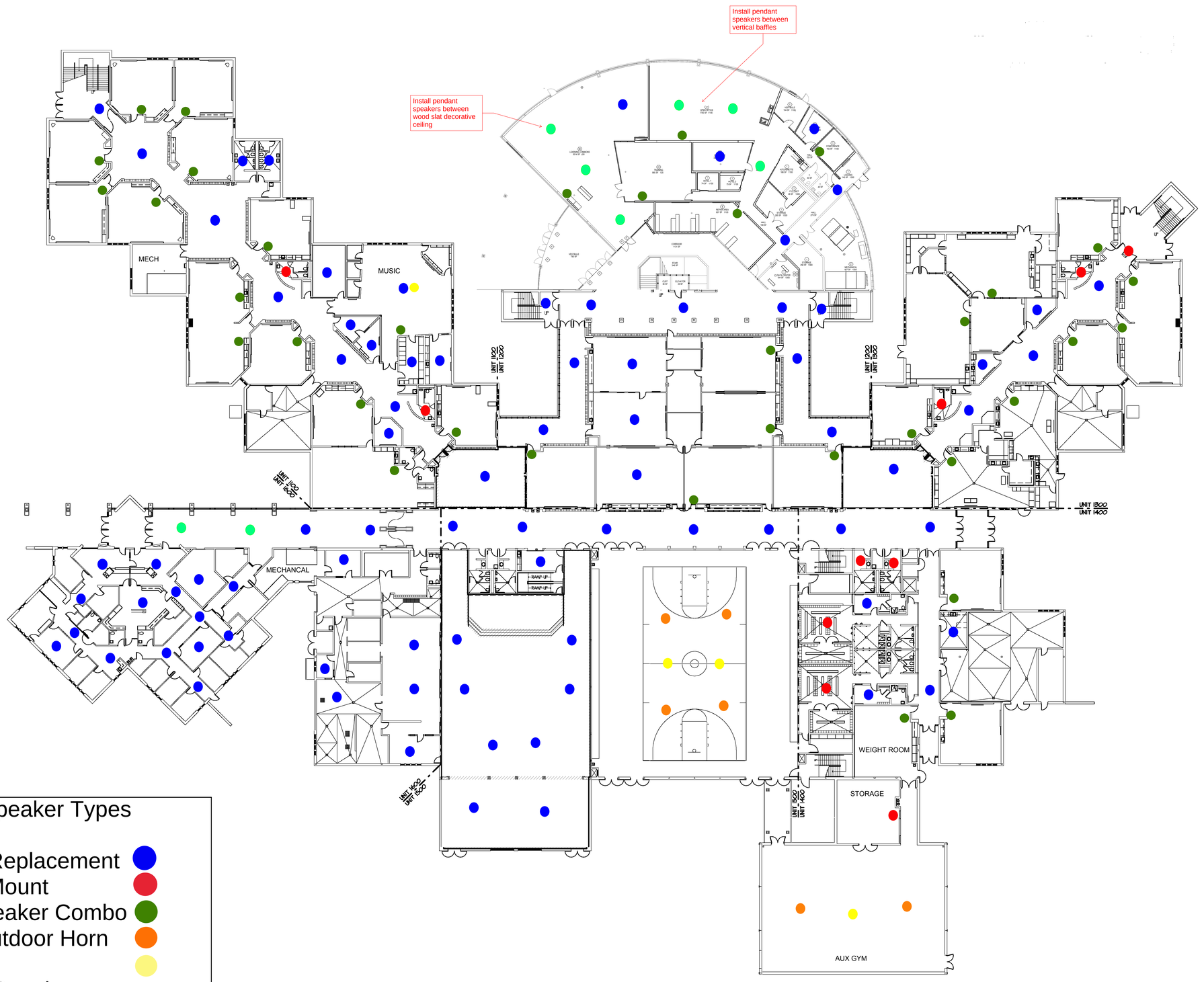
CRESTWOOD MIDDLE SCHOOL

KENTWOOD PUBLIC SCHOOLS

KENTWOOD, MICHIGAN

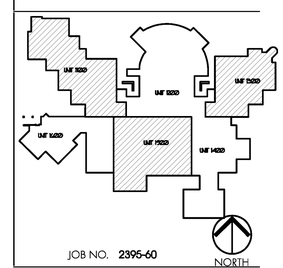
Kingscott
KALAMAZOO | GRAND RAPIDS | CHELSEA
259 East Michigan Ave., Suite 308
Kalamazoo, MI 49007-8403
P: 269.381.4880 | F: 269.381.9110
www.kingscott.com

CAFETERIA REMODELING
East Kentwood Freshman Campus
Kentwood Public Schools
Kentwood, Michigan



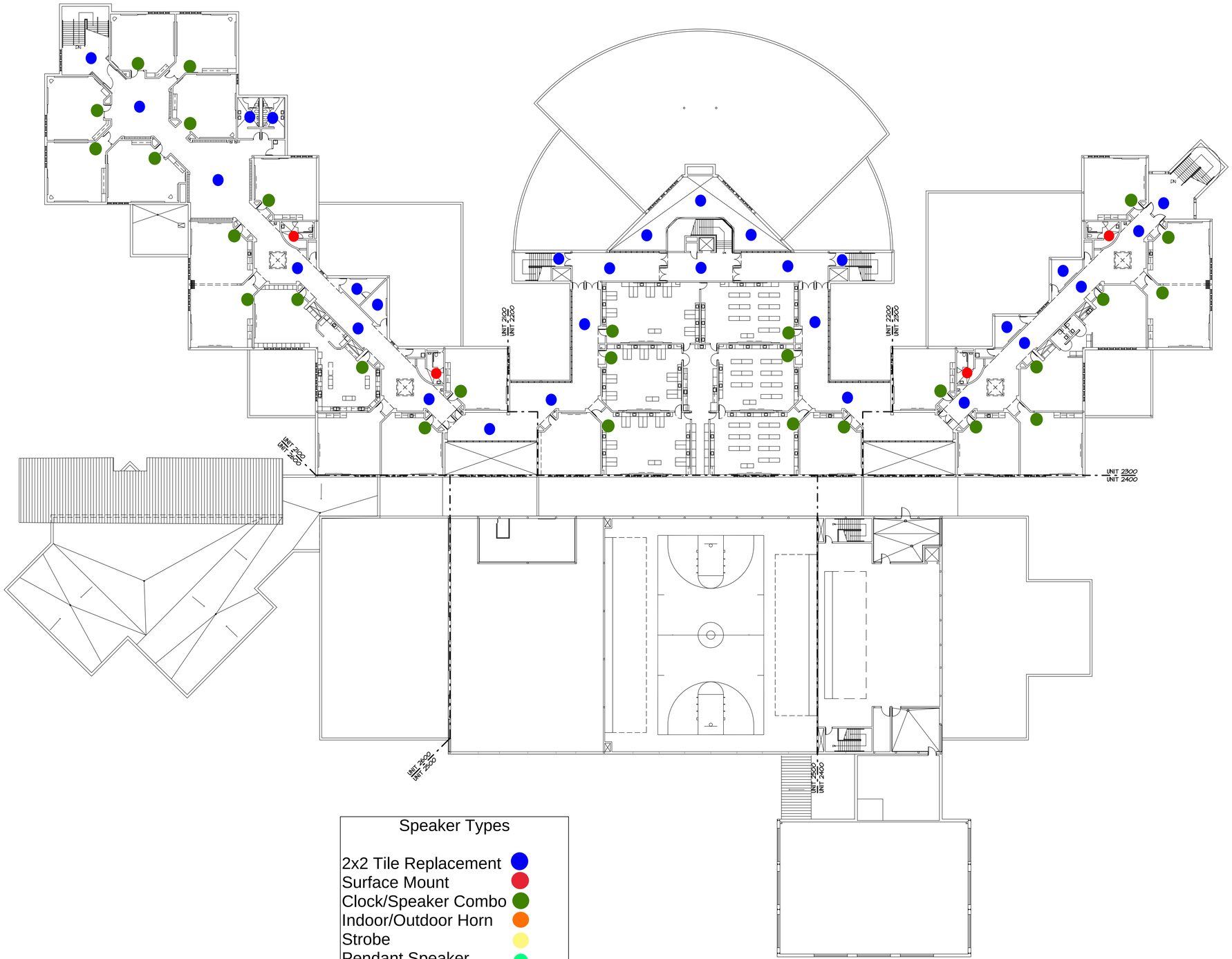
Speaker Types

- 2x2 Tile Replacement
- Surface Mount
- Clock/Speaker Combo
- Indoor/Outdoor Horn
- Strobe
- Pendant Speaker



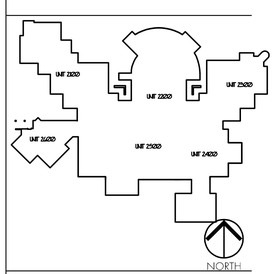
JOB NO. 2395-60

NORTH



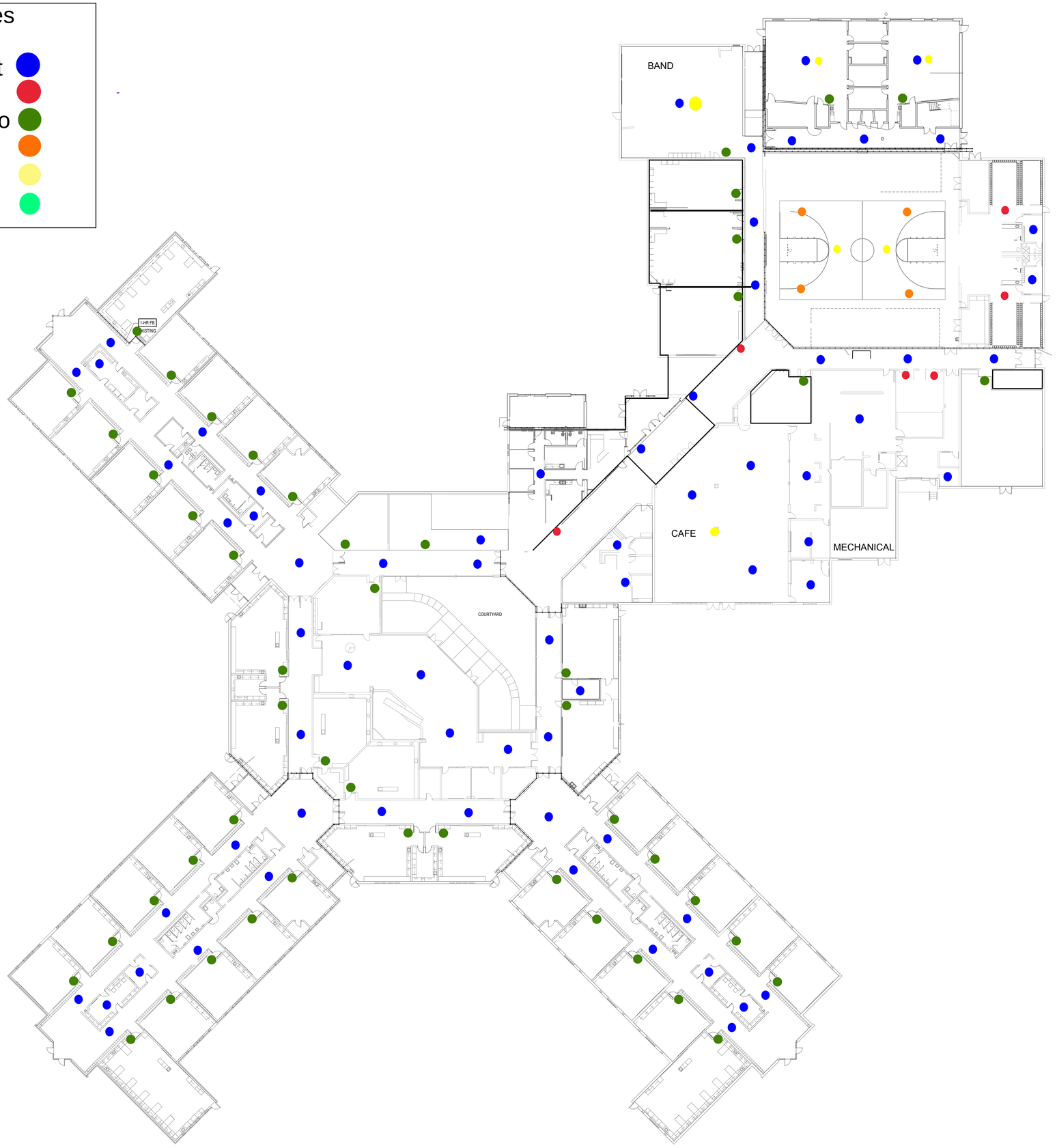
CAFETERIA REMODELING

East Kentwood Freshman Campus
Kentwood Public Schools
Kentwood, Michigan



Speaker Types

- 2x2 Tile Replacement
- Surface Mount
- Clock/Speaker Combo
- Indoor/Outdoor Horn
- Strobe
- Pendant Speaker

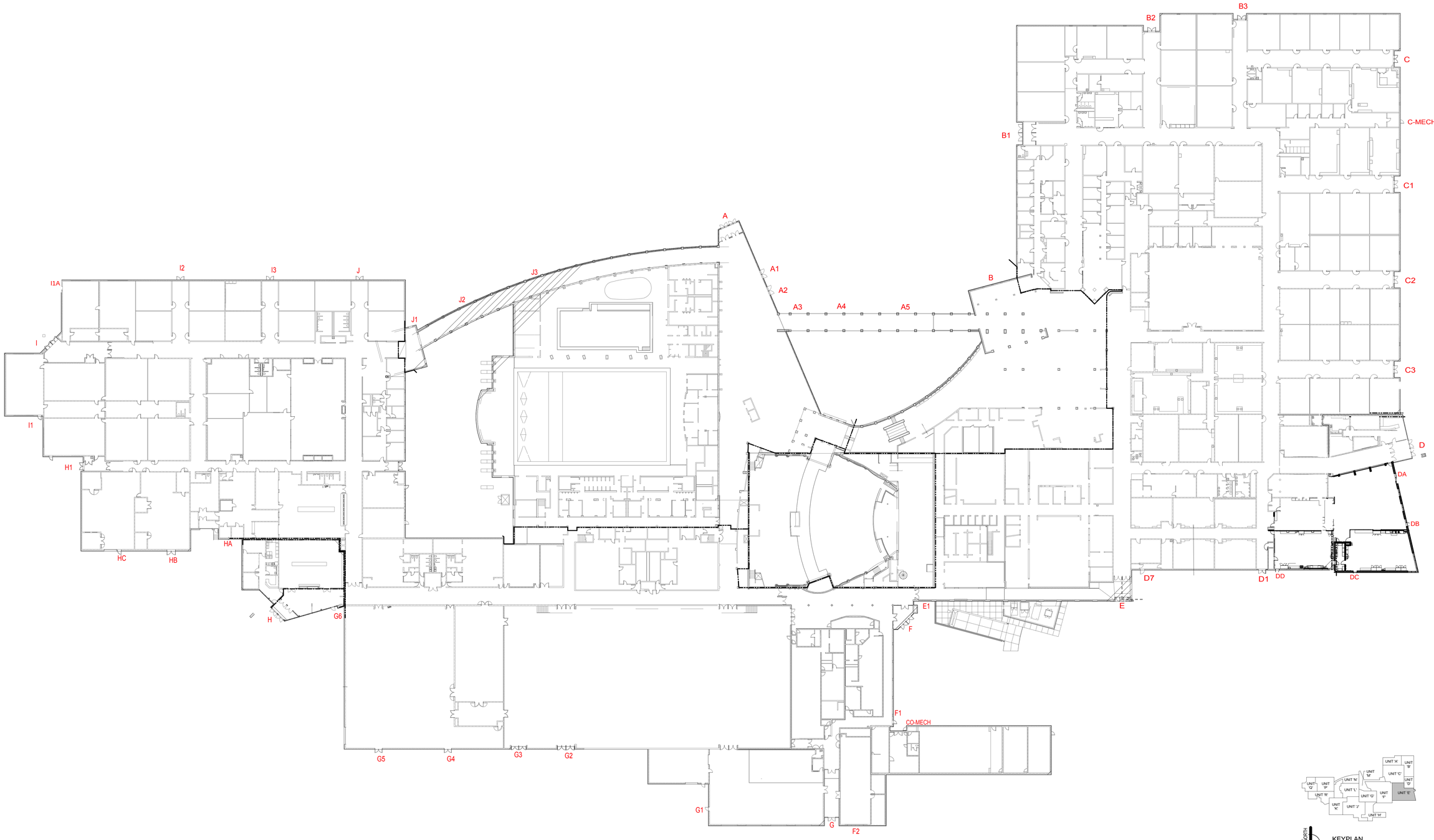


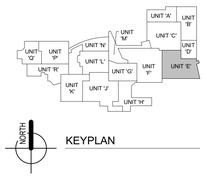
GMB
616.796.0200
WWW.GMB.COM

PINEWOOD MIDDLE SCHOOL IMPROVEMENTS

KENTWOOD PUBLIC SCHOOLS

KENTWOOD, MICHIGAN





KEYPLAN

GMB
616.796.0200
www.gmb.com

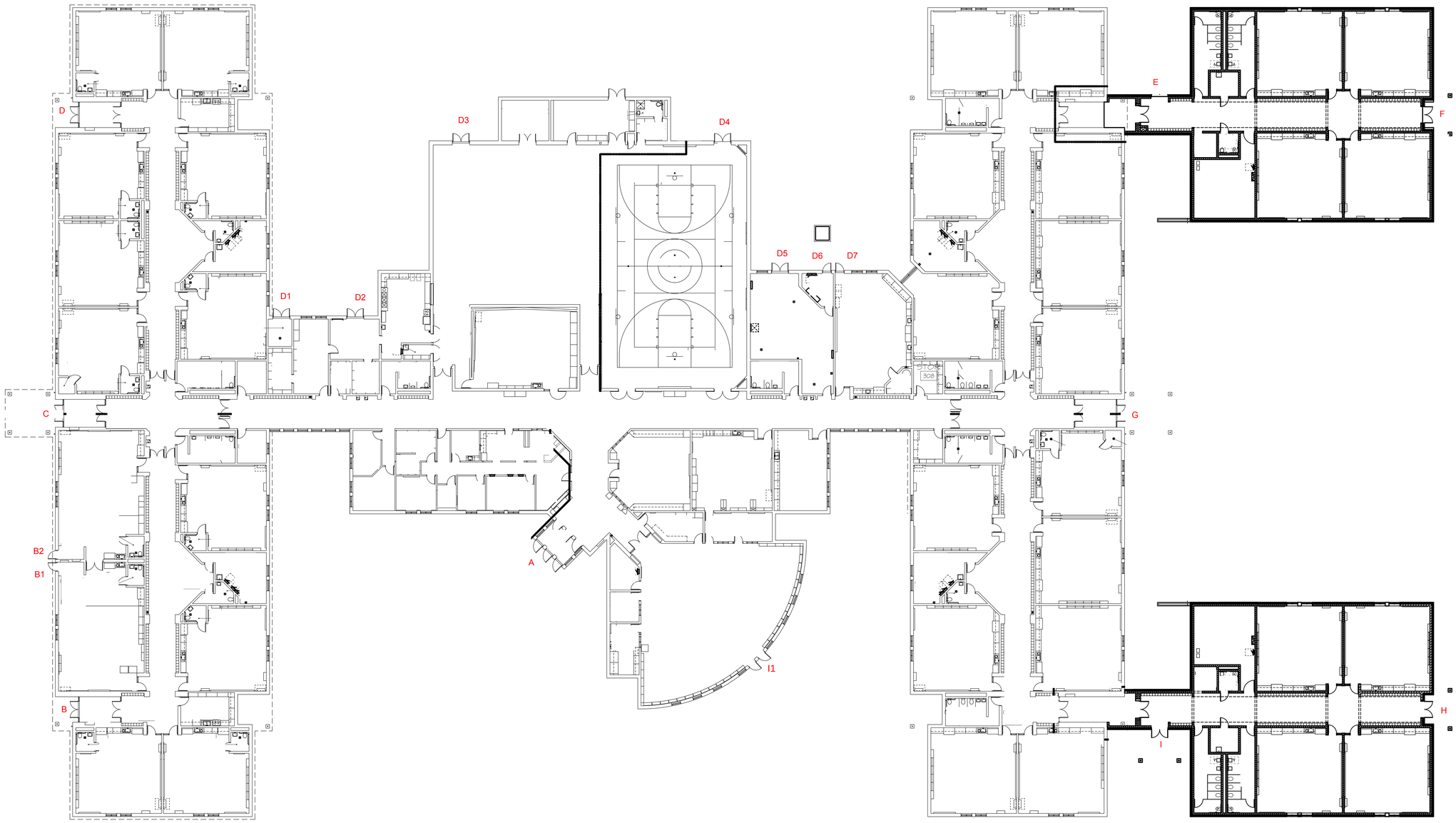
KPS
KENTWOOD PUBLIC SCHOOLS

KENTWOOD PUBLIC SCHOOLS

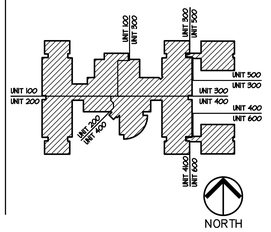
KENTWOOD, MICHIGAN

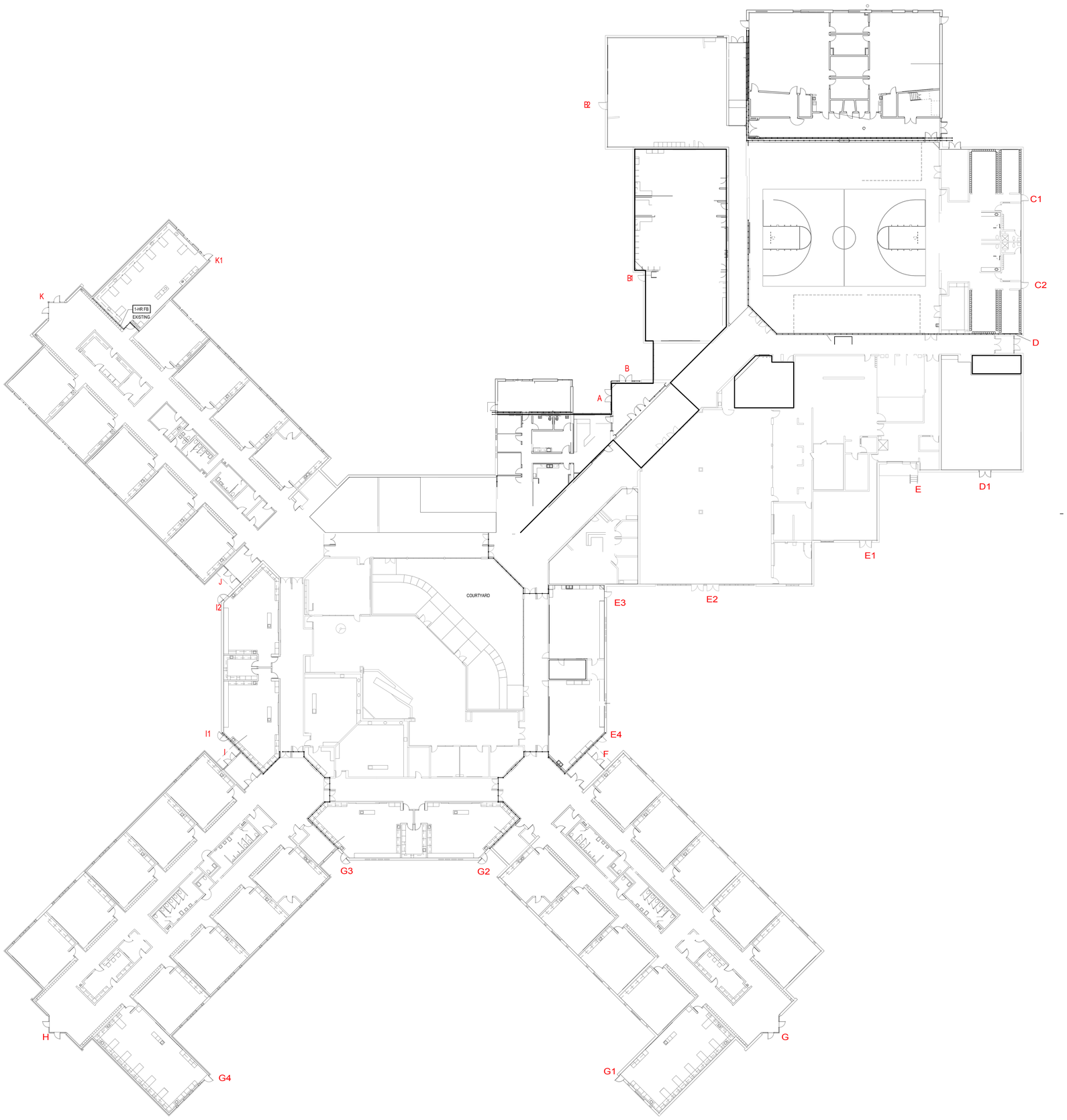
Kingscott
KALAMAZOO | GRAND RAPIDS | CHELSEA
259 East Michigan Ave., Suite 308
Kalamazoo, MI 49007-6403
P: 269.381.4880 | F: 269.381.9110
www.kingscott.com

Explorer Elementary
Classroom Addition
Kentwood Public Schools
Kentwood, Michigan



KPS
Kentwood
Public Schools





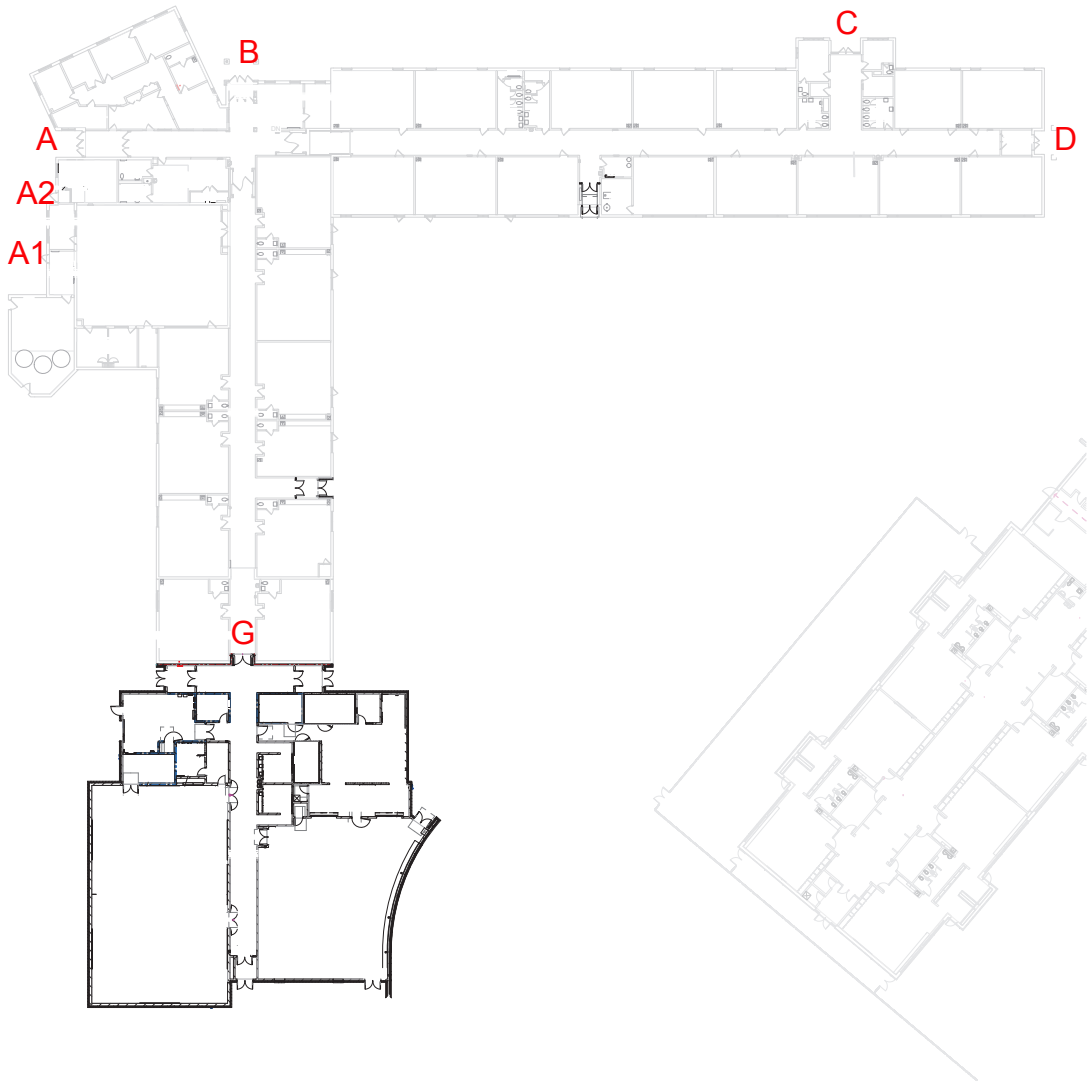
GMB
616.796.0200
WWW.GMB.COM

PINEWOOD MIDDLE SCHOOL IMPROVEMENTS

KENTWOOD PUBLIC SCHOOLS

KENTWOOD, MICHIGAN

Appendix G - Building Access Control Diagrams - Existing Doors



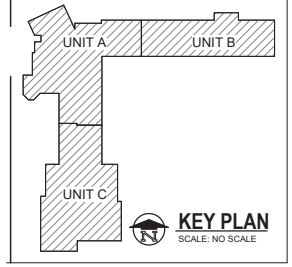
TowerPinkster
Architecture · Engineering · Interiors

PROJECT TITLE
TOWNLINE ELEMENTARY ADDITION & RENOVATION

OWNER
KENTWOOD PUBLIC SCHOOLS

Kentwood, Michigan

TOWNLINE ELEMENTARY ADDITION



Kentwood Public Schools

Appendix H: Door Schedule

Building	Door Controller	Reader	Electric Strike	REX	DPS
Explorer	10	0	0	10	15
Townline	2	0	0	2	2
Pinewood MS	19	3	3	22	23
EKHS	55	10	9	57	91
Total	86	13	12	91	131

Explorer Elementary Existing Door Access Schedule						
Door Opening Identifier	**Door Controller**	**Reader**	**Electric Strike**	**REX**	**DPS**	**Notes**
A	0	0	0	0	0	
B	0	0	0	0	0	Existing
B1	1	0	0	1	1	
B2	1	0	0	1	1	
C	0	0	0	0	0	
D	0	0	0	0	0	Existing
D1	1	0	0	1	2	
D2	1	0	0	1	2	Existing CR no REX or DC
D3	1	0	0	1	2	
D4	1	0	0	1	2	
D5	1	0	0	1	2	
D6	1	0	0	1	1	
D7	1	0	0	1	1	
E	0	0	0	0	0	Existing
F	0	0	0	0	0	Existing
G	0	0	0	0	0	Existing
H	0	0	0	0	0	Existing
I	0	0	0	0	0	Existing
I1	1	0	0	1	1	
Total	10	0	0	10	15	

Townline Elementary School Existing Door Access Schedule						
Door Opening Identifier	**Door Controller**	**Reader**	**Electric Strike**	**REX**	**DPS**	**Notes**
A	0	0	0	0	0	
A1	1	0	0	1	1	
A2	1	0	0	1	1	
B	0	0	0	0	0	Existing
C	0	0	0	0	0	Existing
D	0	0	0	0	0	Existing
G	0	0	0	0	0	Existing
Total	2	0	0	2	2	

East Kentwood High School Existing Door Access Schedule						
Door Opening Identifier	**Door Controller**	**Reader**	**Electric Strike**	**REX**	**DPS**	**Notes**
A	0	0	0	0	0	
A1	1	0	0	1	1	
A2	1	0	0	1	1	
A3	1	0	0	1	1	
A4	1	0	0	1	1	
A5	1	0	0	1	1	
B	2	0	0	4	8	Existing CR - no REX or DC
B1	2	0	0	2	4	Existing CR - no REX or DC
B2	1	0	0	1	2	Existing CR - no REX or DC
B3	1	1	1	1	2	
C	1	1	0	1	2	Existing strike - no REX or DC
C MECH	1	0	0	1	1	
C1	1	0	0	1	2	Existing CR - no REX or DC
C2	1	1	1	1	2	
C3	1	1	1	1	2	
CAMPUS OPERATIONS	1	1	1	1	1	
CO-MECH	0	0	0	0	0	
D	2	0	0	2	4	Existing CR - no REX or DC
DA	1	0	0	1	1	New Construction
DB	1	0	0	1	1	New Construction
DC	1	0	0	1	1	New Construction
DD	1	0	0	1	1	New Construction Existing CR - no REX or DC
D1	1	1	1	1	2	
D7	1	0	0	1	1	
E	0	0	0	0	0	
E1	1	0	0	1	2	
F	2	1	1	2	4	
F1	1	0	0	1	1	
F2	1	0	0	1	1	

G	1	0	0	1	2	Existing CR - no REX or DC
G1	1	0	0	1	2	
G1A	1	0	0	1	1	
G2	2	0	0	2	4	
G3	2	0	0	2	4	
G4	1	0	0	1	2	
G5	1	0	0	1	2	
G6	1	0	0	1	1	
H	2	0	0	2	4	Existing CR - no REX or DC
H1	1	1	1	1	2	
H2	1	0	0	1	1	
HA	1	0	0	1	1	Existing CR - no REX or DC
HB	1	0	0	1	2	
HC	1	0	0	1	1	
I	1	0	0	1	2	Existing CR - no REX or DC
I1	1	0	0	1	1	
I1A	1	0	0	1	1	
I2	1	1	1	1	2	
I3	1	1	1	1	2	
J	1	0	0	1	1	Existing CR - no REX or DC
J1	1	0	0	1	1	
J2	1	0	0	1	2	
J3	0	0	0	0	0	
Totals	**55**	**10**	**9**	**57**	**91**	

Pinewood Middle School Existing Door Access Schedule						
Door Opening Identifier	**Door Controller**	**Reader**	**Electric Strike**	**REX**	**DPS**	**Notes**
A	0	0	0	0	0	Construction
B	0	0	0	0	0	Construction
B1	1	0	0	1	1	
B2	1	0	0	1	1	
C1	1	0	0	1	1	
C2	1	0	0	1	1	
D	1	1	1	1	2	
D1	1	0	0	1	2	
E	0	0	0	0	0	Existing
E1	1	0	0	1	1	
E2	1	0	0	4	1	
E3	1	0	0	1	1	
E4	1	0	0	1	1	
F	1	1	1	1	2	
G	0	0	0	0	0	Existing
G1	1	0	0	1	1	
G2	1	0	0	1	1	
G3	1	0	0	1	1	
G4	1	0	0	1	1	
H	0	0	0	0	0	Existing
I	0	0	0	0	0	Existing
I1	1	0	0	1	1	
I2	1	0	0	1	1	
J	0	0	0	0	0	Existing
K	1	1	1	1	2	
K1	1	0	0	1	1	
Total	**19**	**3**	**3**	**22**	**23**	

Appendix I - Existing System Export	
Access Panels	Type
Panel A - E Kentwood High School	Panel Type: LNL-X2220
Panel B - Explorer	Panel Type: LNL-2220
Panel C - Administration	Panel Type: LNL-2220
Panel D - Challenger	Panel Type: LNL-2220
Panel E - Endeavor	Panel Type: LNL-2220
Panel F - Brookwood	Panel Type: LNL-2220
Panel G - Pinewood	Panel Type: LNL-2220
Panel H - Freshman Campus	Panel Type: LNL-2220
Panel I - Bowen	Panel Type: LNL-2220
Panel J - Crestwood	Panel Type: LNL-2220
Panel K - Glenwood	Panel Type: LNL-2220
Panel L - Hamilton	Panel Type: LNL-2220
Panel M - Meadowlawn	Panel Type: LNL-2220
Panel N - Southwood	Panel Type: LNL-2220
Panel O - Townline	Panel Type: LNL-2220
Panel P - Valleywood	Panel Type: LNL-2220
Panel Q - Crossroads	Panel Type: LNL-2220
Panel R - Discovery	Panel Type: LNL-2220
Panel S - Plant Services	Panel Type: LNL-2220
Panel T - Transportation	Panel Type: LNL-2220
Panel U - Special Ed Bldg	Panel Type: LNL-2220

Appendix I - Existing System Export						
Access Panel:		Type / Output:	Aux Input #1 Desc:	Aux Input #2 Desc:	Aux Output #1 Desc:	Aux Output #2 Desc:
Panel A - E Kentwood High School	KHS - Athletic Office Front Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS-Athletics Office Fron DR			KHS-Athletic Office Front DR
Panel A - E Kentwood High School	KHS - Athletic Office Front Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS-Athletics Office Fron DR			KHS-Athletic Office Front DR
Panel A - E Kentwood High School	KHS - Athletic Office Front Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS-Athletics Office Fron DR			KHS-Athletic Office Front DR
Panel A - E Kentwood High School	KHS - Athletic Office Front Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS-Athletics Office Fron DR			KHS-Athletic Office Front DR
Panel A - E Kentwood High School	KHS - S Culinary Entrance (70)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS - S Culinary Entrance (70)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS - S Culinary Entrance (70)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS - S Culinary Entrance (70)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS - SE Entry (55)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - ACE-A8 Bat Fail	KHS - SE Entry AO (56)		
Panel A - E Kentwood High School	KHS - SE Entry (55)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - ACE-A8 Bat Fail	KHS - SE Entry AO (56)		
Panel A - E Kentwood High School	KHS - SE Entry (55)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - ACE-A8 Bat Fail	KHS - SE Entry AO (56)		
Panel A - E Kentwood High School	KHS - SE Entry (55)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - ACE-A8 Bat Fail	KHS - SE Entry AO (56)		
Panel A - E Kentwood High School	KHS - SE Office to Hall-IN (59)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - SE Office DB (60)	KHS - SE Office Lockdown (61)		
Panel A - E Kentwood High School	KHS - SE Office to Hall-IN (59)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - SE Office DB (60)	KHS - SE Office Lockdown (61)		
Panel A - E Kentwood High School	KHS - SE Office to Hall-IN (59)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - SE Office DB (60)	KHS - SE Office Lockdown (61)		
Panel A - E Kentwood High School	KHS - SE Office to Hall-IN (59)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - SE Office DB (60)	KHS - SE Office Lockdown (61)		
Panel A - E Kentwood High School	KHS - SE Office to Hall-OUT (65)	LNL-1320 (Dual Interface) (Wiegand / Prox)		H Office Intercom Door Release		H Office Intercom Door Release
Panel A - E Kentwood High School	KHS - SE Vestibule (57)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - SE Vestibule AO (58)	EKHS D Office Door Release		
Panel A - E Kentwood High School	KHS - SE Vestibule (57)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - SE Vestibule AO (58)	EKHS D Office Door Release		
Panel A - E Kentwood High School	KHS - SE Vestibule (57)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - SE Vestibule AO (58)	EKHS D Office Door Release		
Panel A - E Kentwood High School	KHS - SE Vestibule (57)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - SE Vestibule AO (58)	EKHS D Office Door Release		
Panel A - E Kentwood High School	KHS-00 Door A	Onboard Reader (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-00 Door A	Onboard Reader (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-00 Door A	Onboard Reader (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-00 Door A	Onboard Reader (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-01 East Wing Admin Office Door	Onboard Reader (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-01 East Wing Admin Office Door	Onboard Reader (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-01 East Wing Admin Office Door	Onboard Reader (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-01 East Wing Admin Office Door	Onboard Reader (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-02 Door C	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-02 Door C	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-02 Door C	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-02 Door C	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-03 East Wing Tech Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-03 East Wing Tech Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-03 East Wing Tech Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-03 East Wing Tech Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-04 Door E Exterior	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-04 Door E Exterior	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-04 Door E Exterior	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-04 Door E Exterior	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-05 Door E Interior Hall	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-05 Door E Interior Hall	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-05 Door E Interior Hall	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-05 Door E Interior Hall	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-08 West Wing Door A Inside	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-08 West Wing Door A Inside	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-08 West Wing Door A Inside	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-08 West Wing Door A Inside	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-09 West Wing Classroom	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-09 West Wing Classroom	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-09 West Wing Classroom	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-09 West Wing Classroom	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-10 West Wing From Tunnel	LNL-1320 (Dual Interface) (Wiegand / Prox)				

Panel A - E Kentwood High School	KHS-10 West Wing From Tunnel	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-10 West Wing From Tunnel	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-10 West Wing From Tunnel	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-11 West Wing Door I	LNL-1320 (Dual Interface) (Wiegand / Prox)	Door I Auto Opener Button			
Panel A - E Kentwood High School	KHS-11 West Wing Door I	LNL-1320 (Dual Interface) (Wiegand / Prox)	Door I Auto Opener Button			
Panel A - E Kentwood High School	KHS-11 West Wing Door I	LNL-1320 (Dual Interface) (Wiegand / Prox)	Door I Auto Opener Button			
Panel A - E Kentwood High School	KHS-11 West Wing Door I	LNL-1320 (Dual Interface) (Wiegand / Prox)	Door I Auto Opener Button			
Panel A - E Kentwood High School	KHS-12 Guidance Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-12 Guidance Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-12 Guidance Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-12 Guidance Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-13 **Disconnected**	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-13 **Disconnected**	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-13 **Disconnected**	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-13 **Disconnected**	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-14 Door D	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-14 Door D	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-14 Door D	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-14 Door D	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-15 Door B (33)	LNL-1320 (Dual Interface) (Wiegand / Prox)			New Door D Unlock (50)	
Panel A - E Kentwood High School	KHS-15 Door B (33)	LNL-1320 (Dual Interface) (Wiegand / Prox)			New Door D Unlock (50)	
Panel A - E Kentwood High School	KHS-15 Door B (33)	LNL-1320 (Dual Interface) (Wiegand / Prox)			New Door D Unlock (50)	
Panel A - E Kentwood High School	KHS-15 Door B (33)	LNL-1320 (Dual Interface) (Wiegand / Prox)			New Door D Unlock (50)	
Panel A - E Kentwood High School	KHS-16 Boiler Room Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-16 Boiler Room Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-16 Boiler Room Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-16 Boiler Room Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-17 Door Near Laundry Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-17 Door Near Laundry Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-17 Door Near Laundry Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-17 Door Near Laundry Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-18 West Tunnel Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-18 West Tunnel Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-18 West Tunnel Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-18 West Tunnel Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-19 Pool Mech Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-19 Pool Mech Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-19 Pool Mech Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-19 Pool Mech Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-21 West Kitchen Loading Dock	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-21 West Kitchen Loading Dock	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-21 West Kitchen Loading Dock	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-21 West Kitchen Loading Dock	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-22 Door K	LNL-1320 (Dual Interface) (Wiegand / Prox)	Door K AO (52)			
Panel A - E Kentwood High School	KHS-22 Door K	LNL-1320 (Dual Interface) (Wiegand / Prox)	Door K AO (52)			
Panel A - E Kentwood High School	KHS-22 Door K	LNL-1320 (Dual Interface) (Wiegand / Prox)	Door K AO (52)			
Panel A - E Kentwood High School	KHS-22 Door K	LNL-1320 (Dual Interface) (Wiegand / Prox)	Door K AO (52)			
Panel A - E Kentwood High School	KHS-23 Safety Office entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-23 Safety Office entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-23 Safety Office entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-23 Safety Office entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-24 Kitchen Back Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-24 Kitchen Back Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-24 Kitchen Back Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-24 Kitchen Back Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-25 Dock Door by Door F	LNL-1320 (Dual Interface) (Wiegand / Prox)				

Panel A - E Kentwood High School	KHS-25 Dock Door by Door F	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-25 Dock Door by Door F	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-25 Dock Door by Door F	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-26 Outer Vest H (40)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - Batt Fail (15)		KHS - Outter Vest H AO (41)	
Panel A - E Kentwood High School	KHS-26 Outer Vest H (40)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - Batt Fail (15)		KHS - Outter Vest H AO (41)	
Panel A - E Kentwood High School	KHS-26 Outer Vest H (40)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - Batt Fail (15)		KHS - Outter Vest H AO (41)	
Panel A - E Kentwood High School	KHS-26 Outer Vest H (40)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - Batt Fail (15)		KHS - Outter Vest H AO (41)	
Panel A - E Kentwood High School	KHS-27 Inner Vest H (42)	LNL-1320 (Dual Interface) (Wiegand / Prox)			KHS - Inner Vest H AO (43)	
Panel A - E Kentwood High School	KHS-27 Inner Vest H (42)	LNL-1320 (Dual Interface) (Wiegand / Prox)			KHS - Inner Vest H AO (43)	
Panel A - E Kentwood High School	KHS-27 Inner Vest H (42)	LNL-1320 (Dual Interface) (Wiegand / Prox)			KHS - Inner Vest H AO (43)	
Panel A - E Kentwood High School	KHS-27 Inner Vest H (42)	LNL-1320 (Dual Interface) (Wiegand / Prox)			KHS - Inner Vest H AO (43)	
Panel A - E Kentwood High School	KHS-28 Athletics Office (44)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - Off to Corr Release			
Panel A - E Kentwood High School	KHS-28 Athletics Office (44)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - Off to Corr Release			
Panel A - E Kentwood High School	KHS-28 Athletics Office (44)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - Off to Corr Release			
Panel A - E Kentwood High School	KHS-28 Athletics Office (44)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS - Off to Corr Release			
Panel A - E Kentwood High School	KHS-29 Door G (48)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS-29 Door G AO			
Panel A - E Kentwood High School	KHS-29 Door G (48)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS-29 Door G AO			
Panel A - E Kentwood High School	KHS-29 Door G (48)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS-29 Door G AO			
Panel A - E Kentwood High School	KHS-29 Door G (48)	LNL-1320 (Dual Interface) (Wiegand / Prox)	KHS-29 Door G AO			
Panel A - E Kentwood High School	KHS-63 Door J	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-63 Door J	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-63 Door J	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel A - E Kentwood High School	KHS-63 Door J	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-00 Computer Room	Onboard Reader (Wiegand / Prox)				
Panel B - Explorer	EXP-00 Computer Room	Onboard Reader (Wiegand / Prox)				
Panel B - Explorer	EXP-00 Computer Room	Onboard Reader (Wiegand / Prox)				
Panel B - Explorer	EXP-00 Computer Room	Onboard Reader (Wiegand / Prox)				
Panel B - Explorer	EXP-01 Foyer To Office Door	Onboard Reader (Wiegand / Prox)	Explorer Office Door Release			
Panel B - Explorer	EXP-01 Foyer To Office Door	Onboard Reader (Wiegand / Prox)	Explorer Office Door Release			
Panel B - Explorer	EXP-01 Foyer To Office Door	Onboard Reader (Wiegand / Prox)	Explorer Office Door Release			
Panel B - Explorer	EXP-01 Foyer To Office Door	Onboard Reader (Wiegand / Prox)	Explorer Office Door Release			
Panel B - Explorer	EXP-02 Media Center	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-02 Media Center	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-02 Media Center	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-02 Media Center	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-03 Door A East Main	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-03 Door A East Main	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-03 Door A East Main	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-03 Door A East Main	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-04 Door E Mech/Receiving	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-04 Door E Mech/Receiving	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-04 Door E Mech/Receiving	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-04 Door E Mech/Receiving	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-05 Corr 500 North	LNL-1320 (Dual Interface) (Wiegand / Prox)	EXP-04 ACE-A2 Batt Fail			
Panel B - Explorer	EXP-05 Corr 500 North	LNL-1320 (Dual Interface) (Wiegand / Prox)	EXP-04 ACE-A2 Batt Fail			
Panel B - Explorer	EXP-05 Corr 500 North	LNL-1320 (Dual Interface) (Wiegand / Prox)	EXP-04 ACE-A2 Batt Fail			
Panel B - Explorer	EXP-05 Corr 500 North	LNL-1320 (Dual Interface) (Wiegand / Prox)	EXP-04 ACE-A2 Batt Fail			
Panel B - Explorer	EXP-05 Northeast Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-05 Northeast Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-05 Northeast Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-05 Northeast Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-06 Corr 500 East	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-06 Corr 500 East	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-06 Corr 500 East	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-06 Corr 500 East	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-06 Door C South Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				

Panel B - Explorer	EXP-06 Door C South Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-06 Door C South Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-06 Door C South Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-07 Corr 600 South	LNL-1320 (Dual Interface) (Wiegand / Prox)	EXP-08 Corr South AO			
Panel B - Explorer	EXP-07 Corr 600 South	LNL-1320 (Dual Interface) (Wiegand / Prox)	EXP-08 Corr South AO			
Panel B - Explorer	EXP-07 Corr 600 South	LNL-1320 (Dual Interface) (Wiegand / Prox)	EXP-08 Corr South AO			
Panel B - Explorer	EXP-07 Corr 600 South	LNL-1320 (Dual Interface) (Wiegand / Prox)	EXP-08 Corr South AO			
Panel B - Explorer	EXP-07 Foyer To Hall Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-07 Foyer To Hall Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-07 Foyer To Hall Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-07 Foyer To Hall Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-09 Corr 600 East	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-09 Corr 600 East	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-09 Corr 600 East	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel B - Explorer	EXP-09 Corr 600 East	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 106A (12)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 106A (12)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 106A (12)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 106A (12)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 113A (14)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 113A (14)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 113A (14)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 113A (14)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 113B (15)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 113B (15)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 113B (15)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 113B (15)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 127B (13)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 127B (13)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 127B (13)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Corridor 127B (13)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Main Entrance Vestibule (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)	ADM - ACE-C2 Bat Fail (06)	ADM - Vestibule AO		
Panel C - Administration	ADM - Main Entrance Vestibule (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)	ADM - ACE-C2 Bat Fail (06)	ADM - Vestibule AO		
Panel C - Administration	ADM - Main Entrance Vestibule (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)	ADM - ACE-C2 Bat Fail (06)	ADM - Vestibule AO		
Panel C - Administration	ADM - Main Entrance Vestibule (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)	ADM - ACE-C2 Bat Fail (06)	ADM - Vestibule AO		
Panel C - Administration	ADM - Registration 103B (11)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Registration 103B (11)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Registration 103B (11)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Registration 103B (11)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Server Room (17)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Server Room (17)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Server Room (17)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM - Server Room (17)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM-01 Hall 04A (07)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM-01 Hall 04A (07)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM-01 Hall 04A (07)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM-01 Hall 04A (07)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM-01 Hall 04A (07) Moved	Onboard Reader (Wiegand / Prox)				
Panel C - Administration	ADM-01 Hall 04A (07) Moved	Onboard Reader (Wiegand / Prox)				
Panel C - Administration	ADM-01 Hall 04A (07) Moved	Onboard Reader (Wiegand / Prox)				
Panel C - Administration	ADM-01 Hall 04A (07) Moved	Onboard Reader (Wiegand / Prox)				
Panel C - Administration	ADM-02 Accounting Area Door (08)	Onboard Reader (Wiegand / Prox)				
Panel C - Administration	ADM-02 Accounting Area Door (08)	Onboard Reader (Wiegand / Prox)				
Panel C - Administration	ADM-02 Accounting Area Door (08)	Onboard Reader (Wiegand / Prox)				
Panel C - Administration	ADM-02 Accounting Area Door (08)	Onboard Reader (Wiegand / Prox)				
Panel C - Administration	ADM-10 Lobby 10A (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)				

Panel C - Administration	ADM-10 Lobby 10A (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM-10 Lobby 10A (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel C - Administration	ADM-10 Lobby 10A (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel D - Challenger	CHA-00 Main Door	Onboard Reader (Wiegand / Prox)				
Panel D - Challenger	CHA-00 Main Door	Onboard Reader (Wiegand / Prox)				
Panel D - Challenger	CHA-00 Main Door	Onboard Reader (Wiegand / Prox)				
Panel D - Challenger	CHA-00 Main Door	Onboard Reader (Wiegand / Prox)				
Panel D - Challenger	CHA-01 Receiving Door	Onboard Reader (Wiegand / Prox)				
Panel D - Challenger	CHA-01 Receiving Door	Onboard Reader (Wiegand / Prox)				
Panel D - Challenger	CHA-01 Receiving Door	Onboard Reader (Wiegand / Prox)				
Panel D - Challenger	CHA-01 Receiving Door	Onboard Reader (Wiegand / Prox)				
Panel D - Challenger	CHA-02 Door D North Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Challenger Office Door Release			
Panel D - Challenger	CHA-02 Door D North Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Challenger Office Door Release			
Panel D - Challenger	CHA-02 Door D North Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Challenger Office Door Release			
Panel D - Challenger	CHA-02 Door D North Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Challenger Office Door Release			
Panel D - Challenger	CHA-04 Foyer To Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Challenger Office Door Release			
Panel D - Challenger	CHA-04 Foyer To Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Challenger Office Door Release			
Panel D - Challenger	CHA-04 Foyer To Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Challenger Office Door Release			
Panel D - Challenger	CHA-04 Foyer To Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Challenger Office Door Release			
Panel D - Challenger	CHA-05 Foyer To Hall Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel D - Challenger	CHA-05 Foyer To Hall Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel D - Challenger	CHA-05 Foyer To Hall Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel D - Challenger	CHA-05 Foyer To Hall Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-00 Door H North Door	Onboard Reader (Wiegand / Prox)				
Panel E - Endeavor	END-00 Door H North Door	Onboard Reader (Wiegand / Prox)				
Panel E - Endeavor	END-00 Door H North Door	Onboard Reader (Wiegand / Prox)				
Panel E - Endeavor	END-00 Door H North Door	Onboard Reader (Wiegand / Prox)				
Panel E - Endeavor	END-01 Media Center	Onboard Reader (Wiegand / Prox)				
Panel E - Endeavor	END-01 Media Center	Onboard Reader (Wiegand / Prox)				
Panel E - Endeavor	END-01 Media Center	Onboard Reader (Wiegand / Prox)				
Panel E - Endeavor	END-01 Media Center	Onboard Reader (Wiegand / Prox)				
Panel E - Endeavor	END-02 Door D Front Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-02 Door D Front Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-02 Door D Front Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-02 Door D Front Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-03 Foyer To Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Endeavor Office Door Release			
Panel E - Endeavor	END-03 Foyer To Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Endeavor Office Door Release			
Panel E - Endeavor	END-03 Foyer To Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Endeavor Office Door Release			
Panel E - Endeavor	END-03 Foyer To Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Endeavor Office Door Release			
Panel E - Endeavor	END-04 Computer Lab Drive	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-04 Computer Lab Drive	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-04 Computer Lab Drive	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-04 Computer Lab Drive	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-05 South Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-05 South Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-05 South Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-05 South Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-06 Foyer To Hall Drive	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-06 Foyer To Hall Drive	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-06 Foyer To Hall Drive	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-06 Foyer To Hall Drive	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-08 Culinary Kitchen	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-08 Culinary Kitchen	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-08 Culinary Kitchen	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel E - Endeavor	END-08 Culinary Kitchen	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO - 10 Vestibule 118	LNL-1320 (Dual Interface) (Wiegand / Prox)	BRO - ACE-A4 Batt Fail			

Panel F - Brookwood	BRO - 10 Vestibule 118	LNL-1320 (Dual Interface) (Wiegand / Prox)	BRO - ACE-A4 Batt Fail			
Panel F - Brookwood	BRO - 10 Vestibule 118	LNL-1320 (Dual Interface) (Wiegand / Prox)	BRO - ACE-A4 Batt Fail			
Panel F - Brookwood	BRO - 10 Vestibule 118	LNL-1320 (Dual Interface) (Wiegand / Prox)	BRO - ACE-A4 Batt Fail			
Panel F - Brookwood	BRO - NW Entrance (08)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO - NW Entrance (08)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO - NW Entrance (08)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO - NW Entrance (08)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-00 South Teachers Drive	Onboard Reader (Wiegand / Prox)				
Panel F - Brookwood	BRO-00 South Teachers Drive	Onboard Reader (Wiegand / Prox)				
Panel F - Brookwood	BRO-00 South Teachers Drive	Onboard Reader (Wiegand / Prox)				
Panel F - Brookwood	BRO-00 South Teachers Drive	Onboard Reader (Wiegand / Prox)				
Panel F - Brookwood	BRO-01 Main Entrance	Onboard Reader (Wiegand / Prox)				
Panel F - Brookwood	BRO-01 Main Entrance	Onboard Reader (Wiegand / Prox)				
Panel F - Brookwood	BRO-01 Main Entrance	Onboard Reader (Wiegand / Prox)				
Panel F - Brookwood	BRO-01 Main Entrance	Onboard Reader (Wiegand / Prox)				
Panel F - Brookwood	BRO-02 Main Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	BRO - Main Office DRB			
Panel F - Brookwood	BRO-02 Main Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	BRO - Main Office DRB			
Panel F - Brookwood	BRO-02 Main Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	BRO - Main Office DRB			
Panel F - Brookwood	BRO-02 Main Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	BRO - Main Office DRB			
Panel F - Brookwood	BRO-03 West Playground Drive	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-03 West Playground Drive	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-03 West Playground Drive	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-03 West Playground Drive	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-05 Cafeteria (09)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-05 Cafeteria (09)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-05 Cafeteria (09)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-05 Cafeteria (09)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-06 S Gym Corridor (11)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-06 S Gym Corridor (11)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-06 S Gym Corridor (11)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-06 S Gym Corridor (11)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-07 Receiving 131 (12)	LNL-1320 (Dual Interface) (Wiegand / Prox)	BRO - ACE-A4 Batt Fail (15)			
Panel F - Brookwood	BRO-07 Receiving 131 (12)	LNL-1320 (Dual Interface) (Wiegand / Prox)	BRO - ACE-A4 Batt Fail (15)			
Panel F - Brookwood	BRO-07 Receiving 131 (12)	LNL-1320 (Dual Interface) (Wiegand / Prox)	BRO - ACE-A4 Batt Fail (15)			
Panel F - Brookwood	BRO-07 Receiving 131 (12)	LNL-1320 (Dual Interface) (Wiegand / Prox)	BRO - ACE-A4 Batt Fail (15)			
Panel F - Brookwood	BRO-08 Kitchen 128 (13)*	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-08 Kitchen 128 (13)*	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-08 Kitchen 128 (13)*	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-08 Kitchen 128 (13)*	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-09 NE GYM Corridor (17)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-09 NE GYM Corridor (17)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-09 NE GYM Corridor (17)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel F - Brookwood	BRO-09 NE GYM Corridor (17)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-00 South Dock Door	Onboard Reader (Wiegand / Prox)				
Panel G - Pinewood	PIN-00 South Dock Door	Onboard Reader (Wiegand / Prox)				
Panel G - Pinewood	PIN-00 South Dock Door	Onboard Reader (Wiegand / Prox)				
Panel G - Pinewood	PIN-00 South Dock Door	Onboard Reader (Wiegand / Prox)				
Panel G - Pinewood	PIN-02 Exterior Door A	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-02 Exterior Door A	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-02 Exterior Door A	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-02 Exterior Door A	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-04 West Staff Door (8th Grade)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-04 West Staff Door (8th Grade)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-04 West Staff Door (8th Grade)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-04 West Staff Door (8th Grade)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-05 D116 to Collab Center	LNL-1320 (Dual Interface) (Wiegand / Prox)	ACE-G7 Batt Fail			

Panel G - Pinewood	PIN-05 D116 to Collab Center	LNL-1320 (Dual Interface) (Wiegand / Prox)	ACE-G7 Batt Fail			
Panel G - Pinewood	PIN-05 D116 to Collab Center	LNL-1320 (Dual Interface) (Wiegand / Prox)	ACE-G7 Batt Fail			
Panel G - Pinewood	PIN-05 D116 to Collab Center	LNL-1320 (Dual Interface) (Wiegand / Prox)	ACE-G7 Batt Fail			
Panel G - Pinewood	PIN-06 D117 to Collab Center	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-06 D117 to Collab Center	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-06 D117 to Collab Center	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-06 D117 to Collab Center	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-06 Southwest Door (5th Grade)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-06 Southwest Door (5th Grade)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-06 Southwest Door (5th Grade)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-06 Southwest Door (5th Grade)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-07 G-Wing Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-07 G-Wing Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-07 G-Wing Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-07 G-Wing Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-08 H-Wing Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-08 H-Wing Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-08 H-Wing Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-08 H-Wing Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-08 Music Hall Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-08 Music Hall Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-08 Music Hall Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-08 Music Hall Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-10 Guidance Office	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-10 Guidance Office	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-10 Guidance Office	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-10 Guidance Office	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-11 Media Center Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-11 Media Center Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-11 Media Center Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-11 Media Center Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-13 Hall To Main Office Interior	LNL-1320 (Dual Interface) (Wiegand / Prox)	Pinewood Office Door Release			
Panel G - Pinewood	PIN-13 Hall To Main Office Interior	LNL-1320 (Dual Interface) (Wiegand / Prox)	Pinewood Office Door Release			
Panel G - Pinewood	PIN-13 Hall To Main Office Interior	LNL-1320 (Dual Interface) (Wiegand / Prox)	Pinewood Office Door Release			
Panel G - Pinewood	PIN-13 Hall To Main Office Interior	LNL-1320 (Dual Interface) (Wiegand / Prox)	Pinewood Office Door Release			
Panel G - Pinewood	PIN-14 Interior Door A To Hall	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-14 Interior Door A To Hall	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-14 Interior Door A To Hall	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-14 Interior Door A To Hall	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel G - Pinewood	PIN-15 Lobby A To Main Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Lobby to Office DRB	Pinewood Office Door Release		
Panel G - Pinewood	PIN-15 Lobby A To Main Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Lobby to Office DRB	Pinewood Office Door Release		
Panel G - Pinewood	PIN-15 Lobby A To Main Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Lobby to Office DRB	Pinewood Office Door Release		
Panel G - Pinewood	PIN-15 Lobby A To Main Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Lobby to Office DRB	Pinewood Office Door Release		
Panel H - Freshman Campus	FRE- Door B (22)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE- Door B (22)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE- Door B (22)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE- Door B (22)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-00 Door A West Main Exterior	Onboard Reader (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-00 Door A West Main Exterior	Onboard Reader (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-00 Door A West Main Exterior	Onboard Reader (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-00 Door A West Main Exterior	Onboard Reader (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-01 Main Office Door	Onboard Reader (Wiegand / Prox)	Freshman Campus DRB			
Panel H - Freshman Campus	FRE-01 Main Office Door	Onboard Reader (Wiegand / Prox)	Freshman Campus DRB			
Panel H - Freshman Campus	FRE-01 Main Office Door	Onboard Reader (Wiegand / Prox)	Freshman Campus DRB			
Panel H - Freshman Campus	FRE-01 Main Office Door	Onboard Reader (Wiegand / Prox)	Freshman Campus DRB			
Panel H - Freshman Campus	FRE-02 Door A West Main Interior	LNL-1300 (Single Interface) (Wiegand / Prox)				

Panel H - Freshman Campus	FRE-02 Door A West Main Interior	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-02 Door A West Main Interior	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-02 Door A West Main Interior	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-04 Rm 131 - Tech 2000	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-04 Rm 131 - Tech 2000	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-04 Rm 131 - Tech 2000	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-04 Rm 131 - Tech 2000	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-06 Door H West Receiving	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-06 Door H West Receiving	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-06 Door H West Receiving	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-06 Door H West Receiving	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-08 West Computer Lab 117	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-08 West Computer Lab 117	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-08 West Computer Lab 117	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-08 West Computer Lab 117	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-10 Media Center Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-10 Media Center Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-10 Media Center Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-10 Media Center Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-12 Door C Northwest	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-12 Door C Northwest	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-12 Door C Northwest	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-12 Door C Northwest	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-14 East Computer Lab Room 122	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-14 East Computer Lab Room 122	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-14 East Computer Lab Room 122	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-14 East Computer Lab Room 122	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-16 Door D	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-16 Door D	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-16 Door D	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-16 Door D	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-18 Tech Hub Room Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-18 Tech Hub Room Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-18 Tech Hub Room Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel H - Freshman Campus	FRE-18 Tech Hub Room Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel I - Bowen	BOW-A Front Door	Onboard Reader (Wiegand / Prox)				
Panel I - Bowen	BOW-A Front Door	Onboard Reader (Wiegand / Prox)				
Panel I - Bowen	BOW-A Front Door	Onboard Reader (Wiegand / Prox)				
Panel I - Bowen	BOW-A Front Door	Onboard Reader (Wiegand / Prox)				
Panel I - Bowen	BOW-B Office Door	Onboard Reader (Wiegand / Prox)	Bowen Office Door Release			
Panel I - Bowen	BOW-B Office Door	Onboard Reader (Wiegand / Prox)	Bowen Office Door Release			
Panel I - Bowen	BOW-B Office Door	Onboard Reader (Wiegand / Prox)	Bowen Office Door Release			
Panel I - Bowen	BOW-B Office Door	Onboard Reader (Wiegand / Prox)	Bowen Office Door Release			
Panel I - Bowen	BOW-C West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel I - Bowen	BOW-C West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel I - Bowen	BOW-C West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel I - Bowen	BOW-C West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel I - Bowen	BOW-D Interior Vestibule Door Next To Office	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel I - Bowen	BOW-D Interior Vestibule Door Next To Office	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel I - Bowen	BOW-D Interior Vestibule Door Next To Office	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel I - Bowen	BOW-D Interior Vestibule Door Next To Office	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-A Front Exterior Door	Onboard Reader (Wiegand / Prox)				
Panel J - Crestwood	CRE-A Front Exterior Door	Onboard Reader (Wiegand / Prox)				
Panel J - Crestwood	CRE-A Front Exterior Door	Onboard Reader (Wiegand / Prox)				
Panel J - Crestwood	CRE-A Front Exterior Door	Onboard Reader (Wiegand / Prox)				
Panel J - Crestwood	CRE-B Front Office Interior Door	Onboard Reader (Wiegand / Prox)	Front Door Release	drb		

Panel J - Crestwood	CRE-B Front Office Interior Door	Onboard Reader (Wiegand / Prox)	Front Door Release	drb		
Panel J - Crestwood	CRE-B Front Office Interior Door	Onboard Reader (Wiegand / Prox)	Front Door Release	drb		
Panel J - Crestwood	CRE-B Front Office Interior Door	Onboard Reader (Wiegand / Prox)	Front Door Release	drb		
Panel J - Crestwood	CRE-C A101 West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-C A101 West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-C A101 West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-C A101 West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-D Southwest Kitchen Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-D Southwest Kitchen Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-D Southwest Kitchen Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-D Southwest Kitchen Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-E G127 SE Corridor	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-E G127 SE Corridor	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-E G127 SE Corridor	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-E G127 SE Corridor	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-G Door K (Northwest Door)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-G Door K (Northwest Door)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-G Door K (Northwest Door)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel J - Crestwood	CRE-G Door K (Northwest Door)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE- New Wing East Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE- New Wing East Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE- New Wing East Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE- New Wing East Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE- New Wing North Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE- New Wing North Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE- New Wing North Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE- New Wing North Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE- New Wing South Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE- New Wing South Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE- New Wing South Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE- New Wing South Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE-A Office Door	Onboard Reader (Wiegand / Prox)	Glenwood Office Door Release		Glenwood Office Intercom DR	
Panel K - Glenwood	GLE-A Office Door	Onboard Reader (Wiegand / Prox)	Glenwood Office Door Release		Glenwood Office Intercom DR	
Panel K - Glenwood	GLE-A Office Door	Onboard Reader (Wiegand / Prox)	Glenwood Office Door Release		Glenwood Office Intercom DR	
Panel K - Glenwood	GLE-A Office Door	Onboard Reader (Wiegand / Prox)	Glenwood Office Door Release		Glenwood Office Intercom DR	
Panel K - Glenwood	GLE-B West Door	Onboard Reader (Wiegand / Prox)				
Panel K - Glenwood	GLE-B West Door	Onboard Reader (Wiegand / Prox)				
Panel K - Glenwood	GLE-B West Door	Onboard Reader (Wiegand / Prox)				
Panel K - Glenwood	GLE-B West Door	Onboard Reader (Wiegand / Prox)				
Panel K - Glenwood	GLE-C South Playground Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE-C South Playground Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE-C South Playground Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE-C South Playground Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE-Kitchen Door (07)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE-Kitchen Door (07)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE-Kitchen Door (07)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel K - Glenwood	GLE-Kitchen Door (07)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM - Inner Vestibule 100 (15)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM - Inner Vestibule 100 (15)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM - Inner Vestibule 100 (15)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM - Inner Vestibule 100 (15)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM - Main Office Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM - Main Office Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM - Main Office Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM - Main Office Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM - SPARE 1	LNL-1320 (Dual Interface) (Wiegand / Prox)			HAM - Kindergarten Exit (16)	HAM - Classroom 226 Exit (17)

Panel L - Hamilton	HAM - SPARE 1	LNL-1320 (Dual Interface) (Wiegand / Prox)			HAM - Kindergarten Exit (16)	HAM - Classroom 226 Exit (17)
Panel L - Hamilton	HAM - SPARE 1	LNL-1320 (Dual Interface) (Wiegand / Prox)			HAM - Kindergarten Exit (16)	HAM - Classroom 226 Exit (17)
Panel L - Hamilton	HAM - SPARE 1	LNL-1320 (Dual Interface) (Wiegand / Prox)			HAM - Kindergarten Exit (16)	HAM - Classroom 226 Exit (17)
Panel L - Hamilton	HAM - SPARE 2	LNL-1320 (Dual Interface) (Wiegand / Prox)			HAM - Classroom 305 Exit (18)	HAM - Classroom 306 Exit (19)
Panel L - Hamilton	HAM - SPARE 2	LNL-1320 (Dual Interface) (Wiegand / Prox)			HAM - Classroom 305 Exit (18)	HAM - Classroom 306 Exit (19)
Panel L - Hamilton	HAM - SPARE 2	LNL-1320 (Dual Interface) (Wiegand / Prox)			HAM - Classroom 305 Exit (18)	HAM - Classroom 306 Exit (19)
Panel L - Hamilton	HAM - SPARE 2	LNL-1320 (Dual Interface) (Wiegand / Prox)			HAM - Classroom 305 Exit (18)	HAM - Classroom 306 Exit (19)
Panel L - Hamilton	HAM-Entrance 100 (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 100 (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 100 (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 100 (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 102 (08)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 102 (08)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 102 (08)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 102 (08)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 105 (12)	LNL-1320 (Dual Interface) (Wiegand / Prox)	HAM A2 Batt Fail (5)			
Panel L - Hamilton	HAM-Entrance 105 (12)	LNL-1320 (Dual Interface) (Wiegand / Prox)	HAM A2 Batt Fail (5)			
Panel L - Hamilton	HAM-Entrance 105 (12)	LNL-1320 (Dual Interface) (Wiegand / Prox)	HAM A2 Batt Fail (5)			
Panel L - Hamilton	HAM-Entrance 105 (12)	LNL-1320 (Dual Interface) (Wiegand / Prox)	HAM A2 Batt Fail (5)			
Panel L - Hamilton	HAM-Entrance 200 (11)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 200 (11)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 200 (11)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 200 (11)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 203 (07)	Onboard Reader (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 203 (07)	Onboard Reader (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 203 (07)	Onboard Reader (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 203 (07)	Onboard Reader (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 304 (13)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 304 (13)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 304 (13)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Entrance 304 (13)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Lobby 101 (09)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Lobby 101 (09)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Lobby 101 (09)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Lobby 101 (09)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel L - Hamilton	HAM-Lobby 328 (06)	Onboard Reader (Wiegand / Prox)				
Panel L - Hamilton	HAM-Lobby 328 (06)	Onboard Reader (Wiegand / Prox)				
Panel L - Hamilton	HAM-Lobby 328 (06)	Onboard Reader (Wiegand / Prox)				
Panel L - Hamilton	HAM-Lobby 328 (06)	Onboard Reader (Wiegand / Prox)				
Panel M - Meadowlawn	MEA - Collab Ctr Entry (22)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA - Collab Ctr Entry (22)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA - Collab Ctr Entry (22)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA - Collab Ctr Entry (22)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-A Principals Office Door (06)	Onboard Reader (Wiegand / Prox)	Meadowlawn Office Door Release			
Panel M - Meadowlawn	MEA-A Principals Office Door (06)	Onboard Reader (Wiegand / Prox)	Meadowlawn Office Door Release			
Panel M - Meadowlawn	MEA-A Principals Office Door (06)	Onboard Reader (Wiegand / Prox)	Meadowlawn Office Door Release			
Panel M - Meadowlawn	MEA-A Principals Office Door (06)	Onboard Reader (Wiegand / Prox)	Meadowlawn Office Door Release			
Panel M - Meadowlawn	MEA-B North Door (07)	Onboard Reader (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-B North Door (07)	Onboard Reader (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-B North Door (07)	Onboard Reader (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-B North Door (07)	Onboard Reader (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-C West Door (08)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-C West Door (08)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-C West Door (08)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-C West Door (08)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-D Interior Foyer Doors (09)	LNL-1320 (Dual Interface) (Wiegand / Prox)				

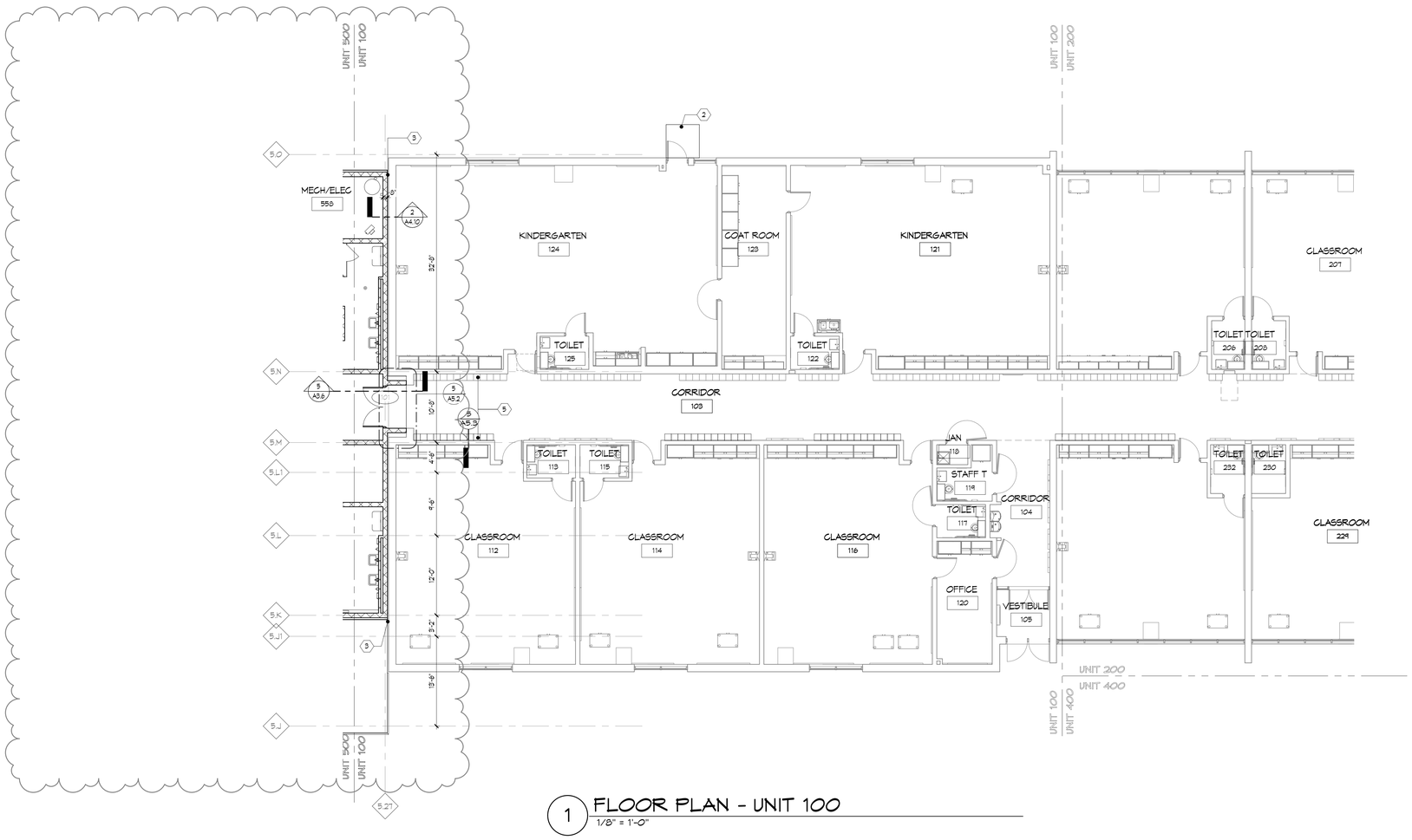
Panel M - Meadowlawn	MEA-D Interior Foyer Doors (09)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-D Interior Foyer Doors (09)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-D Interior Foyer Doors (09)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-E Exterior Vest A109 (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)	MEA - Batt Fail (05)	MEA - E Exterior Vest A109 DRB		
Panel M - Meadowlawn	MEA-E Exterior Vest A109 (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)	MEA - Batt Fail (05)	MEA - E Exterior Vest A109 DRB		
Panel M - Meadowlawn	MEA-E Exterior Vest A109 (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)	MEA - Batt Fail (05)	MEA - E Exterior Vest A109 DRB		
Panel M - Meadowlawn	MEA-E Exterior Vest A109 (10)	LNL-1320 (Dual Interface) (Wiegand / Prox)	MEA - Batt Fail (05)	MEA - E Exterior Vest A109 DRB		
Panel M - Meadowlawn	MEA-F Entrance A114A (14)	LNL-1320 (Dual Interface) (Wiegand / Prox)	MEA - ENT A114A Intercom (15)		MEA - Exterior Vest A109 AO (11)	
Panel M - Meadowlawn	MEA-F Entrance A114A (14)	LNL-1320 (Dual Interface) (Wiegand / Prox)	MEA - ENT A114A Intercom (15)		MEA - Exterior Vest A109 AO (11)	
Panel M - Meadowlawn	MEA-F Entrance A114A (14)	LNL-1320 (Dual Interface) (Wiegand / Prox)	MEA - ENT A114A Intercom (15)		MEA - Exterior Vest A109 AO (11)	
Panel M - Meadowlawn	MEA-F Entrance A114A (14)	LNL-1320 (Dual Interface) (Wiegand / Prox)	MEA - ENT A114A Intercom (15)		MEA - Exterior Vest A109 AO (11)	
Panel M - Meadowlawn	MEA-G Entrance A110A (16)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-G Entrance A110A (16)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-G Entrance A110A (16)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-G Entrance A110A (16)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-H Door D (17)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-H Door D (17)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-H Door D (17)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel M - Meadowlawn	MEA-H Door D (17)	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-A Main Office North Vestibule	Onboard Reader (Wiegand / Prox)				
Panel N - Southwood	SOU-A Main Office North Vestibule	Onboard Reader (Wiegand / Prox)				
Panel N - Southwood	SOU-A Main Office North Vestibule	Onboard Reader (Wiegand / Prox)				
Panel N - Southwood	SOU-A Main Office North Vestibule	Onboard Reader (Wiegand / Prox)				
Panel N - Southwood	SOU-B Office Door	Onboard Reader (Wiegand / Prox)	Southwood Office Door Release			
Panel N - Southwood	SOU-B Office Door	Onboard Reader (Wiegand / Prox)	Southwood Office Door Release			
Panel N - Southwood	SOU-B Office Door	Onboard Reader (Wiegand / Prox)	Southwood Office Door Release			
Panel N - Southwood	SOU-B Office Door	Onboard Reader (Wiegand / Prox)	Southwood Office Door Release			
Panel N - Southwood	SOU-C Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-C Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-C Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-C Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-D Inner Lobby Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-D Inner Lobby Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-D Inner Lobby Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-D Inner Lobby Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-E Back Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-E Back Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-E Back Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-E Back Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-F South Wing	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-F South Wing	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-F South Wing	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-F South Wing	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-G Main Office West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-G Main Office West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-G Main Office West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-G Main Office West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-H NE Vestibule Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-H NE Vestibule Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-H NE Vestibule Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-H NE Vestibule Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-I Vestibule Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-I Vestibule Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-I Vestibule Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel N - Southwood	SOU-I Vestibule Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-A Bus Door	Onboard Reader (Wiegand / Prox)				

Panel O - Townline	TOW-A Bus Door	Onboard Reader (Wiegand / Prox)				
Panel O - Townline	TOW-A Bus Door	Onboard Reader (Wiegand / Prox)				
Panel O - Townline	TOW-A Bus Door	Onboard Reader (Wiegand / Prox)				
Panel O - Townline	TOW-B Office Door	Onboard Reader (Wiegand / Prox)	Townline Office Door Releaes			
Panel O - Townline	TOW-B Office Door	Onboard Reader (Wiegand / Prox)	Townline Office Door Releaes			
Panel O - Townline	TOW-B Office Door	Onboard Reader (Wiegand / Prox)	Townline Office Door Releaes			
Panel O - Townline	TOW-B Office Door	Onboard Reader (Wiegand / Prox)	Townline Office Door Releaes			
Panel O - Townline	TOW-C East Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-C East Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-C East Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-C East Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-D Southwest Recess Hall Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-D Southwest Recess Hall Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-D Southwest Recess Hall Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-D Southwest Recess Hall Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-F Main Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-F Main Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-F Main Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-F Main Entrance	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-G Computer Room Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-G Computer Room Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-G Computer Room Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-G Computer Room Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-H Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-H Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-H Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-H Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-I Gym Hallway Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-I Gym Hallway Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-I Gym Hallway Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel O - Townline	TOW-I Gym Hallway Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-A Front Door	Onboard Reader (Wiegand / Prox)				
Panel P - Valleywood	VAL-A Front Door	Onboard Reader (Wiegand / Prox)				
Panel P - Valleywood	VAL-A Front Door	Onboard Reader (Wiegand / Prox)				
Panel P - Valleywood	VAL-A Front Door	Onboard Reader (Wiegand / Prox)				
Panel P - Valleywood	VAL-B Office Door	Onboard Reader (Wiegand / Prox)	Valleywood Office Door Release			
Panel P - Valleywood	VAL-B Office Door	Onboard Reader (Wiegand / Prox)	Valleywood Office Door Release			
Panel P - Valleywood	VAL-B Office Door	Onboard Reader (Wiegand / Prox)	Valleywood Office Door Release			
Panel P - Valleywood	VAL-B Office Door	Onboard Reader (Wiegand / Prox)	Valleywood Office Door Release			
Panel P - Valleywood	VAL-C Guidance Office	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-C Guidance Office	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-C Guidance Office	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-C Guidance Office	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-D Cooks Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-D Cooks Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-D Cooks Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-D Cooks Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-E Gym Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-E Gym Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-E Gym Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-E Gym Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-F Kitchen Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-F Kitchen Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-F Kitchen Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel P - Valleywood	VAL-F Kitchen Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel Q - Crossroads	CEC-A North Exterior Main Door	Onboard Reader (Wiegand / Prox)	CEC - North Exterior Main DR			

Panel Q - Crossroads	CEC-A North Exterior Main Door	Onboard Reader (Wiegand / Prox)	CEC - North Exterior Main DR			
Panel Q - Crossroads	CEC-A North Exterior Main Door	Onboard Reader (Wiegand / Prox)	CEC - North Exterior Main DR			
Panel Q - Crossroads	CEC-A North Exterior Main Door	Onboard Reader (Wiegand / Prox)	CEC - North Exterior Main DR			
Panel Q - Crossroads	CEC-B Main Office Front Door	Onboard Reader (Wiegand / Prox)	Crossroads Office Door Release			
Panel Q - Crossroads	CEC-B Main Office Front Door	Onboard Reader (Wiegand / Prox)	Crossroads Office Door Release			
Panel Q - Crossroads	CEC-B Main Office Front Door	Onboard Reader (Wiegand / Prox)	Crossroads Office Door Release			
Panel Q - Crossroads	CEC-B Main Office Front Door	Onboard Reader (Wiegand / Prox)	Crossroads Office Door Release			
Panel Q - Crossroads	CEC-C Interior Main Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Interior Door Release Button #1	Interior Door Release #2		
Panel Q - Crossroads	CEC-C Interior Main Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Interior Door Release Button #1	Interior Door Release #2		
Panel Q - Crossroads	CEC-C Interior Main Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Interior Door Release Button #1	Interior Door Release #2		
Panel Q - Crossroads	CEC-C Interior Main Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Interior Door Release Button #1	Interior Door Release #2		
Panel Q - Crossroads	CEC-D Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel Q - Crossroads	CEC-D Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel Q - Crossroads	CEC-D Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel Q - Crossroads	CEC-D Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel Q - Crossroads	CEC-E South Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel Q - Crossroads	CEC-E South Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel Q - Crossroads	CEC-E South Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel Q - Crossroads	CEC-E South Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel Q - Crossroads	CEC-F West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel Q - Crossroads	CEC-F West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel Q - Crossroads	CEC-F West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel Q - Crossroads	CEC-F West Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-A Door C	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-A Door C	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-A Door C	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-A Door C	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-A Main Exterior Door	Onboard Reader (Wiegand / Prox)				
Panel R - Discovery	DIS1-A Main Exterior Door	Onboard Reader (Wiegand / Prox)				
Panel R - Discovery	DIS1-A Main Exterior Door	Onboard Reader (Wiegand / Prox)				
Panel R - Discovery	DIS1-A Main Exterior Door	Onboard Reader (Wiegand / Prox)				
Panel R - Discovery	DIS1-B Main Interior Door	Onboard Reader (Wiegand / Prox)				
Panel R - Discovery	DIS1-B Main Interior Door	Onboard Reader (Wiegand / Prox)				
Panel R - Discovery	DIS1-B Main Interior Door	Onboard Reader (Wiegand / Prox)				
Panel R - Discovery	DIS1-B Main Interior Door	Onboard Reader (Wiegand / Prox)				
Panel R - Discovery	DIS1-C Admin Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Discovery Office Door Release			
Panel R - Discovery	DIS1-C Admin Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Discovery Office Door Release			
Panel R - Discovery	DIS1-C Admin Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Discovery Office Door Release			
Panel R - Discovery	DIS1-C Admin Office Door	LNL-1320 (Dual Interface) (Wiegand / Prox)	Discovery Office Door Release			
Panel R - Discovery	DIS1-D Computer Lab	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-D Computer Lab	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-D Computer Lab	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-D Computer Lab	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-D Northwest Door (19)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-D Northwest Door (19)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-D Northwest Door (19)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-D Northwest Door (19)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-E Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-E Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-E Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-E Receiving Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-F East Center Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-F East Center Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-F East Center Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-F East Center Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-F Northeast Door (20)	LNL-1320 (Dual Interface) (Wiegand / Prox)				

Panel R - Discovery	DIS1-F Northeast Door (20)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-F Northeast Door (20)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-F Northeast Door (20)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-G West Center Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-G West Center Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-G West Center Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-G West Center Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-H Day Care	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-H Day Care	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-H Day Care	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-H Day Care	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-I Southeast Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-I Southeast Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-I Southeast Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-I Southeast Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-J MDF Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-J MDF Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-J MDF Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel R - Discovery	DIS1-J MDF Room	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel S - Plant Services	PLA-A Main Office Exterior Door	Onboard Reader (Wiegand / Prox)	PLA-ACE-A1 Batt Fail (07)			
Panel S - Plant Services	PLA-A Main Office Exterior Door	Onboard Reader (Wiegand / Prox)	PLA-ACE-A1 Batt Fail (07)			
Panel S - Plant Services	PLA-A Main Office Exterior Door	Onboard Reader (Wiegand / Prox)	PLA-ACE-A1 Batt Fail (07)			
Panel S - Plant Services	PLA-A Main Office Exterior Door	Onboard Reader (Wiegand / Prox)	PLA-ACE-A1 Batt Fail (07)			
Panel S - Plant Services	PLA-B Office To Plant Door	Onboard Reader (Wiegand / Prox)				
Panel S - Plant Services	PLA-B Office To Plant Door	Onboard Reader (Wiegand / Prox)				
Panel S - Plant Services	PLA-B Office To Plant Door	Onboard Reader (Wiegand / Prox)				
Panel S - Plant Services	PLA-B Office To Plant Door	Onboard Reader (Wiegand / Prox)				
Panel S - Plant Services	PLA-NE Entrance Door (05)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel S - Plant Services	PLA-NE Entrance Door (05)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel S - Plant Services	PLA-NE Entrance Door (05)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel S - Plant Services	PLA-NE Entrance Door (05)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel S - Plant Services	PLA-NW Entrance (06)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel S - Plant Services	PLA-NW Entrance (06)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel S - Plant Services	PLA-NW Entrance (06)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel S - Plant Services	PLA-NW Entrance (06)	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel T - Transportation	TRA-A Car Gate	Onboard Reader (Wiegand / Prox)				
Panel T - Transportation	TRA-A Car Gate	Onboard Reader (Wiegand / Prox)				
Panel T - Transportation	TRA-A Car Gate	Onboard Reader (Wiegand / Prox)				
Panel T - Transportation	TRA-A Car Gate	Onboard Reader (Wiegand / Prox)				
Panel T - Transportation	TRA-B Bus Gate	Onboard Reader (Wiegand / Prox)				
Panel T - Transportation	TRA-B Bus Gate	Onboard Reader (Wiegand / Prox)				
Panel T - Transportation	TRA-B Bus Gate	Onboard Reader (Wiegand / Prox)				
Panel T - Transportation	TRA-B Bus Gate	Onboard Reader (Wiegand / Prox)				
Panel T - Transportation	TRA-C North Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel T - Transportation	TRA-C North Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel T - Transportation	TRA-C North Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel T - Transportation	TRA-C North Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel T - Transportation	TRA-D East Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel T - Transportation	TRA-D East Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel T - Transportation	TRA-D East Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel T - Transportation	TRA-D East Door	LNL-1320 (Dual Interface) (Wiegand / Prox)				
Panel U - Special Ed Bldg	SPE-A Interior Foyer Door	Onboard Reader (Wiegand / Prox)	Door Release Button			
Panel U - Special Ed Bldg	SPE-A Interior Foyer Door	Onboard Reader (Wiegand / Prox)	Door Release Button			
Panel U - Special Ed Bldg	SPE-A Interior Foyer Door	Onboard Reader (Wiegand / Prox)	Door Release Button			
Panel U - Special Ed Bldg	SPE-A Interior Foyer Door	Onboard Reader (Wiegand / Prox)	Door Release Button			
Panel U - Special Ed Bldg	SPE-B Door A North Main Door	Onboard Reader (Wiegand / Prox)				

Panel U - Special Ed Bldg	SPE-B Door A North Main Door	Onboard Reader (Wiegand / Prox)				
Panel U - Special Ed Bldg	SPE-B Door A North Main Door	Onboard Reader (Wiegand / Prox)				
Panel U - Special Ed Bldg	SPE-B Door A North Main Door	Onboard Reader (Wiegand / Prox)				
Panel U - Special Ed Bldg	SPE-C Door B Southeast Side Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel U - Special Ed Bldg	SPE-C Door B Southeast Side Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel U - Special Ed Bldg	SPE-C Door B Southeast Side Door	LNL-1300 (Single Interface) (Wiegand / Prox)				
Panel U - Special Ed Bldg	SPE-C Door B Southeast Side Door	LNL-1300 (Single Interface) (Wiegand / Prox)				



1 FLOOR PLAN - UNIT 100
1/8" = 1'-0"

ARCHITECTURAL GENERAL NOTES

1. XX INDICATES CONSTRUCTION DOCUMENT ROOM NUMBERS.
2. REFER TO EQUIPMENT PLANS FOR CASEWORK, VISUAL DISPLAY BOARDS, LOCKERS, SHELVING, ETC.
3. REFER TO COLOR LAYOUT PLANS (A8 SERIES) FOR FLOOR FINISH PATTERNS AND COLORS.
4. CONTRACTOR SHALL COORDINATE LOCATIONS OF FLOOR DRAINS, CLEAN OUTS, ETC., WITH APPROPRIATE TRADES.
5. REFER TO ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS.
6. MASONRY CONTRACTOR TO INSTALL LOOSE LINTELS FOR MISCELLANEOUS OPENINGS NOT INDICATED ON DRAWINGS BUT REQUIRED FOR MECHANICAL, ELECTRICAL, FOOD SERVICE EQUIPMENT OR OTHER ITEMS THAT PASS THROUGH A WALL. STEEL LINTELS SHALL BE SUPPLIED BY THE STEEL CONTRACTOR.
7. ALL PARTITION WALLS TO RUN TIGHT TO DECK, U.N.O.
8. REFER TO PARTITION TYPES SHOWN ON REFLECTED CEILING PLANS AND PARTITION TYPE SHEET A2.6.
9. REFER TO SHEET G2 FOR FLOOR PLAN SYMBOLS LEGEND.
10. ALL CMU PARTITION WALLS SHALL BE 8" NOMINAL UNLESS NOTED OTHERWISE.
11. FILL/SEAL ALL PENETRATIONS THROUGH WALLS & VOIDS AT STRUCTURAL MEMBERS.
12. CAULK & SEAL AROUND ALL NEW CABINET HEATER LOUVERS INSTALLED IN EXTERIOR WALLS.
13. NEW OPENINGS IN EXISTING MASONRY WALLS SHALL BE TOOTHED IN TO MATCH EXISTING COURSING AND MASONRY SIZES, U.N.O.
14. REFER TO CIVIL DRAWINGS FOR FENCE AND GATE INFORMATION.
15. PROVIDE CLEAR ANODIZED ALUMINUM SHADOWBOX AT SPANDREL LOCATIONS THAT ARE EXPOSED. SHADOWBOXES NOT REQUIRED WHERE SPANDREL IS ABOVE CEILING.

ARCHITECTURAL PLAN KEYNOTES

1. PATCH MASONRY. REMOVE WHOLE MASONRY UNITS AND TOOTH IN NEW MASONRY UNITS MATCHING IN SIZE, COLOR, FINISH, AND COURSING. MAINTAIN FIRE RATINGS. REFER TO CODE PLAN ON A0.1.
2. PROVIDE FROST STOOP. REFER TO STRUCTURAL.
3. 2HR RATED EXPANSION JOINT. REFER TO SPECIFICATION SECTION 079500.
4. FIRE EXTINGUISHER & CABINET. REFER TO SPECIFICATION SECTIONS 104413 & 104416.
5. TYPICAL LOCKER BASE - SEE DETAIL 5/A5.3.
6. LCD SCREEN BY OTHERS. REFER TO ELECTRICAL FOR POWER AND DATA.
7. REINFORCED CONCRETE PAD FOR CONDENSING UNIT. REFER TO MECHANICAL & STRUCTURAL.
8. EXISTING CONCRETE PAD FOR GENERATOR FROM PREVIOUS PHASE.
9. REINFORCED CONCRETE PAD FOR TRANSFORMER. REFER TO ELECTRICAL & STRUCTURAL.
10. DECORATIVE ALUMINUM HANDRAILS AND GUARDRAILS. REFER TO CIVIL.
11. ROOF ACCESS LADDER.
12. PREFABRICATED METAL STAIRS WITH METAL GRATE TREADS & HANDRAILS.
13. REPAIR FOUNDATION. REFER TO STRUCTURAL PLANS FOR ADDITIONAL INFORMATION.
14. REINFORCED CONCRETE FORMLINER RETAINING WALL WITH CAST STONE CAP. REFER TO STRUCTURAL.
15. INPUT AND TOUCHSCREEN LOCATION FOR PROJECTOR SCREENS. REFER TO ELECTRICAL FOR POWER AND DATA.
16. PYLON SIGNAGE. REFER TO ELECTRICAL & STRUCTURAL.
17. REPLACE EXISTING METAL PANEL INFILL WITH SPANDREL GLAZING. REFER TO ELEVATION 4/A3.2. VERIFY DIMENSIONS AND CONDITIONS IN FIELD.

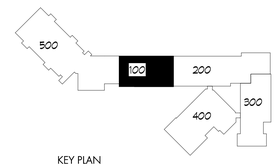
KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

HAMILTON ELEMENTARY ADDITION

KENTWOOD PUBLIC SCHOOLS
3303 BRETON RD SE
KENTWOOD, MI 49512

KPS KENTWOOD PUBLIC SCHOOLS

ISSUANCES	DATE
DESIGN DEVELOPMENT	05/04/2023
CONSTRUCTION DOCUMENTS	08/17/2023
PR-02	12/14/2023



KEY PLAN

N

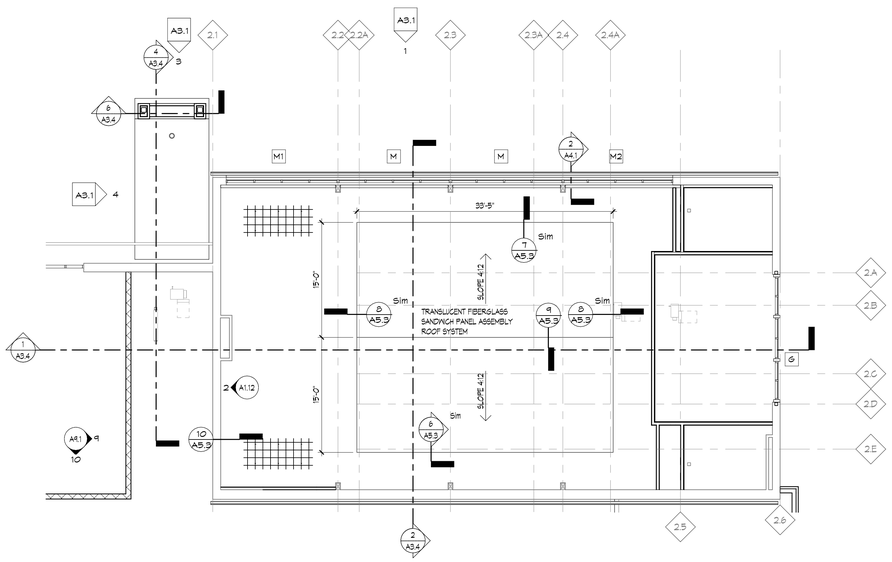
JOB NO. 2395-72

SHEET TITLE
FLOOR PLAN - UNIT 100

SHEET NO.
A1.1

© KINGSCOTT ASSOCIATES INC. KALAMAZOO, MICHIGAN

THESE DRAWINGS AND THE WORK REPRESENTED THEREON ARE THE PROPERTY OF AND COPYRIGHTED BY KINGSCOTT ASSOCIATES AND MAY NOT BE USED OR REPRODUCED WITHOUT PERMISSION.
LAST SAVED: 12/14/2023 10:49:48 AM
C:\Users\brian.cox\Documents\KPS_HAMILTON ADDITION_Arch_r23_1_BrianMarch26.rvt



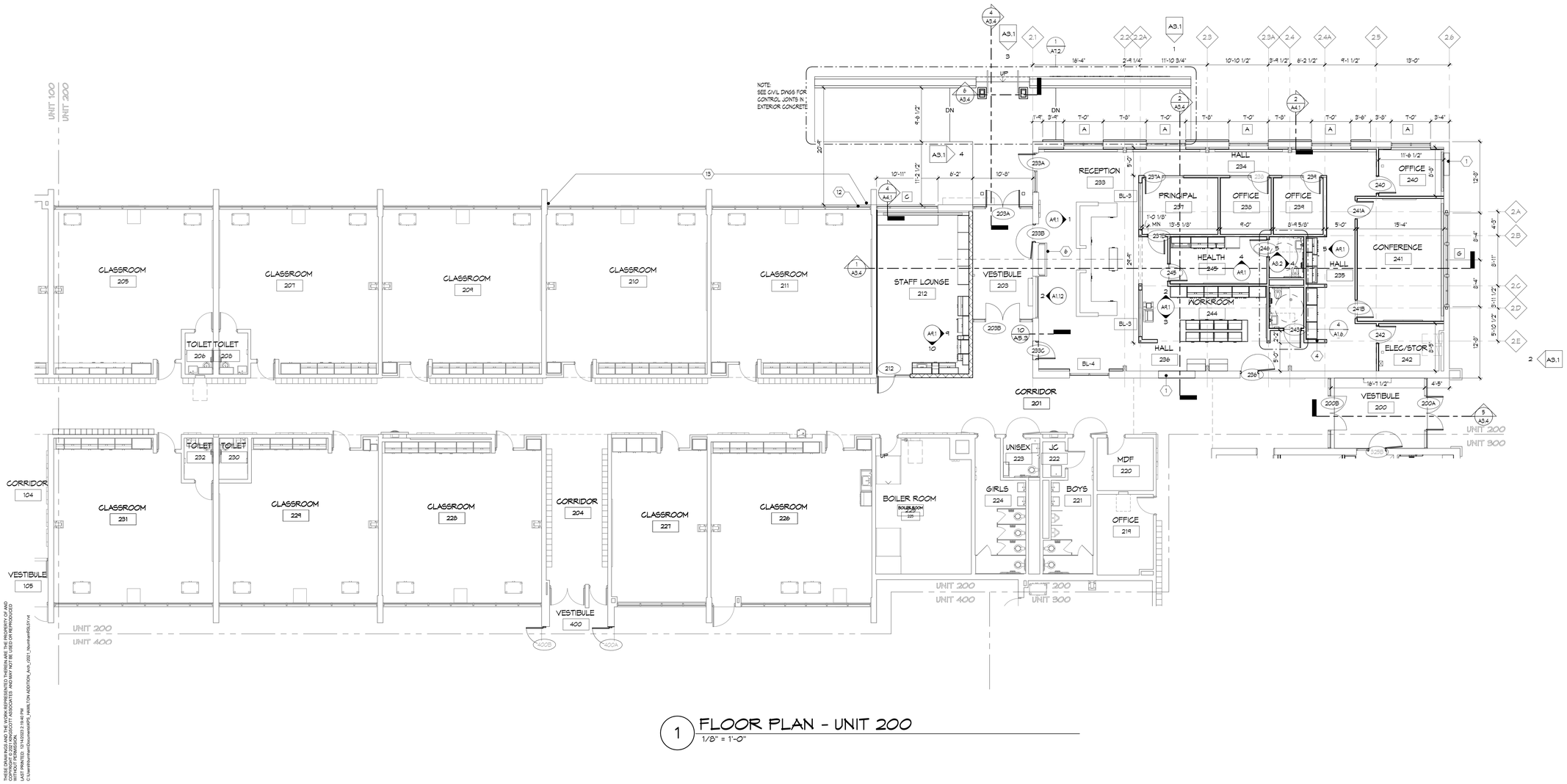
2 CLERESTORY FLOOR PLAN - UNIT 200
1/8" = 1'-0"

ARCHITECTURAL PLAN KEYNOTES

1. PATCH MASONRY. REMOVE WHOLE MASONRY UNITS AND TOOTH IN NEW MASONRY UNITS MATCHING IN SIZE, COLOR, FINISH, AND COURSING. MAINTAIN FIRE RATINGS. REFER TO CODE PLAN ON A0.1.
2. PROVIDE FROST STOOP. REFER TO STRUCTURAL.
3. 2HR RATED EXPANSION JOINT. REFER TO SPECIFICATION SECTION 079500.
4. FIRE EXTINGUISHER & CABINET. REFER TO SPECIFICATION SECTIONS 104413 & 104416.
5. TYPICAL LOCKER BASE - SEE DETAIL 5/A5.3.
6. LCD SCREEN BY OTHERS. REFER TO ELECTRICAL FOR POWER AND DATA.
7. REINFORCED CONCRETE PAD FOR CONDENSING UNIT. REFER TO MECHANICAL & STRUCTURAL.
8. EXISTING CONCRETE PAD FOR GENERATOR FROM PREVIOUS PHASE.
9. REINFORCED CONCRETE PAD FOR TRANSFORMER. REFER TO ELECTRICAL & STRUCTURAL.
10. DECORATIVE ALUMINUM HANDRAILS AND GUARDRAILS. REFER TO CIVIL.
11. ROOF ACCESS LADDER.
12. PREFABRICATED METAL STAIRS WITH METAL GRATE TREADS & HANDRAILS.
13. REPAIR FOUNDATION. REFER TO STRUCTURAL PLANS FOR ADDITIONAL INFORMATION.
14. REINFORCED CONCRETE FORMLINER RETAINING WALL WITH CAST STONE CAP. REFER TO STRUCTURAL.
15. INPUT AND TOUCHSCREEN LOCATION FOR PROJECTOR SCREENS. REFER TO ELECTRICAL FOR POWER AND DATA.
16. PYLON SIGNAGE. REFER TO ELECTRICAL & STRUCTURAL.
17. REPLACE EXISTING METAL PANEL INFILL WITH SPANDREL GLAZING. REFER TO ELEVATION 4/A3.2. VERIFY DIMENSIONS AND CONDITIONS IN FIELD.

ARCHITECTURAL GENERAL NOTES

1. XX INDICATES CONSTRUCTION DOCUMENT ROOM NUMBERS.
2. REFER TO EQUIPMENT PLANS FOR CASEWORK, VISUAL DISPLAY BOARDS, LOCKERS, SHELVING, ETC.
3. REFER TO COLOR LAYOUT PLANS (A5 SERIES) FOR FLOOR FINISH PATTERNS AND COLORS.
4. CONTRACTOR SHALL COORDINATE LOCATIONS OF FLOOR DRAINS, CLEAN OUTS, ETC., WITH APPROPRIATE TRADES.
5. REFER TO ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS.
6. MASONRY CONTRACTOR TO INSTALL LOOSE LINTELS FOR MISCELLANEOUS OPENINGS NOT INDICATED ON DRAWINGS BUT REQUIRED FOR MECHANICAL, ELECTRICAL, FOOD SERVICE EQUIPMENT OR OTHER ITEMS THAT PASS THROUGH A WALL. STEEL LINTELS SHALL BE SUPPLIED BY THE STEEL CONTRACTOR.
7. ALL PARTITION WALLS TO RUN TIGHT TO DECK, U.N.O.
8. REFER TO PARTITION TYPES SHOWN ON REFLECTED CEILING PLANS AND PARTITION TYPE SHEET A2.6.
9. REFER TO SHEET G2 FOR FLOOR PLAN SYMBOLS LEGEND.
10. ALL CMU PARTITION WALLS SHALL BE 8" NOMINAL UNLESS NOTED OTHERWISE.
11. FILL/SEAL ALL PENETRATIONS THROUGH WALLS & VOIDS AT STRUCTURAL MEMBERS.
12. CAULK & SEAL AROUND ALL NEW CABINET HEATER LOUVERS INSTALLED IN EXTERIOR WALLS.
13. NEW OPENINGS IN EXISTING MASONRY WALLS SHALL BE TOOTHED IN TO MATCH EXISTING COURSING AND MASONRY SIZES, U.N.O.
14. REFER TO CIVIL DRAWINGS FOR FENCE AND GATE INFORMATION.
15. PROVIDE CLEAR ANODIZED ALUMINUM SHADOWBOX AT SPANDREL LOCATIONS THAT ARE EXPOSED. SHADOWBOXES NOT REQUIRED WHERE SPANDREL IS ABOVE CEILING.



1 FLOOR PLAN - UNIT 200
1/8" = 1'-0"

THESE DRAWINGS AND THE WORK REPRESENTED THEREIN ARE THE PROPERTY OF AND COPYRIGHTED BY KINGSCOTT ASSOCIATES. AN IDEA THAT MAY BE USED OR REPRODUCED WITHOUT PERMISSION.
LAST PRINTED: 12/14/2023 2:19:40 PM
C:\Users\tfortune\Documents\KPS_HAMILTON ADDITION_Arch_r2021_tfortune.rvt

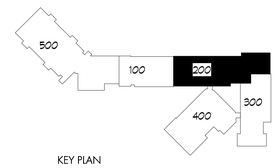
KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

HAMILTON ELEMENTARY ADDITION

KENTWOOD PUBLIC SCHOOLS
3303 BRETON RD SE
KENTWOOD, MI 49512

KPS KENTWOOD PUBLIC SCHOOLS

ISSUANCES	DATE
DESIGN DEVELOPMENT	10/27/2022
CONSTRUCTION DOCUMENTS	08/17/2023
PR-02	12/14/2023



KEY PLAN

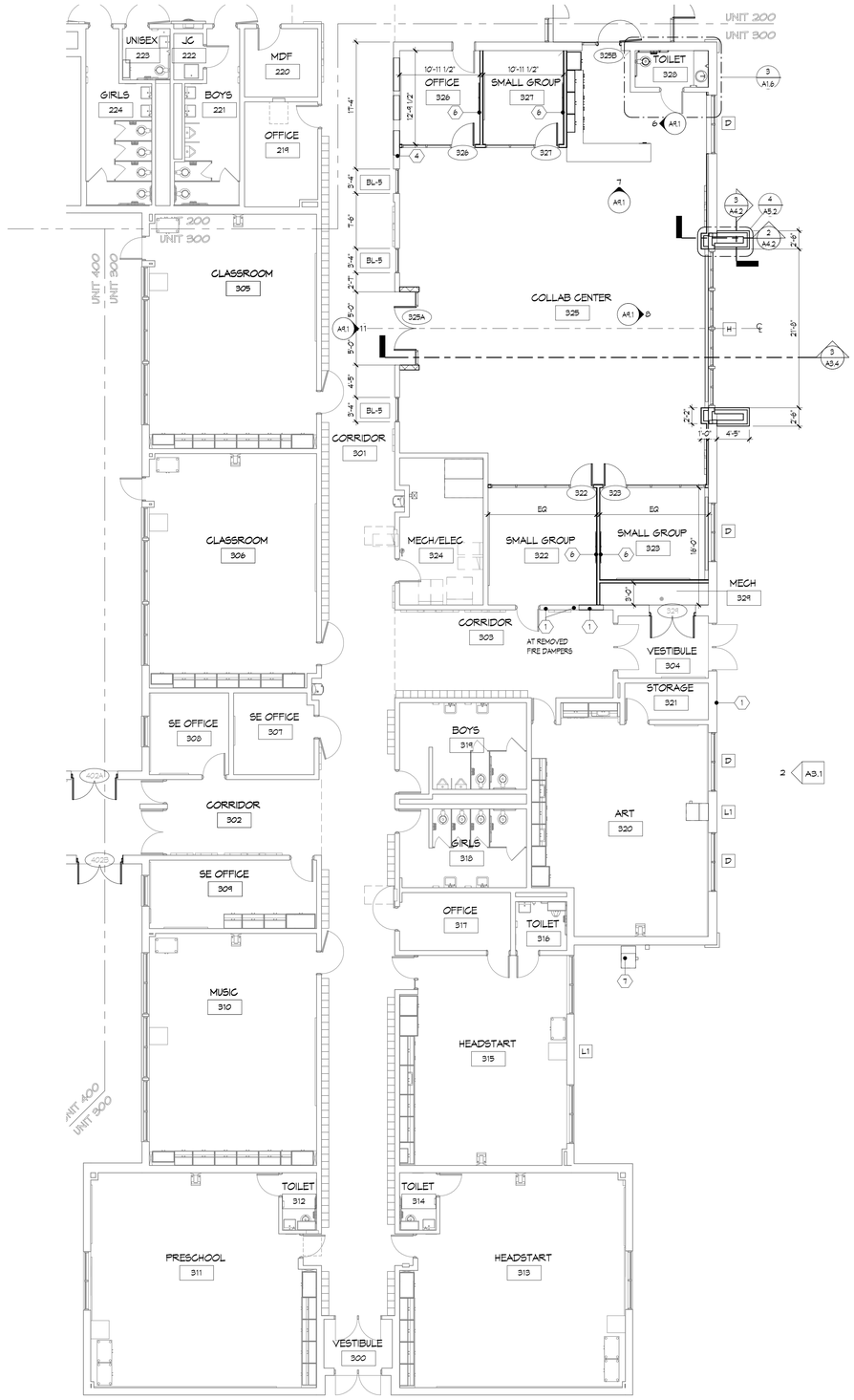
JOB NO. 2395-72

N

SHEET TITLE
FLOOR PLAN - UNIT 200

SHEET NO.
A1.2

© KINGSCOTT ASSOCIATES INC. KALAMAZOO, MICHIGAN



1 FLOOR PLAN - UNIT 300
1/8" = 1'-0"

ARCHITECTURAL GENERAL NOTES

1. XX INDICATES CONSTRUCTION DOCUMENT ROOM NUMBERS.
2. REFER TO EQUIPMENT PLANS FOR CASEWORK, VISUAL DISPLAY BOARDS, LOCKERS, SHELVING, ETC.
3. REFER TO COLOR LAYOUT PLANS (A5 SERIES) FOR FLOOR FINISH PATTERNS AND COLORS.
4. CONTRACTOR SHALL COORDINATE LOCATIONS OF FLOOR DRAINS, CLEAN OUTS, ETC., WITH APPROPRIATE TRADES.
5. REFER TO ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS.
6. MASONRY CONTRACTOR TO INSTALL LOOSE LINTELS FOR MISCELLANEOUS OPENINGS NOT INDICATED ON DRAWINGS BUT REQUIRED FOR MECHANICAL, ELECTRICAL, FOOD SERVICE EQUIPMENT OR OTHER ITEMS THAT PASS THROUGH A WALL. STEEL LINTELS SHALL BE SUPPLIED BY THE STEEL CONTRACTOR.
7. ALL PARTITION WALLS TO RUN TIGHT TO DECK, U.N.O.
8. REFER TO PARTITION TYPES SHOWN ON REFLECTED CEILING PLANS AND PARTITION TYPE SHEET A2.6.
9. REFER TO SHEET G2 FOR FLOOR PLAN SYMBOLS LEGEND.
10. ALL CMU PARTITION WALLS SHALL BE 8" NOMINAL UNLESS NOTED OTHERWISE.
11. FILL/SEAL ALL PENETRATIONS THROUGH WALLS & VOIDS AT STRUCTURAL MEMBERS.
12. CAULK & SEAL AROUND ALL NEW CABINET HEATER LOUVERS INSTALLED IN EXTERIOR WALLS.
13. NEW OPENINGS IN EXISTING MASONRY WALLS SHALL BE TOOTHED IN TO MATCH EXISTING COURSING AND MASONRY SIZES, U.N.O.
14. REFER TO CIVIL DRAWINGS FOR FENCE AND GATE INFORMATION.
15. PROVIDE CLEAR ANODIZED ALUMINUM SHADOWBOX AT SPANDREL LOCATIONS THAT ARE EXPOSED. SHADOWBOXES NOT REQUIRED WHERE SPANDREL IS ABOVE CEILING.

ARCHITECTURAL PLAN KEYNOTES

1. PATCH MASONRY. REMOVE WHOLE MASONRY UNITS AND TOOTH IN NEW MASONRY UNITS MATCHING IN SIZE, COLOR, FINISH, AND COURSING. MAINTAIN FIRE RATINGS. REFER TO CODE PLAN ON A0.1.
2. PROVIDE FROST STOOP. REFER TO STRUCTURAL.
3. 2HR RATED EXPANSION JOINT. REFER TO SPECIFICATION SECTION 079500.
4. FIRE EXTINGUISHER & CABINET. REFER TO SPECIFICATION SECTIONS 104413 & 104416.
5. TYPICAL LOCKER BASE - SEE DETAIL 5/A5.3.
6. LCD SCREEN BY OTHERS. REFER TO ELECTRICAL FOR POWER AND DATA.
7. REINFORCED CONCRETE PAD FOR CONDENSING UNIT. REFER TO MECHANICAL & STRUCTURAL.
8. EXISTING CONCRETE PAD FOR GENERATOR FROM PREVIOUS PHASE.
9. REINFORCED CONCRETE PAD FOR TRANSFORMER. REFER TO ELECTRICAL & STRUCTURAL.
10. DECORATIVE ALUMINUM HANDRAILS AND GUARDRAILS. REFER TO CIVIL.
11. ROOF ACCESS LADDER.
12. PREFABRICATED METAL STAIRS WITH METAL GRATE TREADS & HANDRAILS.
13. REPAIR FOUNDATION. REFER TO STRUCTURAL PLANS FOR ADDITIONAL INFORMATION.
14. REINFORCED CONCRETE FORMLINER RETAINING WALL WITH CAST STONE CAP. REFER TO STRUCTURAL.
15. INPUT AND TOUCHSCREEN LOCATION FOR PROJECTOR SCREENS. REFER TO ELECTRICAL FOR POWER AND DATA.
16. PYLON SIGNAGE. REFER TO ELECTRICAL & STRUCTURAL.
17. REPLACE EXISTING METAL PANEL INFILL WITH SPANDREL GLAZING. REFER TO ELEVATION 4/A3.2. VERIFY DIMENSIONS AND CONDITIONS IN FIELD.

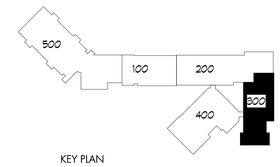
KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

HAMILTON ELEMENTARY ADDITION

KENTWOOD PUBLIC SCHOOLS
3303 BRETON RD SE
KENTWOOD, MI 49512

KPS KENTWOOD PUBLIC SCHOOLS

ISSUANCES	DATE
DESIGN DEVELOPMENT	10/27/2022
CONSTRUCTION DOCUMENTS	08/17/2023
PR-02	12/14/2023



KEY PLAN

JOB NO. 2395-72

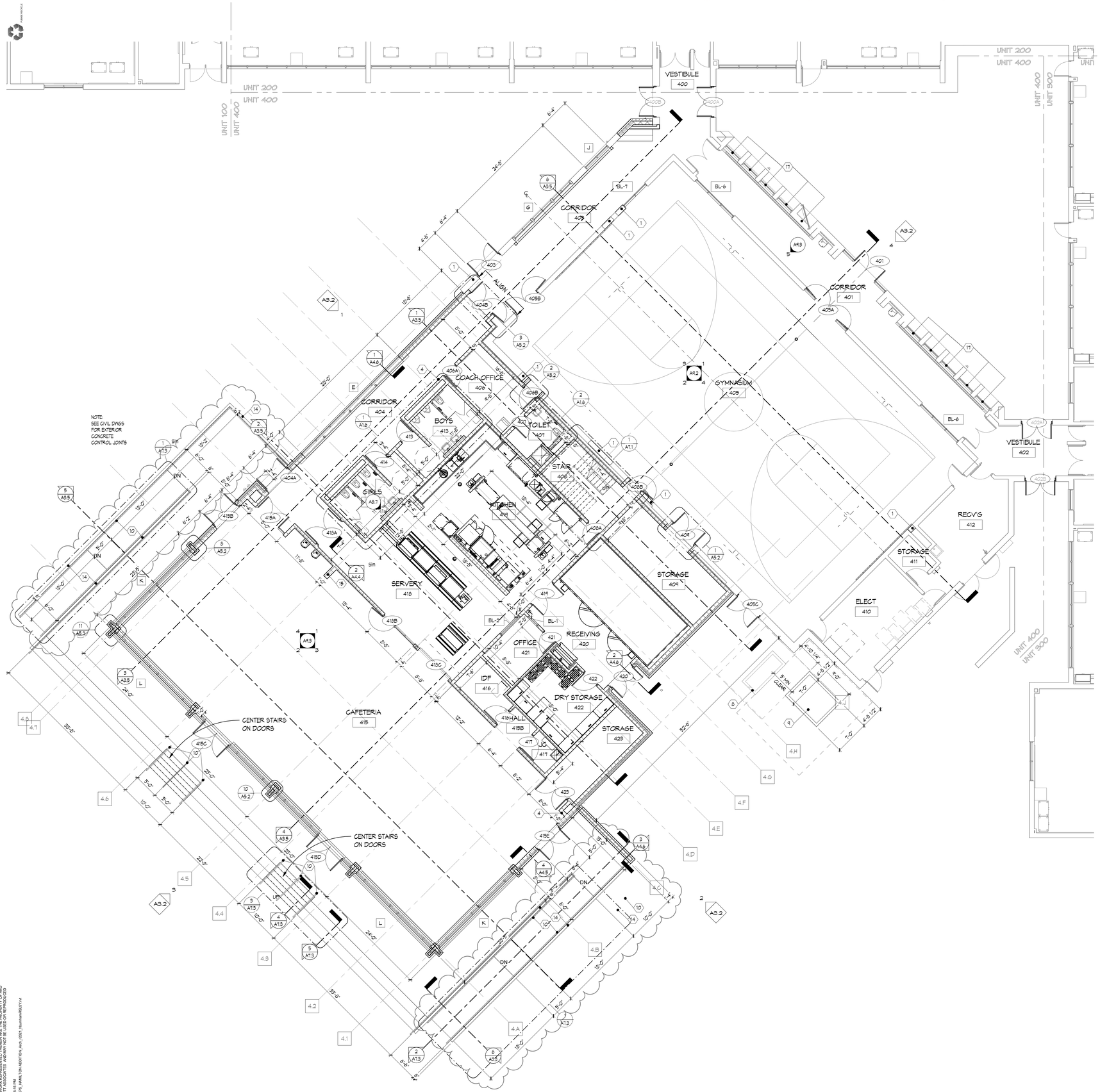
N

SHEET TITLE
FLOOR PLAN - UNIT 300

SHEET NO.
A1.3

© KINGSCOTT ASSOCIATES INC. KALAMAZOO, MICHIGAN

THESE DRAWINGS AND THE WORK REPRESENTED THEREIN ARE THE PROPERTY OF AND COPYRIGHTED BY KINGSCOTT ASSOCIATES INC. AND MAY NOT BE USED OR REPRODUCED WITHOUT PERMISSION.
LAST PRINTED: 12/14/2023 1:19:43 PM
C:\Users\tmortensen\Documents\KPS_HAMILTON ADDITION_Arch_r23T_1_tmortensenRSLXY.rvt



ARCHITECTURAL GENERAL NOTES

1. XX INDICATES CONSTRUCTION DOCUMENT ROOM NUMBERS.
2. REFER TO EQUIPMENT PLANS FOR CASEWORK, VISUAL DISPLAY BOARDS, LOCKERS, SHELVING, ETC.
3. REFER TO COLOR LAYOUT PLANS (A5 SERIES) FOR FLOOR FINISH PATTERNS AND COLORS.
4. CONTRACTOR SHALL COORDINATE LOCATIONS OF FLOOR DRAINS, CLEAN OUTS, ETC., WITH APPROPRIATE TRADES.
5. REFER TO ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS.
6. MASONRY CONTRACTOR TO INSTALL LOOSE LINTELS FOR MISCELLANEOUS OPENINGS NOT INDICATED ON DRAWINGS BUT REQUIRED FOR MECHANICAL, ELECTRICAL, FOOD SERVICE EQUIPMENT OR OTHER ITEMS THAT PASS THROUGH A WALL. STEEL LINTELS SHALL BE SUPPLIED BY THE STEEL CONTRACTOR.
7. ALL PARTITION WALLS TO RUN TIGHT TO DECK, U.N.O.
8. REFER TO PARTITION TYPES SHOWN ON REFLECTED CEILING PLANS AND PARTITION TYPE SHEET A2.6.
9. REFER TO SHEET G2 FOR FLOOR PLAN SYMBOLS LEGEND.
10. ALL CMU PARTITION WALLS SHALL BE 8" NOMINAL UNLESS NOTED OTHERWISE.
11. FILL/SEAL ALL PENETRATIONS THROUGH WALLS & VOIDS AT STRUCTURAL MEMBERS.
12. CAULK & SEAL AROUND ALL NEW CABINET HEATER LOUVERS INSTALLED IN EXTERIOR WALLS.
13. NEW OPENINGS IN EXISTING MASONRY WALLS SHALL BE TOOTHED IN TO MATCH EXISTING COURSING AND MASONRY SIZES, U.N.O.
14. REFER TO CIVIL DRAWINGS FOR FENCE AND GATE INFORMATION.
15. PROVIDE CLEAR ANODIZED ALUMINUM SHADOWBOX AT SPANDREL LOCATIONS THAT ARE EXPOSED. SHADOWBOXES NOT REQUIRED WHERE SPANDREL IS ABOVE CEILING.

ARCHITECTURAL PLAN KEYNOTES

1. PATCH MASONRY. REMOVE WHOLE MASONRY UNITS AND TOOTH IN NEW MASONRY UNITS MATCHING IN SIZE, COLOR, FINISH, AND COURSING. MAINTAIN FIRE RATINGS. REFER TO CODE PLAN ON A0.1.
2. PROVIDE FROST STOOP. REFER TO STRUCTURAL.
3. 2HR RATED EXPANSION JOINT. REFER TO SPECIFICATION SECTION 079500.
4. FIRE EXTINGUISHER & CABINET. REFER TO SPECIFICATION SECTIONS 104413 & 104416.
5. TYPICAL LOCKER BASE - SEE DETAIL 5/A5.3.
6. LCD SCREEN BY OTHERS. REFER TO ELECTRICAL FOR POWER AND DATA.
7. REINFORCED CONCRETE PAD FOR CONDENSING UNIT. REFER TO MECHANICAL & STRUCTURAL.
8. EXISTING CONCRETE PAD FOR GENERATOR FROM PREVIOUS PHASE.
9. REINFORCED CONCRETE PAD FOR TRANSFORMER. REFER TO ELECTRICAL & STRUCTURAL.
10. DECORATIVE ALUMINUM HANDRAILS AND GUARDRAILS. REFER TO CIVIL.
11. ROOF ACCESS LADDER.
12. PREFABRICATED METAL STAIRS WITH METAL GRATE TREADS & HANDRAILS.
13. REPAIR FOUNDATION. REFER TO STRUCTURAL PLANS FOR ADDITIONAL INFORMATION.
14. REINFORCED CONCRETE FORMLINER RETAINING WALL WITH CAST STONE CAP. REFER TO STRUCTURAL.
15. INPUT AND TOUCHSCREEN LOCATION FOR PROJECTOR SCREENS. REFER TO ELECTRICAL FOR POWER AND DATA.
16. PYLON SIGNAGE. REFER TO ELECTRICAL & STRUCTURAL.
17. REPLACE EXISTING METAL PANEL INFILL WITH SPANDREL GLAZING. REFER TO ELEVATION 4/A3.2. VERIFY DIMENSIONS AND CONDITIONS IN FIELD.

1 FLOOR PLAN - UNIT 400
1/8" = 1'-0"

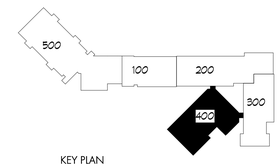
KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

HAMILTON ELEMENTARY ADDITION

KENTWOOD PUBLIC SCHOOLS
3303 BRETON RD SE
KENTWOOD, MI 49512

KPS KENTWOOD PUBLIC SCHOOLS

ISSUANCES	DATE
DESIGN DEVELOPMENT	10/27/2022
CONSTRUCTION DOCUMENTS	08/17/2023
PR-02	12/14/2023



KEY PLAN

N

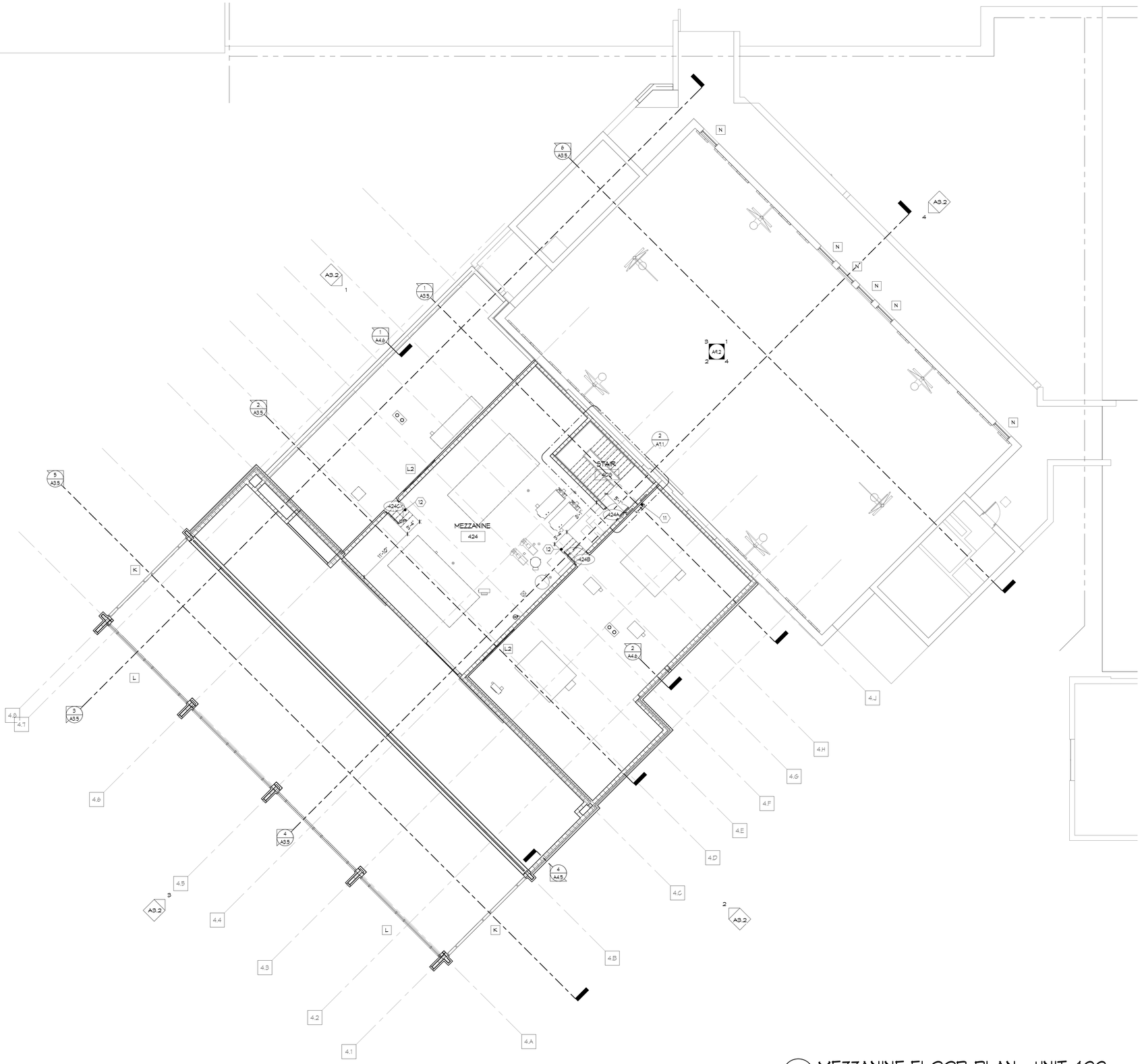
JOB NO. 2395-72

SHEET TITLE
FLOOR PLAN - UNIT 400

SHEET NO.
A1.4

© KINGSCOTT ASSOCIATES INC. KALAMAZOO, MICHIGAN

THESE DRAWINGS AND THE WORK REPRESENTED THEREIN ARE THE PROPERTY OF AND COPYRIGHTED BY KINGSCOTT ASSOCIATES. NO PART MAY BE USED OR REPRODUCED WITHOUT PERMISSION.
LAST PLOTTED: 12/14/2023 2:45:51 PM
C:\Users\thurman\Documents\KPS_HAMILTON ADDITION_Arch_r2021_thurmanwb5LF.rvt



1 MEZZANINE FLOOR PLAN - UNIT 400
1/8" = 1'-0"

ARCHITECTURAL GENERAL NOTES

1. XX INDICATES CONSTRUCTION DOCUMENT ROOM NUMBERS.
2. REFER TO EQUIPMENT PLANS FOR CASEWORK, VISUAL DISPLAY BOARDS, LOCKERS, SHELVING, ETC.
3. REFER TO COLOR LAYOUT PLANS (A8 SERIES) FOR FLOOR FINISH PATTERNS AND COLORS.
4. CONTRACTOR SHALL COORDINATE LOCATIONS OF FLOOR DRAINS, CLEAN OUTS, ETC., WITH APPROPRIATE TRADES.
5. REFER TO ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS.
6. MASONRY CONTRACTOR TO INSTALL LOOSE LINTELS FOR MISCELLANEOUS OPENINGS NOT INDICATED ON DRAWINGS BUT REQUIRED FOR MECHANICAL, ELECTRICAL, FOOD SERVICE EQUIPMENT OR OTHER ITEMS THAT PASS THROUGH A WALL. STEEL LINTELS SHALL BE SUPPLIED BY THE STEEL CONTRACTOR.
7. ALL PARTITION WALLS TO RUN TIGHT TO DECK, U.N.O.
8. REFER TO PARTITION TYPES SHOWN ON REFLECTED CEILING PLANS AND PARTITION TYPE SHEET A2.6.
9. REFER TO SHEET G2 FOR FLOOR PLAN SYMBOLS LEGEND.
10. ALL CMU PARTITION WALLS SHALL BE 8" NOMINAL UNLESS NOTED OTHERWISE.
11. FILL/SEAL ALL PENETRATIONS THROUGH WALLS & VOIDS AT STRUCTURAL MEMBERS.
12. CAULK & SEAL AROUND ALL NEW CABINET HEATER LOUVERS INSTALLED IN EXTERIOR WALLS.
13. NEW OPENINGS IN EXISTING MASONRY WALLS SHALL BE TOOTHED IN TO MATCH EXISTING COURSING AND MASONRY SIZES, U.N.O.
14. REFER TO CIVIL DRAWINGS FOR FENCE AND GATE INFORMATION.
15. PROVIDE CLEAR ANODIZED ALUMINUM SHADOWBOX AT SPANDREL LOCATIONS THAT ARE EXPOSED. SHADOWBOXES NOT REQUIRED WHERE SPANDREL IS ABOVE CEILING.

ARCHITECTURAL PLAN KEYNOTES

1. PATCH MASONRY. REMOVE WHOLE MASONRY UNITS AND TOOTH IN NEW MASONRY UNITS MATCHING IN SIZE, COLOR, FINISH, AND COURSING. MAINTAIN FIRE RATINGS. REFER TO CODE PLAN ON A0.1.
2. PROVIDE FROST STOOP. REFER TO STRUCTURAL.
3. 2HR RATED EXPANSION JOINT. REFER TO SPECIFICATION SECTION 079500.
4. FIRE EXTINGUISHER & CABINET. REFER TO SPECIFICATION SECTIONS 104413 & 104416.
5. TYPICAL LOCKER BASE - SEE DETAIL 5/A5.3.
6. LCD SCREEN BY OTHERS. REFER TO ELECTRICAL FOR POWER AND DATA.
7. REINFORCED CONCRETE PAD FOR CONDENSING UNIT. REFER TO MECHANICAL & STRUCTURAL.
8. EXISTING CONCRETE PAD FOR GENERATOR FROM PREVIOUS PHASE.
9. REINFORCED CONCRETE PAD FOR TRANSFORMER. REFER TO ELECTRICAL & STRUCTURAL.
10. DECORATIVE ALUMINUM HANDRAILS AND GUARDRAILS. REFER TO CIVIL.
11. ROOF ACCESS LADDER.
12. PREFABRICATED METAL STAIRS WITH METAL GRATE TREADS & HANDRAILS.
13. REPAIR FOUNDATION. REFER TO STRUCTURAL PLANS FOR ADDITIONAL INFORMATION.
14. REINFORCED CONCRETE FORMLINER RETAINING WALL WITH CAST STONE CAP. REFER TO STRUCTURAL.
15. INPUT AND TOUCHSCREEN LOCATION FOR PROJECTOR SCREENS. REFER TO ELECTRICAL FOR POWER AND DATA.
16. PYLON SIGNAGE. REFER TO ELECTRICAL & STRUCTURAL.
17. REPLACE EXISTING METAL PANEL INFILL WITH SPANDREL GLAZING. REFER TO ELEVATION 4/A3.2. VERIFY DIMENSIONS AND CONDITIONS IN FIELD.

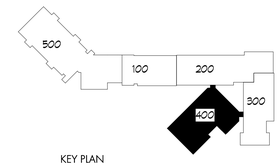
KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

HAMILTON ELEMENTARY ADDITION

KENTWOOD PUBLIC SCHOOLS
3303 BRETON RD SE
KENTWOOD, MI 49512

KPS KENTWOOD PUBLIC SCHOOLS

ISSUANCES	DATE
DESIGN DEVELOPMENT	10/27/2022
CONSTRUCTION DOCUMENTS	08/17/2023
PR-02	12/14/2023



KEY PLAN

N

JOB NO. 2395-72

SHEET TITLE
MEZZANINE FLOOR PLAN - UNIT 400

SHEET NO.
A1.4M

© KINGSCOTT ASSOCIATES INC. KALAMAZOO, MICHIGAN

THESE DRAWINGS AND THE WORK REPRESENTED THEREIN ARE THE PROPERTY OF AND COPYRIGHTED BY KINGSCOTT ASSOCIATES AND MAY NOT BE USED OR REPRODUCED WITHOUT PERMISSION.
LAST PLOTTED: 12/13/2023 3:39:09 PM
C:\Users\tmurtman\Documents\KPS_HAMILTON ADDITION_Arch_2021_tmurtman956.rvt

ARCHITECTURAL PLAN KEYNOTES

1. PATCH MASONRY. REMOVE WHOLE MASONRY UNITS AND TOOTH IN NEW MASONRY UNITS MATCHING IN SIZE, COLOR, FINISH, AND COURSING. MAINTAIN FIRE RATINGS. REFER TO CODE PLAN ON A0.1.
2. PROVIDE FROST STOOP. REFER TO STRUCTURAL.
3. 2HR RATED EXPANSION JOINT. REFER TO SPECIFICATION SECTION 079500.
4. FIRE EXTINGUISHER & CABINET. REFER TO SPECIFICATION SECTIONS 104413 & 104416.
5. TYPICAL LOCKER BASE - SEE DETAIL 5/A5.3.
6. LCD SCREEN BY OTHERS. REFER TO ELECTRICAL FOR POWER AND DATA.
7. REINFORCED CONCRETE PAD FOR CONDENSING UNIT. REFER TO MECHANICAL & STRUCTURAL.
8. EXISTING CONCRETE PAD FOR GENERATOR FROM PREVIOUS PHASE.
9. REINFORCED CONCRETE PAD FOR TRANSFORMER. REFER TO ELECTRICAL & STRUCTURAL.
10. DECORATIVE ALUMINUM HANDRAILS AND GUARDRAILS. REFER TO CIVIL.
11. ROOF ACCESS LADDER.
12. PREFABRICATED METAL STAIRS WITH METAL GRATE TREADS & HANDRAILS.
13. REPAIR FOUNDATION. REFER TO STRUCTURAL PLANS FOR ADDITIONAL INFORMATION.
14. REINFORCED CONCRETE FORM-LINER RETAINING WALL WITH CAST STONE CAP. REFER TO STRUCTURAL.
15. INPUT AND TOUCHSCREEN LOCATION FOR PROJECTOR SCREENS. REFER TO ELECTRICAL FOR POWER AND DATA.
16. PYLON SIGNAGE. REFER TO ELECTRICAL & STRUCTURAL.
17. REPLACE EXISTING METAL PANEL INFILL WITH SPANDREL GLAZING. REFER TO ELEVATION 4/A3.2. VERIFY DIMENSIONS AND CONDITIONS IN FIELD.

ARCHITECTURAL GENERAL NOTES

1. XX INDICATES CONSTRUCTION DOCUMENT ROOM NUMBERS.
2. REFER TO EQUIPMENT PLANS FOR CASEWORK, VISUAL DISPLAY BOARDS, LOCKERS, SHELVING, ETC.
3. REFER TO COLOR LAYOUT PLANS (A0 SERIES) FOR FLOOR FINISH PATTERNS AND COLORS.
4. CONTRACTOR SHALL COORDINATE LOCATIONS OF FLOOR DRAINS, CLEAN OUTS, ETC., WITH APPROPRIATE TRADES.
5. REFER TO ENLARGED PLANS FOR ADDITIONAL NOTES AND DIMENSIONS.
6. MASONRY CONTRACTOR TO INSTALL LOOSE LINTELS FOR MISCELLANEOUS OPENINGS NOT INDICATED ON DRAWINGS BUT REQUIRED FOR MECHANICAL, ELECTRICAL, FOOD SERVICE EQUIPMENT OR OTHER ITEMS THAT PASS THROUGH A WALL. STEEL LINTELS SHALL BE SUPPLIED BY THE STEEL CONTRACTOR.
7. ALL PARTITION WALLS TO RUN TIGHT TO DECK, U.N.O.
8. REFER TO PARTITION TYPES SHOWN ON REFLECTED CEILING PLANS AND PARTITION TYPE SHEET A2.6.
9. REFER TO SHEET G2 FOR FLOOR PLAN SYMBOLS LEGEND.
10. ALL CMU PARTITION WALLS SHALL BE 8" NOMINAL UNLESS NOTED OTHERWISE.
11. FILL/SEAL ALL PENETRATIONS THROUGH WALLS & VOIDS AT STRUCTURAL MEMBERS.
12. CAULK & SEAL AROUND ALL NEW CABINET HEATER LOUVERS INSTALLED IN EXTERIOR WALLS.
13. NEW OPENINGS IN EXISTING MASONRY WALLS SHALL BE TOOTHED IN TO MATCH EXISTING COURSING AND MASONRY SIZES, U.N.O.
14. REFER TO CIVIL DRAWINGS FOR FENCE AND GATE INFORMATION.
15. PROVIDE CLEAR ANODIZED ALUMINUM SHADOWBOX AT SPANDREL LOCATIONS THAT ARE EXPOSED. SHADOWBOXES NOT REQUIRED WHERE SPANDREL IS ABOVE CEILING.

REFER TO CIVIL DRAWINGS FOR FENCE/GATE LOCATIONS

REFER TO CIVIL DRAWINGS FOR FENCE/GATE LOCATIONS

1 FLOOR PLAN - UNIT 500
1/8" = 1'-0"

THESE DRAWINGS AND THE WORK REPRESENTED THEREIN ARE THE PROPERTY OF AND COPYRIGHTED BY KINGSCOTT ASSOCIATES AND MAY NOT BE USED OR REPRODUCED WITHOUT PERMISSION.
LAST PLOTTED: 12/15/2023 3:19:08 PM
C:\Users\tmunter\Documents\KPS_HAMILTON ADDITION_Arch_r2021_tmunter95LSY.rvt

KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

HAMILTON ELEMENTARY ADDITION

KENTWOOD PUBLIC SCHOOLS
3303 BRETON RD SE
KENTWOOD, MI 49512

KPS KENTWOOD PUBLIC SCHOOLS

ISSUANCES	DATE
DESIGN DEVELOPMENT	05/04/2023
CONSTRUCTION DOCUMENTS	08/17/2023
ADDENDUM 01	09/14/2023
PR-02	12/14/2023

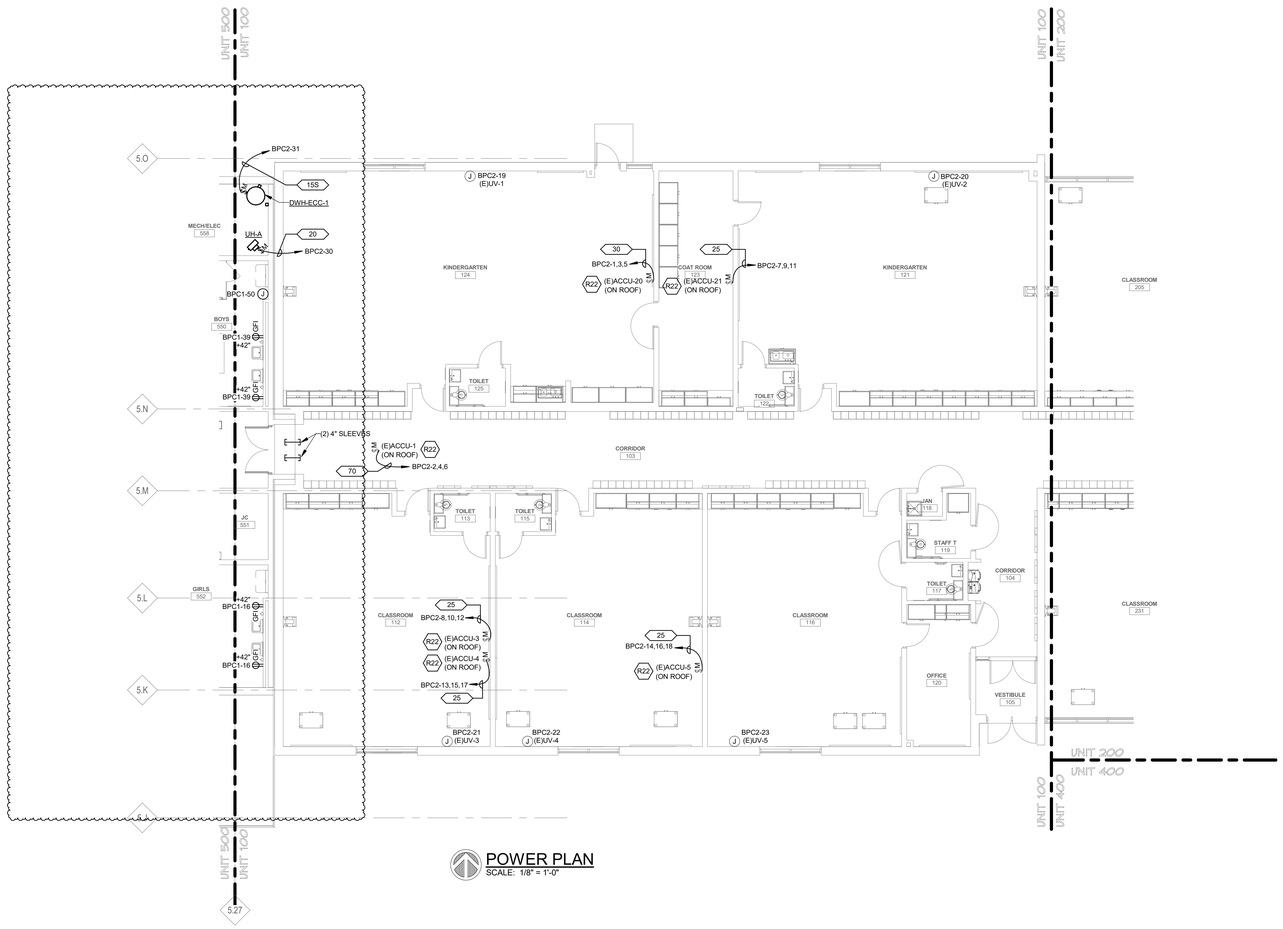
KEY PLAN

JOB NO. 2395-72

SHEET TITLE
FLOOR PLAN - UNIT 500

SHEET NO.
A1.5

© KINGSCOTT ASSOCIATES INC. KALAMAZOO, MICHIGAN



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

POWER GENERAL NOTES

1. ALL RECEPTACLES ON EXTERIOR, IN KITCHEN, IN CONCESSION, IN LABORATORY, AND WITHIN 6'-0" OF SINK OR OTHER WATER SUPPLY SHALL BE READILY ACCESSIBLE GFCI TYPE RECEPTACLE.
2. REFER TO ARCHITECTURAL FLOOR PLANS AND ELEVATIONS TO VERIFY LOCATION OF DEVICES.
3. ALL CONDUITS SERVING 120 VOLTS OR GREATER SHALL INCLUDE A GROUND WIRE.
4. ALL CONDUITS SHALL BE ROUTED CONCEALED UNLESS NOTED OTHERWISE.
5. ALL 120 VOLT CIRCUITS SHALL UTILIZE A SEPARATE NEUTRAL.
6. RECEPTACLES INSTALLED IN ELEVATOR HOISTWAY(S), ELEVATOR MACHINE ROOM(S), CONTROL ROOM(S)/SPACE(S) SHALL BE GROUND FAULT CIRCUIT INTERRUPTER TYPE (GFCI) WITH THE EXCEPTION OF A DEDICATED SINGLE PHASE RECEPTACLE SUPPLYING AN ELEVATOR PIT SUMP PUMP SHALL NOT BE A GFCI TYPE RECEPTACLE.
7. ALL BRANCH CIRCUITS THAT SUPPLY 125-V SINGLE PHASE, 15 AND 20 AMP OUTLETS TO BE INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, RECREATION ROOMS, CLOSETS, HALLWAYS OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION-TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT.
8. ALL 15/20A 120V NONLOCKING TYPE RECEPTACLES SHALL BE LISTED TAMPER-RESISTANT PER NEC 406.12.

POWER KEYNOTES

R1 LOCATE GENERATOR ANNUNCIATOR PANEL BELOW FIRE ALARM ANNUNCIATOR PANEL.
R2 ROUTE 4" CONDUIT FROM SITE AND STUB INTO FLOOR OF ELEC 242 FOR INCOMING FIBER. REFER TO SITE PLAN FOR MORE INFORMATION.
R3 ALL ABOVE CEILING CONDUITS FOR OFFICE AREA SHALL ROUTE THROUGH THIS AREA, ADJACENT TO DUCTWORK. CONDUIT SHALL BE ROUTED NEATLY ACROSS SPAN AND PAINTED.
R4 CLASSROOM TEACHER STATION. PROVIDE EXTRA DEEP DOUBLE GANG BOX WITH DOUBLE GANG MUD RING. TYPICAL OUTLET HEIGHT 16" AFF TO BOTTOM OF ELECTRICAL BOX. COORDINATE WITH TECHNOLOGY DRAWINGS.
R5 SHORT THROW PROJECTOR. PROVIDE (1) QUAD OUTLET IN CEILING TILE AND CENTER ON MARKERBOARD.
R6 CLOCK LOCATION. PROVIDE SINGLE GANG BACK BOX ABOVE DOOR AT 96" AFF TO BOTTOM OF BOX UNLESS OTHERWISE NOTED.
R7 PROVIDE (1) 4" FIRE RATED SLEEVE LOCATED IN ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.
R8 IRRIGATION CONTROLS, COORDINATE EXACT LOCATION OF 120V CIRCUIT WITH IRRIGATION CONTRACTOR.
R9 MOTORIZED ROLLER SHADE WALL MOUNTED KEYPAD. COORDINATE FINAL LOCATION AND PRESETS WITH OWNER.
R10 PROVIDE JUNCTION BOX FOR MOTORIZED SHADES. COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS PRIOR TO ROUGH-IN WITH ARCHITECT. CIRCUIT AS INDICATED ON PLAN.
R11 PROVIDE POWER TO OVERHEAD COILING DOOR. COORDINATE EXACT POWER AND CONTROL REQUIREMENTS WITH APPROVED SHOP DRAWINGS PRIOR TO ROUGH-IN.
R12 PROVIDE 3/4" CONDUIT FOR POWER AND 1-1/2" C FOR DATA TO ISLAND COUNTER. ROUTE CONDUIT IN SLAB AND STUB INTO MILLWORK. COORDINATE FINAL LOCATION WITH ARCHITECT IN FIELD.
R13 PROVIDE DEDICATED 120V POWER CONNECTION FOR EACH HAND DRYER; COORDINATE EXACT REQUIREMENTS AND INSTALLATION WITH MANUFACTURER. CIRCUIT AS INDICATED ON PLAN. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
R14 INDOOR MECHANICAL UNIT (FCU) SHALL BE FED FROM OUTDOOR CONDENSER UNIT (CU) LOCATED ON ROOF. WIRING TO UNIT SHALL BE PROVIDED AND INSTALLED BY EC WITH 2#12,1#12G,3/4"C. EC SHALL PROVIDE DISCONNECTING MEANS AT BOTH PIECES OF EQUIPMENT.
R15 ELECTRICAL CONTRACTOR SHALL INSTALL MANUFACTURER PROVIDED DISCONNECT.
R16 PROVIDE POWER CONNECTION TO MANUFACTURER-SUPPLIED VFD. COORDINATE EXACT LOCATION AND CONTROLS WITH MECHANICAL TRADES IN FIELD.
R17 PROVIDE 120V CIRCUIT FOR MOTORIZED FIRE/SMOKE DAMPER AND CONNECTION TO FIRE ALARM SYSTEM. COORDINATE EXACT REQUIREMENTS AND LOCATIONS WITH MECHANICAL TRADES IN FIELD.
R18 PROVIDE COMBINATION MOTOR RATED STARTER (HOA) AND DISCONNECT SWITCH AS INDICATED ON PLAN FOR PUMP CP-233 IN VESTIBULE 233. COORDINATE FINAL LOCATION IN FIELD.
R19 PROVIDE COMBINATION MOTOR RATED STARTER (HOA) AND DISCONNECT SWITCH AS INDICATED ON PLAN FOR PUMP CP-325. COORDINATE FINAL LOCATION IN FIELD.
R20 DOUBLE-GANG BOX WITH DOUBLE-GANG MUD RING AT 44" AFF FOR TOUCH PANEL.
R21 DOUBLE-GANG BOX WITH DOUBLE-GANG MUD RING AT 18" AFF.
R22 VERIFY EXISTING TO REMAIN ROOF MOUNTED MECHANICAL EQUIPMENT HAVE GFI SERVICE RECEPTACLE MOUNTED WITHIN 25' OF EQUIPMENT. IF EXISTING, RECIRCUIT TO SPARE 120V, 20A BREAKER IN PANEL 'BPC2'. IF NO GFI SERVICE RECEPTACLE IS PRESENT, PROVIDE NEW AND CIRCUIT TO SPARE 120V, 20A BREAKER IN PANEL 'BPC2'.

KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK

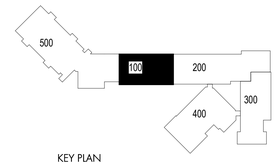
Strategic Energy Solutions®
4000 W. Eleven Mile Road Berkley, MI 48072
Phone 248.399.1900 Fax 248.399.1901
www.sesnet.com
© 2023 SES, INC.
SES Project # 22 0588 02

HAMILTON ELEMENTARY ADDITION

KENTWOOD PUBLIC SCHOOLS
3303 BRETON RD SE
KENTWOOD, MI 49512

KPS KENTWOOD PUBLIC SCHOOLS

ISSUANCES	DATE
DESIGN DEVELOPMENT	05/04/2023
CONSTRUCTION DOCUMENTS	08/17/2023
ADDENDUM NO. 1	09/14/2023
PR-02	12/14/2023



KEY PLAN

JOB NO. 2395-72
N

SHEET TITLE
POWER PLAN - UNIT 100

SHEET NO.
EP1.1

© KINGSCOTT ASSOCIATES INC. KALAMAZOO, MICHIGAN

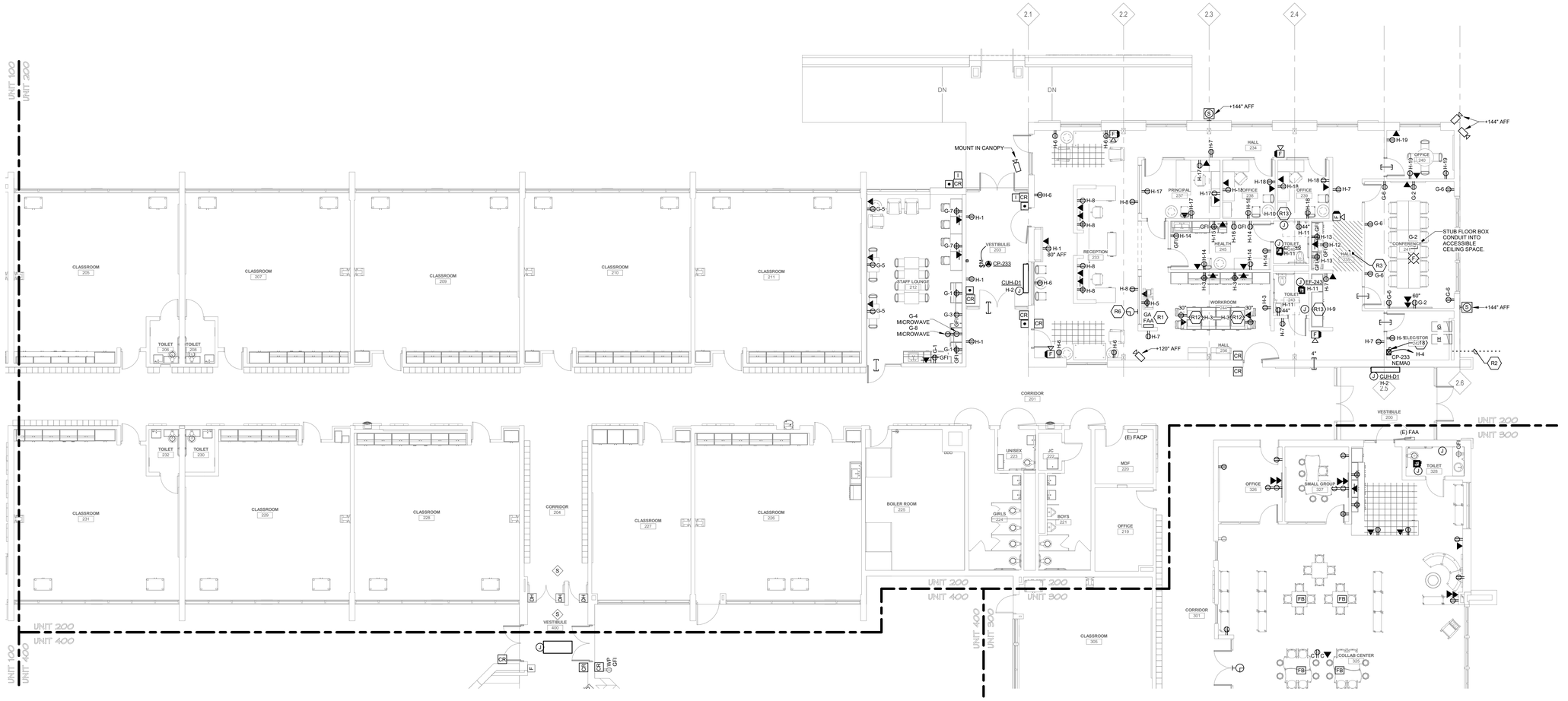
THESE DRAWINGS AND THE WORK REPRESENTED THEREON ARE THE PROPERTY OF AND COPYRIGHTED BY KINGSCOTT ASSOCIATES AND MAY NOT BE USED OR REPRODUCED WITHOUT PERMISSION.
LAST PRINTED: 12/14/2023 11:21:05 AM
C:\Users\eastaa\Documents\22 0588 05_Kentwood Hamilton Elem_MEP_2021_eastaaDJ2CR.rvt

POWER GENERAL NOTES

1. ALL RECEPTACLES ON EXTERIOR, IN KITCHEN, IN CONCESSION, IN LABORATORY, AND WITHIN 6'-0" OF SINK OR OTHER WATER SUPPLY SHALL BE READILY ACCESSIBLE GFCI TYPE RECEPTACLE.
2. REFER TO ARCHITECTURAL FLOOR PLANS AND ELEVATIONS TO VERIFY LOCATION OF DEVICES.
3. ALL CONDUITS SERVING 120 VOLTS OR GREATER SHALL INCLUDE A GROUND WIRE.
4. ALL CONDUITS SHALL BE ROUTED CONCEALED UNLESS NOTED OTHERWISE.
5. ALL 120 VOLT CIRCUITS SHALL UTILIZE A SEPARATE NEUTRAL.
6. RECEPTACLES INSTALLED IN ELEVATOR HOISTWAY(S), ELEVATOR MACHINE ROOM(S), CONTROL ROOM(S)/SPACE(S) SHALL BE GROUND FAULT CIRCUIT INTERRUPTER TYPE (GFCI) WITH THE EXCEPTION OF A DEDICATED SINGLE PHASE RECEPTACLE SUPPLYING AN ELEVATOR PIT SUMP PUMP SHALL NOT BE A GFCI TYPE RECEPTACLE.
7. ALL BRANCH CIRCUITS THAT SUPPLY 125-V SINGLE PHASE, 15 AND 20 AMP OUTLETS TO BE INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, RECREATION ROOMS, CLOSETS, HALLWAYS OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION-TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT.
8. ALL 15/20A 120V NONLOCKING TYPE RECEPTACLES SHALL BE LISTED TAMPER-RESISTANT PER NEC 406.12.

POWER KEYNOTES

R1 LOCATE GENERATOR ANNUNCIATOR PANEL BELOW FIRE ALARM ANNUNCIATOR PANEL.
R2 ROUTE 4" CONDUIT FROM SITE AND STUB INTO FLOOR OF ELEC 242 FOR INCOMING FIBER. REFER TO SITE PLAN FOR MORE INFORMATION.
R3 ALL ABOVE CEILING CONDUITS FOR OFFICE AREA SHALL ROUTE THROUGH THIS AREA, ADJACENT TO DUCTWORK. CONDUIT SHALL BE ROUTED NEATLY ACROSS SPAN AND PAINTED.
R4 CLASSROOM TEACHER STATION. PROVIDE EXTRA DEEP DOUBLE GANG BOX WITH DOUBLE GANG MUD RING. TYPICAL OUTLET HEIGHT 15" AFF TO BOTTOM OF ELECTRICAL BOX. COORDINATE WITH TECHNOLOGY DRAWINGS.
R5 SHORT THROW PROJECTOR. PROVIDE (1) QUAD OUTLET IN CEILING TILE AND CENTER ON MARKERBOARD.
R6 CLOCK LOCATION. PROVIDE SINGLE GANG BACK BOX ABOVE DOOR AT 96" AFF TO BOTTOM OF BOX UNLESS OTHERWISE NOTED.
R7 PROVIDE (1) 4" FIRE RATED SLEEVE LOCATED IN ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.
R8 IRRIGATION CONTROLS, COORDINATE EXACT LOCATION OF 120V CIRCUIT WITH IRRIGATION CONTRACTOR.
R9 MOTORIZED ROLLER SHADE WALL MOUNTED KEYPAD. COORDINATE FINAL LOCATION AND PRESETS WITH OWNER.
R10 PROVIDE JUNCTION BOX FOR MOTORIZED SHADES. COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS PRIOR TO ROUGH-IN WITH ARCHITECT. CIRCUIT AS INDICATED ON PLAN.
R11 PROVIDE POWER TO OVERHEAD COILING DOOR. COORDINATE EXACT POWER AND CONTROL REQUIREMENTS WITH APPROVED SHOP DRAWINGS PRIOR TO ROUGH-IN.
R12 PROVIDE 3/4" CONDUIT FOR POWER AND 1-1/2" C FOR DATA TO ISLAND COUNTER. ROUTE CONDUIT IN SLAB AND STUB INTO MILLWORK. COORDINATE FINAL LOCATION WITH ARCHITECT IN FIELD.
R13 PROVIDE DEDICATED 120V POWER CONNECTION FOR EACH HAND DRYER; COORDINATE EXACT REQUIREMENTS AND INSTALLATION WITH MANUFACTURER. CIRCUIT AS INDICATED ON PLAN. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
R14 INDOOR MECHANICAL UNIT (FCU) SHALL BE FED FROM OUTDOOR CONDENSER UNIT (CU) LOCATED ON ROOF. WIRING TO UNIT SHALL BE PROVIDED AND INSTALLED BY EC WITH 2#12,1#12G,3/4"C. EC SHALL PROVIDE DISCONNECTING MEANS AT BOTH PIECES OF EQUIPMENT.
R15 ELECTRICAL CONTRACTOR SHALL INSTALL MANUFACTURER PROVIDED DISCONNECT.
R16 PROVIDE POWER CONNECTION TO MANUFACTURER-SUPPLIED VFD. COORDINATE EXACT LOCATION AND CONTROLS WITH MECHANICAL TRADES IN FIELD.
R17 PROVIDE 120V CIRCUIT FOR MOTORIZED FIRE/SMOKE DAMPER AND CONNECTION TO FIRE ALARM SYSTEM. COORDINATE EXACT REQUIREMENTS AND LOCATIONS WITH MECHANICAL TRADES IN FIELD.
R18 PROVIDE COMBINATION MOTOR RATED STARTER (HOA) AND DISCONNECT SWITCH AS INDICATED ON PLAN FOR PUMP CP-233 IN VESTIBULE 233. COORDINATE FINAL LOCATION IN FIELD.
R19 PROVIDE COMBINATION MOTOR RATED STARTER (HOA) AND DISCONNECT SWITCH AS INDICATED ON PLAN FOR PUMP CP-325. COORDINATE FINAL LOCATION IN FIELD.
R20 DOUBLE-GANG BOX WITH DOUBLE-GANG MUD RING AT 44" AFF FOR TOUCH PANEL.
R21 DOUBLE-GANG BOX WITH DOUBLE-GANG MUD RING AT 18" AFF.
R22 VERIFY EXISTING TO REMAIN ROOF MOUNTED MECHANICAL EQUIPMENT HAVE GFI SERVICE RECEPTACLE MOUNTED WITHIN 25' OF EQUIPMENT. IF EXISTING, RECIRCUIT TO SPARE 120V, 20A BREAKER IN PANEL 'BPC2'. IF NO GFI SERVICE RECEPTACLE IS PRESENT, PROVIDE NEW AND CIRCUIT TO SPARE 120V, 20A BREAKER IN PANEL 'BPC2'.



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

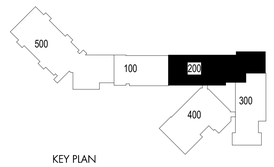
THESE DRAWINGS AND THE WORK REPRESENTED THEREIN ARE THE PROPERTY OF AND COPYRIGHTED BY KINGSCOTT ASSOCIATES INC. AND MAY NOT BE USED OR REPRODUCED WITHOUT PERMISSION.
LAST PRINTED: 12/14/2023 11:21:13 AM
C:\Revit\Local\Documents\22-0588 05_Kentwood Hamilton Elem_MEP_2021_wlocal%DOR.rvt

KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK
Strategic Energy Solutions®
4000 W. Eleven Mile Road Berkley, MI 48072
Phone 248.399.1900 Fax 248.399.1901
www.sesnet.com
© 2023 SES, INC.
SES Project # 22 0588 02

HAMILTON ELEMENTARY ADDITION
KENTWOOD PUBLIC SCHOOLS
3303 BRETON RD SE
KENTWOOD, MI 49512

KPS KENTWOOD PUBLIC SCHOOLS

ISSUANCES	DATE
DESIGN DEVELOPMENT	10/27/2022
CONSTRUCTION DOCUMENTS	08/17/2023
ADDENDUM NO. 1	09/14/2023
PR-02	12/14/2023



KEY PLAN

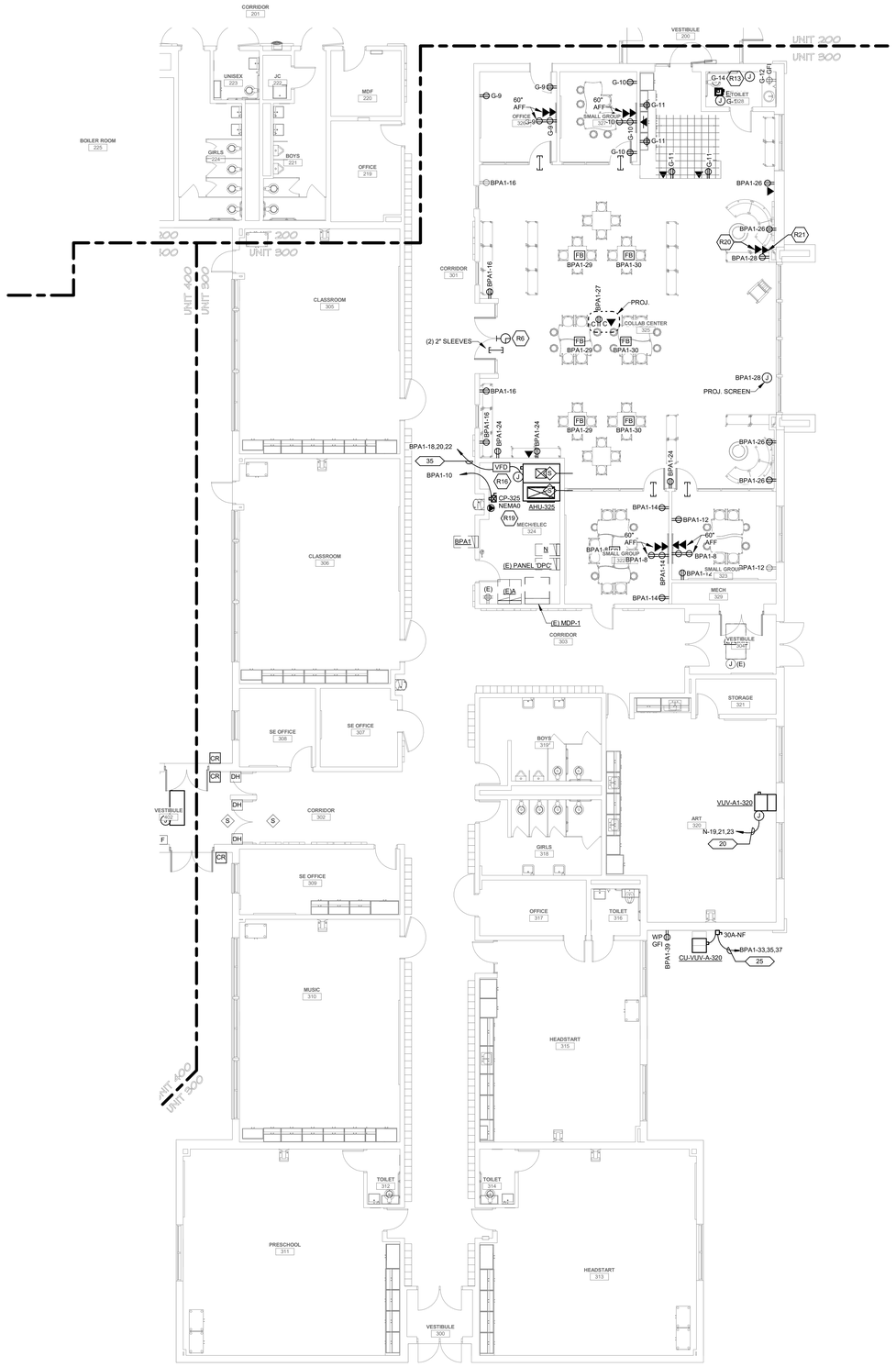
N

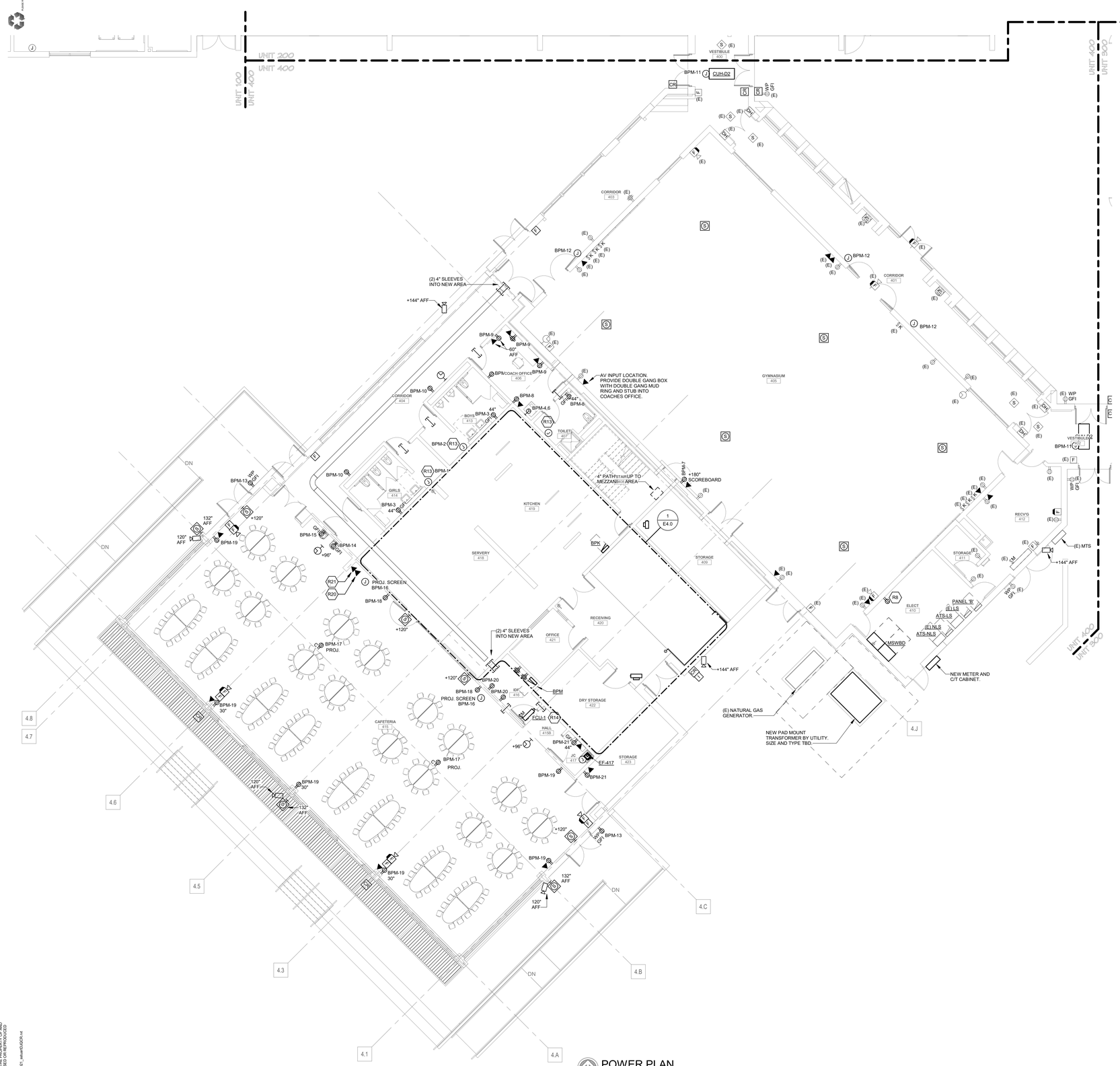
JOB NO. 2395-72

SHEET TITLE
POWER PLAN - UNIT 200

SHEET NO.
EP1.2

© KINGSCOTT ASSOCIATES INC. KALAMAZOO, MICHIGAN


CORRIDOR 201
VESTIBULE 200
UNIT 200
UNIT 300
UNISEX 223
JC 222
MDF 220
BOILER ROOM 225
GIRLS 224
BOYS 221
OFFICE 219
100
200
UNIT 400
UNIT 300
CLASSROOM 305
CORRIDOR 321
CLASSROOM 306
SE OFFICE 308
SE OFFICE 307
CORRIDOR 302
SE OFFICE 309
MUSIC 310
PRESCHOOL 311
TOILET 312
VESTIBULE 300
UNIT 400
UNIT 300
G-9
G-10
G-11
G-14
G-15
G-16
G-17
G-18
G-19
G-20
G-21
G-22
G-23
G-24
G-25
G-26
G-27
G-28
G-29
G-30
G-31
G-32
G-33
G-34
G-35
G-36
G-37
G-38
G-39
G-40
G-41
G-42
G-43
G-44
G-45
G-46
G-47
G-48
G-49
G-50
G-51
G-52
G-53



POWER GENERAL NOTES

1. ALL RECEPTACLES ON EXTERIOR, IN KITCHEN, IN CONCESSION, IN LABORATORY, AND WITHIN 6'-0" OF SINK OR OTHER WATER SUPPLY SHALL BE READILY ACCESSIBLE GFCI TYPE RECEPTACLE.
2. REFER TO ARCHITECTURAL FLOOR PLANS AND ELEVATIONS TO VERIFY LOCATION OF DEVICES.
3. ALL CONDUITS SERVING 120 VOLTS OR GREATER SHALL INCLUDE A GROUND WIRE.
4. ALL CONDUITS SHALL BE ROUTED CONCEALED UNLESS NOTED OTHERWISE.
5. ALL 120 VOLT CIRCUITS SHALL UTILIZE A SEPARATE NEUTRAL.
6. RECEPTACLES INSTALLED IN ELEVATOR HOISTWAY(S), ELEVATOR MACHINE ROOM(S), CONTROL ROOM(S)/SPACE(S) SHALL BE GROUND FAULT CIRCUIT INTERRUPTER TYPE (GFCI) WITH THE EXCEPTION OF A DEDICATED SINGLE PHASE RECEPTACLE SUPPLYING AN ELEVATOR PIT SUMP PUMP SHALL NOT BE A GFCI TYPE RECEPTACLE.
7. ALL BRANCH CIRCUITS THAT SUPPLY 125-V SINGLE PHASE, 15 AND 20 AMP OUTLETS TO BE INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, RECREATION ROOMS, CLOSETS, HALLWAYS OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION-TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT.
8. ALL 15/20A 120V NONLOCKING TYPE RECEPTACLES SHALL BE LISTED TAMPER-RESISTANT PER NEC 406.12.

POWER KEYNOTES

R1 LOCATE GENERATOR ANNUNCIATOR PANEL BELOW FIRE ALARM ANNUNCIATOR PANEL.
R2 ROUTE 4" CONDUIT FROM SITE AND STUB INTO FLOOR OF ELEC 242 FOR INCOMING FIBER. REFER TO SITE PLAN FOR MORE INFORMATION.
R3 ALL ABOVE CEILING CONDUITS FOR OFFICE AREA SHALL ROUTE THROUGH THIS AREA, ADJACENT TO DUCTWORK. CONDUIT SHALL BE ROUTED NEATLY ACROSS SPAN AND PAINTED.
R4 CLASSROOM TEACHER STATION. PROVIDE EXTRA DEEP DOUBLE GANG BOX WITH DOUBLE GANG MUD RING. TYPICAL OUTLET HEIGHT 16" AFF TO BOTTOM OF ELECTRICAL BOX. COORDINATE WITH TECHNOLOGY DRAWINGS.
R5 SHORT THROW PROJECTOR. PROVIDE (1) QUAD OUTLET IN CEILING TILE AND CENTER ON MARKERBOARD.
R6 CLOCK LOCATION. PROVIDE SINGLE GANG BACK BOX ABOVE DOOR AT 96" AFF TO BOTTOM OF BOX UNLESS OTHERWISE NOTED.
R7 PROVIDE (1) 4" FIRE RATED SLEEVE LOCATED IN ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.
R8 IRRIGATION CONTROLS. COORDINATE EXACT LOCATION OF 120V CIRCUIT WITH IRRIGATION CONTRACTOR.
R9 MOTORIZED ROLLER SHADE WALL MOUNTED KEYPAD. COORDINATE FINAL LOCATION AND PRESETS WITH OWNER.
R10 PROVIDE JUNCTION BOX FOR MOTORIZED SHADES. COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS PRIOR TO ROUGH-IN WITH ARCHITECT. CIRCUIT AS INDICATED ON PLAN.
R11 PROVIDE POWER TO OVERHEAD COILING DOOR. COORDINATE EXACT POWER AND CONTROL REQUIREMENTS WITH APPROVED SHOP DRAWINGS PRIOR TO ROUGH-IN.
R12 PROVIDE 3/4" CONDUIT FOR POWER AND 1-1/2" C FOR DATA TO ISLAND COUNTER. ROUTE CONDUIT IN SLAB AND STUB INTO MILLWORK. COORDINATE FINAL LOCATION WITH ARCHITECT IN FIELD.
R13 PROVIDE DEDICATED 120V POWER CONNECTION FOR EACH HAND DRYER; COORDINATE EXACT REQUIREMENTS AND INSTALLATION WITH MANUFACTURER. CIRCUIT AS INDICATED ON PLAN. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
R14 INDOOR MECHANICAL UNIT (FCU) SHALL BE FED FROM OUTDOOR CONDENSER UNIT (CU) LOCATED ON ROOF. WIRING TO UNIT SHALL BE PROVIDED AND INSTALLED BY EC WITH 2#12,1#12G,3/4"C. EC SHALL PROVIDE DISCONNECTING MEANS AT BOTH PIECES OF EQUIPMENT.
R15 ELECTRICAL CONTRACTOR SHALL INSTALL MANUFACTURER PROVIDED DISCONNECT.
R16 PROVIDE POWER CONNECTION TO MANUFACTURER-SUPPLIED VFD. COORDINATE EXACT LOCATION AND CONTROLS WITH MECHANICAL TRADES IN FIELD.
R17 PROVIDE 120V CIRCUIT FOR MOTORIZED FIRE/SMOKE DAMPER AND CONNECTION TO FIRE ALARM SYSTEM. COORDINATE EXACT REQUIREMENTS AND LOCATIONS WITH MECHANICAL TRADES IN FIELD.
R18 PROVIDE COMBINATION MOTOR RATED STARTER (HOA) AND DISCONNECT SWITCH AS INDICATED ON PLAN FOR PUMP CP-233 IN VESTIBULE 233. COORDINATE FINAL LOCATION IN FIELD.
R19 PROVIDE COMBINATION MOTOR RATED STARTER (HOA) AND DISCONNECT SWITCH AS INDICATED ON PLAN FOR PUMP CP-325. COORDINATE FINAL LOCATION IN FIELD.
R20 DOUBLE-GANG BOX WITH DOUBLE-GANG MUD RING AT 44" AFF FOR TOUCH PANEL.
R21 DOUBLE-GANG BOX WITH DOUBLE-GANG MUD RING AT 18" AFF.
R22 VERIFY EXISTING TO REMAIN ROOF MOUNTED MECHANICAL EQUIPMENT HAVE GFI SERVICE RECEPTACLE MOUNTED WITHIN 25' OF EQUIPMENT. IF EXISTING, RECIRCUIT TO SPARE 120V, 20A BREAKER IN PANEL 'BPC2'. IF NO GFI SERVICE RECEPTACLE IS PRESENT, PROVIDE NEW AND CIRCUIT TO SPARE 120V, 20A BREAKER IN PANEL 'BPC2'.

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

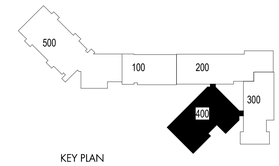
THESE DRAWINGS AND THE WORK REPRESENTED THEREIN ARE THE PROPERTY OF AND COPYRIGHTED BY KINGSCOTT ASSOCIATES AND MAY NOT BE REPRODUCED WITHOUT PERMISSION.
LAST PRINTED: 12/14/2023 11:21:29 AM
C:\Users\stuart\Documents\22 0588 02_Kentwood Hamilton Elem_MEP_2021_stuart.DJOCR.rvt

KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK
Strategic Energy Solutions®
4000 W. Eleven Mile Road Berkley, MI 48072
Phone 248.399.1900 Fax 248.399.1901
www.sesnet.com
© 2023 SES, INC.
SES Project # 22 0588 02

HAMILTON ELEMENTARY ADDITION
KENTWOOD PUBLIC SCHOOLS
3303 BRETON RD SE
KENTWOOD, MI 49512

KPS KENTWOOD PUBLIC SCHOOLS

ISSUANCES	DATE
DESIGN DEVELOPMENT	10/27/2022
CONSTRUCTION DOCUMENTS	08/17/2023
ADDENDUM NO. 1	09/14/2023
ADDENDUM NO. 2	09/19/2023
PR-02	12/14/2023



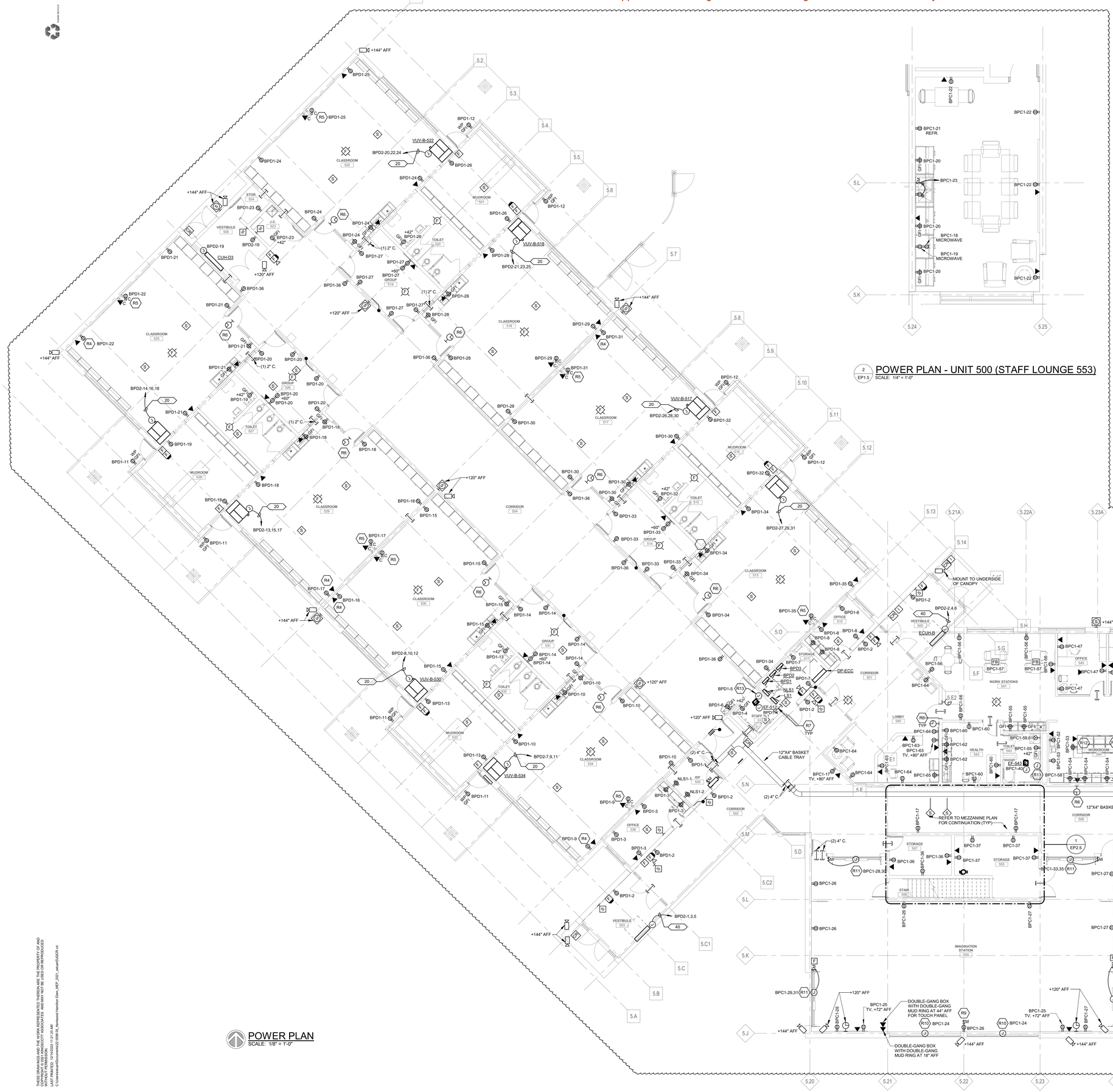
KEY PLAN

JOB NO. 2395-72
N

SHEET TITLE
POWER PLAN - UNIT 400

SHEET NO.
EP1.4

© KINGSCOTT ASSOCIATES INC. KALAMAZOO, MICHIGAN



2 EP1.5 POWER PLAN - UNIT 500 (STAFF LOUNGE 553)
SCALE: 1/4" = 1'-0"

POWER GENERAL NOTES

1. ALL RECEPTACLES ON EXTERIOR, IN KITCHEN, IN CONCESSION, IN LABORATORY, AND WITHIN 6'-0" OF SINK OR OTHER WATER SUPPLY SHALL BE READILY ACCESSIBLE GFCI TYPE RECEPTACLE.
2. REFER TO ARCHITECTURAL FLOOR PLANS AND ELEVATIONS TO VERIFY LOCATION OF DEVICES.
3. ALL CONDUITS SERVING 120 VOLTS OR GREATER SHALL INCLUDE A GROUND WIRE.
4. ALL CONDUITS SHALL BE ROUTED CONCEALED UNLESS NOTED OTHERWISE.
5. ALL 120 VOLT CIRCUITS SHALL UTILIZE A SEPARATE NEUTRAL.
6. RECEPTACLES INSTALLED IN ELEVATOR HOISTWAY(S), ELEVATOR MACHINE ROOM(S), CONTROL ROOM(S)/SPACE(S) SHALL BE GROUND FAULT CIRCUIT INTERRUPTER TYPE (GFCI) WITH THE EXCEPTION OF A DEDICATED SINGLE PHASE RECEPTACLE SUPPLYING AN ELEVATOR PIT SUMP PUMP SHALL NOT BE A GFCI TYPE RECEPTACLE.
7. ALL BRANCH CIRCUITS THAT SUPPLY 125-V SINGLE PHASE, 15 AND 20 AMP OUTLETS TO BE INSTALLED IN DWELLING UNIT FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, RECREATION ROOMS, CLOSETS, HALLWAYS OR SIMILAR ROOMS OR AREAS SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER, COMBINATION-TYPE, INSTALLED TO PROVIDE PROTECTION OF THE BRANCH CIRCUIT.
8. ALL 15/20A 120V NONLOCKING TYPE RECEPTACLES SHALL BE LISTED TAMPER-RESISTANT PER NEC 406.12.

POWER KEYNOTES

R1 LOCATE GENERATOR ANNUNCIATOR PANEL BELOW FIRE ALARM ANNUNCIATOR PANEL.
R2 ROUTE 4" CONDUIT FROM SITE AND STUB INTO FLOOR OF ELEC 242 FOR INCOMING FIBER. REFER TO SITE PLAN FOR MORE INFORMATION.
R3 ALL ABOVE CEILING CONDUITS FOR OFFICE AREA SHALL ROUTE THROUGH THIS AREA, ADJACENT TO DUCTWORK. CONDUIT SHALL BE ROUTED NEATLY ACROSS SPAN AND PAINTED.
R4 CLASSROOM TEACHER STATION. PROVIDE EXTRA DEEP DOUBLE GANG BOX WITH DOUBLE GANG MUD RING. TYPICAL OUTLET HEIGHT 16" AFF TO BOTTOM OF ELECTRICAL BOX. COORDINATE WITH TECHNOLOGY DRAWINGS.
R5 SHORT THROW PROJECTOR. PROVIDE (1) QUAD OUTLET IN CEILING TILE AND CENTER ON MARKERBOARD.
R6 CLOCK LOCATION. PROVIDE SINGLE GANG BACK BOX ABOVE DOOR AT 96" AFF TO BOTTOM OF BOX UNLESS OTHERWISE NOTED.
R7 PROVIDE (1) 4" FIRE RATED SLEEVE LOCATED IN ACCESSIBLE CEILING UNLESS OTHERWISE NOTED.
R8 IRRIGATION CONTROLS. COORDINATE EXACT LOCATION OF 120V CIRCUIT WITH IRRIGATION CONTRACTOR.
R9 MOTORIZED ROLLER SHADE WALL MOUNTED KEYPAD. COORDINATE FINAL LOCATION AND PRESETS WITH OWNER.
R10 PROVIDE JUNCTION BOX FOR MOTORIZED SHADES. COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS PRIOR TO ROUGH-IN WITH ARCHITECT. CIRCUIT AS INDICATED ON PLAN.
R11 PROVIDE POWER TO OVERHEAD COILING DOOR. COORDINATE EXACT POWER AND CONTROL REQUIREMENTS WITH APPROVED SHOP DRAWINGS PRIOR TO ROUGH-IN.
R12 PROVIDE 3/4" CONDUIT FOR POWER AND 1-1/2" C FOR DATA TO ISLAND COUNTER. ROUTE CONDUIT IN SLAB AND STUB INTO MILLWORK. COORDINATE FINAL LOCATION WITH ARCHITECT IN FIELD.
R13 PROVIDE DEDICATED 120V POWER CONNECTION FOR EACH HAND DRYER; COORDINATE EXACT REQUIREMENTS AND INSTALLATION WITH MANUFACTURER. CIRCUIT AS INDICATED ON PLAN. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS.
R14 INDOOR MECHANICAL UNIT (FCU) SHALL BE FED FROM OUTDOOR CONDENSER UNIT (CU) LOCATED ON ROOF. WIRING TO UNIT SHALL BE PROVIDED AND INSTALLED BY EC WITH 2#12,1#12G,3/4"C. EC SHALL PROVIDE DISCONNECTING MEANS AT BOTH PIECES OF EQUIPMENT.
R15 ELECTRICAL CONTRACTOR SHALL INSTALL MANUFACTURER PROVIDED DISCONNECT.
R16 PROVIDE POWER CONNECTION TO MANUFACTURER-SUPPLIED VFD. COORDINATE EXACT LOCATION AND CONTROLS WITH MECHANICAL TRADES IN FIELD.
R17 PROVIDE 120V CIRCUIT FOR MOTORIZED FIRE/SMOKE DAMPER AND CONNECTION TO FIRE ALARM SYSTEM. COORDINATE EXACT REQUIREMENTS AND LOCATIONS WITH MECHANICAL TRADES IN FIELD.
R18 PROVIDE COMBINATION MOTOR RATED STARTER (HOA) AND DISCONNECT SWITCH AS INDICATED ON PLAN FOR PUMP CP-233 IN VESTIBULE 233. COORDINATE FINAL LOCATION IN FIELD.
R19 PROVIDE COMBINATION MOTOR RATED STARTER (HOA) AND DISCONNECT SWITCH AS INDICATED ON PLAN FOR PUMP CP-325. COORDINATE FINAL LOCATION IN FIELD.
R20 DOUBLE-GANG BOX WITH DOUBLE-GANG MUD RING AT 44" AFF FOR TOUCH PANEL.
R21 DOUBLE-GANG BOX WITH DOUBLE-GANG MUD RING AT 18" AFF.
R22 VERIFY EXISTING TO REMAIN ROOF MOUNTED MECHANICAL EQUIPMENT HAVE GFI SERVICE RECEPTACLE MOUNTED WITHIN 25' OF EQUIPMENT. IF EXISTING, RECIRCUIT TO SPARE 120V, 20A BREAKER IN PANEL 'BPC2'. IF NO GFI SERVICE RECEPTACLE IS PRESENT, PROVIDE NEW AND CIRCUIT TO SPARE 120V, 20A BREAKER IN PANEL 'BPC2'.

THESE DRAWINGS AND THE WORK REPRESENTED THEREIN ARE THE PROPERTY OF AND COPYRIGHTED BY KINGSCOTT ASSOCIATES AND MAY NOT BE USED OR REPRODUCED WITHOUT PERMISSION.
LAST PLOTTED: 2023-12-15 08:13:28 AM
C:\Users\eastaart\Documents\22 0588 05_Kentwood Hamilton Elem_MEP_2021_eastaartDJ0DR.rvt

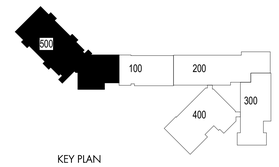
KINGSCOTT
KALAMAZOO | CHELSEA | GRAND RAPIDS | ROYAL OAK
Strategic Energy Solutions®
4000 W. Eleven Mile Road Berkley, MI 48072
Phone 248.399.1900 Fax 248.399.1901
www.sesnet.com
© 2023 SES, INC.
SES Project # 22 0588 02

HAMILTON ELEMENTARY ADDITION

KENTWOOD PUBLIC SCHOOLS
3303 BRETON RD SE
KENTWOOD, MI 49512

KPS KENTWOOD PUBLIC SCHOOLS

ISSUANCES	DATE
DESIGN DEVELOPMENT	05/04/2023
CONSTRUCTION DOCUMENTS	08/17/2023
ADDENDUM NO. 1	09/14/2023
PR-02	12/14/2023



KEY PLAN

JOB NO. 2395-72

SHEET TITLE
POWER PLAN - UNIT 500

SHEET NO.
EP1.5

© KINGSCOTT ASSOCIATES INC. KALAMAZOO, MICHIGAN

Kingscott Associates, Inc.
Architects/Engineers
Kalamazoo, Michigan

Hamilton Elementary School
Addition and Remodeling
Kentwood Public Schools
Kentwood, Michigan

SECTION 080671X

DOOR HARDWARE SCHEDULE

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 references specification sections relating to commercial door hardware for the following:

1. Swinging doors.
2. Sliding Doors.
3. Other doors to the extent indicated.

B. Commercial door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical and access control door hardware.
3. Electromechanical and access control door hardware power supplies, back-ups and surge protection.
4. Automatic operators.
5. Cylinders specified for doors in other sections.

C. Related Sections:

1. Division 08 Section “Door Hardware”.
2. 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. State Building Codes, Local Amendments.

E. Standards: Reference Related Sections for requirements regarding compliance with applicable industry standards.

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.

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. Keying Schedule: Prepared under the supervision of the Owner, separate schedule detailing final keying instructions for locksets and cylinders in writing. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner to approve submitted keying schedule prior to the ordering of permanent cylinders.

D. 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.

E. 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 Submittals. The manual to include the name, address, and contact information of the manufacturers providing the hardware and their nearest service representatives. The final copies delivered after completion of the installation test to include "as built" modifications made during installation, checkout, and acceptance.

F. Warranties and Maintenance: Special warranties and maintenance agreements specified in the Related Sections.

1.4 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".

1.5 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.

1.6 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. Refer to “PART 3 – EXECUTION” for required specification sections.

PART 3 - EXECUTION

3.1 DOOR HARDWARE SETS

A. The door 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. Products listed in the hardware sets shall be supplied by and in accordance with the requirements described in the specification section as noted for each item.

1. Section 08 71 00 – Door Hardware.
2. Section 28 15 00 – Access Control Hardware Devices.

C. Manufacturer's Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. SU - Securitron
4. RO - Rockwood
5. OT - Other
6. RU - Corbin Russwin
7. HS - HES
8. RF - Rixson
9. LC - Norton
10. PN - PERSONA

Hardware Sets

Set: 1.0

Doors: 100A, 400B, 401, 402B, 404A, 415E

1 Continuous Hinge	CFM-SLF-HD1	PE	087100

1	Continuous Hinge	CFM-SLF-HD1 x PT		PE	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100
1	Removable Mullion	910KM		RU	087100
1	IN220 Rim Exit	ED5200SN PR9134ET-IN220 BIPS CT7D	630	RU	281500
1	Exit Device (rim, exit only)	ED5200S EO M110	630	RU	087100
1	Mortise Cylinder	CR1580 CT7D GMK	626	RU	087100
2	Interchangeable Core	CR8000 GMK	626	RU	087100
2	Conc Overhead Stop	6-X36	630	RF	087100
2	Surface Closer	4040XP (Top Jamb)	689	LC	087100
1	Threshold	252x3AFG MSES25SS		PE	087100
1	Weatherstrip	Integral to door/frame assembly		OT	08 4113
2	Sweep	29326CNB TKSP		PE	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100
1	ElectroLynx Harness	PoE-C (power transfer to exit device)		MK	087100
1	Door Position Switch	Provided by Security Contractor		OT	281300
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Doors normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric exit device trim allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Electric exit device touch bar equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 2.0

Doors: 400A, 402A

1	Continuous Hinge	CFM-SLF-HD1		PE	087100
1	Continuous Hinge	CFM-SLF-HD1 x PT		PE	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100
1	Removable Mullion	CR800	Anod	RU	087100
1	IN220 Rim Exit	ED4200SN PR9134ET-IN220 BIPS CT7D	630	RU	281500
1	Exit Device (rim, exit only)	ED4200S EO M110	630	RU	087100
1	Mortise Cylinder	CR1580 CT7D GMK	626	RU	087100
2	Interchangeable Core	CR8000 GMK	626	RU	087100
2	Conc Overhead Stop	6-X36	630	RF	087100
2	Surface Closer	4040XP (RA)	689	NO	087100
1	Threshold	252x3AFG MSES25SS		PE	087100
1	Weatherstrip	Integral to door/frame assembly		OT	08 4113
2	Sweep	29326CNB TKSP		PE	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100
1	ElectroLynx Harness	PoE-C (power transfer to exit device)		MK	087100
1	Door Position Switch	Provided by Security Contractor		OT	281300

1	Wiring Diagram	Elevation and Point to Point as Specified	OT	

Notes:

Courtyard doors. Free ingress at all times.
Mount closers inside.
Order exit devices with SPAR 05579, which includes weep holes and a protective coating.
Doors normally closed and locked from corridor side.
Presentation of valid credential at card reader momentarily unlocks electric exit device trim allowing ingress to courtyard.
Door position switch to monitor / report open closed status of opening to security system.
Electric exit device touch bar equipped with request to exit switch to shunt door monitoring at egress.
Fail-secure.

Set: 3.0

Doors: 403, 405C, 415B, 415C, 415D

2	Continuous Hinge	CFM-SLF-HD1		PE	087100
1	Removable Mullion	KR4954		VD	087100
2	Exit Device (rim, exit only)	LD 98EO	626	VD	087100
1	Mortise Cylinder	Match existing key system	626		087100
2	Conc Overhead Stop	6-X36	630	RF	087100
2	Surface Closer	404XP (TJ) mtg plate, if required	689	LC	087100
1	Threshold	252x3AFG MSES25SS		PE	087100
1	Weatherstrip	Integral to door/frame assembly		OT	08 4113
2	Sweep	29326CNB TKSP		PE	087100
2	Door Position Switch	Provided by Security Contractor		OT	281300
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Doors normally closed and locked. No outside operation
Free egress at all times.

Set: 4.0

Doors: 503B, 505B, 507B

1	Continuous Hinge	CFM-SLF-HD1 x PT		PE	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100
1	Fixed Mullion	Integral to frame assembly		OT	08 4113
1	IN220 Rim Exit	ED5200SN PR9134ET-IN220 BIPS CT7D	630	RU	281500
1	Conc Overhead Stop	6-X36	630	RF	087100
1	Surface Closer	4040XP (TJ) mtg plate, if required	689	LC	087100
1	Threshold	252x3AFG MSES25SS		PE	087100
1	Weatherstrip	Integral to door/frame assembly		OT	08 4113
1	Sweep	29326CNB TKSP		PE	087100
1	Door Position Switch	Provided by Security Contractor		OT	281300

1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Door position switch to monitor / report open closed status of opening to security system.

Set 5.0

Doors: 503A, 505A, 507A

1	Continuous Hinge	CFM-SLF-HD1		PE	087100
1	Exit Device (rim, exit only)	LD 98EO	626	VD	087100
1	Conc Overhead Stop	6-X36	630	RF	087100
1	Surface Closer	4040XP (TJ) mtg plate, if required	689	LC	087100
1	Threshold	252x3AFG MSES25SS		PE	087100
1	Weatherstrip	Integral to door/frame assembly		OT	08 4113
1	Sweep	29326CNB TKSP		PE	087100
1	Door Position Switch	Provided by Security Contractor		OT	281300
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Door position switch to monitor / report open closed status of opening to security system.

Set: 6.0

Doors: 516A, 516B, 521A, 512B, 528A, 528B, 533A, 533B

1	Continuous Hinge	CFM-SLF-HD1 x PT		PE	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100
1	Access Control Mort Lock	IN220-ML20234 B PSA BIPS CT7D	626	RU	281500
1	Interchangeable Core	CR8000 GMK	626	RU	087100
1	Conc Overhead Stop	6-X36	630	RF	087100
1	Surface Closer	4040XP (TJ) mtg plate, if required	689	LC	087100
1	Threshold	252x3AFG MSES25SS		PE	087100
1	Weatherstrip	Integral to door/frame assembly		OT	08 4113
1	Sweep	29326CNB TKSP		PE	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100
1	ElectroLynx Harness	PoE-C (power transfer to electric lock)		MK	087100
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.

Fail-secure.

Set: 7.0

Doors: 233A

1	Continuous Hinge	CFM-SLF-HD1		PE	087100
1	Exit Device (rim, exit only)	LD 98EO	626	VD	087100
1	Conc Overhead Stop	6-X36	630	RF	087100
1	Surface Closer	4040XP (TJ) mtg plate, if required	689	LC	087100
1	Threshold	252x3AFG MSES25SS		PE	087100
1	Weatherstrip	Integral to door/frame assembly		OT	08 4113
1	Sweep	29326CNB TKSP		PE	087100
1	Door Position Switch	Provided by Security Contractor		OT	281300

Notes:

Exit Only. No outside operation.
Door position switch to monitor / report open closed status of opening to security system.
Free egress at all times.

Set: 8.0

Doors: 424C

1	Continuous Hinge	CFM-SLF-HD1		PE	087100
1	Passage Latch	ML2010 PSA	626	RU	087100
1	Conc Overhead Stop	6-X36	630	RF	087100
1	Surface Closer	4040XP (TJ) mtg plate, if required	689	LC	087100
1	Threshold	252x3AFG MSES25SS		PE	087100
1	Weatherstrip	Integral to door/frame assembly		OT	08 4113
1	Sweep	29326CNB TKSP		PE	087100
1	Door Position Switch	Provided by Security Contractor		OT	281300

Notes:

Door position switch to monitor / report open closed status of opening to security system.
Free egress at all times.

Set: 9.0

Doors: 200A, 203A, 500A/500B

2	Continuous Hinge	CFM-SLF-HD1		PE	087100
1	Fixed Mullion	Provided with Aluminum Frame	AL	OT	084126
1	Exit Device, Nightlatch	LD 98 NL-OP	626	VD	087100
1	Exit Device (rim, exit only)	LD 98EO	626	VD	087100
1	Rim Cylinder	CR3580 CT7D GMK	626	RU	087100
1	Interchangeable Core	CR8000 GMK	626	RU	087100
2	Electric Strike	9600-LBM	630	HS	087100

2	SMART Pac Bridge Rectifier	2005M3		HS	087100
2	Vandal Resistant Trim	VRT22 C	US32D	RO	087100
2	Conc Overhead Stop	6-X36	630	RF	087100
1	Surface Closer	4040XP (TJ) mtg plate, if required	689	LC	087100
1	Automatic Opener	4630/4640 Series	689	LC	087100
1	Threshold	252x3AFG MSES25SS		PE	087100
1	Weatherstrip	Integral to door/frame assembly		OT	08 4113
2	Sweep	29326CNB TKSP		PE	087100
2	ElectroLynx Harness	QC-C1500P (electric strike to j-box))		MK	087100
1	Door Switch	8310-855 - vestibule mount		LC	087100
1	Door Switch	8310-853 - wall mount		LC	087100
2	Door Position Switch	Provided by Security Contractor		OT	281300
1	Card Reader	Provided by Security Contractor		OT	281300
1	Power Supply	Provided by Security Contractor		OT	281300
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Doors to be on lock unlock schedule per the buildings access control system.
Door position switch to monitor / report open closed status of opening to security system.
Free egress at all times.
Fail-secure.

Automatic operator by actuator.

Set: 10.0

Doors: 100B, 505C, 507C

2	Continuous Hinge	CFM-SLF-HD1		PE	087100
2	Dummy Bar, Exit Only	350	US26D	VD	087100
2	Vandal Resistant Trim	VRT22	US32D	RO	087100
2	Conc Overhead Stop	6-X36	630	RF	087100
2	Surface Closer	4040XP (TJ) mtg plate, if required	689	LC	087100

Set: 11.0

Doors: 200B, 500C/500D

2	Continuous Hinge	CFM-SLF-HD1		PE	087100
2	Dummy Bar, Exit Only	350	US26D	VD	087100
2	Vandal Resistant Trim	VRT22	US32D	RO	087100
2	Conc Overhead Stop	6-X36	630	RF	087100
1	Surface Closer	4040XP (TJ) mtg plate, if required	689	LC	087100
1	Automatic Opener	4630/4640 Series	689	LC	087100
1	Door Switch	8310-853 - wall mount		LC	087100

Notes:

Automatic operator by actuator.

Set: 12.0

Doors: 503C, 503D

1	Continuous Hinge	CFM-SLF-HD1		PE	087100
1	Dummy Bar, Exit Only	350	US26D	VD	087100
1	Vandal Resistant Trim	VRT22	US32D	RO	087100
1	Conc Overhead Stop	6-X36	630	RF	087100
1	Surface Closer	4040XP (TJ) mtg plate, if required	689	LC	087100

Set: 13.0

Doors: 203B

2	Continuous Hinge	CFM-SLF-HD1		PE	087100
1	Fixed Mullion	Provided with Aluminum Frame	AL	OT	084126
1	Exit Device, Nightlatch	LD 98 NL-OP	626	VD	087100
1	Exit Device (rim, exit only)	LD 98EO	626	VD	087100
1	Rim Cylinder	CR3580 CT7D GMK	626	RU	087100
1	Interchangeable Core	CR8000 GMK	626	RU	087100
2	Electric Strike	9600-LBM	630	HS	087100 ⚡
2	SMART Pac Bridge Rectifier	2005M3		HS	087100 ⚡
2	Vandal Resistant Trim	VRT22 C	US32D	RO	087100
2	Conc Overhead Stop	6-X36	630	RF	087100
1	Surface Closer	4040XP (TJ) mtg plate, if required	689	LC	087100
1	Automatic Opener	4630/4640 Series	689	LC	087100 ⚡
2	ElectroLynx Harness	QC-C1500P (electric strike to j-box)		MK	087100 ⚡
1	Door Switch	8310-853 - wall mount		LC	087100 ⚡
1	Intercom	- Provided by Security Contractor		OT	281300
2	Door Position Switch	- Provided by Security Contractor		OT	281300 ⚡
1	Card Reader	- Provided by Security Contractor		OT	281300 ⚡
1	Power Supply	- Provided by Security Contractor		OT	281300 ⚡
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Door to be normally closed and locked.
Presentation of valid credential at card reader, or intercom unlocks electric strike allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Free egress at all times.
Fail-secure.

Automatic operator by actuator.

Set: 14.0

Doors: 501A/501B

6	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Exit Device, Nightlatch	LD 98 NL-OP	626	VD	087100
1	Exit Device (rim, exit only)	LD 98EO	626	VD	087100
1	Rim Cylinder	CR3580 CT7D GMK	626	RU	087100
1	Interchangeable Core	CR8000 GMK	626	RU	087100
2	Electric Strike	9600-LBM	630	HS	087100
1	SMART Pac Bridge Rectifier	2005M3		HS	087100
1	Surface Closer	4040XP SCUSH	689	LC	087100
1	Automatic Opener	4630/4640 Series	689	LC	087100
2	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
2	Silencer	608 / 609		RO	087100
2	ElectroLynx Harness	QC-C1500P (electric strike to j-box)		MK	087100
2	Door Switch	8310-853 - wall mount		LC	087100
1	Card Reader	Provided by Security Contractor		OT	281300
1	Power Supply	Provided by Security Contractor		OT	281300
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Door to be normally closed and locked.
Presentation of valid credential at card reader, unlocks electric strike allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Free egress at all times.
Fail-secure.

Automatic operator by actuator.

Set: 15.0

Doors: 511, 554A, 554D

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100
1	IN220 Rim Exit	ED5200N PR9134ET-IN220 BIPS CT7D	630	RU	281500
1	Interchangeable Core	CR8000 GMK	626	RU	087100
1	Surface Closer	4040XP EDA	689	LC	087100
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Wall Stop	406 / 409	US32D	RO	087100
3	Silencer	608 / 609		RO	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100
1	ElectroLynx Harness	PoE-C (power transfer to exit device)		MK	087100
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric exit device trim allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Electric exit device touch bar equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 16.0

Doors: 101, 404B, 415A, 418A,

6	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100 ⚡
1	Removable Mullion	910KM		RU	087100
1	IN220 Rim Exit	ED5200N PR9134ET-IN220 BIPS CT7D	630	RU	281500 ⚡
1	Rim Exit Device, Exit Only	ED5200 EO M110	630	RU	087100
1	Mortise Cylinder	CR1580 CT7D GMK	626	RU	087100
2	Interchangeable Core	CR8000 GMK	626	RU	087100
2	Surface Closer	4040XP EDA	689	LC	087100
2	Kick Plates	K1050 10” high x CSK BEV	US32D	RO	087100
2	Electromagnetic Holder	M994	689	RF	087100
1	Gasketing	S88BL		PE	087100
1	Astragal	S772C		PE	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100 ⚡
1	ElectroLynx Harness	PoE-C (power transfer to exit device)		MK	087100 ⚡
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Doors normally held open with magnetic wall mounted hold open devices.
Doors are tied to fire alarm system and lockdown systems to closed and locked.
When closed, presentation of valid credential at card reader momentarily unlocks electric exit device trim allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Electric exit device touch bar equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 17.0

Doors: 325A, 405A, 405B, 506

6	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100 ⚡
1	Removable Mullion	910KM		RU	087100

1	IN220 Rim Exit	ED5200N PR9134ET-IN220 BIPS CT7D	630	RU	281500
1	Rim Exit Device, Exit Only	ED5200 EO M110	630	RU	087100
1	Mortise Cylinder	CR1580 CT7D GMK	626	RU	087100
2	Interchangeable Core	CR8000 GMK	626	RU	087100
2	Surface Closer	4040XP EDA	689	LC	087100
2	Kick Plates	K1050 10" high x CSK BEV	US32D	RO	087100
2	Wall Stop	406 / 409	US32D	RO	087100
1	Gasketing	S88BL		PE	087100
1	Astragal	S772C		PE	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100
1	ElectroLynx Harness	PoE-C (power transfer to exit device)	MK	087100	
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Doors normally closed and locked (lock / unlock scheduled by access control system).
Presentation of valid credential at card reader momentarily unlocks electric exit device trim allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Electric exit device touch bar equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 18.0

Doors: 504

6	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100
1	Removable Mullion	910KM		RU	087100
1	IN220 Rim Exit	ED5200N PR9134ET-IN220 BIPS CT7D	630	RU	281500
1	Rim Exit Device, Exit Only	ED5200 EO M110	630	RU	087100
1	Mortise Cylinder	CR1580 CT7D GMK	626	RU	087100
2	Interchangeable Core	CR8000 GMK	626	RU	087100
2	Surface Closer	4040XP EDA	689	LC	087100
2	Kick Plates	K1050 10" high x CSK BEV	US32D	RO	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100
1	ElectroLynx Harness	PoE-C (power transfer to exit device)		MK	087100
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Doors normally closed and locked (lock / unlock scheduled by access control system).
Presentation of valid credential at card reader momentarily unlocks electric exit device trim allowing

ingress.
Door position switch to monitor / report open closed status of opening to security system.
Electric exit device touch bar equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 19.0

Doors: 325B

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Rim Exit Device, Exit Only	LD 98EO	626	VD	087100
1	Surface Closer	4040XP EDA	689	LC	087100
1	Kick Plates	K1050 10” high x CSK BEV	US32D	RO	087100
1	Wall Stop	406 / 409	US32D	RO	087100
1	Gasketing	S88BL		PE	087100

Set: 20.0

Doors: 329, 409, 423

6	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100
1	Flush Bolt	2805 / 2905	US26D	RO	087100
1	Access Control Mort Lock	IN220-ML20234 B PSA BIPS CT7D	626	RU	281500
1	Interchangeable Core	CR8000 GMK	626	RU	087100
1	Coordinator	2672	US28	RO	087100
2	Mounting Brackets	2601AB	US28	RO	087100
2	Surface Closer	4040XP EDA	689	LC	087100
2	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
2	Wall Stop	406 / 409	US32D	RO	087100
1	Gasketing	S88BL		PE	087100
1	Astragal	S772C		PE	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100
1	ElectroLynx Harness	PoE-C (power transfer to electric lock)		MK	087100
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 21.0

Doors: 126, 555

6	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100

1	Electric Power Transfer	CEPT-C5E	630	SU	087100 ⚡
1	Flush Bolt	2805 / 2905	US26D	RO	087100
1	Access Control Mort Lock	IN220-ML20234 B PSA BIPS CT7D	626	RU	281500 ⚡
1	Interchangeable Core	CR8000 GMK	626	RU	087100
1	Surface OH Stop	10-x36	689	RF	087100
1	Surface Closer	4040XP SCUSH	689	LC	087100
2	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
2	Silencer	608 / 609		RO	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100 ⚡
1	ElectroLynx Harness	PoE-C (power transfer to electric lock)		MK	087100 ⚡
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 22.0

Doors: 420

6	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100 ⚡
1	Flush Bolt	2845	US26D	RO	087100
1	Access Control Mort Lock	IN220-ML20234 B PSA BIPS CT7D	626	RU	281500 ⚡
1	Interchangeable Core	CR8000 GMK	626	RU	087100
1	Concealed OH Stop/Holder	1-x26	630	RF	087100
1	Surface Closer	4040XP HEDA	689	LC	087100
2	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Threshold	252x3AFG MSES25SS		PE	087100
1	Weatherstrip	Integral to door/frame assembly		OT	08 4113
2	Sweep	29326CNB TKSP		PE	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100 ⚡
1	ElectroLynx Harness	PoE-C (power transfer to electric lock)		MK	087100 ⚡
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 23.0

Doors: 419

6	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Flush Bolt	2805 / 2905	US26D	RO	087100
1	Passage Latch	ML2010 PSA	626	RU	087100
2	Surface Closer	4040XP HEDA	689	LC	087100
2	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
2	Wall Stop	406 / 409	US32D	RO	087100
1	Gasketing	S88BL		PE	087100
1	Astragal	S772C		PE	087100

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 24.0

Doors: 237A, 238, 239, 240, 245, 326, 542, 545, 546, 547

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100	
1	Electric Power Transfer	CEPT-C5E	630	SU	087100	⚡
1	Access Control Mort Lock	IN220-ML20234 B PSA BIPS CT7D	626	RU	281500	⚡
1	Interchangeable Core	CR8000 GMK	626	RU	087100	
1	Wall Stop	406 / 409	US32D	RO	087100	
3	Silencer	608 / 609		RO	087100	
1	ElectroLynx Harness	PoE-C1300_ (power transfer to J-Box)		MK	087100	⚡
1	ElectroLynx Harness	PoE-C (power transfer to electric lock)		MK	087100	⚡
1	Wiring Diagram	Elevation and Point to Point as Specified		OT		

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 25.0

Doors: 110, 127, 212, 237B, 513, 517, 518, 522, 523, 525, 529, 530, 534, 541B

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100	
1	Electric Power Transfer	CEPT-C5E	630	SU	087100	⚡
1	Access Control Mort Lock	IN220-ML20234 B PSA BIPS CT7D	626	RU	281500	⚡
1	Interchangeable Core	CR8000 GMK	626	RU	087100	
1	Surface Closer	4040XP EDA	689	LC	087100	
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100	
1	Wall Stop	406 / 409	US32D	RO	087100	
3	Silencer	608 / 609		RO	087100	
1	ElectroLynx Harness	PoE-C1300_ (power transfer to J-Box)		MK	087100	⚡
1	ElectroLynx Harness	PoE-C (power transfer to electric lock)		MK	087100	⚡
1	Wiring Diagram	Elevation and Point to Point as Specified		OT		

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 26.0

Doors: 541A, 556

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100	
1	Electric Power Transfer	CEPT-C5E	630	SU	087100	⚡
1	Access Control Mort Lock	IN220-ML20234 B PSA BIPS CT7D	626	RU	281500	⚡
1	Interchangeable Core	CR8000 GMK	626	RU	087100	
1	Surface Closer	4040XP SCUSH	689	LC	087100	
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100	
1	Wall Stop	406 / 409	US32D	RO	087100	
3	Silencer	608 / 609		RO	087100	
1	ElectroLynx Harness	PoE-C1300_ (power transfer to J-Box)		MK	087100	⚡
1	ElectroLynx Harness	PoE-C (power transfer to electric lock)		MK	087100	⚡
1	Wiring Diagram	Elevation and Point to Point as Specified		OT		

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 27.0

Doors: 510, 514A, 514B, 519A, 519B, 524, 526A, 526B, 531A, 531B, 535, 536, 551, 557

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100	
1	Electric Power Transfer	CEPT-C5E	630	SU	087100	⚡
1	Access Control Mort Lock	IN220-ML20234 B PSA BIPS CT7D	626	RU	281500	⚡
1	Interchangeable Core	CR8000 GMK	626	RU	087100	
1	Surface Closer	4040XP (RA)	689	LC	087100	
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100	
1	Wall Stop	406 / 409	US32D	RO	087100	
3	Silencer	608 / 609		RO	087100	
1	ElectroLynx Harness	PoE-C1300_ (power transfer to J-Box)		MK	087100	⚡
1	ElectroLynx Harness	PoE-C (power transfer to electric lock)		MK	087100	⚡
1	Wiring Diagram	Elevation and Point to Point as Specified		OT		

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 28.0

Doors: 322

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100	
1	Electric Power Transfer	CEPT-C5E	630	SU	087100	⚡
1	Access Control Mort Lock	IN220-ML20234 B PSA BIPS CT7D	626	RU	281500	⚡
1	Interchangeable Core	CR8000 GMK	626	RU	087100	
1	Surface OH Stop	10-x36	689	RF	087100	
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100	
3	Silencer	608 / 609		RO	087100	
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100	⚡
1	ElectroLynx Harness	PoE-C (power transfer to electric lock)		MK	087100	⚡
1	Wiring Diagram	Elevation and Point to Point as Specified		OT		

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 29.0

Doors: 233B, 553

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100 ⚡
1	Access Control Mort Lock	IN220-ML20234 B PSA BIPS CT7D	626	RU	281500 ⚡
1	Interchangeable Core	CR8000 GMK	626	RU	087100
1	Surface Closer	4040XP EDA	689	LC	087100
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Wall Stop	406 / 409	US32D	RO	087100
1	Gasketing	S88BL		PE	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100 ⚡
1	ElectroLynx Harness	PoE-C (power transfer to electric lock)		MK	087100 ⚡
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 30.0

Doors: 418B

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100 ⚡
1	Access Control Mort Lock	IN220-ML20234 B PSA BIPS CT7D	626	RU	281500 ⚡
1	Interchangeable Core	CR8000 GMK	626	RU	087100
1	Surface Closer	4040XP EDA	689	LC	087100
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Electromagnetic Holder	M994	689	RF	087100
3	Silencer	608 / 609		RO	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100 ⚡
1	ElectroLynx Harness	PoE-C (power transfer to electric lock)		MK	087100 ⚡
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Door normally closed and locked.
Door can be held open at selected times with electromagnetic wall holder. Mag holder is tied to lockdown system.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.

Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 31.0

Doors: 242, 406A, 406B, 408A, 408B, 416, 417, 421, 422

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Electric Power Transfer	CEPT-C5E	630	SU	087100 ⚡
1	Access Control Mort Lock	IN220-ML20234 B PSA BIPS CT7D	626	RU	281500 ⚡
1	Interchangeable Core	CR8000 GMK	626	RU	087100
1	Surface Closer	4040XP (RA)	689	LC	087100
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Wall Stop	406 / 409	US32D	RO	087100
1	Gasketing	S88BL		PE	087100
1	ElectroLynx Harness	PoE-C1300_ (power transfer to j-box)		MK	087100 ⚡
1	ElectroLynx Harness	PoE-C (power transfer to electric lock)		MK	087100 ⚡
1	Wiring Diagram	Elevation and Point to Point as Specified		OT	

Notes:

Door normally closed and locked.
Presentation of valid credential at card reader momentarily unlocks electric lock allowing ingress.
Door position switch to monitor / report open closed status of opening to security system.
Inside lever of electric lock equipped with request to exit switch to shunt door monitoring at egress.
Free egress at all times.
Fail-secure.

Set: 32.0

Doors: 424A, 424B

3	Hinge, Full Mortise	TA2714	US26D	MK	087100
1	Passage Latch	ML2010 PSA	626	RU	087100
1	Surface Closer	4040XP (RA)	689	LC	087100
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Wall Stop	406 / 409	US32D	RO	087100
1	Gasketing	S88BL		PE	087100

Set: 33.0

Doors: 241A, 241B, 327

3 Hinge, Full Mortise	TA2714	US26D	MK	087100
1 Passage Latch	ML2010 PSA	626	RU	087100
1 Wall Stop	406 / 409	US32D	RO	087100
3 Silencer	608 / 609		RO	087100

Set: 34.0

Doors: 323

3 Hinge, Full Mortise	TA2714	US26D	MK	087100
1 Passage Latch	ML2010 PSA	626	RU	087100
1 Surface OH Stop	10-x36	689	RF	087100
3 Silencer	608 / 609		RO	087100

Set: 35.0

Doors: 246, 543

3 Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1 Privacy Lock	ML2060 PSA M34 V21	626	RU	087100
1 Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1 Wall Stop	406 / 409	US32D	RO	087100
1 Gasketing	S88BL		PE	087100
1 Coat Hook	796	US26D	RO	087100

Set: 36.0

Doors: 111, 128, 407, 549

3 Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1 Privacy Lock	ML2060 PSA M34 V21	626	RU	087100
1 Surface Closer	4040XP (RA)	689	LC	087100
1 Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1 Wall Stop	406 / 409	US32D	RO	087100
1 Gasketing	S88BL		PE	087100
1 Coat Hook	796	US26D	RO	087100

Set: 37.0

Doors: 243, 512, 548

3 Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1 Privacy Lock	ML2060 PSA M34 V21	626	RU	087100

1	Surface Closer	4040XP EDA	689	LC	087100
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Wall Stop	406 / 409	US32D	RO	087100
1	Gasketing	S88BL		PE	087100
1	Coat Hook	796	US26D	RO	087100

Set: 38.0

Doors: 413, 414, 550, 552

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Deadbolt	DL4117 CT7D	626	RU	087100
1	Interchangeable Core	CR8000 GMK	626	RU	087100
1	Push Plate	70C-RKW	US32D	RO	087100
1	Pull Plate	BF 111x70B	US32D	RO	087100
1	Surface Closer	4040XP EDA	689	LC	087100
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Wall Stop	406 / 409	US32D	RO	087100
1	Gasketing	S88BL		PE	087100

Set: 39.0

Doors: 233C

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Institution Lock	ML2032 PSA CT7D	626	RU	087100
1	Interchangeable Core	CR8000 GMK	626	RU	087100
1	Electric Strike	1500C	630	HS	087100 ⚡
1	SMART Pac Bridge Rectifier	2005M3		HS	087100 ⚡
1	Surface OH Stop	10-x36	689	RF	087100
1	Surface Closer	4040XP (RA)	689	LC	087100
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Gasketing	S88D		PE	087100
1	ElectroLynx Harness	QC-C1500P (electric strike to j-box)		MK	087100
1	Power Supply	Provided by Security Contractor			281500 ⚡
2	Card Readers	Provided by Security Contractor			281500 ⚡

Notes:

Doors normally locked on both sides but are capable of being scheduled.
Valid use of card reader momentarily unlocks electric strike for ingress and egress.
Key override on both sides lever retracts latch bolt.
Refer to electrical and security drawings for additional components provided by the security contractor. These include, but are not limited to, remote release switches and push-to-enter switches and integration to the lockdown system.

Set: 40.0

Doors: 236

3	Hinge, Full Mortise, Hvy Wt	T4A3786	US26D	MK	087100
1	Institution Lock	ML2032 PSA CT7D	626	RU	087100
1	Interchangeable Core	CR8000 GMK	626	RU	087100
1	Electric Strike	1500C	630	HS	087100
1	SMART Pac Bridge Rectifier	2005M3		HS	087100
1	Surface Closer	4040XP (RA)	689	LC	087100
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO	087100
1	Wall Stop	406 / 409	US32D	RO	087100
1	Gasketing	S88D		PE	087100
1	ElectroLynx Harness	QC-C1500P (electric strike to j-box)		MK	087100
1	Power Supply	Provided by Security Contractor			281500
2	Card Readers	Provided by Security Contractor			281500

Notes:

Doors normally locked on both sides but are capable of being scheduled.
Valid use of card reader momentarily unlocks electric strike for ingress and egress.
Key override on both sides lever retracts latch bolt.
Refer to electrical and security drawings for additional components provided by the security contractor. These include, but are not limited to, remote release switches and push-to-enter switches and integration to the lockdown system.

Set: 41.0

Doors: 418C, 554B, 554C, 554E, 554F,

1	Cylinder	As Required			087100

Notes: Overhead door. Coordinate keying requirements with Owner and CM.

Set: 42.0

Gates: 560, 561, 562, 563, 564, 565

1	Rim Exit Device	LD 9852L-NL 17 WH	626	VD	087100
1	Rim Cylinder	Coordinate key requirements with Owner			087100

Notes:
Gates specified in 32 31119 Decorative Metal Fences and Gates.
Hinges, wire mesh, means of securing inactive leaf on pairs provided by gate manufacturer.
Exit devices specified with weep holes for exterior application.

END OF SECTION 080671X

Kingscott Associates, Inc.
Architects/Engineers
Kalamazoo, Michigan

Hamilton Elementary School
Addition and Remodeling
Kentwood Public Schools
Kentwood, Michigan

SECTION 087100X

DOOR HARDWARE

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. 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.

D. 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. Automatic Operator Supplier Qualifications: Power operator products and accessories are required to be supplied and installed through the Norton Preferred Installer (NPI) program. Suppliers are to be factory trained, certified, and a direct purchaser of the specified power operators and be responsible for the installation and maintenance of the units and accessories indicated for the Project.

F. 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.

G. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

H. 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.

I. 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.

1. 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

J. 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. 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 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 inches, provide 4 hinges, plus 1 hinge for every 30 inches of 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) - 5BB Series, 5 knuckle.
   b. McKinney (MK) - TA/T4A Series, 5 knuckle.

B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge. with minimum 0.120-inch thick extruded 6063-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 cut-outs.

1. Manufacturers:

   a. Ives (IV).
   b. Pemko (PE).

2.3 POWER TRANSFER DEVICES

A. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish 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. 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) - EL-CEPT Series.

B. 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.

C. 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. Provide one each of the following tools as part of the base bid contract:

    a. McKinney (MK) - Electrical Connecting Kit: QC-R001.
    b. McKinney (MK) - Connector Hand Tool: QC-R003.

2. Manufacturers:

    a. McKinney (MK) - QC-C Series.

2.4 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: Provide products conforming to ANSI/BHMA A156.3 and A156.16, Grade 1.

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 (RO).

B. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units 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 inch thick, 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 (RO).

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. Removable Cores: Provide removable cores as specified, core insert, removable by use of a special key, and for use with only the core manufacturer's cylinder and door hardware.

E. Patented Cylinders: ANSI/BHMA A156.5, Grade 1 Certified Products Directory (CPD) listed cylinders employing a utility patented and restricted keyway requiring the use of a patented key. Cylinders are to be protected from unauthorized manufacture and distribution by manufacturer’s United States patents. Cylinders are to be factory keyed with owner having the ability for on-site original key cutting.

1. Patented key systems shall not be established with products that have an expired patent. Expired systems shall only be specified and supplied to support existing systems.

2. Manufacturers:

    a. Corbin Russwin (RU) - Access 3 AP.

b. No Substitution.

F. 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. New System: Key locks to a new key system as directed by the Owner.

G. 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).

H. Construction Keying: Provide temporary keyed construction cores.

I. 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.

1. 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. Corbin Russwin Hardware (RU) - ML2000 Series.
b. Schlage (SC) – L9000 Series.

2.7 AUXILIARY LOCKS

A. Mortise Deadlocks, Small Case: ANSI/BHMA A156.36, Grade 1, small case mortise type deadlocks constructed of heavy gauge wrought corrosion resistant steel. Steel or stainless steel bolts with a 1" throw and hardened steel roller pins. Deadlocks to be products of the same source manufacturer and keyway as other specified locksets.

1. Manufacturers:

    a. Corbin Russwin Hardware (RU) - DL4000 Series.
    b. Schlage (SC) – L400 Series.

2.8 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.

2.9 ELECTRIC STRIKES

A. Surface Mounted Rim Electric Strikes: Surface mounted rim exit device electric strikes conforming 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. Von Duprin (VD) – 6300 Series.

2.10 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. PoE functions and mechanical functions at pairs to compliment PoE devices.
   b. Von Duprin (VD) – 98 Series. Mechanical functions.

2.11 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.

2.12 ELECTROHYDRAULIC DOOR OPERATORS

A. General: Provide low energy operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for compliance with UL 325. Coordinate operator mechanisms with door operation, hinges, and activation devices.

1. Fire-Rated Doors: Provide door operators for fire-rated door assemblies that comply with NFPA 80 for fire-rated door components and are listed and labeled by a qualified testing agency.

B. Standard: Conforming to ANSI/BHMA A156.19.

C. Performance Requirements:

1. Opening Force if Power Fails: Not more than 15 lbf required to release a latch if provided, not more than 30 lbf required to manually set door in motion, and not more than 15 lbf required to fully open door.
2. Entrapment Protection: Not more than 15 lbf required to prevent stopped door from closing or opening.

D. Configuration: Surface mounted or in-ground as required. Door operators to control single swinging and pair of swinging doors.

E. Operation: Power opening and spring closing operation capable of meeting ANSI A117.1 accessibility guideline. Provide time delay for door to remain open before initiating closing cycle as required by ANSI/BHMA A156.19. When not in automatic mode, door operator to function as manual door closer with fully adjustable opening and closing forces, with or without electrical power.

F. Features: Operator units to have full feature adjustments for door opening and closing force and speed, backcheck, motor assist acceleration from 0 to 30 seconds, time delay, vestibule interface delay, obstruction recycle, and hold open time from 0 up to 30 seconds.

G. Provide outputs and relays on board the operator to allow for coordination of exit device latch retraction, electric strikes, magnetic locks, card readers, safety and motion sensors and specified auxiliary contacts.

H. Brackets and Reinforcements: Manufacturer's standard, fabricated from aluminum with nonferrous shims for aligning system components.

I. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. LCN Closers (LC) - 4640 Series.
2. No Substitution.

2.13 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. Rixson (RF) - 980/990 Series.
    b. LCN (LC) – SEM 7800 Series.

2.14 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 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 (RO).

2.15 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 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 (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. Norton Rixson (RF).
b. Glynn Johnson (GL).

2.16 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 (PE).
2. Zero (ZE).

2.17 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.

2.18 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. DHI TDH-007-20: Installation Guide for Doors and Hardware.
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.

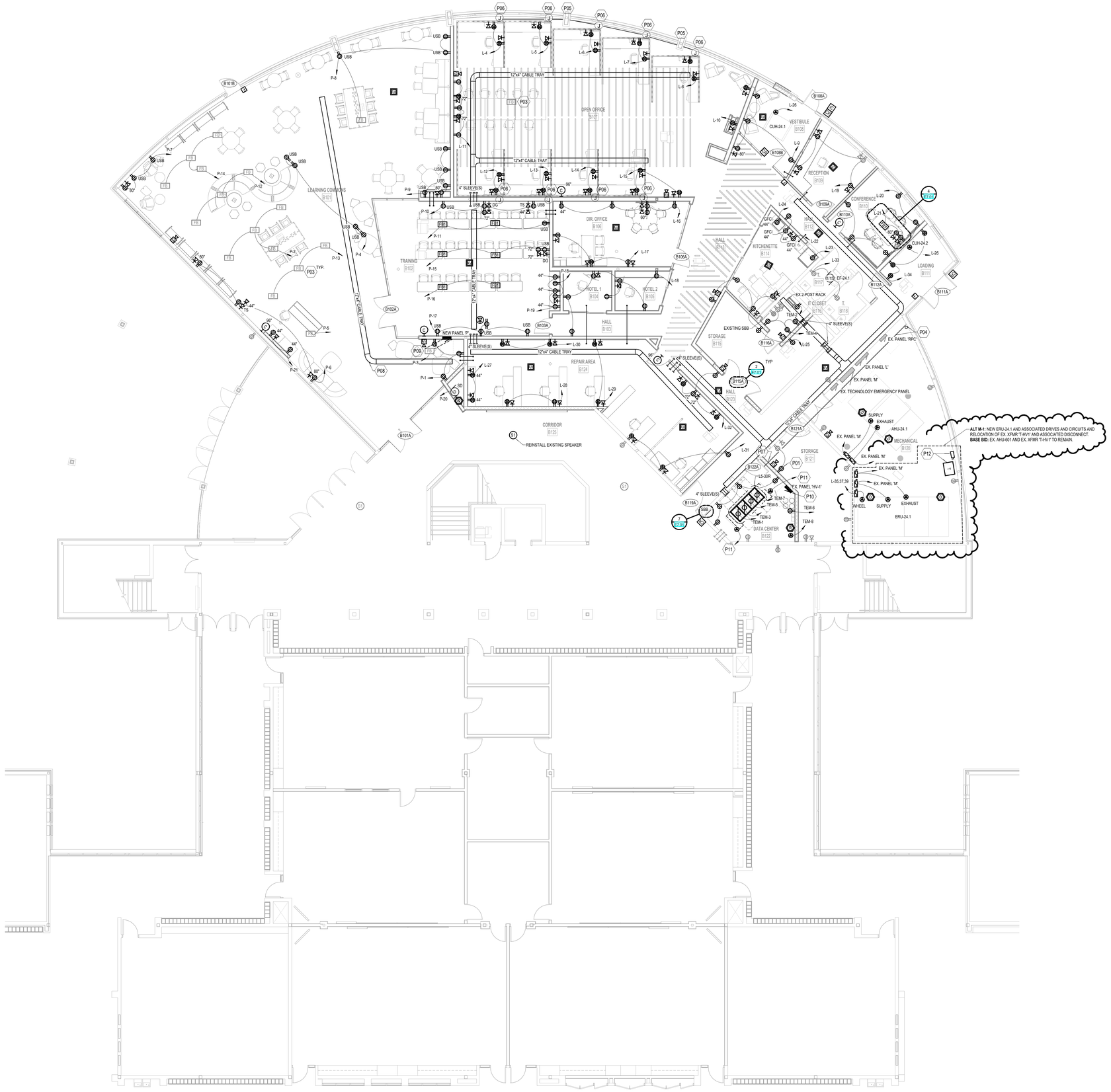
2. The supplier is responsible for handing and sizing all products.

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 080671, Door Hardware Sets, for hardware sets.

END OF SECTION 087100X



POWER & COMMUNICATION GENERAL NOTES

1. REFER TO ELECTRICAL GENERAL NOTES ON SHEET E0.1.
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 GENERAL-USE 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 FOR CONTINUED OPERATION UNDER LOSS OF UTILITY POWER.

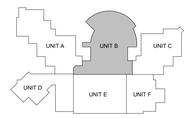
ELECTRICAL KEYNOTES

P01	EXTEND EXISTING CIRCUIT TO NEW RECEPTACLE.
P03	EXISTING FLOOR ACTIVATION SHALL REMAIN INTACT. FURNISH AND INSTALL NEW ALUMINUM COVERS FOR ALL EXISTING FLOOR ACTIVATIONS IN SPACE TO BE FLUSH WITH NEW CARPET. EXISTING ACTIVATION MODULES ACCORDING TO RECORD DOCUMENTS ARE STEEL, CITY GES-6A-GRY. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROVIDE COVERS TO MATCH EXISTING PRODUCT, COVER COLOR AND STYLE SHALL BE SELECTED DURING SUBMITTAL PROCESS. TYPICAL FOR ALL EXISTING FLOOR ACTIVATIONS.
P04	LOCATION OF EXISTING FIBER OPTIC CABLING ENTRANCE TO BUILDING. PROVIDE (2) 4" CONDUIT SLEEVES FROM THIS LOCATION TO NEW DATA CENTER. COORDINATE RE-ROUTING OF FIBER OPTIC CABLING WITH OWNER'S TECHNOLOGY CONSULTANT.
P05	ROUTE CONDUIT DOWN COLUMN FACE TO FEED FURNITURE SYSTEM WITH POWER AND DATA.
P06	FURNITURE FEED FOR POWER AND DATA. COORDINATE WITH FURNITURE SYSTEM FOR ROUGH-IN.
P07	EXISTING DATA CABLING AND FIBER OPTIC CABLING IN THIS AREA SHALL BE PRESERVED DURING NEW WALL CONSTRUCTION. PROVIDE SPLIT SLEEVES TO PROTECT CABLING. FIELD-VERIFY QUANTITIES AND LOCATIONS.
P08	ROUTE CABLE TRAY OVER WOOD ACCENT CEILING, REFER TO ARCHITECTURAL CEILING PLANS.
P09	EXISTING FLOOR BOX CIRCUITS TO BE REFED FROM NEW PANEL P. COORDINATE FLOOR CUTTING WITH ARCHITECTURAL TRADES TO TIE INTO EXISTING UNDERFLOOR TRENCH SYSTEM.
P10	RELOCATED EXISTING PANEL 'HV-1'. REWORK EXISTING CIRCUIT TO ROOFTOP CONDENSER UNIT. FEED NEW CIRCUITS TO EXISTING AND NEW LIEBERT COOLING UNITS IN DATA CENTER.
P11	POWER LIEBERT COOLING UNITS AND ROOFTOP CONDENSER UNIT FROM PANEL 'HV-1'. CONFIRM BREAKER SIZES WITH MANUFACTURER REQUIREMENTS. COORDINATE WITH MECHANICAL PLANS FOR ROOFTOP CONDENSER LOCATIONS.
P12	RELOCATE EX. TRANSFORMER AND DISCONNECT, REWORK AND EXTEND EXISTING FEEDERS AS REQUIRED.

ALT M-1: NEW ERU-24.1 AND ASSOCIATED DRIVES AND CIRCUITS AND RELOCATION OF EX. XFMR 'T-HV1' AND ASSOCIATED DISCONNECT.
BASE BID: EX. AHU-601 AND EX. XFMR 'T-HV1' TO REMAIN.

NORTH

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



NORTH

KEYPLAN

GMB
616.796.0200
WWW.GMB.COM

FRESHMAN CAMPUS RENOVATIONS
KENTWOOD PUBLIC SCHOOLS
KENTWOOD, MICHIGAN

ISSUANCES
08.01.2023 BIDS & CONSTRUCTION
09.21.2023 ADDENDUM 002

DRAWN JFB
REVIEWED JFB

PROJECT NO. 5-5526

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 POWER & COMMUNICATIONS PLAN

E2.1B

Autodesk Docs://5-5526 Kentwood Freshman Campus/5-5526E 2022.rvt
9/21/2023 10:48:00 AM

Appendix M - Building Access Control Schedule - EKFC Technology

GLAZING NOTES:

ALL EXTERIOR WINDOWS AND DOOR LITES:
1" INSULATED PER SPECIFICATIONS.

INTERIOR DOOR & BORROWED LITES:
1/4" CLEAR TYPICAL EXCEPT FIRE-RATED - SEE SPECIFICATIONS.

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

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

VERIFY COMPLIANCE TO ALL APPLICABLE CODES.

ADJUST LITE SIZE BASED ON SCHEDULED FIRE RATING AS NECESSARY.

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

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

DOOR & FRAME SCHEDULE UNIT 'B'

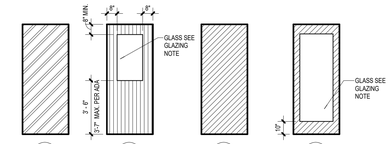
DOOR NUMBER	DOOR SIZE	DOOR TYPE	FRAME TYPE	FIRE RATING	HDWR SET NO.	ELEC. HARDWARE	REMOVABLE MULLION	DETAILS HEAD	DETAILS JAMB	DETAILS SILL	REMARKS
B											
B101A	(PR) 3' 0" x 7' 2" x 1 3/4"	A06	21A (PR)		13	■	■	18/A7.01	17/A7.01	-----	PART OF CURTAINWALL CW01 - POE LOCK
B101B	3' 0" x 7' 2" x 1 3/4" 2	A05	20A1		17						EX DOOR; ADD DPS
B102A	(PR) 3' 0" x 7' 2" x 1 3/4"	A06	21A (PR)		09	■		18/A7.01	17/A7.01	-----	PART OF CURTAINWALL CW02 - POE LOCK
B103A	3' 0 x 7' 2" x 1 3/4"	A06	01A		03	■		1/A7.01	1/A7.01	-----	POE + DOOR FILM
B104A	7'-6" x 8'-0"		SL1-SP1		16			1/A7.01 SIM.		-----	SLIDING
B106A	3' 0" x 7' 10" x 1 3/4"	A06	20A		08	■		1/A7.01 SIM.	1/A7.01 SIM.	-----	PART OF FRAME SL1-SP2 - POE LOCK
B108A	3' 0" x 7' 2" x 1 3/4" (4'-0")	A06	06A		15	■		-----	4/A7.01	-----	EX. FRAME; NEW CR + STRIKE
B108B	3' 0" x 7' 2" x 1 3/4"	A06	20A		14	■		1/A7.01 SIM.	1/A7.01 SIM.	-----	POE LOCK
B109A	3' 0" x 7' 2" x 1 3/4" (4'-8")	A06	05A		02	■		1/A7.01	1/A7.01	-----	POE LOCK
B110A	3' 0" x 7' 2" x 1 3/4" (4'-8")	A06	05A		02	■		1/A7.01	1/A7.01	-----	POE LOCK
B111A	PR. 3' 2" x 7' 2" x 1 3/4"	A01	02A		11	■		5/A7.01	5/A7.01	5/A7.01	ACTIVE/INACTIVE CR + STRIKE
B112A	3' 4" x 7' 2" x 1 3/4" (5'-4")	H04	05H		01	■		1/A7.01	1/A7.01	-----	LATCHING, PASSAGE
B114A	7'-6" x 8'-0"		SL1-SP1		16			1/A7.01 SIM.		-----	
B115A	PR. 3' 0" x 7' 2" x 1 3/4"	H01	02H		06	■		7/A7.01	7/A7.01	-----	ACTIVE/INACTIVE POE LOCK
B116A	3' 0" x 7' 2" x 1 3/4"	H01	01H		07	■		7/A7.01	7/A7.01	-----	POE LOCK
B119A	4' 0" x 7' 2" x 1 3/4"	W01	01H		12						EX DOOR; ADD CR + STRIKE
B121A	3' 4" x 7' 2" x 1 3/4"	H01	01H		04	■		6/A7.01	6/A7.01	6/A7.01	POE LOCK
B122A	3' 0" x 7' 2" x 1 3/4"	H01	01H		10	■		6/A7.01	6/A7.01	6/A7.01	POE LOCK
B122F	7'-6" x 8'-0"		SL1-SP2		16			1/A7.01 SIM.		-----	SLIDING
B124B	3' 0" x 7' 2" x 1 3/4" (6'-0")	A06	05A		05	■		1/A7.01	1/A7.01	-----	POE LOCK

DOOR NUMBERING LEGEND

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

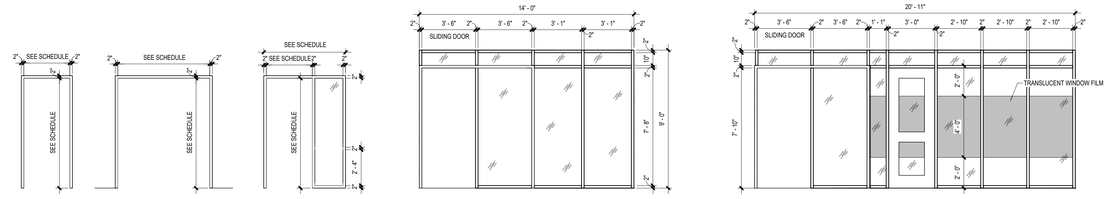
DOOR NAME / SIZE
- 3'-0" x 7'-2" x 1 3/4": DOOR SIZE
- (PR.) 3'-0" x 7'-2" x 1 3/4": DOOR SIZE; PAIR OF DOORS, NO FIXED MULLION
- (2) 3'-0" x 7'-2" x 1 3/4": DOOR SIZE; TWO DOORS, WITH FIXED MULLION BETWEEN THEM
- 3'-0" x 7'-2" x 1 3/4" (6'-4"): OVERALL FRAME WIDTH AND / OR HEIGHT SEE FRAME LEGEND; DOOR SIZE

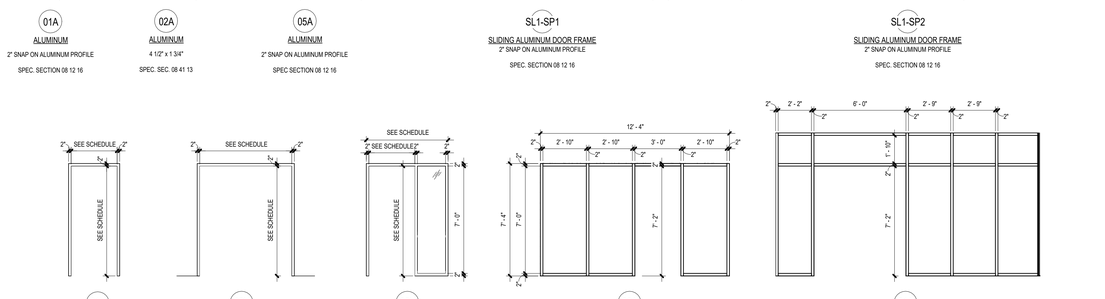
NOTE:
STANDARD DOOR AND FRAME DIMENSIONS ARE GIVEN IN: WIDTH x HEIGHT x THICKNESS



DOOR TYPE LEGEND

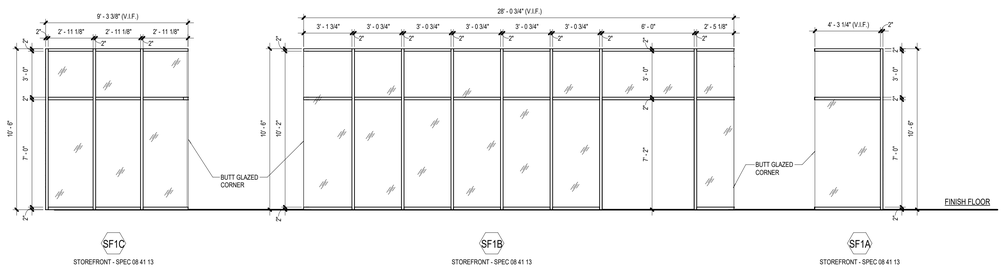
1/4" = 1'-0"





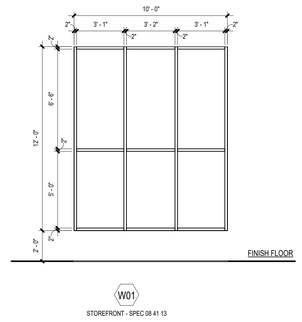
DOOR FRAME LEGEND

1/4" = 1'-0"



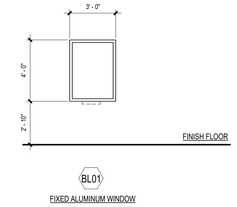
STOREFRONT LEGEND

1/4" = 1'-0"



WINDOW LEGEND

1/4" = 1'-0"



BORROWED LITE LEGEND

1/4" = 1'-0"

GMB
616.796.0200
WWW.GMB.COM

FRESHMAN CAMPUS RENOVATIONS
KENTWOOD PUBLIC SCHOOLS
KENTWOOD, MICHIGAN

ISSUANCES
08.01.2023 BIDS & CONSTRUCTION

DRAWN RLW
REVIEWED LDK

PROJECT NO. 5-5526

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

DOOR & FRAME SCHEDULE

A5.01

Autodesk Docs://5-5526 Kentwood Freshman Campus/5-5526A 2022.rvt
7/31/2023 4:31:35 PM

SECTION 08 71 00 – DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:
   1. Mechanical and electrified door hardware.
   2. Electronic access control system components.
      1. Field verification, preparation and modification of existing doors and frames to receive new door hardware.

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

C. Related Sections:
   1. Division 01 Section “Alternates” for alternates affecting this section.
   2. Division 06 Section “Rough Carpentry”
   3. Division 06 Section "Finish Carpentry”
   4. Division 07 Section “Joint Sealants” for sealant requirements applicable to threshold installation specified in this section.
   5. Division 08 Sections:
      a. “Metal Doors and Frames”
      b. “Flush Wood Doors”
      c. “Stile and Rail Wood Doors”
      d. “Interior Aluminum Doors and Frames”
      e. "Aluminum-Framed Entrances and Storefronts"
      2. Division 09 sections for touchup, finishing or refinishing of existing openings modified by this section.
   6. Division 26 “Electrical” sections for connections to electrical power system and for low-voltage wiring.
   7. Division 28 “Electronic Safety and Security” sections for coordination with other components of electronic access control system and fire alarm system.

1.2 REFERENCES

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

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

GMB Copyright 2023

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

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

1.3 SUBMITTALS

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

B. Action Submittals:
   1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
   2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
      a. Wiring Diagrams: For power, signal, and control wiring and including:
         1) Details of interface of electrified door hardware and building safety and security systems.
         2) Schematic diagram of systems that interface with electrified door hardware.
         3) Point-to-point wiring.
         4) Risers.
   3. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.
      a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
   4. Door Hardware Schedule:
      a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of

GMB Copyright 2023

other work to facilitate fabrication of other work critical in Project construction schedule.

b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.

c. Indicate complete designations of each item required for each opening, include:

1) Door Index: door number, heading number, and Architect's hardware set number.

2) Quantity, type, style, function, size, and finish of each hardware item.

3) Name and manufacturer of each item.

4) Fastenings and other pertinent information.

5) Location of each hardware set cross-referenced to indications on Drawings.

6) Explanation of all abbreviations, symbols, and codes contained in schedule.

7) Mounting locations for hardware.

8) Door and frame sizes and materials.

9) Degree of door swing and handing.

10) Operational Description of openings with electrified hardware covering egress, ingress (access), and fire/smoke alarm connections.

5. Key Schedule:

a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.

b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.

c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.

d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.

e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.

f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

C. Informational Submittals:

1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.

2. Provide Product Data:

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

b. Include warranties for specified door hardware.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:

a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.

GMB Copyright 2023

b. Catalog pages for each product.

c. Final approved hardware schedule edited to reflect conditions as installed.

d. Final keying schedule

e. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

f. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.

E. Inspection and Testing:

1. Submit written reports to the Owner and Authority Having Jurisdiction (AHJ) of the results of functional testing and inspection for:

a. fire door assemblies, in compliance with NFPA 80.

b. required egress door assemblies, in compliance with NFPA 101.

1.4 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with a minimum of 5 years documented experience supplying both mechanical and electromechanical door hardware similar in quantity, type, and quality to that indicated for this Project. Supplier to be recognized as a factory direct distributor by the manufacturer of the primary materials with a warehousing facility in the Project's vicinity. Supplier to have on staff, a certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.

2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.

3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:

a. For door hardware: DHI certified AHC or DHC.

b. Can provide installation and technical data to Architect and other related subcontractors.

c. Can inspect and verify components are in working order upon completion of installation.

d. Capable of producing wiring diagram and coordinating installation of electrified hardware with Architect and electrical engineers.

4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

B. Certifications:

1. Fire-Rated Door Openings:

a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.

b. Provide only items of door hardware that are listed products tested by UL LLC, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

2. Smoke and Draft Control Door Assemblies:

a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105

GMB Copyright 2023

b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.

3. Electrified Door Hardware

a. Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

4. Accessibility Requirements:

a. Comply with governing accessibility regulations cited in “REFERENCES” article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.

C. Pre-Installation Meetings

1. Keying Conference

a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:

1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.

2) Preliminary key system schematic diagram.

3) Requirements for key control system.

4) Requirements for access control.

5) Address for delivery of keys.

2. Pre-installation Conference

a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

b. Inspect and discuss preparatory work performed by other trades.

c. Inspect and discuss electrical roughing-in for electrified door hardware.

d. Review sequence of operation for each type of electrified door hardware.

e. Review required testing, inspecting, and certifying procedures.

f. Review questions or concerns related to proper installation and adjustment of door hardware.

3. Electrified Hardware Coordination Conference:

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

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping.

B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer’s original packaging.

C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.

D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

GMB Copyright 2023

E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.6 COORDINATION

A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

E. Existing Openings: Where existing doors, frames and/or hardware are to remain, field verify existing functions, conditions and preparations and coordinate to suit opening conditions and to provide proper door operation.

1.7 WARRANTY

A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.

1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer’s published listings.
    a. Mechanical Warranty
        1) Locks
            a) Schlage L Series: 3 years
        2) Exit Devices
            a) Von Duprin: 3 years
        3) Closers
            a) LCN 4000 Series: 30 years

1.8 MAINTENANCE

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

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

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. The Owner requires use of certain products for their unique characteristics and project suitability to ensure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: “No Substitute.”

1. Where “No Substitute” is noted, submittals and substitution requests for other products will not be considered.

B. Approval of alternate manufacturers and/or products other than those listed as “Scheduled Manufacturer” or “Acceptable Manufacturers” in the individual article for the product category are only to be considered by official substitution request in accordance in section 01 25 00.

GMB Copyright 2023

C. Approval of products from manufacturers indicated in “Acceptable Manufacturers” is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer’s product.

D. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.2 MATERIALS

A. Fabrication

1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer’s recognized installation standards for application intended.
2. Finish exposed screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
3. Provide concealed fasteners wherever possible for hardware units exposed when door is closed. Coordinate with “Metal Doors and Frames”, “Flush Wood Doors”, “Stile and Rail Wood Doors” to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.

B. Modification and Preparation of Existing Doors: Where existing door hardware is indicated to be removed and reinstalled.

1. Provide necessary fillers, Dutchmen, reinforcements, and fasteners, compatible with existing materials, as required for mounting new opening hardware and to cover existing door and frame preparations.
2. Use materials which match materials of adjacent modified areas.
3. When modifying existing fire-rated openings, provide materials permitted by NFPA 80 as required to maintain fire-rating.

B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

2.3 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. Ives 5BB series
2. Acceptable Manufacturers and Products:
   a. Hager BB1191/1279 series
   b. McKinney TB series
   c. Best FBB series

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. Provide five knuckle, ball bearing hinges.
3. 1-3/4 inch thick doors, up to and including 36 inches (914 mm) wide:
   a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
   b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high
4. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
   a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
   b. Interior: Heavy weight, steel, 5 inches (127 mm) high

GMB Copyright 2023

5. 2 inches or thicker doors:
    a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
    b. Interior: Heavy weight, steel, 5 inches (127 mm) high
6. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
7. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
8. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
9. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
    a. Steel Hinges: Steel pins
    b. Non-Ferrous Hinges: Stainless steel pins
    c. Out-Swinging Exterior Doors: Non-removable pins
    d. Out-Swinging Interior Lockable Doors: Non-removable pins
    e. Interior Non-lockable Doors: Non-rising pins
10. Provide hinges with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component. Provide mortar guard for each electrified hinge specified.

2.4 HINGES (POE)

A. Manufacturers and Products:
    1. Scheduled Manufacturer and Product:
        a. Provided and purchased through Access Control Contractor

2.5 CONTINUOUS HINGES

A. Manufacturers:
    1. Scheduled Manufacturer:
        a. Ives
    2. Acceptable Manufacturers:
        a. Markar
        b. Stanley

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

GMB Copyright 2023

2.6 ELECTRIC POWER TRANSFER

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

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

2.7 FLUSH BOLTS

A. Manufacturers:
   1. Scheduled Manufacturer:
      a. Ives
   2. Acceptable Manufacturers:
      a. Equal products of any B.H.M.A. manufacturer

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

2.8 MORTISE LOCKS

A. Manufacturers and Products:
   1. Scheduled Manufacturer and Product:
      a. Schlage L9000 series
   2. Acceptable Manufacturers and Products:
      a. No Substitute

B. Requirements:
   1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.
   2. Indicators: Where specified, provide indicator window measuring a minimum 2-inch x 1/2 inch with 180-degree visibility. Provide messages color-coded with full text and/or symbols, as scheduled, for easy visibility.
   3. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
   4. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
   5. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1-inch (25 mm) throw, constructed of stainless steel.
   6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.

GMB Copyright 2023

7. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
    a. Provide levers with vandal resistant technology for use at heavy traffic or abusive applications.
    a. Lever Design: 17A.

1.02 **CYLINDRICAL LOCKS – GRADE 1**

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

B. Requirements:
1. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3-hour fire doors.
2. Cylinders: Refer to “KEYING” article, herein.
3. Provide locks with standard 2-3/4 inches backset, unless noted otherwise, with 1/2-inch latch throw. Provide proper latch throw for UL listing at pairs.
4. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
5. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
7. Provide electrified options as scheduled in the hardware sets.
8. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.
    a. Lever Design: SPA (Sparta).

2.9 EXIT DEVICES

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

B. Requirements:
1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to “KEYING” article, herein.
3. Provide smooth touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide exit devices with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
7. Provide flush end caps for exit devices.
8. Provide exit devices with manufacturer’s approved strikes.
9. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.

GMB Copyright 2023

10. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
11. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
12. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
13. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
14. Provide electrified options as scheduled.
15. Top latch mounting: double- or single-tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
16. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

2.10 ELECTRONIC ACCESS CONTROL LOCKSETS AND EXIT DEVICE TRIM

A. Manufacturers and Products:
   1. Scheduled Manufacturer and Product:
      a. Assa Abloy IN-220 series (Provided and purchased through Access Control Contractor)
   2. Acceptable Manufacturers and Products:
      a. No Substitute

B. POE Wire Harness: Provided and purchased through Access Control Contractor.

C. Lever Design: Equal to Schlage 17 lever.

2.11 ELECTRIC STRIKES

A. Manufacturers and Products:
   1. Scheduled Manufacturer and Product:
      a. Von Duprin 6000 series
   2. Acceptable Manufacturers and Products:
      a. HES 1006/9500 series

B. Requirements:
   1. Provide electric strikes designed for use with type of locks shown at each opening.
   2. Provide electric strikes UL Listed as burglary resistant that are tested to a minimum endurance test of 1,000,000 cycles.
   3. Where required, provide electric strikes UL Listed for fire doors and frames.
   4. Provide transformers and rectifiers for each strike as required. Verify voltage with electrical contractor.

2.12 PASSIVE INFRARED MOTION SENSORS

A. Manufacturers and Products:
   1. Scheduled Manufacturer and Product:
      a. Provided and purchased through Access Control Contractor

2.13 POWER SUPPLIES

A. Manufacturers and Products:
   1. Scheduled Manufacturer and Product:
      a. Provided and purchased through Access Control Contractor

GMB Copyright 2023

2.14 CYLINDERS & KEYING

A. Final keying will be handled by the Owner. Door/Hardware contractor to provide construction cylinders/cores compatible with Owners existing key system.

2.15 DOOR CLOSERS

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

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

2.16 DOOR TRIM

A. Manufacturers:
   1. Scheduled Manufacturer:
      a. Ives
   2. Acceptable Manufacturers:
      a. Equal products of any B.H.M.A. manufacturer

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

GMB Copyright 2023

2.17 PROTECTION PLATES

A. Manufacturers:
   1. Scheduled Manufacturer:
      a. Ives
   2. Acceptable Manufacturers:
      a. Equal products of any B.H.M.A. manufacturer

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

2.18 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

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

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

2.19 DOOR STOPS AND HOLDERS

A. Manufacturers:
   1. Scheduled Manufacturer:
      a. Ives
   2. Acceptable Manufacturers:
      a. Equal products of any B.H.M.A. manufacturer

B. Provide door stops at each door leaf:
   1. Provide wall stops wherever possible. Provide concave type where lockset has a push button of thumbturn.
   2. Where a wall stop cannot be used, provide overhead stop.

2.20 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:
   1. Scheduled Manufacturer:
      a. Zero International
   2. Acceptable Manufacturers:
      a. National Guard
      b. Reese
      c. Pemko

B. Requirements:

GMB Copyright 2023

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

2.21 SILENCERS

A. Manufacturers:
   1. Scheduled Manufacturer:
      a. Ives
   2. Acceptable Manufacturers:
      a. Equal products of any B.H.M.A. manufacturer

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

2.22 DOOR POSITION SWITCHES

A. Manufacturers and Products:
   1. Scheduled Manufacturer and Product:
      a. Provided and purchased through Access Control Contractor

2.23 FINISHES

A. Finish: Provide finish for each item as indicated in the hardware sets.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.

B. Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.

C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

D. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

1.03 **PREPARATION**

A. Where on-site modification of doors and frames is required:
   1. Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
   2. Field modify and prepare existing doors and frames for new hardware being installed.
   3. When modifications are exposed to view, use concealed fasteners, when possible.

GMB Copyright 2023

4. Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:
   a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
   b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
   c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

3.2 INSTALLATION

A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
   1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
   2. Custom Steel Doors and Frames: HMMA 831.
   3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
   4. Installation Guide for Doors and Hardware: DHI TDH-007-20

B. Install door hardware in accordance with NFPA 80, NFPA 101 and provide post-install inspection, testing as specified in section 1.03.E unless otherwise required to comply with governing regulations.

C. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

D. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

E. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

F. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

G. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

H. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.

I. Lock Cylinders:
   1. Install construction cores to secure building and areas during construction period.
   2. Replace construction cores with permanent cores as indicated in keying section.
   3. Furnish permanent cores to Owner for installation.

J. Wiring: Coordinate with Division 26, ELECTRICAL and Division 28 ELECTRONIC SAFETY AND SECURITY sections for:
   1. Conduit, junction boxes and wire pulls.
   2. Connections to and from power supplies to electrified hardware.
   3. Connections to fire/smoke alarm system and smoke evacuation system.
   4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
   5. Connections to panel interface modules, controllers, and gateways.
   6. Testing and labeling wires with Architect's opening number.

K. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

GMB Copyright 2023

L. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.

M. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

N. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.

O. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

P. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

Q. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

R. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

S. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

3.3 ADJUSTING

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

1. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
2. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.4 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items per manufacturer’s instructions to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.5 DOOR HARDWARE SCHEDULE

A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier’s responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.

B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application.

C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.

D. Hardware Sets:

GMB Copyright 2023

Hardware Group No. 01
For use on Door #(s):
B112A
Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 5 X 4.5 NRP		652	IVE
1	EA	PASSAGE SET	L9010 17A		626	SCH
1	EA	SURFACE CLOSER	4040XP EDA		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CVX		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 02
For use on Door #(s):
B109A B110A
Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	HINGE	5BB1HW 4.5 X 4.5		FBLK/631	IVE
1	EA	ELECTRIFIED POE HINGE (HW)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			
1	EA	ELECTRONIC MORTISE LOCK (POE)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - LESS CYLINDER		626	
1	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15		626	C-R
1	EA	WALL STOP	WS406/407CVX		BLK	IVE
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			

NOTES:
1) ACCESS CONTROLS CONTRACTOR TO COORDINATE DOOR AND FRAME PREP WITH HARDWARE CONTRACTOR.
2) MATCH LEVER STYLE EQUAL TO SCHLAGE 17 LEVER.

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

LOCKSET IS NORMALLY SECURE. PRESENTING VALID CREDENTIAL TO CARD READER WILL MOMENTARILY UNLOCK LOCK AND ALLOW ENTRY. VALID TOGGLE CREDENTIAL CAN PROVIDE PASSAGE STATUS. DURING LOCKDOWN THE STATUS WILL CHANGE TO LOCK. THE REQUEST TO EXIT FEATURE OF THE LOCK TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACT FEATURE OF THE LOCK DURING VALID EGRESS. DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG. FREE EGRESS AT ALL TIMES.
Hardware Group No. 03
For use on Door #(s):
B103A
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	HINGE	5BB1HW 4.5 X 4.5		FBLK/631	IVE
1	EA	ELECTRIFIED POE HINGE (HW)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			
1	EA	ELECTRONIC MORTISE LOCK (POE)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - LESS CYLINDER		626	
1	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15		626	C-R
1	EA	SURFACE CLOSER	4040XP REG		693	LCN
1	EA	WALL STOP	WS406/407CVX		BLK	IVE
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			

NOTES:
1) ACCESS CONTROLS CONTRACTOR TO COORDINATE DOOR AND FRAME PREP WITH HARDWARE CONTRACTOR.
2) MATCH LEVER STYLE EQUAL TO SCHLAGE 17 LEVER.

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

LOCKSET IS NORMALLY SECURE. PRESENTING VALID CREDENTIAL TO CARD READER WILL MOMENTARILY UNLOCK LOCK AND ALLOW ENTRY. VALID TOGGLE CREDENTIAL CAN PROVIDE PASSAGE STATUS. DURING LOCKDOWN THE STATUS WILL CHANGE TO LOCK. THE REQUEST TO EXIT FEATURE OF THE LOCK TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACT FEATURE OF THE LOCK DURING VALID EGRESS. DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG. FREE EGRESS AT ALL TIMES.
Hardware Group No. 04
For use on Door #(s):
B121A
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	HINGE	5BB1HW 5 X 4.5		652	IVE
1	EA	ELECTRIFIED POE HINGE (HW)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			
1	EA	ELECTRONIC MORTISE LOCK (POE)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - LESS CYLINDER		626	
1	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15		626	C-R
1	EA	SURFACE CLOSER	4040XP REG		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CVX		630	IVE
3	EA	SILENCER	SR64		GRY	IVE
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			

NOTES:
1) ACCESS CONTROLS CONTRACTOR TO COORDINATE DOOR AND FRAME PREP WITH HARDWARE CONTRACTOR.
2) MATCH LEVER STYLE EQUAL TO SCHLAGE 17 LEVER.

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

LOCKSET IS NORMALLY SECURE. PRESENTING VALID CREDENTIAL TO CARD READER WILL MOMENTARILY UNLOCK LOCK AND ALLOW ENTRY. VALID TOGGLE CREDENTIAL CAN PROVIDE PASSAGE STATUS. DURING LOCKDOWN THE STATUS WILL CHANGE TO LOCK. THE REQUEST TO EXIT FEATURE OF THE LOCK TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACT FEATURE OF THE LOCK DURING VALID EGRESS. DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG. FREE EGRESS AT ALL TIMES.
Hardware Group No. 05
For use on Door #(s):
B124B
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	HINGE	5BB1HW 4.5 X 4.5		FBLK/631	IVE
1	EA	ELECTRIFIED POE HINGE (HW)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			
1	EA	ELECTRONIC MORTISE LOCK (POE)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - LESS CYLINDER		626	
1	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15		626	C-R
1	EA	OH STOP	100S		BLK	GLY
1	EA	SURFACE CLOSER	4040XP REG ST-1630		693	LCN
1	EA	TOP JAMB MTG PLATE	4040XP-18TJ		693	LCN
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			

NOTES:
1) ACCESS CONTROLS CONTRACTOR TO COORDINATE DOOR AND FRAME PREP WITH HARDWARE CONTRACTOR.
2) MATCH LEVER STYLE EQUAL TO SCHLAGE 17 LEVER.

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

LOCKSET IS NORMALLY SECURE. PRESENTING VALID CREDENTIAL TO CARD READER WILL MOMENTARILY UNLOCK LOCK AND ALLOW ENTRY. VALID TOGGLE CREDENTIAL CAN PROVIDE PASSAGE STATUS. DURING LOCKDOWN THE STATUS WILL CHANGE TO LOCK. THE REQUEST TO EXIT FEATURE OF THE LOCK TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACT FEATURE OF THE LOCK DURING VALID EGRESS. DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG. FREE EGRESS AT ALL TIMES.
Hardware Group No. 06
For use on Door #(s):
B115A
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
5	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	ELECTRIFIED POE HINGE (HW)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			
1	EA	CONST LATCHING BOLT	FB51P		630	IVE
1	EA	DUST PROOF STRIKE	DP2		626	IVE
1	EA	ELECTRONIC MORTISE LOCK (POE)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - LESS CYLINDER - RHRA		626	
1	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15		626	C-R
2	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4040XP REG ST-1630		689	LCN
1	EA	TOP JAMB MTG PLATE	4040XP-18TJ		689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS		630	IVE
2	EA	SILENCER	SR64		GRY	IVE
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			
1	EA	DOOR CONTACT	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - INACTIVE LEAF			

NOTES:
1) ACCESS CONTROLS CONTRACTOR TO COORDINATE DOOR AND FRAME PREP WITH HARDWARE CONTRACTOR.
2) MATCH LEVER STYLE EQUAL TO SCHLAGE 17 LEVER.

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

LOCKSET IS NORMALLY SECURE. PRESENTING VALID CREDENTIAL TO CARD READER WILL MOMENTARILY UNLOCK LOCK AND ALLOW ENTRY. VALID TOGGLE CREDENTIAL CAN PROVIDE PASSAGE STATUS. DURING LOCKDOWN THE STATUS WILL CHANGE TO LOCK. THE REQUEST TO EXIT FEATURE OF THE LOCK TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACT FEATURE OF THE LOCK DURING VALID EGRESS. DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG. FREE EGRESS AT ALL TIMES.
Hardware Group No. 07
For use on Door #(s):
B116A
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		652	IVE
1	EA	ELECTRIFIED POE HINGE (HW)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			
1	EA	ELECTRONIC MORTISE LOCK (POE)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - LESS CYLINDER		626	
1	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15		626	C-R
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)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			

NOTES:
1) ACCESS CONTROLS CONTRACTOR TO COORDINATE DOOR AND FRAME PREP WITH HARDWARE CONTRACTOR.
2) MATCH LEVER STYLE EQUAL TO SCHLAGE 17 LEVER.

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

LOCKSET IS NORMALLY SECURE. PRESENTING VALID CREDENTIAL TO CARD READER WILL MOMENTARILY UNLOCK LOCK AND ALLOW ENTRY. VALID TOGGLE CREDENTIAL CAN PROVIDE PASSAGE STATUS. DURING LOCKDOWN THE STATUS WILL CHANGE TO LOCK. THE REQUEST TO EXIT FEATURE OF THE LOCK TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACT FEATURE OF THE LOCK DURING VALID EGRESS. DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG. FREE EGRESS AT ALL TIMES.
Hardware Group No. 08
For use on Door #(s):
B106A
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		FBLK/631	IVE
1	EA	ELECTRIFIED POE HINGE (HW)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			
1	EA	ELECTRONIC MORTISE LOCK (POE)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - LESS CYLINDER		626	
1	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15		626	C-R
1	EA	SURFACE CLOSER	4040XP SCUSH		693	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30		693	LCN
1	EA	BLADE STOP SPACER	4040XP-61		693	LCN
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			

NOTES:
1) ACCESS CONTROLS CONTRACTOR TO COORDINATE DOOR AND FRAME PREP WITH HARDWARE CONTRACTOR.
2) MATCH LEVER STYLE EQUAL TO SCHLAGE 17 LEVER.

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

LOCKSET IS NORMALLY SECURE. PRESENTING VALID CREDENTIAL TO CARD READER WILL MOMENTARILY UNLOCK LOCK AND ALLOW ENTRY. VALID TOGGLE CREDENTIAL CAN PROVIDE PASSAGE STATUS. DURING LOCKDOWN THE STATUS WILL CHANGE TO LOCK. THE REQUEST TO EXIT FEATURE OF THE LOCK TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACT FEATURE OF THE LOCK DURING VALID EGRESS. DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG. FREE EGRESS AT ALL TIMES.
Hardware Group No. 09
For use on Door #(s):
B102A
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
5	EA	HINGE	5BB1HW 4.5 X 4.5 NRP		FBLK/631	IVE
1	EA	ELECTRIFIED POE HINGE (HW)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			
1	SET	CONST LATCHING BOLT	FB51P		BLK	IVE
1	EA	DUST PROOF STRIKE	DP2		BLK	IVE
1	EA	ELECTRONIC MORTISE LOCK (POE)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - LESS CYLINDER - RHRA		626	
1	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15		626	C-R
1	EA	OH STOP	100S		BLK	GLY
1	EA	SURFACE CLOSER	4040XP SCUSH		693	LCN
1	EA	CUSH SHOE SUPPORT	4040XP-30		693	LCN
1	EA	BLADE STOP SPACER	4040XP-61		693	LCN
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			
1	EA	DOOR CONTACT	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - INACTIVE LEAF			

NOTES:
1) ACCESS CONTROLS CONTRACTOR TO COORDINATE DOOR AND FRAME PREP WITH HARDWARE CONTRACTOR.
2) MATCH LEVER STYLE EQUAL TO SCHLAGE 17 LEVER.

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

LOCKSET IS NORMALLY SECURE. PRESENTING VALID CREDENTIAL TO CARD READER WILL MOMENTARILY UNLOCK LOCK AND ALLOW ENTRY. VALID TOGGLE CREDENTIAL CAN PROVIDE PASSAGE STATUS. DURING LOCKDOWN THE STATUS WILL CHANGE TO LOCK. THE REQUEST TO EXIT FEATURE OF THE LOCK TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACT FEATURE OF THE LOCK DURING VALID EGRESS. DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG. FREE EGRESS AT ALL TIMES.
Hardware Group No. 10
For use on Door #(s):
B122A
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
2	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	ELECTRIFIED POE HINGE (HW)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			
1	EA	ELECTRONIC MORTISE LOCK (POE)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - LESS CYLINDER		626	
1	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15		626	C-R
1	EA	SURFACE CLOSER	4040XP REG		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CVX		630	IVE
1	EA	GASKETING	488S		BK	ZER
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR			

NOTES:
1) ACCESS CONTROLS CONTRACTOR TO COORDINATE DOOR AND FRAME PREP WITH HARDWARE CONTRACTOR.
2) MATCH LEVER STYLE EQUAL TO SCHLAGE 17 LEVER.

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

LOCKSET IS NORMALLY SECURE. PRESENTING VALID CREDENTIAL TO CARD READER WILL MOMENTARILY UNLOCK LOCK AND ALLOW ENTRY. VALID TOGGLE CREDENTIAL CAN PROVIDE PASSAGE STATUS. DURING LOCKDOWN THE STATUS WILL CHANGE TO LOCK. THE REQUEST TO EXIT FEATURE OF THE LOCK TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACT FEATURE OF THE LOCK DURING VALID EGRESS. DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG. FREE EGRESS AT ALL TIMES.
Hardware Group No. 11
For use on Door #(s):
B111A
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER			FINISH	MFR
1	EA	CONT. HINGE	112HD			628	IVE
1	EA	CONT. HINGE	112HD EPT			628	IVE
1	EA	POWER TRANSFER	EPT10			689	VON
1	EA	STOREROOM LOCK	LV9080L 17A			626	SCH
1	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15			626	C-R
1	EA	ELECTRIC STRIKE	1006CS			630	HES
1	EA	SMART PAC III	2005M3				HES
2	EA	OH STOP & HOLDER	100H			630	GLY
1	EA	SURFACE CLOSER	4040XP EDA			689	LCN
1	EA	BLADE STOP SPACER	4040XP-61			689	LCN
2	EA	DOOR SWEEP	8192AA			AA	ZER
1	EA	THRESHOLD	566A			A	ZER
1	EA	CARD READER	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
2	EA	DOOR CONTACT	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
1	EA	MOTION SCANNER	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
			WEATHERSTRIP BY DOOR/FRAME 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. 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 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.
Hardware Group No. 12
For use on Door #(s):
B119A
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER			FINISH	MFR
1	EA	STOREROOM LOCK	ND80LD SPA			626	SCH
1	EA	K-I-L CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR			626	C-R
1	EA	ELECTRIC STRIKE	6400 FSE			630	VON
1	EA	CARD READER	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
1	EA	DOOR CONTACT	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
1	EA	MOTION SCANNER	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
			BALANCE OF HARDWARE TO REMAIN				

NOTES:
1) FIELD VERIFY EXISTING CONDITIONS. VERIFY/COORDINATE PREPS ON EXISTING DOORS AND FRAMES TO ENSURE THE COMPATIBILITY OF NEW HARDWARE PRIOR TO ORDER OF NEW MATERIALS. PROVIDE FIELD MODIFICATIONS AND/OR NECESSARY FILLERS (PAINT TO MATCH WHERE EXISTING IS PREVIOUSLY PAINTED), REINFORCEMENTS AND FASTENERS, COMPATIBLE WITH EXISTING MATERIALS REQUIRED FOR MOUNTING NEW SPECIFIED HARDWARE AND TO COVER EXISTING DOOR AND FRAME PREPARATIONS.

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. 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.
Hardware Group No. 13
For use on Door #(s):
B101A
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER			FINISH	MFR
5	EA	HINGE	5BB1HW 4.5 X 4.5 NRP			652	IVE
1	EA	ELECTRIFIED POE HINGE (HW)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
1	EA	REMOVABLE MULLION	KR4954 STAB			689	VON
1	EA	ELECTRONIC EXIT DEVICE TRIM (POE)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - LESS CYLINDER - RHRA			626	
1	EA	PANIC HARDWARE	CD-98-EO			626	VON
1	EA	ELEC PANIC HARDWARE	CD-RX-98-EO - LEAF W/POE TRIM			626	VON
3	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15			626	C-R
1		RIM CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15			626	C-R
2	EA	SURFACE CLOSER	4040XP SCUSH			689	LCN
2	EA	CUSH SHOE SUPPORT	4040XP-30			689	LCN
2	EA	BLADE STOP SPACER	4040XP-61			689	LCN
1	EA	POE WIRE HARNESS (HINGE TO LOCK X HINGE TO CEILING)	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
1	EA	DOOR CONTACT	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR - INACTIVE LEAF				

NOTES:
1) ACCESS CONTROLS CONTRACTOR TO COORDINATE DOOR AND FRAME PREP WITH HARDWARE CONTRACTOR.
2) MATCH LEVER STYLE EQUAL TO SCHLAGE 17 LEVER.

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

LOCKSET IS NORMALLY SECURE. PRESENTING VALID CREDENTIAL TO CARD READER WILL MOMENTARILY UNLOCK LOCK AND ALLOW ENTRY. VALID TOGGLE CREDENTIAL CAN PROVIDE PASSAGE STATUS. DURING LOCKDOWN THE STATUS WILL CHANGE TO LOCK. THE REQUEST TO EXIT FEATURE OF THE LOCK TO SHUNT THE ALARM OUTPUT OF THE DOOR CONTACT FEATURE OF THE LOCK DURING VALID EGRESS. DOOR CONTACT MONITORS WHETHER THE DOOR IS OPENED, CLOSED OR HELD OPEN TOO LONG. FREE EGRESS AT ALL TIMES.
Hardware Group No. 14
For use on Door #(s):
B108B
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER			FINISH	MFR
1	EA	CONT. HINGE	112HD			628	IVE
1	EA	PANIC HARDWARE	CD-98-NL-OP-110MD			626	VON
1	EA	RIM CYLINDER	BLANK CYLINDER			626	
1	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15			626	C-R
1	EA	ELECTRIC STRIKE	6300 FSE			630	VON
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O			630-316	IVE
1	EA	OH STOP	100S			630	GLY
1	EA	SURFACE CLOSER	4040XP EDA			689	LCN
1	EA	BLADE STOP SPACER	4040XP-61			689	LCN
1	EA	CARD READER	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
1	EA	DOOR RELEASE BUTTON	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
1	EA	DOOR CONTACT	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
1	EA	MOTION SCANNER	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
			WEATHERSTRIP BY DOOR/FRAME MANUFACTURER				

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. PRESENTING A VALID CREDENTIAL TO THE READER OR PRESSING THE DOOR RELEASE BUTTON AT RECEPTION DESK 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.
Hardware Group No. 15
For use on Door #(s):
B108A
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER			FINISH	MFR
1	EA	CONT. HINGE	112HD			628	IVE
1	EA	PANIC HARDWARE	CD-98-NL-OP-110MD			626	VON
1	EA	RIM CYLINDER	BLANK CYLINDER			626	
1	EA	MORTISE CYLINDER	PROVIDED BY DOOR HARDWARE CONTRACTOR - REFER TO SECTION 2.15			626	C-R
1	EA	ELECTRIC STRIKE	6300 FSE			630	VON
1	EA	90 DEG OFFSET PULL	8190EZHD 10" O			630-316	IVE
1	EA	OH STOP	100S			630	GLY
1	EA	SURFACE CLOSER	4040XP EDA			689	LCN
1	EA	BLADE STOP SPACER	4040XP-61			689	LCN
1	EA	DOOR SWEEP	8192AA			AA	ZER
1	EA	THRESHOLD	566A			A	ZER
1	EA	CARD READER	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
1	EA	DOOR CONTACT	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
1	EA	MOTION SCANNER	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR				
			WEATHERSTRIP BY DOOR/FRAME MANUFACTURER				

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. PRESENTING A VALID CREDENTIAL TO THE READER WILL MOMENTARILY UNLOCK THE ELECTRIC STRIKE ALLOWING ACCESS. ELECTRIC STRIKE IS ALSO CAPABLE OF BEING ELECTRONICALLY UNLOCKED FOR CERTAIN TIMES OF THE DAY VIA THE ACCESS CONTROL SYSTEM, THUS IN PUSH/PULL MODE.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.

Hardware Group No. 16
For use on Door #(s):
B104A B114A B122F
Each to have:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	LONG DOOR PULL	PR 9266F 36" N		630	IVE
			BALANCE OF HARDWARE BY DOOR MANUFACTURER			

NOTES:
1) VERIFY DOOR HARDWARE COMPATIBILITY WITH DOOR MANUFACTURER PRIOR TO ORDER.

Hardware Group No. 17
For use on Door #(s):
B101B
Each to have:

GMB Copyright 2023

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
1	EA	DOOR CONTACT	PROVIDED AND INSTALLED BY ACCESS CONTROL CONTRACTOR BALANCE OF HARDWARE TO REMAIN			

NOTES:
1) FIELD VERIFY EXISTING CONDITIONS. VERIFY/COORDINATE PREPS ON EXISTING DOORS AND FRAMES TO ENSURE THE COMPATIBILITY OF NEW HARDWARE PRIOR TO ORDER OF NEW MATERIALS. PROVIDE FIELD MODIFICATIONS AND/OR NECESSARY FILLERS (PAINT TO MATCH WHERE EXISTING IS PREVIOUSLY PAINTED), REINFORCEMENTS AND FASTENERS, COMPATIBLE WITH EXISTING MATERIALS REQUIRED FOR MOUNTING NEW SPECIFIED HARDWARE AND TO COVER EXISTING DOOR AND FRAME PREPARATIONS.

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.

END OF SECTION

GMB Copyright 2023

Appendix O - Video Monitoring Diagrams

Legend

- Type A - Interior Single Lens
- Type B - Exterior Single Lens
- Type C - Interior/Exterior Multidirectional - Dual
- Type D - Interior/Exterior Multidirectional - Quad
- Type E - Interior/Exterior Panoramic

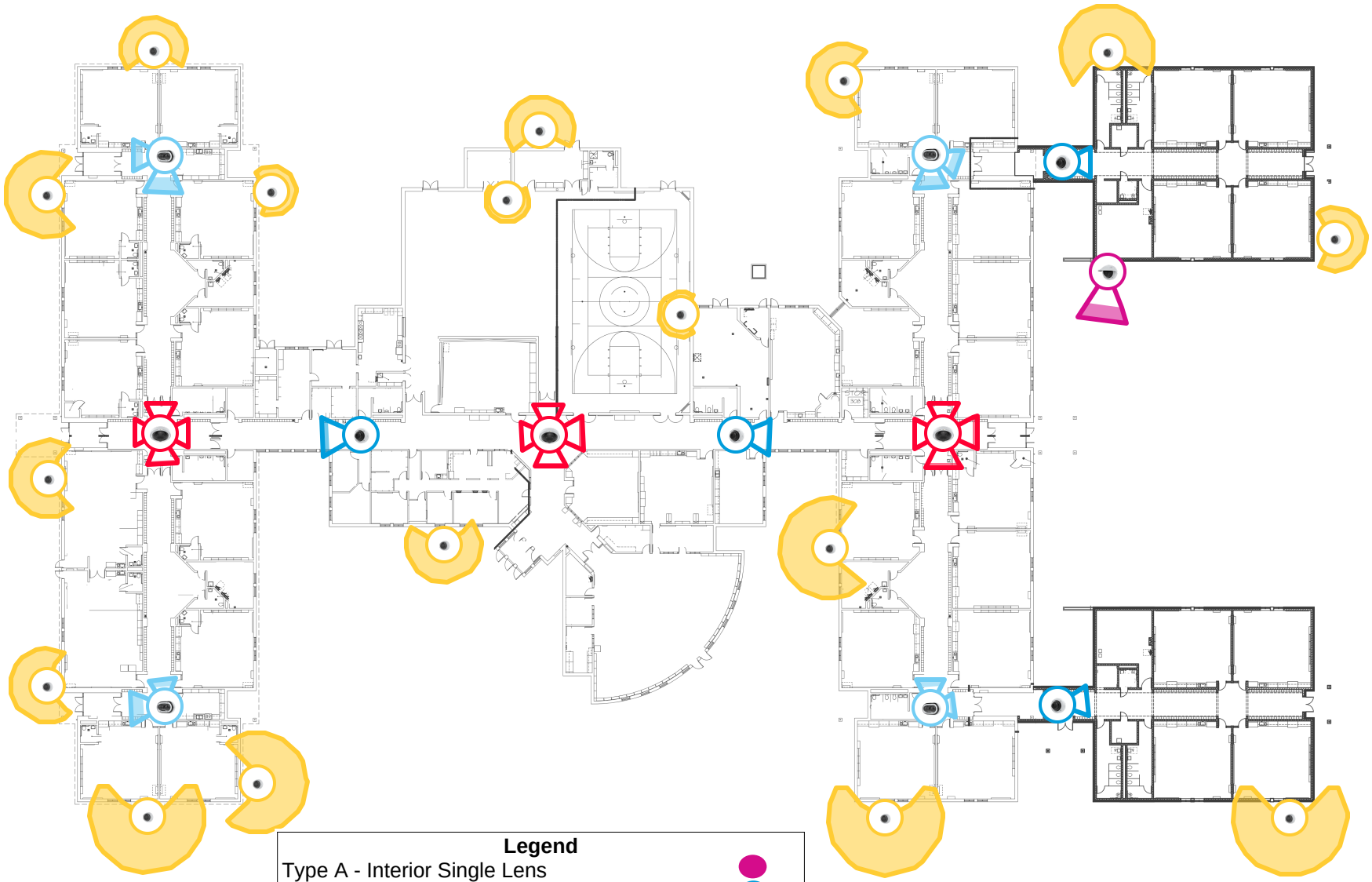
30 m
100 ft

KEYPLAN

KENTWOOD PUBLIC SCHOOLS
KENTWOOD, MICHIGAN

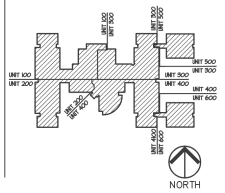
Appendix O - Video Monitoring Diagrams

Kingscott
KALAMAZOO | GRAND RAPIDS | CHELSEA
259 East Michigan Ave., Suite 308
Kalamazoo, MI 49007-6403
P: 269.381.4880 | F: 269.381.9110
www.kingscott.com

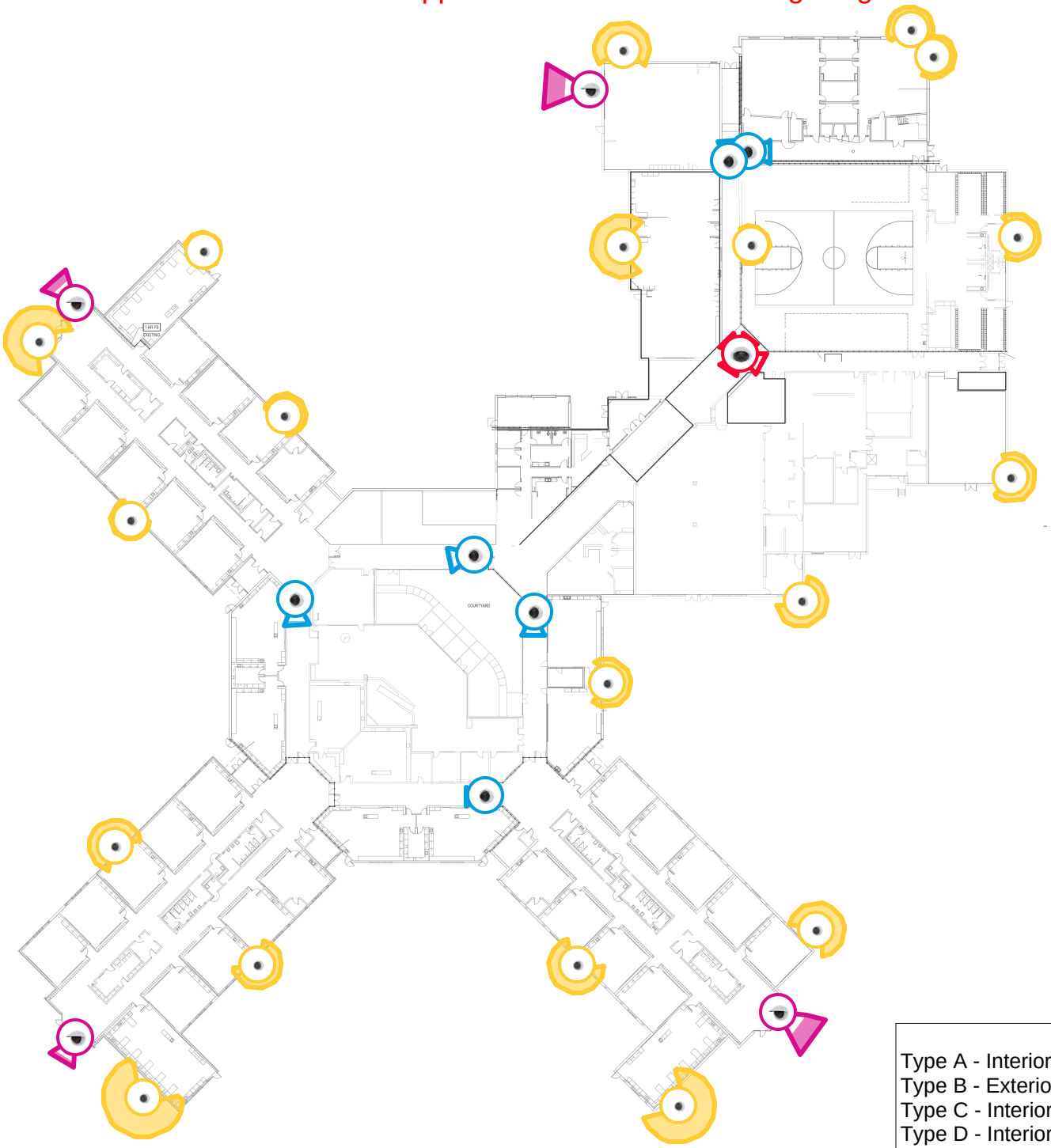


Explorer Elementary
Classroom Addition
Kentwood Public Schools
Kentwood, Michigan

KPS
Kentwood
Public Schools



Appendix O - Video Monitoring Diagrams



20 m
50 ft

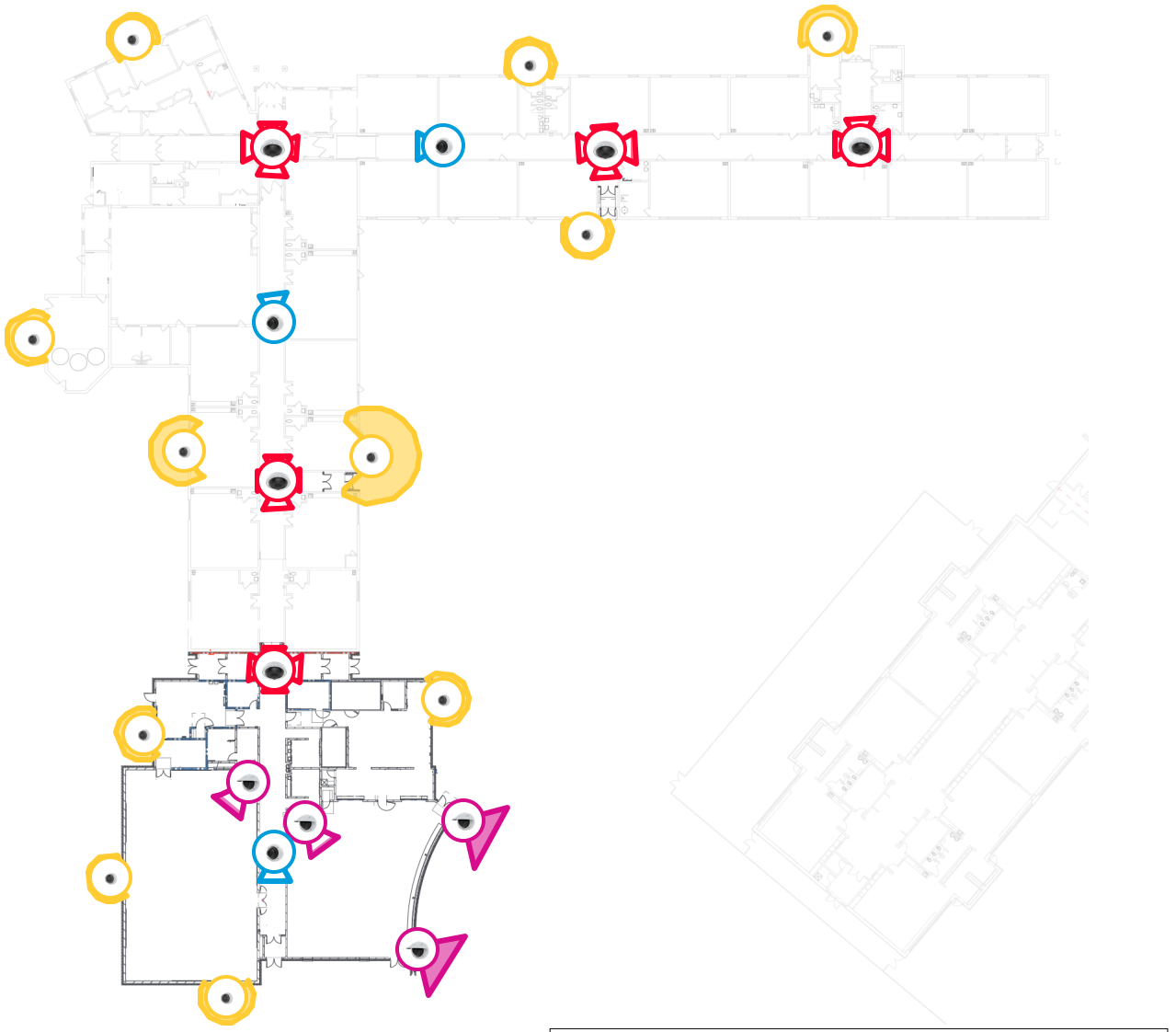
Legend

- Type A - Interior Single Lens
- Type B - Exterior Single Lens
- Type C - Interior/Exterior Multidirectional - Dual
- Type D - Interior/Exterior Multidirectional - Quad
- Type E - Interior/Exterior Panoramic

GMB
616.796.0200
WWW.GMB.COM

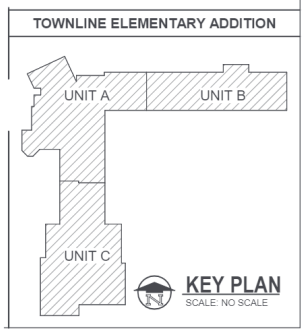
PINEWOOD MIDDLE SCHOOL IMPROVEMENTS
KENTWOOD PUBLIC SCHOOLS
KENTWOOD, MICHIGAN

Appendix O - Video Monitoring Diagrams



Legend

- Type A - Interior Single Lens
- Type B - Exterior Single Lens
- Type C - Interior/Exterior Multidirectional - Dual
- Type D - Interior/Exterior Multidirectional - Quad
- Type E - Interior/Exterior Panoramic



PROJECT TITLE
TOWNLINE ELEMENTARY ADDITION & RENOVATION

OWNER
KENTWOOD PUBLIC SCHOOLS

20 m
50 ft

Kentwood Public Schools

Appendix P: Camera Schedule

Camera Type	**A**	**B**	**C**	**D**	**E**	
Description	**Interior - Single Lens**	**Exterior - Single Lens**	**Interior/Exterior - Dual Lens**	**Interior/Exterior - Quad Lens**	**Interior/Exterior - Panoramic**	**Reuse Existing IP Cameras**
Admin Building	0	0	0	0	0	8
Baseball/Softball Complex	0	0	0	0	0	0
Bowen	0	0	0	0	0	5
Brookwood	0	0	0	0	0	6
Challenger	0	0	0	0	0	6
Crestwood MS	0	0	0	0	0	41
Crossroads	0	0	0	0	0	20
Discovery	0	0	0	0	0	9
EKFC	0	0	0	0	0	71
EKHS	12	6	1	0	19	127
Endeavor	0	0	0	0	0	7
Explorer	4	1	4	3	17	7
Glenwood	0	0	0	0	0	10
Hamilton	0	0	0	0	0	6
Meadowlawn	0	0	0	0	0	7
Pinewood MS	6	4	0	1	19	36
Southwood	0	0	0	0	0	4
SPED Building	0	0	0	0	0	
Townline	3	4	0	5	11	7
Valleywood MS	0	0	0	0	0	67
Falcon Stadium	0	0	0	0	0	10
Pat Patterson	0	0	0	0	0	
Maint/Op/Trans	0	0	0	0	0	
Total	25	15	5	9	66	446