

Addendum 05

DOCUMENT 00 91 00

DATE: August 3, 2026

PROJECT: Cedar Cliff Schools Connector Addition and Renovation
194 Walnut St
Cedarville, Ohio 45314

PROJECT #: 25056.00

OWNER: Cedar Cliff Local Schools
Contact: Brian Masser
194 Walnut St
Cedarville, Ohio 45314

ARCHITECT: Garmann Miller
38 South Lincoln Drive
P.O. Box 71
Minster, Ohio 45865

TO: Prospective Bidders

This addendum form is a part of the Contract Documents and modifies the Construction Documents dated June 24, 2026, with amendments and additions noted below.

Acknowledge receipt of this Addendum on the Bid Form. Failure to do so may disqualify the Bidder.

This addendum consists of 2 pages, 4 specification sections, and 1 drawing.

FOR INFORMATION ONLY

CHANGES TO THE PROJECT MANUAL

1. Section 00 22 13 – Bid Form: Revise contingency allowance amount to \$23,000. Add Article 2.03 to add alternate bid amounts.
2. Section 01 21 00 – Allowances
 - a. Article 1.05, A, Change "brick type II" to "face brick veneer".
 - b. Article 1.05, B, Change contingency allowance amount to \$23,000.
3. Section 01 23 00 – Alternates: Add this section.



4. Section 27 51 23 Hybrid Network Intercom and Paging System
 - a. Republished in its entirety to allow new manufacturers.

CHANGES TO THE DRAWINGS

- TCE1.2 – First Floor Technology Cabling Plan – Unit B:
- a. Added keynotes 3,4,5 for Alternate requirements.
 - b. Altered keynote 1 to provide a different speaker type.

ATTACHMENTS

The following attachments are included and are part of this addendum:

Drawings: TCE1.2

Specifications: 00 22 13, 01 21 00, 01 23 00, and 27 51 23

END OF ADDENDUM



BID FORM**1.01 BID SUBMITTED BY:**_____
(Contractor)

Date bid submitted: _____

1.02 DELIVER TO:

Cedar Cliff Local School District Board of Education
ATTN: Brian Masser, Superintendent
248 N. Main Street
Cedarville, Ohio 45314

- 1.03** Having carefully reviewed the Instructions to Bidders, Drawings, Specifications and other Contract Documents for the Project titled **South Connector Renovation Project** including having also received, read, and taken into account the following Addenda:

Addendum No.	Dated
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

and likewise having inspected the site and the conditions affecting and governing the Project, the undersigned hereby proposes to furnish all materials and to perform all labor, as specified and described in the said Specifications and/or as shown on the said Drawings for all Work necessary to complete the Project on a timely basis and in accordance with the Contract Documents regardless of whether expressly provided for in such Specifications and Drawings.

- 1.04** Before completing the Bid Form, the undersigned represents that it has carefully reviewed the Request for Bids, Instructions to Bidders, this Bid Form, Form of Bid Guaranty and Contract Bond, Contractor's Affidavit (O.R.C. 5719.042), Owner-Contractor Agreement, AIA A201-2017 General Conditions, Drawings, Project Specifications, and other Contract Documents. Failure to comply with provisions of the Contract Documents may be cause for disqualification of the bid.
- 1.05 BONDS AND CONTRACT:** If the undersigned is notified of bid acceptance, it agrees to furnish required bonds as indicated in the Instructions to Bidders.
- 1.06 COMPLETION OF WORK:** In submitting a bid, the undersigned agrees to execute the Owner-Contractor Agreement in the form included in the Contract Documents and to complete its Work as required by the Contract Documents.

NOTE A: The wording of the Bid Form shall be used throughout, without change, alteration, or addition. Any change may cause it to be rejected.

NOTE B: Bidder is cautioned to bid only on the Brands or Standards specified.

NOTE C: If there is an inconsistency or conflict in the Bid amount, the lowest amount shall control, whether expressed in numbers or words.

2.01 BID:

Include the cost of all labor and material for the contract listed below. Bidder is to fill in all blanks related to the Bid Package for which a bid is being submitted. If no bid is submitted for an item, leave the item blank or insert "NO BID" in the blank. For alternate items, indicate whether the amount stated is in addition to or a deduction from the base bid amount (if there is no indication whether the amount for an alternate is an addition or a deduction, the amount shall be a deduction).

2.02 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Lump Sum – All Work, including, a \$23,000 allowance for Construction Contingency.

_____	Dollars	(\$ _____)
(Words)		(Figures)

2.03 Alternates - not included in Lump Sum:

Alternate No. 1: Add or Deduct: _____ Cost: \$ _____

Alternate No. 2: Add or Deduct: _____ Cost: \$ _____

3.01 INSTRUCTIONS FOR SIGNING

- A. The person signing for a sole proprietorship must be the sole proprietor or his authorized representative. The name of the sole proprietor must be shown below.
- B. The person signing for a partnership must be a partner or his authorized representative.
- C. The person signing for a corporation must be the president, vice president or other authorized representative; or he must show authority, by affidavit, to bind the corporation.
- D. The person signing for some other legal entity must show his authority, by affidavit, to bind the legal entity.

4.01 BIDDER CERTIFICATIONS. The Bidder hereby acknowledges that the following representations in this bid are material and not mere recitals:

1. **The Bidder acknowledges that this is a public project involving public funds, and that the Owner expects and requires that each successful Bidder adhere to the highest ethical and performance standards. The Bidder by submitting its bid pledges and agrees that (a) it will act at all times with absolute integrity and truthfulness in its dealings with the Owner and the Design Professional, (b) it will use its best efforts to cooperate with the Owner and the Design Professional and all other Contractors on the Project and at all times will act with professionalism and dignity in its dealings with the Owner, Design Professional and other Contractors, (c) it will assign only competent supervisors and workers to the Project, each of whom is fully qualified to perform the tasks that are assigned to him/her, and (d) it has read, understands and will comply with the terms of the Contract Documents.**
2. The Bidder represents that it has had a competent person carefully and diligently review each part of the Contract Documents, including any Divisions of the Specifications and parts of the Drawings that are not directly applicable to the Work on which the Bidder is submitting its bid. By submitting its bid, each Bidder represents and agrees, based upon its careful and diligent review of the Contract Documents, that it is not aware of any conflicts, inconsistencies, errors or omissions in the Contract Documents for which it has not notified the Design Professional in writing at least ten (10) days prior to the bid opening. If there are any such conflicts, inconsistencies, errors or omissions in the Contract Documents, the Bidder (i) will provide the labor, equipment or materials of the better quality or greater quantity of Work; and/or (ii) will comply with the more stringent requirements. The Bidder will not be entitled to any additional compensation for any conflicts, inconsistencies, errors or omissions that would have been discovered by such careful and diligent review, unless it has given such prior written notice to Design Professional.
3. The Bidder represents that it has had a competent person carefully and diligently inspect and examine the entire site for the Project and the surrounding area, including all parts of the site applicable to the Work for which it is submitting its bid, and carefully correlate the results of the inspection with the requirements of the Contract Documents. The Bidder agrees that its bid shall

include all costs attributable to site and surrounding area conditions that would have been discovered by such careful and diligent inspection and examination of the site and the surrounding area, and the Bidder shall not be entitled to any Change Order, additional compensation, or additional time on account of conditions that could have been discovered by such an investigation.

4. The Bidder represents, understands and agrees that a) the Claim procedures in the General Conditions as modified for the Project are material terms of the Contract Documents, b) if it has a Claim, it will have its personnel provide complete and accurate information to complete and submit the Statement of Claim form on a timely basis, c) the proper completion and timely submission of a Statement of Claim form is a condition precedent to any change in the Contract Sum or the Contract Time(s), and d) the proper and timely submission of the Statement of Claim form provides the Owner and the Design Professional with necessary information so that the Owner may investigate the Claim and mitigate its damages.
5. The Bidder represents that the bid contains the name of every person interested therein and is based upon the Standards specified by the Contract Documents.
6. The Bidder and each person signing on behalf of the Bidder certifies, and in the case of a bid by joint venture, each member thereof certifies as to such member's entity, under penalty of perjury, that to the best of the undersigned's knowledge and belief: (a) the Base Bid, any Unit Prices and any Alternate bid in the bid have been arrived at independently without collusion, consultation, communication or agreement, or for the purpose of restricting competition as to any matter relating to such Base Bid, Unit Prices or Alternate bid with any other Bidder; (b) unless otherwise required by law, the Base Bid, any Unit Prices and any Alternate bid in the bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder prior to the bid opening, directly or indirectly, to any other Bidder who would have any interest in the Base Bid, Unit Prices or Alternate bid; (c) no attempt has been made or will be made by the Bidder to induce any other Person to submit or not to submit a bid for the purpose of restricting competition; and (d) the statements made in this Bid Form are true and correct.
7. The Bidder will execute the form of Owner/Contractor Agreement in the form included with the Contract Documents, if a Contract is awarded on the basis of this bid, and if the Bidder does not execute the Contract Form for any reason, other than as authorized by law, the Bidder and the Bidder's Surety are liable to the Owner.
8. The Bidder certifies that the upon the award of a Contract, the Contractor will ensure that all of the Contractor's employees, while working on the Project site, will not purchase, transfer, use or possess illegal drugs or alcohol or abuse prescription drugs in any way.
9. The Bidder agrees to furnish any information requested by the Design Professional or the Owner's authorized representative to evaluate that the Bidder has submitted the lowest responsible bid and that the bid is responsive to the specifications.
10. The Bidder certifies that it has no unresolved findings for recovery issued by the Auditor of State.
11. The Bidder certifies that it is aware of and in compliance with the requirements of Ohio Revised Code Section 3517.13 regarding campaign contributions.
12. The Bidder further states that it is a duly licensed contractor, for the type of work proposed, in accordance with the local requirements, and that all fees, permits, etc., pursuant to submitting this Bid have been paid in full.

LEGAL NAME OF BIDDER: _____

BIDDER IS (check one): ☐ sole proprietor ☐ partnership ☐ corporation ☐ other legal entity

NAME & TITLE OF PERSON LEGALLY AUTHORIZED TO BIND BIDDER TO A CONTRACT:

Name	Title
DATE SIGNED: _____	SIGNATURE: _____
	ADDRESS: _____

	TELEPHONE: _____
	FAX: _____
	FEDERAL TAX I.D. # _____

When the Bidder is a partnership or a joint venture, state name and address of each partner in the partnership or participant in the joint venture below:

_____	_____
Name	_____
	Address
_____	_____
Name	_____
	Address
_____	_____
Name	_____
	Address
_____	_____
Name	_____
	Address
_____	_____
Name	_____
	Address

END OF SECTION

SECTION 01 21 00 ALLOWANCES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cash allowances.
- B. Contingency allowance.
- C. Payment and modification procedures relating to allowances.

1.02 RELATED REQUIREMENTS

- A. Section 01 20 00 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 CASH ALLOWANCES

- A. Costs Included in Cash Allowances: Cost of material or product to Contractor or subcontractor, less applicable trade discounts .
- B. Costs Not Included in Cash Allowances (included in the Base Bid): Product delivery to site and handling at the site, including unloading, uncrating, and storage; protection of products from elements and from damage; and labor for installation and finishing; overhead, profit and other expenses contemplated for this work.
- C. Architect Responsibilities:
 - 1. Consult with Contractor for consideration and selection of products .
 - 2. Select products in consultation with Owner and transmit decision to Contractor.
 - 3. Prepare Change Order.
- D. Contractor Responsibilities:
 - 1. Obtain proposals from suppliers and offer recommendations.
 - 2. On notification of which products have been selected, execute purchase agreement with designated supplier .
 - 3. Arrange for and process shop drawings, product data, and samples. Arrange for delivery.
 - 4. Promptly inspect products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.
- E. Differences in costs will be adjusted by Change Order.

1.04 CONTINGENCY ALLOWANCE

- A. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.
 - 1. All overhead and profit contemplated for the Work performed under each Allowance is to be included in the Base Bid.
- B. Funds will be drawn from the Contingency Allowance by Change Order.
- C. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

1.05 ALLOWANCES SCHEDULE

- A. Cash Allowance: Section 04 20 00: Include the stipulated sum of \$900.00 per thousand for purchase and delivery of **face brick veneer**.
- B. Contingency Allowance: General Contract - A; Include the stipulated sum/price of **\$23,000** for use upon Owner's instructions.

- C. Contingency Allowance: Door Hardware; Include the stipulated sum/price of \$8,000.00 for use upon Owner's instructions.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 23 00
ALTERNATES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Description of Alternates.
- B. Procedures for pricing Alternates.
- C. Documentation of changes to Contract Sum and Contract Time.

1.02 RELATED REQUIREMENTS

- A. Bid Form

1.03 GENERAL

- A. Required alternates are worded briefly. Refer to Specification sections and Drawings for additional requirements. Claims for additional compensation will not be granted because of omissions or discrepancies due to the brevity.
- B. Bidders shall indicate the addition or deduction amount from the base bid for each alternate requested in the space provided on the bid form.
- C. The cost indicated on the bid form shall include material and labor as may be necessary for the identified alternate.

1.04 ACCEPTANCE OF ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

1.05 SCHEDULE OF ALTERNATES

- A. **Alternate No. 1: New Paging System**
 - 1. **Base Bid Item: Provide new hallway speakers in connector only.**
 - 2. **Alternate Item: Provide new paging system to replace existing Valcom VCS-3 and Valcom class connection paging system. Provide new speakers in hallways and classrooms of new connected building and connect into new paging system.**
- B. **Alternate No. 2: Expansion Card**
 - 1. **Base Bid Item: Provide new hallway speakers in connector only.**
 - 2. **Alternate Item: Provide expansion card for existing Valcom VCS-3 and class connection paging system. Provide new speakers in hallways and classrooms of new connected building and connect into existing paging system.**

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 27 51 23
HYBRID NETWORK INTERCOM AND PAGING SYSTEM

PART 1 GENERAL

1.01 RELATED SECTIONS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section as though bound herein.
- B. Refer to Section 01 2300 for Alternates that may affect the Work of this Section.

1.02 GENERAL DESCRIPTION OF NETWORK INTERNAL COMMUNICATION SYSTEM

- A. The work described in this section includes the furnishing of all materials, equipment, labor, service and the performance of all operations necessary for the installation of a complete supervised network-based intercom system and components, complete and in operating condition as indicated on the Drawings and/or described herein.
- B. Field wiring shall be CAT 6 cable, control wiring for power distributions and very long runs, and utilize an optional fiber backbone (when distances exceed normal Ethernet limitations). All station equipment shall utilize standard RJ-45 modular connections. All remote devices utilizing standard structured cabling shall be capable of PoE (Power over Ethernet) or power supplied within the CAT 5E or CAT 6 cable jacket. Wiring shall be capable of either being installed in conduit or cable trays, where shown on the plans.
- C. The system shall be capable of interconnecting with the building LAN (Local Area Network). This connection shall be minimal and utilize only one Ethernet 100 Mbps (or optionally 1 Gb) connection per station to accomplish all intercom operations. Ethernet ports and associated network switches that are required to connect any intercom devices will be provided by the 27 21 00 contractor
- D. Provide a separate circuit for each room and administrative office so each room, speaker, amplifier, and emergency messaging display/clock can be individually addressed.
- E. Overall intercom communications network shall utilize Ethernet or VoIP communications between all major components: administrative consoles, intercom stations, amplifiers and individual paging speakers, and network switches. Systems not utilizing Ethernet or VoIP communications protocol to each end-point device will not be acceptable. Systems not capable of supervising all networked devices including network amplifiers, network speakers, notification switches, and emergency messaging display/clocks will not be acceptable.
- F. The network shall support a VLAN configuration to separate activity in the intercom system from other in building LAN traffic. In locations where the supervised network communications system will be considered as part of the facilities life safety systems, a dedicated and isolated network shall be required.
- G. The system shall interface to the facilities iPBX via SIP trunk connectivity.
- H. The Communications System shall include master clock support and synchronization of digital secondary clocks, event scheduling, and messaging software allowing the facility to configure multiple schedules per school, multi zone time tone signaling for class changes, and message notification.
- I. The central sound system shall be of modular construction.
- J. The system shall have capacity of two hundred (200) stations and two (2) Administrative Control Consoles (ACC). The system shall be mounted in a floor mounted open technology rack/cabinet provided by the technology cabling contractor.
- K. Modes of communication shall include:

1. Administrative Control Console to Administrative Control Console. (ACC to ACC)
 2. Administrative Control Console to speaker station.
 3. Loudspeaker or group of loudspeakers from a program source.
 4. Administrative Control Console to either all-call or zone paging.
- L. System shall provide a port to interconnect with the Owner's telephone system. Interconnect Owner's telephone system to the central sound system so that standard telephone stations may access the communications network and perform all communications functions accessed by the ACC.
- M. The system shall provide built-in diagnostics and utilize non-volatile user-programmable memory.
- N. The system shall allow the inclusion of audio sources that can be distributed by the ACC operator to any or all of the possible zones. Program may be monitored at the ACC.
- O. All programming shall be menu driven for ease of operation.
- P. System shall provide and support a 802.3 Ethernet port for communications with an external computer. It shall be possible to both create, manage and save (backup) system programming from a network connected external computer through a Microsoft Windows graphical user interface (Windows 10 up to the current release shall be supported).
- Q. The system shall include programmable tones for emergency and civil emergency pages.
- R. The system shall provide 2,3, or 4 digit alpha/numeric architectural room numbering.
- S. The integral system master clock shall have 16 schedules, thirty two (32) zones, and 1536 time events.

1.03 DESCRIPTION OF NETWORK INTERCOM / PA / MESSAGING FEATURES

- A. The system specified is based on the Telecor eSeries Supervised Network based Communications System providing at least the features and functions outlined below. The System shall be installed and programmed by a local authorized and certified Telecor dealer.
- B. The system shall utilize a decentralized network structure not requiring any head-end equipment, central server, or any other control hardware to maintain system operation. Systems utilizing centralized electronics and subject to a single-point-of-failure (power supply, CPU, server, power, etc.) shall not be accepted unless the system has 100% duplication of all centralized operating equipment running concurrently and can automatically take over, including up to the minute programming configuration in the event of a failure of the main system head-end electronics or any required, centralized electronics required to make the system fully operational. Systems that are not based on decentralized structure or systems that do not provide 100% duplication of head-end or systems that operate in a "down-graded" operational mode as the result of a centralized failure are not acceptable.
- C. All station devices shall receive power and data through a Power-Over-Ethernet switch. Once plugged into the LAN through a Power-over-Ethernet network switch, all networked devices shall be immediately operational and as applicable shall place or receive calls and pages from stations as well as page all devices in the network. Consoles, intercom stations, clocks, emergency displays, or speakers connected to the network shall not require any network configuration or administration to function.
- D. Each Intercom Station, Loudspeaker, clock/message display, shall be assignable to all or any combination of Unlimited Paging, Program Distribution or Time Zones in the system.
- E. Each Classroom shall be provided with two Call Stations located in separate locations in order to comply with NEMA Standard SB40 for Emergency Communications in K-12 Schools. One Call switch shall provide the ability to generate normal calls to a designated location while the other shall generate Emergency level calls.

- F. Speech shall be transmitted in the frequency range from 50 Hz to 7 kHz and shall use a maximum of 128 kbps of bandwidth during a call. In order to assure maximum intelligibility, all system audio shall be HD Audio as defined in Intel™ High Definition Audio Specifications, June 17, 2010..
- G. Intercom communications between consoles and system devices shall be non-blocking with no channel restrictions or limitations (other than network capacity) to the number of simultaneous conversations at any time between pairs of intercom stations, intercom station to console, console to console, console to speaker or zone of speakers, program source to a speaker or zone of speakers, or bell tones to a speaker or zone of speakers regardless of number of stations or consoles.
- H. Any and all devices shall have the ability to have their programming downloaded, individually or simultaneously via the network. Programming shall be downloadable in a series of human readable, industry standard comma-separated values (CSV) files that can be saved and edited using common spreadsheet applications. Consoles, intercom stations, clocks, displays, and speakers residing on a network shall have the ability to update their programming, simultaneously from a CSV file. Furthermore, all devices shall also have the capability to be configured directly, such that device numbers, names, zones, and call-in destinations can be altered in real time without the uploading or downloading of their programming. System shall be capable of uploading firmware updates to all device classes simultaneously, via the network, without the requirement of tools, by authorized technician or qualified facility technician or representatives.
- I. Audio communications between all devices shall be accomplished with latency values of a maximum of 0.1 seconds and connection times of 0.01s for 1 to 500 speakers.
- J. The system shall support a minimum of 50 channels of simultaneous duplex communication paths on the intercom system LAN, plus a minimum of 10 simultaneous duplex channels for PBX integration.
- K. The system shall be capable of routing calls from the Public Switched Telephone Network (PSTN) into any classroom, zone or the entire school via the District's SIP enabled Telephone System. This shall allow for remote monitoring and two-way voice communications from outside the facility to classrooms as well as paging into areas of the school. Additional features shall include:
 - 1. The ability to place call-ins from classroom call stations to SIP Telephones.
 - 2. The ability to initiate calls from SIP Telephones to eSeries Classroom Speakers.
 - 3. The ability to initiate zone and all call paging announcements from SIP Telephones to eSeries Speakers throughout the facility.
 - 4. The ability to make outside calls from Administrative Consoles to the PSTN via the Districts Phone System.
- L. The System shall allow users to configure multiple schedules per school, with an unlimited number of programmable events in each schedule. Each Event shall sound a user selectable tone, play a user provided audio file or an external audio source. In addition, a textual message shall be programmed to display on associated message displays throughout the school. All scheduling assignments shall be performed via a simple to use, Graphical User Interface (GUI) from a non-dedicated PC, residing in the School. Programming shall also be accomplished from a non-dedicated PC at the District Office. The following features and functions shall be provided. Systems that cannot provide these, shall not be acceptable.
 - 1. The system schedules shall facilitate the requirements of combined facilities (e.g. elementary and middle schools in a common building) where multiple schedules running concurrently would be required.

2. Each event shall play any of the available tones, audio files or audio sources provided. Events shall be directed to any one or more Time Zones in the systems.
 3. Events shall include textual messages to clock/message displays. These shall be formatted as fixed, flashing or scrolling displays that can include up to 200 characters in length.
 4. Time Tones may be manually activated from Administrative Consoles or selected SIP phones residing on the schools IP PBX.
 5. An integral Master Clock shall provide time synchronization to all secondary, digital clock / Message Displays throughout the school. The communications shall be capable of obtaining it's time synch signal from any NTP timeserver.
- M. The System shall be capable of automatically distribute SMS and email notifications to relevant staff members when an emergency event is occurring the facility. Notifications shall be distributed to user alert devices such as mobile phones and smart devices. Mobile phones shall receive the notifications as SMS messages while smart devices shall receive email messages. Emergency events include:
1. The activation of emergency-themed element icons on a PC GUI (e.g., Lockdown, Evacuate, etc.)
 2. Emergency Calls placed from Call Stations located room locations.
- N. The system shall automatically distribute SMS and email notifications to appropriate technical support staff in the event that the system is experiencing a fault.

1.04 SUBMITTALS

- A. Prior to commencement of work.
1. Shop Drawings - Refer to Section 01 3000 - Administrative Requirements, for submittal procedures. Submit shop Drawings including product data sheets and wiring diagrams and shall include the following:
 - a. A complete bill of materials with model and part numbers and reference to the Specification paragraph number.
 - b. A complete set of detailed manufacturers Specifications describing and illustrating all standard and special components and materials.
 - c. Provide 1/8 inch = 1'-0" Drawings stipulating devices and wiring for review.
- B. Post Construction
1. Provide signed (by attendees & trainer) & dated training syllabus for each completed training session to the Architect/Engineer Technology Designer.
 2. Operation & Maintenance Manuals
 - a. Provide complete O & Ms. One hard copy and PDF format.
 - b. Both formats shall be fully indexed by Section Name/System/Device.
 3. The Architect/Engineer Technology Designer may require operational demonstration of any products and systems to verify Execution/Installation/Configuration requirements are met.

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Technology Kick-Off Meeting: Participate in a technology kick-off meeting at least two (2) weeks prior to the start of the work of this section.
1. Attendance required
 - a. Contractor and contractor's on-site project manager
 - b. Related Subcontractors
 - c. Garmann/Miller Technology Designer
 - d. Construction Manager
 - e. Cedar Cliff Local Schools - Technology Coordinator

- B. Refer to Division 1 Front-End documents for additional requirements.

1.06 QUALITY ASSURANCE

- A. Equipment and components within the equipment shall be approved by UL, and shall meet National, State, and Local Requirements including the 2023 National Electrical Code.
- B. NFPA 70 - National Electric Code.
- C. Underwriter's Laboratory.
- D. ANSI/TIA/EIA-606-B for system records and labeling
- E. ANSI J-STD-607-C Telecommunications Bonding & Grounding.
- F. BICSI 14th Edition TDDM (Telecommunications Distribution Methods Manual)
- G. Americans with Disabilities Act.
- H. Federal Communications Commission Part 15.
- I. Sound System Engineering (Davis & Patronis) - 4th Edition 2013
- J. Audio Systems Design and Installation (Giddings) 1990

1.07 WARRANTY

- A. The system is to be left in first class operating condition and the Contractor is to warrant equipment for a period of three (3) years from date of Substantial Completion against defective materials, design, and workmanship.
- B. Upon receipt of notice from Owner of failure of any part of the new equipment during the warranty period, these parts shall be replaced at no cost to the Owner.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. The equipment specified herein and shown on the Drawings is based upon the Telecor eSeries Hybrid.
 - 1. Equals by: Bogen, Valcom IP6000, CareHawk CH1000

2.02 SUPERVISED NETWORK ADMINISTRATIVE CONTROL CONSOLE

- A. The Supervised Network Administrative Control Console (subsequently referred to as Console) shall be a Telecor model e300 or approved equal. The Console shall be supervised and allow the operator to establish two-way communications with an intercom station, talkback speaker, or another Console using the handset or speakerphone. VOX functioning shall be automatically enabled when the handset is used. The Push-to-Talk button shall toggle the Console between talk and listen mode when the speakerphone is used. The Console shall provide a 2-line by 20-character LCD display. The display shall be adjusted to a range of angles for optimum viewing. When there are no active calls, the display shall show the Console name and dial number. If a time server is connected to the network, the display shall also show the time and date.
- B. Incoming calls to a Console shall show the originating station dial number and name on the Console display. Calls shall be displayed in the order they are received. The operator shall scroll through the list of calls and answer them out of sequence. Emergency call-ins shall be distinctly annunciated both visually and audibly.
- C. The Console shall allow call-ins to be forwarded to another Console, or for calls to be put on hold or transferred to another Console location. Additionally, call-ins or calls shall be forward/transfer-able to PBX telephone extensions via a SIP trunk interface.
- D. The Console shall select remote audio sources connected at any location on the local area network, and distribute the audio broadcast from the source to all speakers in a facility or to selected areas such as a speaker zone or a selection of speakers. The Console shall be

capable of audio source verification by attendant prior to page zone activation. In this manner, attendants shall listen to the audio source locally, including listening to pre-recorded announcements, prior to system broadcast.

- E. The Console shall select a tone or a pre-recorded announcement and broadcast the tone or announcement to all facility speakers or to select areas, such as a speaker zone or a selection of speakers.
- F. The Console shall be equipped with digital volume control that shall allow for the separate adjustment of the speaker listen and handset listen volumes. The levels for intercom listen, tones, and program distributions shall be independently adjusted and stored in memory.
- G. The system shall allow user programming of alphanumeric architectural room names and numbers. The Console shall be capable of using 1 to 7 digit sequences for dial out and call-in identification, and shall display station numbering, station name, and call-in priority.
- H. The end-user shall be allowed to choose and determine the number and location of Consoles. The end-user shall not be limited by pre-set manufacturer limitations of the number of Consoles required by this project; allowing for unrestricted future expansion. Consoles may be added at any time. Consoles added by the end-user that exceed the engineered design for this project shall be at owner's expense. Communication between consoles or consoles and intercom stations or rooms shall not be inhibited by channel number restrictions.
- I. The Console shall be capable of displaying room statuses such as Privacy and Do Not Disturb and shall have the ability to override any status limiting communication between the Console and a station with Privacy or Do Not Disturb status activated. Temporary override shall not interfere with continued activation of Privacy and Do Not Disturb after communication has been established and electively terminated.
- J. Administrative Control Console (ACC)
 - 1. The Administrative Control Console shall be desk mounted and contain a matching telephone handset with retractable coiled cord. Housing shall be constructed of high-impact flame retardant black plastic console with volume control keys. Dimensions (including handset) 8" deep, 9" wide, 4" high, and 2lbs, 8ozs in weight. The termination shall be a plug-in locking modular connector.
 - 2. Administrative control stations shall be equipped with a large 2-line by 16-Character LCD alpha/numeric readout which shall provide:
 - a. 100% queuing of calling room numbers.
 - b. Sequential displays of calls "waiting".
 - c. Sequential display of priority stations.
 - d. Display of current time in idle state.
 - e. Full menu driven display of programmer prompting.
 - f. Full menu driven display of operator function dialing.
 - g. L.E.D's indicate function key's on/off.
 - h. The LCD display shall indicate that additional calls are pending beyond the one displayed "DISPLAY CALLS" button allows review of calls waiting. Call may be answered in or out of sequence.
 - 3. The Administrative Control Consoles shall provide two modes of communication to classroom speakers. Either voice operated handset or speaker and microphone communication activated by a built-in talk/listen switch for use in high noise areas.
 - 4. All Administrative Control Consoles shall have five (5) dedicated membrane switches labeled "EMERGENCY", "LOCK-DOWN", "EVACUATION", "TORNADO", and "ALL CLEAR". The operation of these switches shall gather all speakers for distribution of the highest priority of voice distribution call.
 - 5. Tone signaling distress or emergency signals.

6. Emergency voice announcements.
 7. Distribution of "Civil Emergency" alert tone.
 8. All administrative control stations shall have a dedicated membrane button labeled "PAGE". The operation of this control shall allow the distribution of tone signaling, distress signals, and voice announcements to speaker zones. Loudspeakers may be intermixed between zones.
 9. The Telecor XL shall be equipped with a built-in tone generator which provides for both time signal tone and emergency or other signals. It shall be possible to manually activate and sound the time event signal to any of the thirty-two (32) time zones from the ACC.
 10. An ACC shall have the capability to reset the priority level of any remote call-in device through the use of the menu driven display on the ACC control panel. The system shall provide visual feedback of the priority setting of each room station.
 11. Each ACC shall be provided with a wall plate and matching modular connector for the ACC cable. This connector shall be mounted on a standard single gang plate.
 12. Standard of quality shall be Telecor Model MCC-300. Equals: Class Connection VEADP, Bogen MCDS4, Carehawk AP1 Administrative Phone..
- K. SUPERVISED ETHERNET TERMINATION BOARD UNIT
1. The Termination Unit shall be a Telecor Model eTBU-MI or approved equal. It shall reside on the facilities LAN providing provide two-way intercom communications between Consoles and industry standard 25 Volt speaker stations.
 2. The Termination Unit shall distribute program audio to speaker locations and detect call-in annunciation from call switches in room locations. It shall selectively transmit Paging, Audio Programs and Time Tone Signals originating on the eSeries Network Devices, to individual rooms, all rooms, selected rooms, or zones of loudspeakers.
 3. The Termination Unit shall be consistent with the ANSI/NEMA SB 40 Standard for Communications Systems for Life Safety in Schools, supporting multiple call-in locations per room. These include the support of call-in devices with LED call assurance and privacy or do-not-disturb indication for each room. Multiple devices at a room location shall be configured to place call-ins with different destinations and priority levels. If the call-in destination of these devices is a Console or an IP-PBX phone extension, the device display shall indicate the calling room location dial number, a textual room name, and the priority level of the call-in. Room locations can be configured with a primary, secondary, and back-up call-in destinations. Emergency priority call-ins placed from a room location shall be configured with a different call-in destination.
 4. The Termination Unit shall support a Message Waiting (MW) feature. This feature shall use the LED on call stations to indicate waiting messages to room occupants. If no one is present in a room location to respond to a call or if the room is in Privacy or DND mode, the caller has the option to activate a MW indication. This causes the LED on the call station to pulse. When a call-in is initiated from the room, it shall be directed to the device that activated the MW indication and the MW indication will be deactivated.
 5. The Termination Unit shall support the Privacy function on Call Stations that are equipped with a Privacy button. When pressed, the Privacy button shall place the room location in privacy mode. This shall prevent monitoring of audio in the room. In privacy mode, the LED on the Call Station shall illuminate to indicate privacy mode. When a call-in is placed from the room location, privacy mode shall automatically be suspended for the duration of the call and re-enabled afterwards. If a call is placed to the room location while in privacy mode, the caller shall be alerted to the privacy mode and given the option to connect the call, leave a message-waiting indication, or to cancel the call.
 6. The Termination Unit shall include support for the Do Not Disturb mode. Call Stations equipped with a Do Not Disturb (DND) button shall place the room in DND mode when pressed. In DND mode, the LED on the Call Station shall flash to indicate that the station

is in the DND mode. This shall suspend zone pages and normal priority audio distributions from being broadcast into that room. DND mode shall not prevent emergency priority operations from reaching the location. If a call is initiated from a room location that is in the DND state, the DND shall be automatically suspended for the duration of the call and re-enabled afterwards.

7. The Termination Unit shall also provide synchronization and correction of traditional Digital and Analog Clocks, as well as Electronic Message Displays. The digital signaling that provides support for these devices shall originate in the eSeries Network. Analog Clock correction formats supported by Legacy T2 or XL systems, shall also be supported by the Termination Unit.
8. The Termination Unit shall monitor the wiring of all room location call devices for call line failure. It shall analyze the wiring for an open circuit, short circuit, or short to ground conditions. In the event of a fault, the Termination Unit shall detect the fault and provide trouble notification messages to devices equipped with trouble LED and buzzers which will annunciate the trouble signals.
9. The Termination Unit shall be equipped with an integrated 25 watt, dual-purpose intercom/paging amplifier. It shall be used to provide amplification for two-way intercom communications to room stations, as well as amplification for paging, audio programs, and time tone signals to speaker locations. In the event that the audio load is greater than 25 watts, a line level output shall provide for the connection of an external power amplifier.
10. All speakers, when connected to the Termination Unit shall reside on an "Off Bus." This shall ensure failsafe operation, where even in the event that network connectivity is lost, a redundant audio source can be connected to the "Off Bus" and emergency paging announcements can be transmitted to all speakers connected to the Termination Unit.
11. The Termination Unit shall mount in a standard rack panel measuring 19" W x 1.75" H and shall occupy a single rack unit. It shall be ideally suited for use with the Telecor C5PPL patch panel. Alternatively, two 50-pin, RJ-21 connectors shall provide termination facilities to a pair of TM-2X25 terminal blocks for connecting field devices. The unit shall be powered from an external 24 VDC Power Supply.

L. SUPERVISED SPEAKER BREAKOUT MODULE

1. The Speaker Breakout Module shall be a Telecor model eSBM-TB or approved equal. It shall provide the means of integrating traditional analog speakers and call initiating devices to the eSeries System. The Module shall also be a Single Zone Paging Adapter that can drive an amplifier to provide paging coverage in a facility. The Module shall have three relay outputs that can activate automatically during a call processing operation.
2. The Module shall receive power and data through a Power-Over-Ethernet switch. Once plugged into the LAN through a Power over Ethernet network switch, the Module shall place or receive calls and pages from the eSeries network. The Module shall not require any network configuration or administration to function.
3. Speech shall be transmitted through the Module in crystal-clear HD Audio. Audio shall be transmitted in the frequency range from 50 Hz to 7 kHz and shall use a maximum of 128 kbps of bandwidth during a call. Audio between the Module and eConsoles shall be non-blocking.
4. The Module shall support eSTB-12 2x2 Ceiling Inlay Speakers, which shall connect to the eSBM-TB via a standard CAT5 cable or conventional 8Ω/25V/70V speakers to provide paging and talkback operation from eSeries e300 eConsoles or phones via an eSIP and an IP-PBX.
5. The volume of the speakers shall be adjustable individually, by zone, or across the entire eSeries network via the ePort Management Interface or eCI Control Interface. Volume controls incorporated into certain eCS station models shall also allow a user to adjust the

- speaker volume locally. Volume levels shall be set by specific functions: intercom, paging, emergency paging, and Public Channel operations.
6. Call-in capabilities shall be provided with addition of any of Telecor's eSeries Call Stations. The eCS-6 and eCS-3 shall be used to initiate Normal and Emergency calls respectively. Advanced stations that provide additional features shall also be available: the eCS-1 (Privacy and Normal Call), eCS-2 (Do Not Disturb and Normal Call), and eCS-4 (Volume Control, Public Channel Select and Normal Call). All eCS Call Stations shall also provide "message waiting" indication.
 7. The eSBM-TB shall also support placing normal and emergency priority call-ins from simple pushbutton call switches. Pressing the normal call switch shall initiate a normal call-in, and either pressing it three times quickly or pressing and holding it for three seconds shall place an emergency call-in. Pressing the emergency switch once shall place an emergency call-in.
 8. The Module shall have the ability to direct normal and emergency call-ins to different devices. If the device that is configured to receive the call-in loses network connectivity, the Module shall automatically search for an alternate destination. If no other suitable call-in destinations exist, the Module shall audibly and visually indicate a fault.
 9. The Module shall have a call-in roll-over feature where if a call-in to the primary call destination is not answered after a pre-set amount of time, the call shall be automatically copied to a secondary call destination. If both the primary and secondary call destinations are unavailable, the call shall be redirected to a back-up eConsole.
 10. The Module shall have the capability to be configured as a member of one or more paging zones.
 11. The Module shall have a built-in 4-watt audio amplifier that shall drive up to 4 watts of audio to a small zone of 25/70 volt loudspeakers. The module shall provide a line level audio output that can connect to an external power amplifier for applications where the speaker zone load exceeds 4 watts.
 12. The Module shall be monitored for network connectivity. If the Module's network connection is lost, targeted e300 eConsoles shall report that station as absent and display its dial number. When the Module is used with eCS Call Stations, the Module shall also provide full supervision and monitoring for Call Station and call-in destination connectivity. If a wiring fault is detected between an eCS Call Station and the Module, the Module shall audibly and visually indicate the error utilizing the status LEDs on the Module. The eCS Call Stations shall pulse to indicate a trouble condition. In case of a fault, the ePort or eLog shall log the location, time, date and type of fault. If so configured, the ePort, eLog, eCI and eAmplifiers shall also generate an alarm tone.
 13. The Module's status LED shall flash in different patterns to indicate normal operation, call-in assurance, message-waiting, a call or paging audio in progress, or to indicate an error.
 14. The Module shall be equipped with three relays that can be used to operate auxiliary devices such as strobe lights, tone initiating devices and door locks.
 15. The eSBM-TB shall be wall-mounted using the attached mounting brackets.
- M. POWER AMPLIFIERS
1. The amplifiers shall be capable of producing an audio output of 60, 125 or 250 watts RMS at less than 1% distortion with balanced output.
 2. They shall be designed to operate on a line voltage of 115 AC.
- N. SUPERVISED NETWORK AMPLIFIERS
1. The Supervised Network Amplifier (subsequently referred to as Network Amplifier) shall provide a minimum of 25 watts for paging and public address and shall be capable of utilizing analog amplifiers to increase the amount of amplified signal from the network

- amplifier. The Network Amplifier shall be connected directly to the network switch by an RJ45 connector and shall receive signals directly from the network.
2. The Network Amplifier shall be supervised and in the event that network communications is lost, an audible alert shall sound on the Amplifier. The Network Amplifier shall provide a silence feature to mute the audible alert for 24 hours.
 3. The Network Amplifier shall also be capable of receiving local input from local devices such as tape decks, iPod docks, CD players, etc. The network amplifier shall be capable of transmitting signals received from the local input to other network locations or locally to directly connected 25/70 volt or 8-ohm analog speakers.
 4. Each Network Amplifier shall be capable of providing two audio inputs for local devices and shall be programmable as either a microphone or line-level input.
 5. The Network Amplifier shall be controlled remotely such that audio programs, input, tones, textual messages, or announcements may be initiated by other devices connected at different locations on the local area network.
 6. The Network Amplifier shall have a minimum of 4 local tone/pre-recorded announcement audio message control lines which when activated will distribute tones/pre-recorded audio messages to intended network amplifiers for re-distribution, network talk-back speakers (or a zone), and/or local 25/70 volt or 8-ohm analog speakers directly connected to amplifier. Each network amplifier shall be capable of storing four (4) pre-recorded announcements in addition to a minimum of 16 tones. Tones and announcements shall be activated locally or from other network devices.
 7. The Network Amplifier shall store and transmit companion textual messages for each stored audio announcements. Textual messages shall be automatically broadcasted to the same zones along with the audio messages such that any device programmed for that zone automatically receives both the audio and textual announcement/message and automatically reproduced each or both messages to the extent of the devices' capabilities.
 8. The Network Amplifier shall be capable of transmitting HD level audio as defined by Intel™ High Definition Audio specifications, June 17th, 2010 at a minimum.
 9. The Network Amplifier shall shut down to protect itself should an output short circuit fault or overload occur that jeopardizes the integrity of the Network Amplifier.
- O. SUPERVISED INTERACTIVE GRAPHICAL USER INTERFACE
1. The system shall include an Interactive Graphical User Interface (subsequently referred to as IGUI). The software shall reside on Telecor provided PC and should have ability to interface to District Wide Emergency Communication system located in district office.
 2. The IGUI shall be supervised and shall utilize an easy-to-use Graphical User Interface for quick and easy graphically aided navigation to access functionality for all intercom stations, paging zones, and program distribution sources. Emergency operations shall be simplified through the IGUI allowing stored audio files and alphanumeric messages for message displays to be activated from the IGUI. The IGUI shall allow common operations such as daily announcements to become simplified into single touch activated icons; removing multi-step console set ups and dial strings.
 3. The voice device used to originate voice communication for the IGUI to selected locations shall be a system console, telephone handset, or microphone independent from the computer hosting the IGUI. The voice device shall remain functional and accessible regardless of the operational state of a computer supporting the IGUI.
 4. The IGUI shall allow the creation of a custom operating screen(s) based on the floor plans of the facilities. Icons representing intercom stations, zones used for paging, tone distribution, textual Message distribution, and audio program distribution shall be incorporated onto the floor plans. The IGUI software shall provide:
 - a. Simple routine call processing, including: hold, transfer, and forward

- b. Activation of remote station auxiliary relays for applications such as door lock or release
 - c. Emergency functions
 - d. Paging
 - e. Audio program distribution
 - f. Customizable page elements
 - g. Customizable operating screen
 - h. Element library for emergency event icons
 - i. Initiation of emergency and non-emergency messaging, textual and audible
 - j. Remote station volume adjustment
 - k. Remote activation of do not disturb status and/or message waiting status
 - l. Remote station trouble indication
 - m. Remote station background music channel selection
 - n. Dynamic zone management for interactive on-the-fly console specific zones
 - o. Single touch emergency response (supporting both actual emergencies and drills) including but not limited to all or any combination of the following:
 - 1) Live voice notification
 - 2) Pre-recorded audio message
 - 3) Digital plain text messaging with simultaneous numerically coded message capability
 - 4) Remote system activation, i.e., access control systems, CCTV systems, door release systems, etc.
5. The IGUI must provide an efficient and reliable method of notifying the occupants within the facility of critical situations. A variety of emergency tone signals that reside within the intercom/paging system shall be activated by clicking on pre-programmed buttons on the IGUI screen, initiating the transmission of tone signals to speakers, and alphanumeric messages to message displays/digital clocks. A "lockdown" icon shall be designed as per Owner direction, with Owner selecting the appropriate tone. Whole building macros for emergency or off-normal response shall be built into the internal communication system as directed by the Owner. Each macro shall be capable of being activated by the console, the IGUI as indicated on plans or as directed by the Owner or AHJ. It shall be possible to activate a WAV file message or Owner selected tone coinciding with multi-language textual messages for distributions to zones as directed by the Owner, all from a single activation icon located on the IGUI. Other single action macros shall be activated in similar fashion via the IGUI and a custom-labeled icon. Plain language labeling of all icons on the IGUI shall be user changeable.

P. LOUDSPEAKERS

- 1. The 24" x 24" lay-in tile speaker assembly shall a Telecor model STB-12 or approved equal. It shall incorporate an 8" cone loudspeaker, equipped with a dual 25/70 volt line-matching transformer, pre-assembled into a 24" x 24" square perforated steel baffle and combination backbox, designed to be installed flush in a suspended ceiling
- 2. The loudspeaker shall have a wide frequency response for general-purpose voice and music reproduction. The line-matching transformer shall have primary taps at 5, 2.5, 1.25, 0.63, and 0.32 watts. The baffle is finished in a mar-resistant, white epoxy coating. The baffle is finished in a mar-resistant, white epoxy coating.
- 3. The speaker assembly shall be designed to be installed in a suspended ceiling. Installation is quick and simple as the 24" x 24" is designed to fit into a common 2-foot square ceiling grid. Tie off tabs allow the assembly to be secured to the building structure or ceiling grid to address any safety concerns.

4. The 12" x 24" lay-in tile speaker assembly shall be a Telecor model STB-5 or approved equal. It shall incorporate an 8" cone loudspeaker, equipped with a dual 25/70 volt line-matching transformer, pre-assembled into a 12" x 24" square perforated steel baffle and combination backbox, designed to be installed flush in a suspended ceiling.
5. The loudspeaker shall have a wide frequency response for general-purpose voice and music reproduction. The line-matching transformer shall have primary taps at 5, 2.5, 1.25, 0.63, and 0.32 watts. The baffle is finished in a mar-resistant, white epoxy coating. The baffle is finished in a mar-resistant, white epoxy coating.
6. The speaker assembly shall be designed to be installed in a suspended ceiling. Installation is quick and simple as the 12" x 24" is designed to fit into a common 2-foot square ceiling grid. Tie off tabs allow the assembly to be secured to the building structure or ceiling grid to address any safety concerns.
7. The Pre-assembled 8" packaged ceiling loudspeaker shall be a Telecor STB-10 assembly or approved equal. It shall include the loudspeaker/transformer/baffle assembly.
8. The loudspeaker size shall be 8 inches in diameter and have a power handling capacity of 15 watts. The voice coil shall be of high-temperature bonded construction, be one inch in diameter and have an impedance of 8 ohms. The speaker shall have a frequency range of at least 65 Hz to 17,000 Hz and an axial sensitivity of 92dB at 1 m, with a 1 watt input signal @ 1000 Hz. The loudspeaker shall be equipped with a factory wired 25/70 volt line-matching transformer. The transformer shall have the primary taps at 5/16, 5/8, 1-1/4, 2-1/2, and 5 watts. The insertion loss shall be no greater than 1.0 dB. The transformer shall be mounted to the speaker with the secondary leads soldered to the speaker terminals.
9. The assembly shall include a baffle constructed of 22 gauge, cold-rolled steel finished with a mar-resistant white, semi-gloss, epoxy coating. The baffle shall have a diameter of 13".
10. The STB-10 shall mount to a T7 support bridge, used to attach the assembly to suspended ceilings. The support bridge shall accept an enclosure, model H7, for applications where a protective enclosure is required. The H7 enclosure shall attach to the support bridge with appropriate mounting screws. The enclosure shall be a Telecor H7 or approved equal. A circular molded polystyrene damping pad shall be fitted to the inside top of the enclosure to prevent acoustical and mechanical resonances. The pad's surface shall be molded with a triangular pattern for enhancing low frequencies and shall optimize the audio response of the enclosure.

Q. RE-ENTRANT HORN/LOUDSPEAKER

1. The Re-Entrant Horn/loudspeakers, as indicated on the drawings, shall be a Telecor model A-15T or approved equal. It shall be a double re-entrant type, with a flared bell and an integral compression driver rated for 15 watts of continuous audio power. The frequency response shall be 375 -14,000Hz. Nominal sensitivity shall be such that a sound pressure level of 110 dB at 1000 Hz. (on axis) at distance of one meter is produced with an input of one watt. Sound dispersion shall be no less than 100 degrees, regardless of the mounting position. The horn shall contain a weatherproof, built-in, 25/70 volt line-matching transformer. Power taps shall be at 0.48, 0.94, 1.8, 7.5 or 15 watts for a 25V line and 1, 2, 3.8, 7.5 or 15 watts for a 70 V line. The power taps shall be screwdriver adjustable. Impedance selection shall be 5,000, 2500, 1300, 666, 333, 87, or 45 ohms.
2. The unit shall include a die-cast universal mounting bracket, allowing the horn to be positioned both in the vertical and horizontal planes with a single adjustment. The wiring terminals and the screwdriver power tap shall be enclosed by a clear plastic cover for security and weather protection. The horn shall be finished in a grey epoxy. Dimensions shall be 9 1/4" deep with a diameter of 8".

R. System Management Software

1. Provide a graphical interface software or application for system management, programming and messaging.

2. Manufacturers: Telecor - Telecor - TII/XL Editor , Bogen - Quantum Commander Software, Valcom - Windows Programming Tool - V-MPT, Carehawk Assistant™ software
- S. Central Equipment
1. The central equipment shall be mounted in a floor mounted open equipment rack provided by others. The central equipment shall consist of:
 - a. A power supply to provide operating DC power for the circuitry contained within the central equipment housing and Administrative Control Consoles (ACC's).
 - b. A central microprocessor unit with 60 watt power amplifiers or as required.
 - c. Zone circuit boards as required for remote stations and/or communications linkage.
 - d. The provision for terminating the cabling from up to two hundred (200) stations and two (2) Administrative Control Consoles.
 - e. The unit shall be a Telecor II as basis of design. Equals: Valcom IP6000, Bogen E7000, Carehawk CH1000
 2. The system shall include an integral master clock capable of distributing tone signals for class change purposes to classroom loudspeakers. The display shall be in either (12) or (24) hour format at the Administrative Control Consoles.
 - a. The system shall provide for an editing and review routine to permit the user to change and edit time events, zones, and schedules without having to reprogram the entire sequence.
 - b. The time display shall be protected by a built-in lithium battery which shall automatically correct the ACC time displays upon restoration of power.
 - c. The central sound system clock shall derive its time from the District designated NTP server. Provide the Ethernet ports, accessories and connections necessary to connect to the NTP server. Coordinate this work with the Clock system contractor installing the NTP server.
 3. The system shall include a remote rack located in the office area consisting of an AM/FM Tuner and CD player with Bluetooth input designed for continuous use as a program source in an institutional or industrial environment. The ACC shall be used to select source input.
 - a. The tuner/CD shall provide drift free reception of both standard AM and FM signals. The antenna shall be terminated via a standard RG-59 U connector.
 - 1) The standard of quality shall be Telecor T-CDP., Equals: Parasound Ztuner V.2 w/Parasound Zcd, Bogen CDR1
 - b. The system shall include a Compact Disc (CD) media player designed for continuous use as a program source in an institutional or industrial environment. It shall provide the following:
 - 1) The unit shall have a two speed manual search and a repeat and programmed play function.
 - 2) Full function infrared remote control.
 - 3) Front panel LED display which will provide a visual indication of all player activity.
 - 4) The unit shall be rack mounted.
 - 5) The unit shall be a Denon DN-500CB CD/USB/Bluetooth Player with Remote. Equals: Tascam CD-200iL Professional CD Player, TEAC CD-P650-B
 - c. Desktop rack shall be a Lowell L40 series. Equals: Middle Atlantic 2-10, Raxxess ERS series
 - d. The system shall have the capability of being configured through a web browser.
 4. Classroom Equipment
 - a. The ceiling loudspeaker shall be a 1' x 2' lay-in grid type speaker system. 12 watt RMS, 92 dB-SPL - 1W/1M average sensitivity, 25 and 70.7 volt lines, 5 taps at -3 dB

- levels, and 65Hz - 17kHz frequency response. Speaker shall be white in color. Provide quantities as shown on plans. The standard of quality shall be Quam System 5. Equals: Clarity S-521, Bogen CSD1x2/U
- b. The horn type paging speaker for mechanical/storage areas shall be wall mounted type with 16 watt power handling capacity, a sensitivity of 110 dB, 1W/1M, frequency response of 300-15kHz, and built-in 25/70 volt line transformer. Quantity as shown on plans. The standard of quality shall be Quam QH16T. Equals: Clarity S-615, Bogen HS15EZ
 - c. The wall speakers in the public/academic areas shall be a wall mounted unit equal to Quam System 2. Equals: Clarity S-504, Bogen MB8TSL
 - d. In high bay rooms and in open/cloud ceiling rooms, provide pendant mount speakers per drawings equal to a Bogen MPS2B with CK10B hanging kits (Black is the default color unless noted otherwise). Equals by Clarity, Soundtube.
5. Cable
- a. 20/2 stranded copper conductors shielded with overall jacket plenum rated mic and speaker wire: 7x28 stranding, 0.008" nominal flex plenum PVC insulation material, 100% Aluminum Polyester Foil shield, Stranded Tin Copper drain, 0.015" nominal flex plenum PVC jacket material, -10 to 60 degree C temperature rating, 300V RMS operating voltage rating, 60 pf/ft maximum capacitance @ 1 kHz between conductors, 108 pf/ft capacitance between conductors to shield @ 1kHz, 10.5 ohm/1M' DC resistance @ 20deg C.
 - 1) Approved Manufacturers: West Penn, Belden, Coleman, Windy City.
 - b. All open cabling must be plenum rated.
 - c. Shielded cables shall be bonded to the TGB/TMGB via the rack bonding busbar in the Telecommunication Room of origination.
6. Miscellaneous Equipment
- a. Two Antennas
 - 1) AM/FM A/S whip type roof mounted.
 - 2) Provide an additional coax cable from the remote rack location to a roof mounted antenna location for future weather radio connections. Weather radio provided by the owner. Coordinate requirements with owner prior to rough-in.
 - b. 10 Watt Attenuators, quantity as shown on plans. The standard of quality shall be Quam QC10. Equals: Clarity S560, Bogen AT10A
 - c. Intercom station with speaker and call button for two way communication, quantity as shown on plans. The standard of quality shall be Telecor ICS-2A. Valcom VIP-172L-ST, Bogen ADP1
 - d. Microphone: Audio Technica AT808G w/ AT866 (quantity 1). Equals by Shure 522, Bogen MBS1000A

PART 3 INSTALLATION

3.01 EXECUTION

- A. Install the system in accordance with the manufactures printed instructions and recommended cable types.
- B. Provide point-to-point wiring diagrams showing location of all wire pulls. Mark all cables corresponding to point-to-point wiring diagrams.
- C. System Acceptance Test
 - 1. Have the company field adviser adjust the completed system to desired volume levels of customer.
 - 2. The system shall operate for at least two weeks with no failures or changes required.
 - 3. Test every circuit in the system to ensure proper operation.

4. Test each daily function school will be using making sure staff is knowledgeable in the operation of the system.
- D. The Contractor shall provide a one-year warranty of the installed system against defects in material and workmanship. All labor and materials shall be provided at no expense to the Owner during normal hours. The warranty period shall begin on the date of acceptance by the Owner.
- E. The Contractor shall, at the Owner's request, make available a service contract offering continuing factory authorized service of this system after the initial warranty period.
- F. The system manufacturer shall maintain engineering and service departments capable of rendering advice regarding installation and final adjustment of the system.

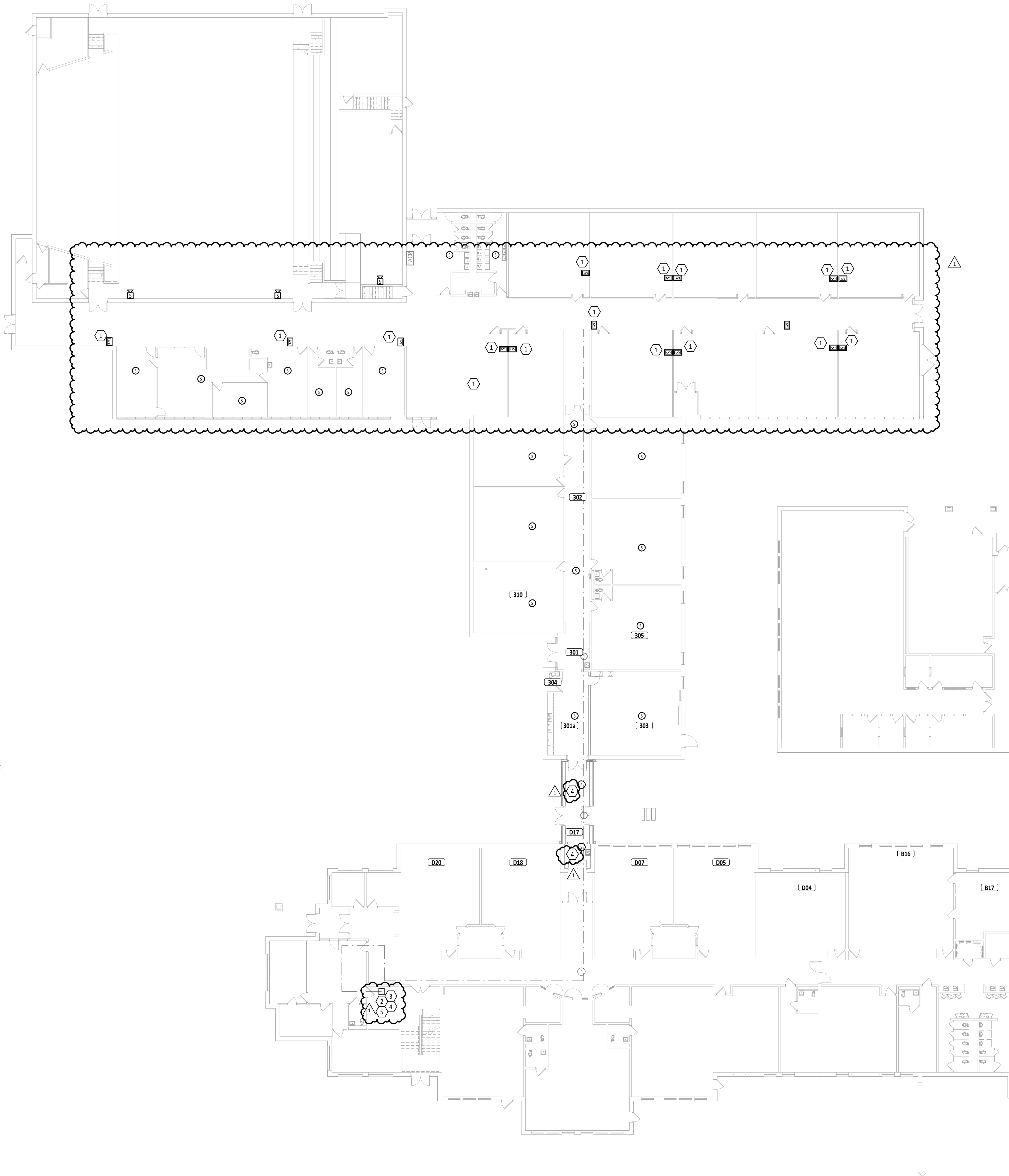
3.02 WIRING

- A. Circuits: Room speaker locations shall be on separate circuits and new corridor speakers shall be on one circuit.
- B. Room circuits shall be routed through classroom sound reinforcement system for auto mute.
- C. Wiring shall conform to recommendations of the subcontractor and shall be installed in accordance with the Specifications and as indicated on the Drawings.
- D. Interface central sound system with telephone system. Provide necessary transformers or relays to accomplish this.
- E. Interface with the District designated NTP server for clock signal.
- F. Contractor shall ground the AM and FM antennas using a No. 2 AWG and a 5/8" x 10 foot ground rod and the appropriate location on the nearest TGB/TMGB.
- G. Balance the levels of the loudspeaker units in the area to assure adequate coverage and level of sound throughout all areas as detailed hereinafter.
- H. Establish the normal settings for all controls for all systems and record same for future reference. All levels shall be set for optimum signal to noise ratio and signal balance.

3.03 TRAINING

- A. Provide sixteen (16) hours training for District's personnel on the operation, programming and maintenance of the system and four (4) additional training hours each six (6) months post installation until expiration of 3 year warranty.
- B. Provide two (2) video copies of all training.

END OF SECTION



FIRST FLOOR PLAN ROOM INDEX - UNIT B		
ROOM NUMBER	ROOM NAME	AREA
B01	WOMEN'S RESTROOM	254 SF
B02	MEN'S RESTROOM	221 SF
B03	CUSTODIAN	32 SF
B04	FAMILY RESTROOM	70 SF
B05	CORRIDOR	1,568 SF
B06	VESTIBULE	312 SF
B07	CONCESSION	114 SF
B08	ELEVATOR MACHINE ROOM	50 SF
B09	ELEVATOR	53 SF
B10	BOY'S RESTROOM	279 SF
B11	GIRL'S RESTROOM	279 SF
B12	HEALTH CLINIC	299 SF
B13	RESTROOM	34 SF
B14	GIFTED CLASSROOM	675 SF
B15	CORRIDOR	587 SF
B16	ART CLASSROOM	1,202 SF
B17	KILN ROOM	124 SF
B18	ART STORAGE	229 SF
B19	ELECTRICAL CLOSET	52 SF
B20	TELECOMMUNICATIONS ROOM	64 SF
B21	INSTRUCT. MATERIALS STORAGE	94 SF
B22	CUSTODIAN	52 SF
B23	TABLE STORAGE	403 SF
B24	STAFF DINING	391 SF
B25	PHYSICAL EDUCATION STORAGE	311 SF
B26	CORRIDOR	633 SF
B27	STAGE	2,019 SF
B28	STUDENT DINING	4,447 SF
B29	CORRIDOR	785 SF
B30	VESTIBULE	97 SF
B31	MAIL/WORK/COPY ROOM	289 SF
B32	RESTROOM	53 SF
B35	GUIDANCE OFFICE	196 SF
B36	PRINCIPAL'S OFFICE	220 SF
B37	CONFERENCE ROOM	246 SF
B38	WAITING AREA	182 SF
B39	MS/ HS SECRETARY	473 SF
B40	ADMINISTRATIVE STORAGE	143 SF
B41	CORRIDOR	651 SF
B42	MAIN ENTRY	243 SF
B43	CUSTODIAL WORKROOM	395 SF
B44	CUSTODIAL OFFICE	103 SF
B45	MECHANICAL	1,455 SF
B46	ELECTRICAL	408 SF
B47	RECEIVING	635 SF
B48	PREP AREA	432 SF
B49	SERVING AREA	652 SF
B50	WARE WASHING	182 SF
B51	OFFICE	103 SF
B52	FREEZER	115 SF
B53	COOLER	115 SF
B54	DRY FOOD STORAGE	239 SF
B55	HALL	163 SF
B56	RESTROOM	75 SF
B57	LOCKER ROOM	91 SF

KEYNOTE LEGEND	
#	KEYNOTE DESCRIPTION
1	ALTERNATE D1 AND ALTERNATE D2 - PROVIDE A QUAM SYSTEM 2 WALL MOUNT OR EQUALS BY OTHERS. SPEAKER FOR THE PUBLIC ADDRESS SYSTEM. SPEAKER TO BE WHITE IN COLOR.
2	LOCATION OF EXISTING PAGING RACK, PROVIDE ALL EQUIPMENT NEEDED TO EXTEND THE PAGING SYSTEM INTO BUILDING. EACH CLASSROOM SHALL BE ON INDIVIDUAL ZONE. ALL CORRIDOR AND GYM SPEAKERS SHOULD BE DAISY CHAINED BETWEEN THEMSELVES.
3	ALTERNATE D2 - PROVIDE EXPANSION CARD FOR EXISTING VALCOM VCS-3 AND CLASS CONNECTION PAGING SYSTEM. CONNECT NEW SPEAKERS TO EXISTING SYSTEM AND COORDINATE WITH OWNER FOR ZONE CONFIGURATION
4	BASE BID - PROVIDE NEW HALLWAYS SPEAKERS IN CONNECTOR ONLY. CONNECT SPEAKERS TO EXISTING HALLWAY PAGING ZONE IN EXISTING MIDDLE/HIGH SCHOOL BUILDING.
5	ALTERNATE D1 - PROVIDE NEW PAGING SYSTEM TO REPLACE EXISTING VALCOM VCS-3 AND VALCOM CLASS CONNECTION. REUSE ALL EXISTING SPEAKERS AND CABLING FROM EXISTING MIDDLE AND HIGH SCHOOL AND PROVIDE THREE (3) REMOTE PAGING RACKS IN MAIN OFFICES. COORDINATE WITH OWNER FOR EXACT LOCATIONS. CONNECT ALL NEW SPEAKERS TO NEW SYSTEM AND COORDINATE WITH OWNER FOR REQUIRED ZONE CONFIGURATION. REFER TO SPECIFICATION 27.51.23 FOR MORE INFORMATION.



ADDITION AND RENOVATION FOR
CEDAR CLIFF LOCAL SCHOOLS - K-12 SOUTH CONNECTOR
SUSAN MANT'S, CEDARVILLE, OH 43014

ISSUANCES/REVISIONS		
CONSTRUCTION DOCUMENTS	06/24/2026	
1 ADDENDUM 05	06/03/2026	

PROJECT NUMBER:	DRAWN BY:	CHECKED BY:
25056.00	JMR	GAW

SHEET TITLE:
FIRST FLOOR TECHNOLOGY CABLING PLAN - UNIT B

SHEET NUMBER:
TCE1.2