ADDENDUM NO. 2
to
CONTRACT DOCUMENTS

for
PUBLIC ADDRESS AND CLOCK SYSTEM REPLACEMENT AT VARIOUS MANALAPAN-ENGLISHTOWN REGIONAL SCHOOLS
School, 118 Millhurst Road, Manalapan, NJ 07726

for the
MANALAPAN-ENGLISHTOWN REGIONAL SCHOOL DISTRICT
Monmouth County, New Jersey

Issued: May 1, 2026

FVHD PROJECT NO. 5618

Locations of Operation:
Clark Mills Elementary School, 34 Gordons Corner Road, Manalapan, NJ 07726
John I. Dawes Early Learning Center, 38 Gordons Corner Road, Manalapan, NJ 07726
Pine Brook Elementary School, 155 Pease Road, Manalapan, NJ 07726
Manalapan-Englishtown Administrative Office located at Manalapan-Englishtown Middle School, 155 Millhurst Road, Manalapan, NJ 07726

FRAYTAK VEISZ HOPKINS DUTHIE, P.C.
Architects – Planners
1515 Lower Ferry Road, Trenton, NJ 08618
Tel: 609.883.7101 - Fax: 609.883.2694
William D. Hopkins, III AIA, LEED AP, No. 21AI01706000

GILLAN & HARTMANN, INC.
Consulting MEP Engineers
820 Adams Ave., Ste. 210, Audubon, PA 19043
M. Steven Gillan, P.E., No. 24GE4470000

INTENT: This Document supersedes all conflicting and contrary information in said Bid Documents. Said documents are hereby amended in certain particulars as described herein after. Unless specifically noted or specified hereinafter all work shall conform to the applicable provisions of the Bid Documents. Bidders shall acknowledge receiving this document and previously issued Addendum No. 1 on the Bid Proposal Form.

This Addendum includes eight (8) pages and the following:

1. Addendum No. 2, as prepared by Gillan & Hartmann, dated May 1, 2026, 3-pages.
2. Prebid Sign-in Sheet (1-page).
3. Revised Bid Proposal Form, 3-pages.
4. Revised Specification Sections: 00850, 01010, 275123.
5. New Specification Sections: 271513.
6. New and Revised Drawing(s): G001CD, G001MS, E001, E101CD, E102CD, E103CD, E104CD, E105CD, E201CD, E202CD, E203CD, E204CD, E205CD, E601CD, E101PB, E102PB, E201PB, E202PB, E601PB, E201MS, E601MS.

CLARIFICATION(S)

1. The project scope of work as originally advertised for bid included every school and the Manalapan-Englishtown Administration Office. The scope of work for this project has been revised to only require work at: Pine Brook Elementary School, John I. Dawes Early Learning Center, Clark Mills Elementary School, Manalapan-Englishtown Administration Office.

REQUESTS FOR INFORMATION (RFI'S)

1. Question: Please confirm the make and model of the Owner's IP-based telephone system. Is the system consistent across all buildings, or does each school operate on a different platform?

   Response: The Owner has an I.P. based telephone system that the Public address System will integrate with over the data network system. Coordinate the exact make and model of the telephone system with the Owner.

2. Question: Please confirm the extent of removal for existing cabling. Is complete removal back to source required, or is abandonment in place (cut and cap above accessible ceiling) acceptable?

   Response: Complete removal is required on the drawings and specifications.

3. Question: Please provide details on the existing cafeteria and gym sound systems to be integrated with the new PA system, including manufacturer and model.

   Response: Provisions for integrating with the existing sound systems are shown on the drawings.

4. Question: Drawings for John Dawes ELC do not indicate any volume attenuator stations. Please confirm if volume controls are required for this building.

   Response: Volume controls are required where shown on the drawings.

5. Question: On Pine Brook Drawing E202PB, please confirm the required clock size for the southeast cafeteria location (9" vs. 24").

   Response: This has been addressed in the Addendum drawings and specifications.

6. Question: Please confirm whether the new PA system is required to integrate with any existing or planned emergency notification or lockdown systems.

   Response: This has been addressed in the Addendum drawings and specifications.

7. Question: Please confirm the final number of PA zones required per building and whether zone layouts shown on drawings are final or schematic.

   Response: Include provisions for what is shown on the drawings.

8. Question: Please confirm the required change-of-class tone schedule and whether tones are to be generated by the clock system, PA system, or both.

   Response: This has been addressed in the Addendum drawings and specifications for the Base Bid and the Addendum.

9. Question: Please confirm configuration of exterior speakers, single vs. double horn requirements.

   Response: This has been addressed in the Addendum drawings.

10. Question: Please confirm whether bidders are permitted to submit a base bid in full compliance with the contract documents and a separate alternate proposal for an equivalent or hybrid system that meets or exceeds the functional requirements of the specifications. If permitted, please clarify whether such alternates should be submitted as part of the base bid (as an alternate) or as a separate proposal.

    Response: Follow the substitution provisions of the contract.

11. Question: Classrooms 3-14 of Pine Brooks Elementary has two sets of clocks and speakers in each room. The drawings do not shown a room divider, please confirm the correct number of units in these rooms.

    Response: This has been addressed on the Addendum drawings.

12. Question: Several outside speakers are shown as “reuse existing recessed backboxes”. Can the model or dimensions of these existing units be provided for reference?

    Response: This has been addressed on the Addendum drawings such that no existing backboxes shall be reused.

13. Question: Section 260810, Part 2.3 section G, classroom clocks are described as 12”. In section H, classroom clocks are described as 16”. Please confirm which is accurate.

    Response: This has been addressed on the Addendum Drawings.

14. Question: Section 260810, Part 2.3 section G, gym clocks are described as 16”. In section H, gym clocks are described as 24”. Please confirm which is accurate.

    Response: This has been addressed on the Addendum Drawings.

15. Question: Please confirm the make/model of the existing clock system. If the district decides not to move forward with new clock system add alternate, we want to confirm the new paging system can seamlessly synchronize the existing clock system.

    Response: No existing clock system shall be relied upon to support new public address system equipment. The Alternate of not providing the clock system will be modified to require an additional Network Time Synchronized Controller in the Public Address System Control Cabinet to obtain time from the Data Network System and be programmed with multiple change of class schedules and a Change of Class Tone Generator.

16. Question: Is a LED 24VDC indicator light design acceptable in lieu of the 120V indicator light specification? This will be a more cost effective solution, with a max candela of 185cd.

    Response: The drawings and specifications indicate 120 volt circuits provided to 120 volt indicator lights. If the Contractor chooses to substitute 24 VDC lights and circuits to fulfill the same requirement, that would be acceptable.

17. Question: Part number for Master Clock is for a company called American Time, is this the only company you will accept?

    Response: Specification 260810 (2.1)(A) lists four available Vendors.

18. Question: Are wired clocks the only acceptable device used? Can Wireless 900 mhz clocks be utilized?

    Response: Wireless control and 120 volt powered clocks are specified.

19. Question: Do you have diagrams of the existing paging system connections?

    Response: No. The existing paging systems are required to be completely removed.

20. Question: Can existing cabling for paging be reutilized?

    Response: No.

21. Question: Are you looking for talkback capability in the classrooms, with a button to notify the main office?

    Response: No.

22. Question: Are you allowing site surveys at each school?

    Response: Coordinate with the Owner. Contact Jeff Lasko, Physical Plant DIrector.

23. Question: Zones are not defined in each school's PDF diagrams, do you have a list?

    Response: Provide Zones as shown on the drawings.

24. Question: Confirm if the district wants two-way communication?

    Response: Two-way communication is not required in this Project.

REFER TO DRAWINGS

The following Drawings and/or Sketches are attached to this Addendum:

DRAWING NO.	TITLE
G001CD	TITLE SHEET AND DRAWING INDEX - CLARK MILLS ES
G001MS	TITLE SHEET AND DRAWING INDEX - MANALAPAN-ENGLISHTOWN MIDDLE SCHOOL
E001	ELECTRICAL LEGEND, NOTES AND DETAILS
E101CD	CLARK MILLS ES ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN: BLOCK "A"
E102CD	CLARK MILLS ES ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN: BLOCK "B"
E103CD	CLARK MILLS ES ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN: BLOCK "C"
E104CD	CLARK MILLS ES ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN: BLOCK "D"
E105CD	JOHN I DAWES ELC ELECTRICAL REMOVALS - PARTIAL FLOOR PLANS: BLOCKS "A" & "B"
E201CD	CLARK MILLS ES ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN: BLOCK "A"
E202CD	CLARK MILLS ES ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN: BLOCK "B"
E203CD	CLARK MILLS ES ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN: BLOCK "C"
E204CD	CLARK MILLS ES ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN: BLOCK "D"
E205CD	JOHN I DAWES ELC ELECTRICAL NEW WORK - PARTIAL FLOOR PLANS: BLOCKS "A" & "B"
E601CD	CLARK MILLS ES & JOHN I DAWES ELC ELECTRICAL PA & CLOCK RISER DIAGRAMS AND PA SYSTEM ZONES
E101PB	PINE BROOK ES ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN: BLOCK "A"
E102PB	PINE BROOK ES ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN: BLOCK "B"
E201PB	PINE BROOK ES ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN: BLOCK "A"
E202PB	PINE BROOK ES ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN: BLOCK "B"
E601PB	PINE BROOK ES ELECTRICAL PA & CLOCK RISER DIAGRAMS AND PA SYSTEM ZONES
E201MS	MIDDLE SCHOOL BOE OFFICE ELECTRICAL NEW WORK
E601MS	MIDDLE SCHOOL BOE OFFICE ELECTRICAL PA & CLOCK RISER DIAGRAMS AND PA SYSTEM ZONES

The following Drawings to be revised or corrected as follows:

DRAWING NO.	CHANGES AND CORRECTIONS
G001CM, G001DA, G001LM, G001MB, G001TM, G001WB	Delete the referenced drawings in their entirety.
E101CM, E102CM, E103CM, E104CM, E201CM, E202CM, E203CM, E204CM, E601CM	Delete the referenced drawings in their entirety.
E101DA, E201DA, E601DA	Delete the referenced drawings in their entirety.
E101LM, E102LM, E201LM, E202LM, E601LM	Delete the referenced drawings in their entirety.
E101MS, E102MS, E103MS, E104MS, E105MS, E106MS, E107MS, E108MS, E109MS, E110MS, E111MS, E112MS, E202MS, E203MS, E204MS, E205MS, E206MS, E207MS, E208MS, E209MS, E210MS, E211MS, E212MS	Delete the referenced drawings in their entirety.
E101MB, E102MB, E201MB, E202MB, E601MB	Delete the referenced drawings in their entirety.
E101TM, E102TM, E103TM, E201TM, E202TM, E203TM, E601TM	Delete the referenced drawings in their entirety.
E101WB, E102WB, E103WB, E104WB, E105WB, E201WB, E202WB, E203WB, E204WB, E205WB, E601WB	Delete the referenced drawings in their entirety.
G001MS	Delete the referenced drawing in its entirety and substitute with the enclosed revised drawing.
G001CD	Add the referenced new drawing enclosed with this Addendum.
E001, E101PB, E102PB, E201PB, E202PB, E601PB, E201MS, E601MS	Delete the referenced drawings in their entirety and substitute with the enclosed revised drawings.
E101CD, E102CD, E103CD, E104CD, E105CD, E201CD, E202CD, E203CD, E204CD, E205CD, E601CD	Add the referenced new drawings enclosed with this Addendum.

REFER TO SPECIFICATIONS

Inside Cover Page – Delete and replace Locations of Operations as follows:

Locations of Operation:
Clark Mills Elementary School, 34 Gordons Corner Road, Manalapan, NJ 07726
John I. Dawes Early Learning Center, 38 Gordons Corner Road, Manalapan, NJ 07726
Pine Brook Elementary School, 155 Pease Road, Manalapan, NJ 07726
Manalapan-Englishtown Administrative Office located at Manalapan-Englishtown Middle School, 155 Millhurst Road, Manalapan, NJ 07726

TABLE OF CONTENTS

Under Part - 6 Electrical Work, add the following new sections which are attached to this Addendum:

271513	Communications Copper Horizontal Cabling, 9 pages.
275123	Public Address and Program System, 15 pages

PART 1 - SECTION 00850 - CONTRACTOR DRAWINGS

Delete Section 00850 in its entirety and replace with the attached revised Section 00850.

PART 1 - SECTION 01010 - SUMMARY OF WORK

Delete Section 01010 in its entirety and replace with the attached revised Section 01010.

PART 1 - SECTION 01030 - ALTERNATE BIDS

Page	Paragraph	
01030-2	1.2	Delete subparagraph "A" in its entirety and substitute with the following:

A. **Alternate Bid No. 1: Analog Clocks, Wiring & Appurtenances at Pine Brook Elementary School, John I. Dawes Early Learning Center, Clark Mills Elementary School and Manalapan-Englishtown Administration Office**

State the amount to be added to the base bid to provide and install analog clocks, wiring and appurtenances at Pine Brook Elementary School, John I. Dawes Early Learning Center, Clark Mills Elementary School, Manalapan-Englishtown Administration Office and all associated work, as shown on various Drawings and as indicated in various Specification sections.

PART 6 - SECTION 271513 - COMMUNICATIONS COPPER HORIZONTAL CABLING

Add new Section 271513 attached to this Addendum

PART 6 - SECTION 275123 - PUBLIC ADDRESS AND PROGRAM SYSTEM

Delete and replace Section 275123 attached to this Addendum

END OF ADDENDUM NO. 2

ADDENDUM NO. 2

to the

DRAWINGS AND SPECIFICATIONS

for the

Public Address, and Clock Systems Replacement at Various District Schools

Located at

Township of Manalapan / Borough of Englishtown

New Jersey

GILLAN & HARTMANN
Building Systems Consulting Engineers

Addendum No. 2, dated May 1, 2026, is issued as part of the Contract Documents, dated April 6, 2026, to inform and/or specify changes which take precedence over information contained in the original Contract Documents. Unless otherwise specifically noted or specified hereinafter, or shown on drawings or specifications accompanying this Addendum, all work required by this Addendum shall conform to the applicable provisions of the Contract Documents. It shall be the responsibility of the Bidder to include in their bid any cost implications of this Addendum. All Bidders are to indicate on the form of proposal submitted by them, acknowledgment of receipt and compliance with the contents of this change to the Contract Documents.

Any provision in any of the Contract Documents which may be in conflict or be inconsistent with the contents of this Addendum shall be void to the extent of such conflict or inconsistency.

1. ELECTRICAL TRADE

1.1 ERRATA IN THE SPECIFICATIONS:

1.1.1 Replace Specification 275123 with the new Specification 275123 in this Addendum.

1.1.2 Added Specification 271513 Communications Copper Cabling in this Addendum.

2.1 ERRATA ON THE DRAWINGS:

2.1.1 Drawing E001:

2.1.1.1 Changed provisions for additional equipment included in General Notes 15, 16, 17, and 18 as shown on the attached drawing.

2.1.1.2 Modified Symbol Legend, General Notes and Abbreviations as indicated.

2.1.2 Removed Clark Mills Drawings E101CM, E102CM, E103CM, E104CM, E201CM, 202CM, 203CM, 204CM, and E601CM.

2.1.3 Removed John Dawes Drawings E101DA, E201DA, and E601DA.

2.1.4 Added the combined John Dawes and Clark Mills Drawings E101CD, E102CD, E103CD, E104CD, E105CD, E201CD, E202CD, E203CD, E204CD, E205CD, and E601CD.

2.1.5 Removed Lafayette Mills Drawings E101LM, E102LM, E201LM, E202LM, E601LM.

2.1.6 Removed Middle School Drawings E101MS, E102MS, E103MS, E104MS, E105MS, E106MS, E107MS, E108MS, E109MS, E110MS, E111MS, E112MS, E201MS, E202MS, E203MS, E204MS, E205MS, E206MS, E207MS, E208MS, E209MS, E210MS, E211MS, E212MS, and E601MS.

2.1.7 Added Middle School Drawings E201MS and E601MS.

2.1.8 Removed Milford Brook Drawings E101MB, E102MB, E201MB, E202MB, E601MB.

2.1.9 Pine Brook Drawings E101PB, E102PB, E201PB, E202PB, E601PB: Revised as indicated.

2.1.10 Removed Taylor Mills Drawings E101TM, E102TM, E103TM, E201TM, E202TM, E203TM, and E601TM.

2.1.11 Removed Wemrock Brook Drawings E101WB, E102WB, E103WB, E104WB, E105WB, E201WB, E202WB, E203WB, E204WB, E205WB, and E601WB.

END OF ADDENDUM NO. 02

Pre Bid Mtg for FVAD 5618 PreBid Sign In Sheet 4/13/26
PA/Clerk - Mandatory Electrical Hours

Name	Co.	Phone	
Veronica Wolf	MERS	(732) 786-2514	VWolf@mersnj.us
Kevin Toner	American Time	(267) 315-6421	KToner@atsclock.com
Kim Murray	Teq	732 762-2994	Kimberlymurray@teq.com
Vlad Litlik	VA Electrical	609 223-0777	VLuilik@yahoo.com
Rob Baumgartner	IBEW LU 400	732-539-6762	Rob@IBEW400.org
Vadim Bonoway	Signal	732-337-3554	Vadim@signalelectrical.com
Dylan Lafarge	Signal	732-333-3554	dylan@signalelectrical.com
Scott Weitz	New Royd		
Bob Postlethwaite	New Royd		
Nick Goldkrant	CM3	215-880-2351	nickgoldkrant@cm3inc.com
Kimberly Wolf	MERS	732 883 2515	Kwolf@mersnj.us
J Lasko	MERS	732-904-1818	Jlasko@mersnj.us
David Pereira	Technotime Business Solutions	732-586-4067	dpereira@technotimebs.com

ADDENDUM NO. 2

BID PROPOSAL FORM

SINGLE OVERALL CONTRACT

DPMC Classification: C048 Prime Contractor

To: Manalapan-Englishtown Regional School District
54 Main Street
Englishtown, NJ 07726

1. The undersigned, having familiarized themself with the local conditions affecting the cost of the work, the Drawings, the Specifications and other Bid Documents, as in the Advertisement for Bids thereto, for the **Public Address and Clock System Replacement at Various Manalapan-Englishtown Regional Schools, (FVHD#5618)**, together with all work incidental thereto, in accordance with the requirements of the Drawings and Specifications prepared by Fraytak Veisz Hopkins Duthie, P.C., Architects/Planners, Trenton, New Jersey, hereby proposes to furnish all labor, materials and equipment required for all Work and as follows:

   Locations of Operation:
   Clark Mills Elementary School, 34 Gordons Corner Road, Manalapan, NJ 07726
   John I. Dawes Early Learning Center, 38 Gordons Corner Road, Manalapan, NJ 07726
   Pine Brook Elementary School, 155 Pease Road, Manalapan, NJ 07726
   Manalapan-Englishtown Administrative Office, located at Manalapan-Englishtown Middle School, 155 Millhurst Road, Manalapan, NJ 07726

   SINGLE OVERALL CONTRACT - BASE BID: All Work at the above referenced buildings, including applicable Allowances - Section 01020, in accordance with the requirements of Bid Documents. If written amount differs from the numerical figure, only the written amount will be accepted as the correct bid.

   TOTAL BASE BID INCLUDING ALLOWANCE $_____
   (Numerical)

   _____
   (To be written in full)

2. **Alternate Proposal(s) - Section 01030** shall be quoted as additions to, deductions from or No Change (NC) to the Base Bid and shall be in accordance with the Specifications for Alternate Bid Work. If written amount differs from the numerical figure, only the written amount will be accepted as the correct bid.

   Alternate Bid No. 1: Analog Clocks, Wiring & Appurtenances @ Clark Mills ES, John I. Dawes ELC, Pine Brook ES & Manalapan-Englishtown Administrative Office

   ADD $_____
   (Numerical)

   _____
   (To be written in full)

Submitted by:_____
(Firm Name)

3. **<u>UNIT PRICES - SECTION 01151:</u> Materials in Place.**

One additional wireless controlled clock added to the system shown on the drawings. Include 50 feet of (2)#12, (1)#12 Ground, 3/4" Conduit for clock power.	$_____ per unit
One additional interior PA speaker with 50 feet of additional PA speaker wiring added to one of the existing PA zones	$_____ per unit
One additional exterior PA speaker with 50 feet of additional PA speaker wiring added to one of the existing PA zones	$_____ per unit
One additional interior PA speaker Sound Attenuating Station with 15 feet of additional PA speaker wiring added to one of the PA speakers	$_____ per unit

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Submitted by:_____
(Firm Name)

4. Bidder hereby acknowledges receipt of the following Addenda:
   No Addenda Issued ☐

Addendum No. 1 ,	**issued**_____	**received**_____**(initial)**
Addendum No. 2 ,	**issued**_____	**received**_____**(initial)**
Addendum No.___,	issued_____	received_____(initial)
Addendum No.___,	issued_____	received_____(initial)

5. In submitting this bid, it is understood that the right is reserved by the Owner to accept or to reject bids pursuant to N.J.S.A. 18A:18-22 and any bid that is non-responsive or submitted by a Bidder that is not responsible, and it is agreed that this bid may not be withdrawn for a period of sixty (60) days from the date set of the opening thereof.

6. Bid Security in the sum of_____($_____)
   in the form of _____ (Certified Check, Cashier's Check, or Bid Bond) is submitted herewith in accordance with the requirements of the Specifications.

7. The undersigned is an individual ( )
   a partnership ( )
   a corporation ( ) under the laws of the State of _____,
   having principal office in the _____ of _____, County
   of _____, and State of _____.

Respectfully Submitted,

_____
(Company Name, if Bidder is a company)

BIDDER'S SIGNATURE

_____
(Company Officer, if Bidder is a Corporation or LLC)

(Seal, if Corporation)

_____
Printed or Typed Name Title of Officer (if the Bidder is a Company)

_____
Address

_____
City, State, Zip Code

_____
Phone & Fax

_____
Dated

_____
Email Address

NOTE: SEE BIDDERS CHECKLIST

Submitted by:_____
(Firm Name)

SECTION 00850 - CONTRACT DRAWINGS

1.1 Clark Mills Elementary School and John I. Dawes Early Learning Center:

All Drawings listed on drawing No. G001CD, "Title Sheet and Drawing Index," dated April 6, 2026, unless otherwise revised or amended (via Addenda, Bulletin, etc.), shall form a part of the Bid Documents.

1.2 Administrative Offices located at Manalapan-Englishtown Middle School:

All Drawings listed on drawing No. G001MS, "Title Sheet and Drawing Index," dated April 6, 2026, unless otherwise revised or amended (via Addenda, Bulletin, etc.), shall form a part of the Bid Documents.

1.4 Pine Brook Elementary School:

All Drawings listed on drawing No. G001PB, "Title Sheet and Drawing Index," dated April 6, 2026, unless otherwise revised or amended (via Addenda, Bulletin, etc.), shall form a part of the Bid Documents.

END OF SECTION 00850

SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The work of this Section applies to all Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections and Specifications Sections included in Part-2 through Part-6.

1.2 SUMMARY

A. Section Includes:

1. Project description.
2. Contract scope description.
3. Contractor's use of the premises.
4. Preconstruction meeting.
5. Security procedures.

1.3 PROJECT DESCRIPTION

A. The base bid project consists of the Public Address Replacement at the Pine Brook Elementary School, John I. Dawes Early Learning Center, Clark Mills Elementary School and Manalapan-Englishtown Administration Office for the Manalapan-Englishtown Regional School District, Board of Education, Monmouth County, New Jersey.

B. Bid Documents prepared by Fraytak Veisz Hopkins Duthie, P.C. Architects / Planners, (Project Number: FVHD-5618) and their Consulting Electrical Engineer: Gillan & Hartmann, Inc., Mont Clare, PA.

1.4 CONTRACT SCOPE DESCRIPTION

A. The work consists of but is not limited to the following:

1. Microprocessor-switched intercommunications and program systems at Pine Brook Elementary School, John I. Dawes Early Learning Center, Clark Mills Elementary School, Manalapan-Englishtown Administration Office and all associated work.

2. Base Bid:
   a. Include provisions in the Public Address System Control Cabinet for a Network Time Synchronized Public Address System Controller/Digital Signal Processor/Paging Server with all required system programming, software, and equipment that can provide (without a separate clock system) change of class bell/tone signals over the public address system speakers.

b. The time synchronization equipment shall include a CAT-6A cable connection extended to the Owner's data network patch panel to maintain accurate system time from the Owner's data network system.
c. The Controller shall be provided with a programmable scheduling Change of Class/Bell Controller with all required software to maintain a minimum of three daily change of class Calender based schedules.
d. The system shall include a tone generator (with multiple styles of tones as selected by the Owner) and allow live paging priority override.
e. The system shall include provisions for the school staff to manage the change of class schedules using a data network system-based interface that is provided with all required network software and licensing.
f. A separate CAT-6A jack and cable connected to the school's data network system shall be provided for this system control if required.
g. Note: If the add Alternate Bid for the Clock System is accepted, this time synchronization and change of class programming can be provided in the Clock System controller.

3. All other indicated work.

B. Alternate Bids:

1. Alternate Bid No. 1: Analog Clocks, Wiring and all Appurtenances

C. Single Overall Contract includes:

1. All work in accordance with Drawings, Parts 2 and 6 Specification Sections and in accordance with Bid Documents.

2. Electrical Work includes:
a. The work necessary for electrical power distribution, and the connections to equipment tied into such systems, including all work in accordance with drawings and Part-6 Specification sections.
1) Also includes both administrative and coordination responsibilities.
a) Electrical Contractor is responsible for all coordination between their work and work of all Subcontractors.
2) Work shall include power distribution and wiring for all indicated electrically operated equipment and fixtures, whether shown or not on Drawings.
3) Work shall include demolition and removals, as indicated or required, to allow for new construction.
4) Work shall include reinstallation, cutting, patching, finishing and repair work associate with Electrical work, as indicated or required.

1.5 CONTRACTOR'S USE OF THE PREMISES

A. The space available to the Contractor for the performance of the work, either exclusively or in conjunction with others performing other construction as part of the project, is shown on the Drawings.

1. Other areas are off limits to all construction personnel.

B. The following building facilities may not be used by construction personnel:

1. Toilet facilities.

2. Food service facilities, including dining areas.

3. Elevator.

C. The Owner will partially occupy the buildings during the construction period.

1. The Owner will endeavor to cooperate with the Contractor's operations when the Contractor has notified the Owner in advance of need for changes in operations in order to accommodate construction operations.

2. Conduct the work so as to cause the least interference with the Owner's operations.

D. Coordinate with Local Authorities as to which routes are capable of handling heavy truck traffic.

E. Signs: Provide signs adequate to direct visitors.

1. Do not install, or allow to be installed, signs other than specified sign(s) and signs identifying the principal entities involved in the project.

F. All deliveries by the Contractor shall be coordinated with the Owner's Representative/ Construction Manager, prior to the delivery date.

1.6 PRECONSTRUCTION MEETING

A. A preconstruction meeting will be held at a time and place designated by the Architect/ Construction Manager for the purpose of identifying responsibilities of the Owner's, Architect's and Construction Manager's personnel and explanation of administrative procedures.

B. The Contractor shall also use this meeting for the following minimum agenda:

1. Construction schedule.
2. Use of areas of each site.

3. Delivery and storage.
4. Safety.
5. Security.
6. Cleaning up.
7. Subcontractor procedures relating to:
    a. Submittals.
    b. Change orders.
    c. Applications for payment.
    d. Record documents.

C. Attendees shall include:

1. The Owner / Owner's Representative.
2. The Architect, and any Consultants.
3. Construction Manager.
4. The Prime Contractor and their superintendent(s).
5. Major Subcontractors, suppliers, and fabricators.
6. Others interested in the work.

1.7 SECURITY PROCEDURES

A. Limit access to the sites and buildings to persons involved in the work.

B. Provide secure storage for materials for which the Owner has made payment and which are stored on-site.

C. Secure completed work as required to prevent loss.

D. The Contractor, and their employees, will be required to be registered with the Owner's Representative / School's Main Office / Construction Manager Office.

1. The Contractor's personnel and Subcontractors will be required to wear identification badges at all times on each site.

END OF SECTION 01010

SECTION 271513 - COMMUNICATIONS COPPER HORIZONTAL CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Category 6A twisted pair cable.

2. Category 6A rated cross connect cables
3. Twisted pair cable hardware, including plugs and jacks.
4. Cabling identification products.
5. Grounding provisions for twisted pair cable.
6. Source quality control requirements for twisted pair cable.

1.3 DEFINITIONS

A. EMI: Electromagnetic interference.

B. Jack: Also commonly called an "outlet," it is the fixed, female connector.

C. Plug: Also commonly called a "connector," it is the removable, male telecommunications connector.

D. RCDD: Registered Communications Distribution Designer.

E. UTP: Unscreened (unshielded) twisted pair.

1.4 SUBMITTALS

A. Product Data: For each type of product.

B. Twisted pair cable testing plan.

C. Provide results of test data to the Design professional after testing has been completed.

D. Product Certificates: For each type of product.

E. Source quality-control reports.

F. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.

1. Testing Supervisor: Currently certified by BICSI as an RCDD to supervise on-site testing.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Test cables upon receipt at Project site.

1. Test each pair of twisted pair cable for open and short circuits.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install cables and connecting materials until Wet Work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.8 COORDINATION

A. Coordinate layout and installation of telecommunications pathways and cabling with the Institution's telecommunications and LAN equipment and service suppliers.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Horizontal cabling system shall comply with and be tested to confirm that transmission standards in TIA-568-C.1, when tested according to test procedures of this standard.

B. Grounding: Comply with TIA-607-B.

2.2 GENERAL CABLE CHARACTERISTICS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with the applicable standard and NFPA 70 for the following types:

1. Communications Plenum Rated: Type CMP complying with UL 1685.

B. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: 25 or less.
2. Smoke-Developed Index: 450 or less.

C. RoHS compliant.

2.3 CATEGORY 6A TWISTED PAIR CABLE

A. Description: Four-pair, balanced-twisted pair cable, certified to meet transmission characteristics of Category 6A cable at frequencies up to 500MHz.

B. Standard: Comply with TIA-568-C.2 for Category 6A cables.

C. Conductors: 100-ohm, 23 AWG solid copper.

D. Shielding/Screening: Unshielded twisted pairs (UTP).

E. Cable Rating: Plenum.

F. Jacket: Blue thermoplastic.

2.4 TWISTED PAIR CABLE HARDWARE

A. Description: Hardware designed to connect, splice, and terminate twisted pair copper communications cable.

B. General Requirements for Twisted Pair Cable Hardware:

1. Comply with the performance requirements of Category 6A.
2. Comply with TIA-568-C.2, IDC type, with modules designed for punch-down caps or tools.
3. Cables shall be terminated with connecting hardware of same category or higher.

C. Source Limitations: Obtain twisted pair cable hardware from single source from single manufacturer.

D. Patch Cables: Cat-6E Rated for the distance between the PA System Rack Patch Panel and the IDF Rack where the Owner's Power Over Ethernet Switches are located. See the Drawings for the locations of the "PA System Patch Panel Racks" and the adjacent "Owner's Power Over Ethernet Switch Racks."Requirement below is optional in TIA-568-C.1.

E. Plugs and Plug Assemblies:

1. Male; eight position; color-coded modular telecommunications connector designed for termination of a single four-pair, 100-ohm, unshielded or shielded twisted pair cable.
2. Standard: Comply with TIA-568-C.2.

3. Marked to indicate transmission performance.

F. Jacks and Jack Assemblies:

1. Female; eight position; modular; fixed telecommunications connector designed for termination of a single four-pair, 100-ohm, unshielded or shielded twisted pair cable.
2. Designed to snap-in to a patch panel or faceplate.
3. Standard: Comply with TIA-568-C.2.

4. Marked to indicate transmission performance.

G. Faceplate:

1. Faceplates designed to mount to single gang wall boxes.

2. Plastic Faceplate: High-impact plastic. Coordinate color with Section 262726 "Wiring Devices."
3. For use with snap-in jacks accommodating any combination of twisted pair, optical fiber, and Coaxial Work area cords.

a. Flush mounting jacks, positioning the cord at a 45-degree angle.

H. Legend:

1. Machine printed, in the field, using adhesive-tape label.
2. Snap-in, clear-label covers and machine-printed paper inserts.

2.5 IDENTIFICATION PRODUCTS

A. Comply with TIA-606-B and UL 969 for a system of labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

2.6 GROUNDING

A. Comply with requirements in Section 260526.

B. Comply with TIA-607-B.

2.7 SOURCE QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to evaluate cables.

B. Factory test cables on reels according to TIA-568-C.1.

C. Factory test twisted pair cables according to TIA-568-C.2.

D. Cable will be considered defective if it does not pass tests and inspections.

E. Prepare test and inspection reports and submit them to the Engineer as a Shop Drawing submittal.

PART 3 - EXECUTION

3.1 WIRING METHODS

A. Wiring Method: Install cables in raceways (where concealed in walls), except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces, where unenclosed wiring method may be used. Conceal raceway and cables, except in unfinished spaces.

1. Install plenum cable in environmental air spaces, including plenum ceilings.

B. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.

C. Provide J-Hooks and cable support rings for cable support between the rooms and the electrical/data closet above dropped ceilings that are rated for use with Cat-6e cables.

D. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools. Install conductors parallel with or at right angles to sides and back of enclosure.

3.2 INSTALLATION OF TWISTED-PAIR HORIZONTAL CABLES

A. Comply with NECA 1 and NECA/BICSI 568.

B. General Requirements for Cabling:

1. Do not untwist twisted pair cables more than 1/2 inch from the point of termination to maintain cable geometry.
2. Terminate all conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
3. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
4. Install lacing bars to restrain cables, prevent straining connections, and prevent bending cables to smaller radii than minimums recommended by manufacturer.
5. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI Information Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section. Use lacing bars and distribution spools.

6. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation, and replace it with new cable.
7. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
8. In the communications equipment room, install a 10-foot-long service loop on each end of cable.
9. Pulling Cable: Comply with BICSI Information Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Pulling and Installing Cable" Section. Monitor cable pull tensions.

C. Open-Cable Installation:

1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
2. Suspend twisted pair cabling, not in a wireway or pathway, a minimum of 8 inches above ceilings by cable supports not more than 60 inches apart.
3. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items.

D. Separation from EMI Sources:

1. Comply with recommendations from BICSI's "Telecommunications Distribution Methods Manual" and TIA-569-D for separating unshielded copper communication cable from potential EMI sources, including electrical power lines and equipment.
2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:

    a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches.
    b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches.
    c. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches.

3. Separation between communications cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:

    a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches.
    b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches.
    c. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches.

4. Separation between communications cables in grounded metallic raceways, power lines, and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:

    a. Electrical Equipment Rating Less Than 2 kVA: No requirement.
    b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches.
    c. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches.

5. Separation between Communications Cables and Electrical Motors and Transformers, 5 kVA or HP and Larger: A minimum of 48 inches.

6. Separation between Communications Cables and Fluorescent Fixtures: A minimum of 5 inches.

3.3 FIRESTOPPING

A. Comply with the "Penetration Firestopping" requirements in the Specifications.

B. Comply with TIA-569-D, Annex A, "Firestopping."

C. Comply with "Firestopping Systems" Article in BISCI's "Telecommunications Distribution Methods Manual."

3.4 GROUNDING

A. Install grounding according to the "Grounding, Bonding, and Electrical Protection" chapter in BICSI's "Telecommunications Distribution Methods Manual."

B. Comply with TIA-607-B and NECA/BICSI-607.

C. Locate grounding bus bar to minimize the length of bonding conductors. Fasten to wall, allowing at least a 2-inch clearance behind the grounding bus bar. Connect grounding bus bar to suitable electrical building ground, using a minimum No. 4 AWG grounding electrode conductor.

D. Bond metallic equipment to the grounding bus bar, using not smaller than a No. 6 AWG equipment grounding conductor.

3.5 IDENTIFICATION

A. Identify system components, wiring, and cabling complying with TIA-606-B.

B. Cable Schedule: Install in a prominent location in each equipment room and wiring closet. List incoming and outgoing cables and their designations, origins, and destinations. Protect with rigid frame and clear plastic cover. Furnish an electronic copy of final comprehensive schedules for Project.

C. Cable and Wire Identification:

1. Label each cable within 4 inches of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
2. Each wire connected to building-mounted devices is not required to be numbered at the device if wire color is consistent with associated wire connected and numbered within panel or cabinet.
3. Label each terminal strip, and screw terminal in each cabinet, rack, or panel.

    a. Individually number wiring conductors connected to terminal strips, and identify each cable or wiring group, extended from a panel or cabinet to a building-mounted device, with the name and number of a particular device.

b. Label each unit and field within distribution racks and frames.

4. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and -connecting hardware. Where similar jacks and plugs are used for both voice and data communication cabling, use a different color for jacks and plugs of each service.

D. Labels shall be preprinted or computer-printed type, with a printing area and font color that contrast with cable jacket color but still comply with TIA-606-B requirements for the following:

1. Cables use flexible vinyl or polyester that flexes as cables are bent.

3.6 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.

C. Perform tests and inspections with the assistance of a factory-authorized service representative.

D. Tests and Inspections:

1. Visually inspect jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with TIA-568-C.1.
2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.

3. Test twisted pair cabling for DC loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination but not cross-connection.

a. Test instruments shall meet or exceed applicable requirements in TIA-568-C.2. Perform tests with a tester that complies with performance requirements in "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.

E. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similarly to Table 10.1 in BICSI's "Telecommunications Distribution Methods Manual," or shall be transferred from the instrument to the computer, saved as text files, printed, and submitted.

F. Remove and replace cabling where test results indicate that they do not comply with specified requirements.

G. End-to-end cabling will be considered defective if it does not pass tests and inspections.

H. Prepare test and inspection reports.

END OF SECTION 271513

SECTION 275123 – PUBLIC ADDRESS AND PROGRAM SYSTEM

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this section.

1.2 SUMMARY

A. Section include microprocessor-switched intercommunications and program systems for the Manalapan Schools shown on the drawings with the following components:

1. All-call amplifiers to initiate "all call" messages to multiple separate zones simultaneously. The number of multiple zone all call groups are shown on the drawing riser diagram details for each school.
2. Amplifiers as required to broadcast messages to any of the separately indicated zones shown on the drawings.
3. Zone Controllers and one Intercommunication Amplifiers.
4. Floor mounted equipment cabinet and internal rack.
5. Paging Gateway/Interface Module to interconnect this Public Address System to the Owner's I.P. based telephone system to initiate communication with any single zone or initiate an "all call" message to multiple zones simultaneously. The public address system equipment shall be able to be accessed from the Owner's Data Network Based Telephone System. Each of the listed individual zones and combinations of zones shall be accessed from the owner's Network Based telephone system using a preprogrammed code. A CAT-6A cable shall be provided between the Main Public address System Cabinet and the Data Rack location shown on the drawing. Provide the cross-connect cable from the patch panel to the Owner's Network Switch.
6. Rack mounted paging system controller and all required accessories for a complete public address system.
7. Tone generator in the PA System Control cabinet controlled by the pre-programmed Change of Class Time Schedule programmed into the Wireless Clock Head End Control Cabinet. The Tone generator is used to broadcast change of class toe signals according to the Owner's directed schedule requirements and also confirm and provide the type of tone desired by the Owner to broadcast over the public address system.
8. Public Address System Administrative telephone handsets (the number for each school as indicated on the Riser Diagrams) including a wall-mounted plug in outlet for the phone, wired to the head and end Public Address System cabinet to be used in the event that the data network system fails.
9. Provide coverplates, backboxes, jacks, and wiring connectors for the recessed and surface mounted speakers and paging telephone wiring.
10. Cone recessed ceiling mounted speakers with multiple adjustable tap settings and backboxes for dropped ceilings.
11. Cone enclosed surface mounted speakers for surface mounted applications.
12. Interior Horn paging speakers where indicated.
13. Exterior weatherproof paging speakers.
14. PA announcement Surface Wall Mounted Indicator Lights where required on the drawings for large assembly spaces that must include 120 volt indicator lights (to

coordinate with the 120 volt power provided) and PA System controlled relays to turn the indicator light on during PA System announcements.

15. Volume attenuating manual adjustable control switches in a surface mounted enclosure to allow an occupant in a single office to adjust the speaker volume. Include a surface mounted backbox with coverplate and surface mounted raceway (box and raceway painted to match the existing wall finish) from the backbox up to above the nearest dropped ceiling.
16. Provide 15 minute battery backup power "UPS" unit within the PA System control cabinet to power the system when normal power fails.
17. Conductors and cables as required by the manufacturer for a complete system.
18. Surface mounted raceways in unconcealed and occupied spaces for wiring painted to match the existing walls.
19. Wire guards where indicated.
20. The Clock System is an Add Alternate. See Part 2.20 of this specification for the additional Base Bid requirements for the Public Address System to perform the functions of the Add Alternate Clock System if the clock System Add Alternate is not accepted.
21. The school Lockdown System shall provide messages to the Public Address System through the data network based telephone system.
22. The Public Address System shall be able to integrate with Singlewire Informacast and WebEx Calling (using the CAT-6A cable connection to the Schools' Data Network System) and be capable of broadcasting emergency messages from them. The Manalapan School's telephone system is Cisco WebEx Calling (Fully Cloud). The Schools' Mass Notification System that sends alert announcements is "Singlewire Informacast." Informacast is the bridge between WebEx calling and the school's paging/notification endpoints, including this Public Address System.

1.3 DEFINITIONS

A. Channels: Separate parallel signal paths, from sources to loudspeakers or loudspeaker zones, with separate amplification and switching that permit selection between paths for speaker alternative program signals.

B. VU: Volume unit.

C. Zone: Separate group of loudspeakers and associated supply wiring that may be arranged for selective switching between different channels.

D. PA: Public Address system

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For educational intercommunications and program systems.

1. Include cut sheets each piece of equipment. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

2. Include floorplans showing final equipment and outlet locations as coordinated with the owner.
3. Calculations for the 15 minute (under full load) battery power backup capacity.
4. Include wiring diagrams for power, signal, and control wiring for all of the components.

    a. Identify terminals to facilitate installation, operation, and maintenance.
    b. Single-line diagram showing interconnection of components.
    c. Cabling diagram showing cable types.

C. Field quality-control reports.

1.5 CLOSEOUT SBMITTALS

A. Operation and Maintenance Data: for educational intercommunications and program systems to include in operation and maintenance manuals. In addition to item specified in section 017823 “Operation and Maintenance Data”, include the following:

1. A record of final matching transformer-tap settings and signal ground- resistance measurement certified by Installer.
2. A record of Owner’s equipment-programming option decisions.
3. Plans, drawn to scale, indicating location, designation, and connection of intercommunications system components.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

B. Warranty; provide a Two year warranty on all products and wiring provided as a part of this product.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: obtain public address system from single source from single manufacturer.

B. The Basis of Design equipment is equipment manufactured by Bogen Communications. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to:

1. Bogen Communications;
2. Rauland Borg;
3. Valcom;
4. AtlasIED.

2.2 SYSTEM DESCRIPTION

A. Equipment: Modular type using solid-state components, fully rated for continuous duty unless otherwise indicated. Select equipment for normal operation on input power usually supplied at 110 to 130 V, 60 Hz in a satisfactory manner without the requirement of any external power conditioning equipment. Comply with UL 813.

B. Integration: Coordinate features and select components to form an integrated system. Match components and interconnections for optimum performance of specified functions.

C. Electrical Components, devices, and Accessories: Listed and labeled as defined in NFPA 70 by a qualified testing agency and marked for location and application.

D. Weather-Resistant Equipment: Listed and labeled by an NRTL for duty outdoors or in damp locations.

2.3 FUNCTIONAL DESCRIPTION OF MICROPROCESSOR-SWITCHED SYSTEM

A. System functions:

1. Selectively connect separate zones to signal channels. The zones are listed on the drawings.
2. Selectively amplify sound inputs from the school's Voice Over Internet Protocol Telephone System (accessed from a CAT-6A cable connection between the PA Cabinet and the Owner's data network System) and one hardwired Administrative Telephone located in the Main Office.
3. In addition to communicating with individual zones, the system shall have the ability to combine zones using internal PA system programming to provide combined "all-call" broadcast. Coordinate final system programming with the Owner prior to the start of any work.
4. The administrative telephones or desktop microphone shall override all other inputs.
5. Broadcast change of class signals over the specific zones as required by the owner, at the specific times as directed by the Owner, using the specific type of tone as directed by the Owner, and working in conjunction with the new wireless clock system for time synchronization. A minimum of four independent programmable memory sets shall be available and be programmed into the system as directed by the Owner. Coordinate with the Owner prior to ordering the equipment and obtain their daily program change of class signal requirements and also confirm and provide the type of tone desired by the Owner to broadcast over the public address system.
6. "All-call' feature shall connect the all-call sound signal simultaneously to all ones regardless of zone or channel switch settings.
7. Digital telephone paging adapter to allow sound input from the Owner's Voice Over Internet Protocol Telephone System PA system to speak through the Public Address System.
8. Illuminate the PA System broadcast Indicator Lights (during PA System broadcasts) that are shown on the drawings using relays provided with and controlled by the Public Address System control cabinet.

9. Produce a program-signal tone that is amplified and sounded over all speakers, overriding signals currently being distributed.
10. Reproduce high-quality sound that is free of noise and distortion at all loudspeakers at all times during equipment operation including standby mode with inputs off; output free of non-uniform coverage of amplified sound.
11. Provide wire guards over speakers where indicated.
13. Emergency priority administrative phones and microphones where indicated to be provided.
14. The control unit shall have a port for the connection for on-site diagnostics.

2.4 ALL-CALL AMPLIFIERS (To reach multiple individual zones simultaneously)

A. Output Power: 70-V balanced line. 80 percent of the sum of wattage settings of connected for each speaker connected in all-call mode of operation, plus an allowance for future stations.

B. Total Harmonic Distortion: less than 5 percent at rated output power with load equivalent to quantity of stations connected in all-call mode of operation.

C. Minimum Signal-to-Noise Ratio: 60 dB at rated output.

D. Frequency Response: Within plus or minus 2 dB from full 50 to 12, 000 Hz.

E. Output Regulation: maintains output level within 2 dB from full to no load.

F. Input Sensitivity: Compatible with administrative console and central equipment so amplifier delivers full-rated output with sound-pressure level of less than 10 dyne/sq. cm impinging on administrative console, speaker microphones, or handset transmitters.

G. Amplifier Protection: Prevents damage from shorted or open output.

H. See the drawing Riser Diagrams that list the number of requirements to reach multiple individual zones simultaneously.

2.5 INTERCOMMUNICATION ZONE AMPLIFIERS

A. Output Power: 70-V balanced line. 80 percent of the sum of wattage settings of connected for each speaker connected in all-call mode of operation.

B. Total Harmonic Distortion: Less than 5 percent at rated output power with load equivalent to one station connected to output terminals.

C. Minimum Signal-to-Noise Ratio: 50db, at rated output.

D. Frequency Response: within plus or minus 3 dB from 70 to 10,000 Hz.

E. Output regulation: Maintains output level from within 2 dB from full to no load.

F. Input Sensitivity: Matched to input circuit and to provide full-rated output with sound-pressure level of less than 10 dynes/sq. cm impinging on microphones in administrative console, speaker microphones, or handset transmitters.

G. Amplifier Protection: Prevents damage from shorted or open output.

2.6 PAGING CONTROLLERS/ZONE CONTROLLERS

A. Allows each school building to divided up into the number of Zones as shown on the drawing Zone Diagrams for each school and controls what audio goes to each Zone.

B. Allows “All Call” announcements to all zones when the programming requires it.

C. Routes the programmed input from the I.P. based phone system or the administrative Handset to the specific zone where required.

D. Provides a Priority override for the Main Office Administrative Handset.

E. Allows/ Enables the Administrative Handset to dial in a programmed code to reach any one zone or perform an “all-call” announcement.

F. Allows/Enables the Administrative Handset to dial in a programmed code to reach any one zone or perform an “all call” announcement.

2.7 TELEPHONE/VOICE OVER INTERNET PROTOCOL INTERFACE DEVICE

A. Allows paging from the school’s Voice Over Internet Protocol Input or the Direct Connected Administrative Phone Handset.

2.8 CONE-TYPE LOUDSPEAKERS RECESSED IN DROP CEILINGS

A. Minimum Axial Sensitivity; 91 dB at one meter, with 1-w input.

B. Frequency Response: Within plus or minus 3 dB from 70 to 15,000 Hz.

C. Minimum Dispersion Angle: 100 degrees.

D. Line Transformer: Maximum insertion loss of 0.5 dB, power rating equal to speaker’s, and at least four level taps.

E. Enclosures: Steel housings or back boxes, acoustically dampened, with the front face of at least 0.0478-inch steel and whole assembly rust proofed and factory primed; complete with mounting assembly and suitable for surface ceiling, flush ceiling, pendant or wall mounting; with relief of back pressure.

F. Baffle: for flush speakers, minimum thickness of 0.032-inch aluminum with textured white finish.

2.9 ENCLOSED CONE-TYPE LOUDSPEEAKERS IN BACKBOXES FOR MOUNTING ON WALLS AND HARD CEILINGS

A. Minimum Axial Sensitivity: 91 dB at one meter, with 1-W input.

B. Frequency response: Within plus or minus 3 dB from 70 to 15,000 Hz.

C. Minimum Dispersion Angle: 100 degrees.

D. Line Transformer: Maximum insertion loss of 0.5 dB, power rating equal to speaker's, and least four level taps.

E. Enclosures: Steel housings or back boxes, acoustically dampened, with front face of at least 0.0478-inch steel and whole assembly rust proofed and factory primed; complete with mounting assembly and suitable for surface ceiling, pendant or wall mounting; with relief of back pressure.

F. Baffle: For flush speakers, minimum thickness of 0.032-inch aluminum with textured white finish.

2.10 HORN-TYPE LOUDSPEAKERS

A. Speakers shall be all metal, weatherproof construction, complete with universal mounting brackets.

B. Frequency Response: Within plus or minus 3 dB from 275 to 14,000 Hz.

C. Minimum Power rating of Driver: 15 W minimum, continuous.

D. Minimum Dispersion Angle: 110 degrees

E. Line Transformer: Maximum insertion loss of 0.5 dB, power rating equal to speaker's , and at least four level taps.

F. Exterior speakers (where indicated on the drawings) rated for weatherproof exterior conditions.

2.11 ADMINISTRATIVE TELEPHONE HANDSETS WIRED TO THE PA SYSTEM

A. Faceplate: Stainless steel or anodized aluminum with tamperproof mounting screws.

B. Enclosure: Galvanized steel with 2-1/2-inch minimum depth.

C. 12-Digit Keypad: Input device to initiate calls and commands.

D. Volume Control: Regulates incoming-call volume.

E. Handset with hook switch: telephone type with minimum 19-inch long, permanently coiled cord.

F. Provide all required surface mounted backbox, coverplate, and telephone connector receptacle to connect the telephone plug. Provide a surface mounted raceway painted to match the existing wall finish from the surface mounted backbox up to above the dropped ceiling.

2.12 PA SYSTEM INDICATOR LIGHTS

A. Basis of design is a 120 volt Amber Colored Light Edwards Model 48XBRMA120A with a wall mount bracket. Coordinate the exact required color with the Owner prior to the submission of shop drawings.

1. 120 volt lights to coordinate with the 120 volt power branch circuits that have been provided. Low voltage powered lights are acceptable if provided with equipment to receive the 120 volt branch circuit shown on the drawings.
2. Provide surface mounted backboxes for lights and the associated control relays.
3. Provide surface mounted raceway for the wiring to the lights and relays from the indicator light up to above the dropped ceiling or to the building steel.

2.13 VOLUME ATTENUATOR STATIONS

A. Wall Plate Mounted Autotransformer Type

1. Wattage Rating; 10 W, unless otherwise indicated.
2. Attenuation per Step: 3 dB, with positive off position
3. Insertion Loss: 0.4 dB maximum.
4. Attenuation Bypass Relay: Single pole, double throw. Connected to operate and bypass attenuation when all-call, paging, program signal, or prerecorded message features are used. Relay returns to normal position at end of priority transmission.
5. Label: “PA Volume”.

2.14 TONE GENERATOR FOR CHANGE OF CLASS SIGNALS

A. Rack-mounted unit consisting of time-delay relay, sealed lead-calcium battery charger, on/off switch and “normal’ and “emergency” indicating lights, and adequate capacity to supply maximum equipment power requirements for 15 minutes of continuous full operation.

B. Equipment Rack; Comply with TIA/EIA-310-D. House amplifiers and auxiliary equipment in standard TIA/EIA 19-inch (483-mm) racks.

1. Group items of same function together, either vertically or side by side, and arrange controls symmetrically.
2. Power-Supply Connections: Approved plugs and receptacles as required to support all components within the rack.

3. Arrange all inputs, outputs, interconnections, and test points so they are accessible at rear of rack for maintenance and testing, with each item removable from rack without disturbing other items or connections.
4. Blank Panels: Cover empty space in equipment rack so entire front of rack is occupied by panels.
5. Enclosure Panels: Ventilated rear and sides and solid top.
6. Finish: Uniform, baked-enamel factory finish over rust-inhibiting primer.
7. Power-Control Panel: On front of equipment housing, with master power on/off switch and pilot light; and with socket for 5-A cartridge fuse for rack equipment power.
8. Vertical Plug Strip: Grounded receptacles, 12 inches (300 mm) o.c the full height of rack, to supply rack-mounted equipment.
9. Maintenance Receptacles: Duplex convenience outlets supplied independent of vertical plug strip and located in front and bottom rear of rack.
10. Spare Capacity: 20 percent spare space capacity in rack for future equipment.
11. Housing: Steel, 0.0478 inch (1.2 mm) minimum, with removable front and rear panels. Side panels are removable for interconnecting side-by-side mounting.
12. Controls signal and zoning throughout the entire school, including existing Buildings A and B, and new Building C.
13. Controls: Include the following:

    a. Switching devices to select signal sources for distribution channels.
    b. Program selector switch to select source for each program channel.
    c. Switching devices to select zones for paging.
    d. All-call selector switch.
    e. Indicators: A visual annunciation for each distribution channel to indicate source being used.
14. Self-Contained Power and Control Unit: a single assembly of basic control, electronics, and power supply necessary to accomplish specified functions.

    a. Arrange unit to supply public address equipment with the required voltage and power automatically during an outage of normal 120-V ac power.
    b. Arrange for battery to be on float charge when not supplying the system and to transfer automatically to supply system after three o five seconds of continuous outage of normal power, as sensed by time-delay relay.
    c. Automatic retransfer of system to normal supply when normal power has been reestablished for three to five seconds continuously.

2.15 CONDUCTORS AND CABLES

A. Conductors: Jacketed, twisted pair and twisted multipair, untinned solid copper. Sizes as recommended by system manufacturer, but no smaller than No. 22 AWG.

B. Insulation: Thermoplastic, not less than 1/32 inch thick.

C. Shielding: For speaker-microphone leads and elsewhere where recommended by manufacturer; No. 34 AWG, tinned, soft-copper strands formed into a braid or equivalent foil.

1. Minimum Shielding Coverage on Conductors: 60 percent.

D. Plenum Cable; listed and labeled for plenum installation.

2.16 RACEWAYS

A. Provide Raceways and Boxes painted to match the existing wall finish (from the outlet box up to above the dropped ceiling or up to the building steel) for interior surface mounted equipment:

1. Surface metal or non-metal raceways (for interior devices) painted to match the existing wall finish extending from the surface mounted enclosure to the nearest dropped ceiling.
2. Boxes for Interior Devices:

a. NEMA 1.
b. Stainless steel painted to match the exiting wall finish.

3. Provide Faceplates for all equipment:

a. Stainless steel painted to match the existing wall finish with screws for all exposed fasteners.

B. Raceways and Boxes for exterior surface mounted equipment:

1. Conceal wiring to the greatest extent possible, otherwise provide conduit raceways painted to match the existing wall finish extending from the device box to the wall penetration. Provide weatherproof seal at all wall penetrations.
2. Boxes for Exterior Devices:

a. NEMA 3R.
b. Galvanized steel painted to match the existing wall finish.

3. Faceplates:

a. Stainless steel (painted to match the existing wall finish) with screws for all exposed fasteners.

4. Outlet boxes shall not be less than 2 inches wide, 3 inches high, and 2 ½ inches deep.

C. Flexible metal or nonmetallic conduit is prohibited at all interior or exterior installations.

2.17 BASE BID PROVISIONS FOR THE PUBLIC ADDRESS SYSTEM THAT ARE REQUIRED FOR WHEN THE CLOCK SYSTEM ADD-ALTERNATE IS NOT ACCEPTED

A. Under the Base bid, include provisions in the Public address system Control Cabinet for a Network Time Synchronized Public Address System Controller/Master Clock/Digital Signal Processor/Paging Server with all required system programming, software, ad equipment that can provide (without a separate Clock System) change of class bell/tone signals over the public address system speakers. The time synchronization equipment shall include a CAT-6A cable and connections to the Owner's data network patch panel to maintain accurate system time from the Owner's data network system. The Controller shall be provided with programmable scheduling Change of Class/Bell Controller with all required software to maintain a minimum of three daily Change of Class Calendar Based Schedules. The system shall include a Tone generator (with multiple styles of tones as selected by the Owner) and allow live paging override. The system shall include provisions for the school staff to manage the change of class schedules using a data network system based interface that is provided with all required network software and licensing. A separate CAT-6A jack and cable connected to the school's data network system shall be provided for this system if required. If the Add Alternate for the Clock System is accepted, this time synchronization and change of class programming can be provided in the Clock System Controller.

PART 3 – EXECUTION

3.1 WIRING METHODS

A. Wiring Method: Install cables in raceways in exposed locations and cable trays except within consoles, cabinets, desks, and counters, and except in accessible ceiling spaces where unenclosed wiring method may be used. Conceal wiring as much as possible except in unfinished spaces.

1. Install plenum rated cable.

B. Wiring Method: Conceal conductor and cables in accessible ceilings, walls, and floors where possible.

C. Wiring within enclosures: Bundle, lace, and train cables to terminal points with no excess and without exceeding manufacturers' limitations on bending radii. Install lacing bars and distribution spools.

3.2 INSTALLATION OF RACEWAYS

A. Install manufactured conduit sweeps and long-radius elbows whenever possible.

3.3 INSTALLATION OF CABLES

A. Comply with NECA 1.

B. General Requirements:

1. Terminate conductors; no cable shall contain unterminated elements. Make terminations only at outlets and terminals.
2. Splices, Taps, and Terminations: Arrange on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures. Cables may not be spliced.
3. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
4. Bundle, lace and train conductors to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
5. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
6. Cold-Weather Insulation: bring cale to room temperature before de-reeling. Heat lamps shall not be used.

C. Open-Cable Installation:

1. Install cabling with horizontal and vertical cable guides in telecommunication spaces with terminating hardware and interconnection equipment.
2. Suspend cable not in a wireway or pathway a minimum of 8 inches above ceiling by cable supports not more than 60 inches apart.
3. Cable shall not be run through structural members or be in contact with pipes, ducts, or other potentially damaging items.

D. Separation of Wires: Separate speaker-microphone, line-level, speaker-level, and power wiring runs. Install in separate raceways or, where exposed or in same enclosure, separate conductors at least 12 inches apart for speaker microphones and adjacent parallel power and telephone wiring. Separate other intercommunication equipment conductors as recommended by equipment manufacturers.

3.4 INSTALLATION

A. Match input and output impedances and signal levels at signal interfaces. Provide matching networks where required.

B. Identification of Conductors and Cables: Color-code conductors and apply wire and cable marking tape to designate wires and cables so they identify media in coordination with system wiring diagrams.

C. Weatherproof Equipment: For units that are mounted outdoors, in damp locations, or where exposed to weather, install consistent with requirements of weatherproof rating.

D. Wall Mounted Stations: Surface mount at 54 inches above finished floor to center of station unless otherwise indicated.

3.5 GROUNDING

A. Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, commo-mode returns, noise pickup, cross talk, and other impairments.

B. Signal Ground Terminal: Locate at main equipment cabinet. Isolate from power system and equipment grounding.

3.6 SYSTEM PROGRAMMING

A. Programming; Fully brief Owner on available programming options. Record Owner's decisions and set up initial system program. Prepare a written record of decisions, implementation methodology, and final results.

3.7 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.

C. Perform tests and inspections with the assistance of a factory-authorized service representative:

D. Tests and Inspections:

1. Schedule test with at least seven days' advance notice of test performance.
2. After installing the PA and program systems and after electrical circuitry has been energized, test for compliance with requirements.
3. Operational Test: Test each all-call, and zone page messages at each intercommunication station. Verify proper routing and volume levels and that system is free of noise and distortion. Test each available message path from each station on system.
4. Frequency Response Test: Determine frequency response of two transmission paths, including all-call and zone paging, by

transmitting and recording audio tones. Minimum acceptable performance is within 3 dB from 150 to 2500 Hz.

5. Signal-to-Noise Ratio Test: Measure signal-to-noise ratio of complete system at normal gain settings as follows:

    a. Disconnect speaker microphone and replace it in the circuit with a signal generator using a 1000-Hz signal. Measure signal-to-noise ratio at paging speakers.
    b. Repeat test for the administrative speaker microphone and for the administrative handsets for each separately controlled zone of paging loudspeakers.
    c. Minimum acceptable ratio is 45 dB.

6. Distortion Test: Measure distortion at normal gain settings and rated power. Feed signals at frequencies of 150, 200, 400, 1000, and 2500 Hz into each intercom, zone paging, and all-call amplifier. For each frequency, measure distortion in the paging and all-call amplifier outputs. Maximum acceptable distortion at any frequency is 5 percent total harmonics.
7. Power Output Test: Measure electrical power output of each paging amplifier at normal gain settings of 150, 1000, and 2500 Hz. Maximum variation in power output at these frequencies is pus or minus 3 dB.
8. Signal Ground Test: Measure and report ground resistance at system signal ground. Comply with testing requirements in Section 270526 “Grounding and Bonding for Communications Systems.”

E. Inspection: Verify that units and controls are properly labeled and interconnecting wires and terminals are identified. Prepare a list of final tap settings of paging and independent room speaker-line matching transformers.

F. Educational intercommunications and program systems will be considered defective if they do not pass tests and inspections.

G. Prepare test and inspection reports.

3.8 STARTUP SERVICE

A. Engage a factor-authorized service representative to perform startup service and initial system programming.

1. Verify that electrical wiring installation complies with manufacturer’s submittal and installation requirements.
2. Complete installation and startup checks according to manufacturer’s written instructions.

3.9 ADJUSTING

A. On-Site Assistance: Engage a factory-authorized service representative to provide on-site assistance in adjusting sound levels, resetting transformer taps, and adjusting controls to meet occupancy conditions.

3.10 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain the educational intercommunications and program systems.

1. Include provisions for four hours of training given to the Owner's maintenance personnel on the programming of the equipment for starting up and shutting down, troubleshooting, servicing, and maintaining the system and equipment.

END OF SECTION 274123

REMOVAL DRAWING SYMBOLS

- INTERIOR PUBLIC ADDRESS SYSTEM SPEAKER RECESSED IN A DROPPED CEILING. REMOVE THE SPEAKER AND ASSOCIATED WIRING BACK TO THE HEAD END CABINET. REMOVE THE EXISTING CEILING TILE AND PROVIDE A NEW REPLACEMENT CEILING TILE.
- H — INTERIOR PUBLIC ADDRESS SYSTEM SPEAKER RECESSED IN A HARD CEILING OR SURFACE MOUNTED ON A STRUCTURAL CEILING. REMOVE THE SPEAKER AND ASSOCIATED WIRING BACK TO THE HEAD END CABINET. REMOVE THE EXISTING CEILING TILE AND PROVIDE A NEW REPLACEMENT CEILING TILE.
- R — INTERIOR PUBLIC ADDRESS SYSTEM SPEAKER RECESSED IN A BLOCK WALL. REMOVE THE SPEAKER AND ASSOCIATED WIRING BACK TO THE HEAD END CABINET. PROVIDE A COVERPLATE PAINTED TO MATCH THE EXISTING WALL FINISH.
- INTERIOR PUBLIC ADDRESS SYSTEM SPEAKER SURFACE WALL MOUNTED. REMOVE THE SPEAKER AND ASSOCIATED WIRING BACK TO THE HEAD END CABINET. PATCH AND PAINT THE WALL TO MATCH THE EXISTING WALL FINISH.
- WP R — EXTERIOR WEATHERPROOF PUBLIC ADDRESS SYSTEM SPEAKER RECESSED IN AN EXTERIOR BLOCK WALL. REMOVE THE SPEAKER AND ASSOCIATED WIRING BACK TO THE HEAD END CABINET. PROVIDE A COVERPLATE PAINTED TO MATCH THE EXISTING EXTERIOR WALL FINISH OR MAINTAIN FOR REUSE BY THE REPLACEMENT PA SYSTEM SPEAKER. CONFIRM THE AVAILABLE INTERIOR DIMENSIONS COORDINATE WITH THE NEW EXTERIOR SPEAKERS TO BE PROVIDED.
- INTERIOR PUBLIC ADDRESS SYSTEM HORN SPEAKER SURFACE WALL MOUNTED. REMOVE THE SPEAKER AND ASSOCIATED WIRING BACK TO THE HEAD END CABINET. PATCH AND PAINT THE WALL TO MATCH THE EXISTING WALL FINISH.
- WP — EXTERIOR WEATHERPROOF PUBLIC ADDRESS SYSTEM HORN SPEAKER SURFACE WALL MOUNTED. REMOVE THE SPEAKER AND ASSOCIATED WIRING BACK TO THE HEAD END CABINET. PROVIDE A WEATHERPROOF COVERPLATE PAINTED TO MATCH THE EXTERIOR WALL FINISH.
- WALL SURFACE MOUNTED PUBLIC ADDRESS SPEAKER PAIR. REMOVE THE SPEAKERS AND ASSOCIATED WIRING BACK TO THE PUBLIC ADDRESS SYSTEM CONTROL CABINET. PROVIDE A COVERPLATE PAINTED TO MATCH THE EXISTING WALL FINISH WHERE THE SPEAKER PAIR WAS REMOVED.
- I — INTERCOM STATION INDICATED ON AS BUILT DRAWINGS AS BEING WIRED TO THE EXISTING PUBLIC ADDRESS SYSTEM. CONFIRM THAT THIS DEVICE IS WIRED TO THE PUBLIC ADDRESS SYSTEM AND INCLUDE PROVISIONS TO REMOVE THIS DEVICE AND ASSOCIATED WIRING BACK TO THE CONTROL CABINET. PROVIDE AN EXTERIOR WEATHERPROOF COVERPLATE AT THE DEVICE BOX.
- ADMINISTRATIVE HANDSET WIRED TO THE PUBLIC ADDRESS SYSTEM CONTROL CABINET. INCLUDE PROVISIONS TO REMOVE THIS DEVICE AND ASSOCIATED WIRING BACK TO THE CONTROL CABINET. PROVIDE AN EXTERIOR WEATHERPROOF COVERPLATE AT THE DEVICE BOX.
- CLASSROOM/OFFICE WALL MOUNTED PUBLIC ADDRESS SYSTEM HANDSET WIRED TO THE PUBLIC ADDRESS SYSTEM CONTROL CABINET. REMOVE THE DEVICE, OUTLET, RECESSED WALL MOUNTED OUTLET BOX, AND ASSOCIATED WIRING EXTENDING TO THE PUBLIC ADDRESS SYSTEM CONTROL CABINET. PATCH AND PAINT THE WALLS TO MATCH THE EXISTING WALL FINISH.
- S C — RECESSED FLUSH MOUNTED COMBINATION PUBLIC ADDRESS SYSTEM SPEAKER AND CLOCK ASSEMBLY. REMOVE THE CLOCK AND SPEAKER ASSEMBLY AND PROVIDE A COVERPLATE PAINTED TO MATCH THE EXISTING WALL FINISH. REMOVE THE CLOCK AND SPEAKER WIRING THAT EXTENDS BACK TO THE MAIN OFFICE CONTROL CABINET.
- RECESS AND FLUSH WALL MOUNTED PUBLIC ADDRESS SYSTEM SPEAKER TALK BACK SWITCH. REMOVE THE SWITCH AND ALL ASSOCIATED WIRING BACK TO THE MAIN OFFICE CONTROL CABINET. PROVIDE A COVERPLATE PAINTED TO MATCH THE EXISTING WALL FINISH.
- C S / S T — COMBINED PUBLIC ADDRESS SYSTEM SPEAKER, CLOCK, LIGHT CONTROL SWITCH, PUBLIC ADDRESS SYSTEM CALL BUTTON, AND THERMOSTAT (COVERPLATE APPROXIMATELY 14" WIDE X 18" HIGH, CONFIRM ACTUAL SIZE PRIOR TO ORDERING MATERIAL). DISCONNECT, REMOVE, AND MAINTAIN THE THERMOSTAT AND LIGHT CONTROL SWITCH AND ASSOCIATED WIRING. REMOVE THE CLOCK, PUBLIC ADDRESS SYSTEM SPEAKER, PUBLIC ADDRESS SYSTEM CALL SWITCH AND ASSOCIATED WIRING FROM THE DEVICES BACK TO THE MAIN OFFICE CONTROL PANEL. PROVIDE A NEW COVERPLATE PAINTED TO MATCH THE EXISTING WALL SURFACE OVER THE OLD COVERPLATE LOCATION. PROVIDE BACKBOXES FOR THE THERMOSTAT AND LIGHT CONTROL SWITCH AND EXTEND THE EXISTING WIRING AS REQUIRED TO REINSTALL THE THERMOSTAT AND LIGHT CONTROL SWITCH IN THE NEW COVERPLATE.
- RECESS WALL MOUNTED PUBLIC ADDRESS SYSTEM TELEPHONE HANDSET WITH WIRING BACK TO THE MAIN PUBLIC ADDRESS SYSTEM CABINET. REMOVE THE HANDSET, JACK, AND ASSOCIATED WIRING BACK TO THE PUBLIC ADDRESS SYSTEM CONTROL CABINET. PROVIDE A COVERPLATE PAINTED TO MATCH THE EXISTING WALL FINISH.
- V — PA SPEAKER VOLUME CONTROL MOUNTED ON WALL. PROVIDE A COVERPLATE PAINTED TO MATCH THE EXISTING WALL FINISH. (△)
- # — REMOVAL SHEET NOTES

NEW WORK DRAWING SYMBOLS

- INTERIOR PUBLIC ADDRESS SYSTEM SPEAKER AND BACKBOX RECESSED IN A DROPPED CEILING UNLESS NOTED OTHERWISE.
- H — INTERIOR PUBLIC ADDRESS SYSTEM SPEAKER AND BACKBOX SURFACE WALL MOUNTED AT A HEIGHT TO MATCH WHERE THE EXISTING PUBLIC ADDRESS SPEAKER WAS REMOVED AT THIS LOCATION. WHERE "WG" IS INDICATED, PROVIDE A PROTECTIVE WIRE GUARD AROUND THE SPEAKER.
- H — INTERIOR PUBLIC ADDRESS SYSTEM SPEAKER SURFACE MOUNTED ON A STRUCTURAL CEILING.
- S — INTERIOR PUBLIC ADDRESS SYSTEM SPEAKER IN BACK BOX SUSPENDED FROM STRUCTURAL CEILING ON CONDUIT.
- WP R — EXTERIOR WEATHERPROOF PUBLIC ADDRESS SYSTEM SPEAKER IN A SURFACE MOUNTED BACKBOX. "R" WHERE INDICATED REQUIRES THE SPEAKER TO BE MOUNTED IN THE EXISTING RECESSED BACKBOX (WHERE THE PREVIOUS SPEAKER WAS REMOVED).
- R — INTERIOR WEATHERPROOF PUBLIC ADDRESS SYSTEM SPEAKER TO BE MOUNTED IN THE EXISTING RECESSED BACKBOX (WHERE THE PREVIOUS SPEAKER WAS REMOVED).
- C — 120V POWERED ANALOG CLOCK (WITH SIZE MINIMUM PHYSICAL SIZE DIAMETER AS LISTED IN SPECIFICATION 260810) SURFACE MOUNTED ON THE WALL. TYPICAL LOCATION IS ABOVE THE ENTRY DOOR. COORDINATE WITH THE OWNER FOR THE EXACT LOCATION PRIOR TO INSTALLATION. WHERE "WG" IS INDICATED, PROVIDE A PROTECTIVE WIRE GUARD AROUND THE CLOCK.
- INTERIOR PUBLIC ADDRESS SYSTEM HORN SPEAKER SURFACE WALL MOUNTED. REMOVE THE SPEAKER AND ASSOCIATED WIRING BACK TO THE HEAD END CABINET. PATCH AND PAINT THE WALL TO MATCH THE EXISTING WALL FINISH.
- WP — EXTERIOR WEATHERPROOF PUBLIC ADDRESS SYSTEM HORN SPEAKER SURFACE WALL MOUNTED. REMOVE THE SPEAKER AND ASSOCIATED WIRING BACK TO THE HEAD END CABINET. PROVIDE A WEATHERPROOF COVERPLATE PAINTED TO MATCH THE EXTERIOR WALL FINISH.
- L — PUBLIC ADDRESS SYSTEM 120 VOLT POWERED INDICATOR LIGHT (SURFACE MOUNTED ADJACENT TO THE ASSOCIATED PUBLIC ADDRESS SYSTEM SPEAKER) THAT ILLUMINATES DURING PUBLIC ADDRESS SYSTEM ANNOUNCEMENTS. PROVIDE 120 VOLT INDICATOR LIGHT TO MATCH THE 120 VOLT POWER CIRCUIT THAT HAS BEEN PROVIDED. THE BASIS OF DESIGN LENS COLOR IS AMBER. COORDINATE THE EXACT COLOR REQUIRED BY THE OWNER PRIOR TO THE SUBMISSION OF SHOP DRAWINGS AND PROVIDE AS REQUIRED. PROVIDE THE REQUIRED CONTROLS IN THE PUBLIC ADDRESS SYSTEM CONTROL CABINET AND RELAY TO CONTROL THE 120 VOLT LIGHT TO ILLUMINATE THE LIGHT DURING PUBLIC ADDRESS SYSTEM ANNOUNCEMENTS.
- R — PUBLIC ADDRESS SYSTEM INDICATOR LIGHT RELAY. RELAY WIRED TO THE PUBLIC ADDRESS SYSTEM AND CLOSES A 120 VOLT BRANCH CIRCUIT CONNECTION TO ACTIVATE THE CONNECTED INDICATOR LIGHTS WHEN AN ANNOUNCEMENT IS MADE OVER THE PUBLIC ADDRESS SYSTEM.
- V — ADJUSTABLE SPEAKER VOLUME CONTROL (MOUNTED 42" ABOVE THE FINISHED FLOOR) IN SURFACE WALL MOUNTED BACK BOX AND SHOWN WIRED TO THE SPEAKER IT CONTROLS. PROVIDE SURFACE MOUNTED RACEWAY FROM THE VOLUME CONTROL UP TO ABOVE THE DROPPED CEILING.
- PP / PP — ADMINISTRATIVE PUBLIC ADDRESS SYSTEM DESKTOP TELEPHONE WIRED TO THE MAIN PUBLIC ADDRESS SYSTEM CONTROL CABINET THROUGH AN ADJACENT WALL PLUG-IN OUTLET (AVAILABLE FOR USE IN THE EVENT THAT THE DATA NETWORK VOICE OVER I.P. TELEPHONE INPUT IS NOT AVAILABLE). PROVIDE THE TELEPHONE CORD CONNECTED TO AN ADJACENT WALL PLUG-IN OUTLET THAT IS DIRECTLY CONNECTED TO THE PUBLIC ADDRESS SYSTEM CONTROL CABINET. PROVIDE OUTLET IN SURFACE MOUNTED BACKBOX. PROVIDE SURFACE MOUNTED WIREMOLD RACEWAY (PAINTED TO MATCH THE WALL FINISH) UP TO THE CEILING AS REQUIRED. PROVIDE WIRING AS REQUIRED BY THE MANUFACTURER. COORDINATE EXACT LOCATION WITH THE OWNER.
- EXISTING ELECTRICAL POWER BRANCH CIRCUIT PANELBOARD SHOWN ONLY FOR REFERENCE
- NEW ELECTRICAL POWER BRANCH CIRCUIT PANELBOARD SHOWN ONLY FOR REFERENCE
- J — JUNCTION BOX
- HOME RUN - 2#12+1#12G IN 3/4"C UNO.
- BRANCH CIRCUIT RUN CONCEALED IN CEILING AND WALLS - 2#12+1#12G IN 3/4"C UNO
- SEE CONTINUATION OF BRANCH CIRCUIT. PROVIDE (2)#12,(1)#12G IN 3/4"C UNO.
- # — NEW WORK SHEET NOTES

GENERAL SYMBOLS

NUMBER / SHEET NUMBER — X / X-X — PLAN OR DETAIL
SCALE: 1/4" = 1'-0"

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
C	CONDUIT
(E)	EXISTING
ES	ELEMENTARY SCHOOL
G	GROUND
MS	MIDDLE SCHOOL
PA	PUBLIC ADDRESS
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
WG	WIRE GUARD
WP	WEATHER PROOF
UNO	UNLESS NOTED OTHERWISE

GENERAL REMOVAL NOTES:

(GENERAL REMOVAL NOTES APPLY TO DRAWINGS E101EH AND E101TC)

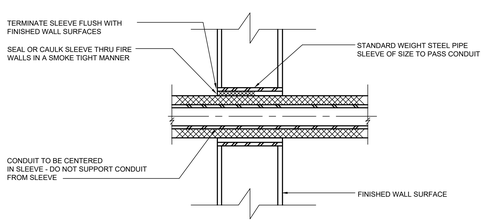
1. DISCONNECT AND REMOVE ALL OF THE PUBLIC ADDRESS SYSTEM, AND CLOCK SYSTEM DEVICES SHOWN ON REMOVAL PLANS UNLESS NOTED OTHERWISE. REMOVE ALL ASSOCIATED BACKBOXES, JUNCTION BOXES, PULL BOXES, AND WIRING FROM THE DEVICE BACK TO THE CONTROL CABINET SOURCE.
2. THE OWNER RETAINS THE FIRST RIGHT TO KEEP ANY REMOVED EQUIPMENT. REVIEW THE DISPOSITION OF ALL EQUIPMENT WITH OWNER PRIOR TO REMOVAL.
3. QUANTITY OF EQUIPMENT SHOWN ON THE REMOVAL DRAWINGS IS INDICATIVE OF EXISTING QUANTITY AND LOCATION. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY ACTUAL QUANTITIES OF EQUIPMENT TO BE REMOVED AND INCLUDE PROVISIONS IN THEIR BID.
4. PERFORM ALL REQUIRED PATCHING AND PAINTING AFTER REMOVAL AS REQUIRED TO RESTORE SURFACES TO MATCH SURROUNDING SURFACE FINISHES.
5. THE OWNER WILL REMOVE AND REINSTALL ALL MOVABLE EQUIPMENT AND FLOOR MOUNTED SHELVING UNLESS NOTED OTHERWISE. REMOVE, STORE AND REINSTALL EXISTING BUILT-IN EQUIPMENT AS REQUIRED TO PERFORM THE WORK, UNLESS NOTED OTHERWISE.
6. PROVIDE ALL WORK AND COSTS ASSOCIATED WITH THE DISCONNECTION, REMOVAL, RELOCATION, AND DISPOSAL OF WIRING AND EQUIPMENT REQUIRED TO BE REMOVED. EQUIPMENT AND WIRING THAT IS REQUIRED TO BE REMOVED SHALL BE RETAINED, DISPOSED OF, AND REMOVED FROM THE SITE IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL GUIDELINES.
7. PROVIDE REPLACEMENT CEILING TILES EVERYWHERE A DEVICE IS REMOVED FROM A DROPPED CEILING.

GENERAL NOTES APPLICABLE TO ALL DRAWINGS:

1. COORDINATE FINAL LOCATION OF ALL DEVICES WITH OWNER AND ARCHITECT WITH RESPECT TO MOUNTING HEIGHTS AND LOCATION OF EQUIPMENT, FURNITURE AND WALL FURNISHINGS. COORDINATE FINAL LOCATION SO AS NOT TO INTERFERE WITH EXHIBIT BOARDS, DRY MARKER BOARDS AND OTHER EXISTING OR NEW SURFACE MOUNTED ITEMS.
2. ALL 20A BRANCH CIRCUITS LONGER THAN 100 FEET SHALL BE MINIMUM WIRE SIZE 2#10AWG+1#10AWG.
3. THE BASIS OF DESIGN LISTED MANUFACTURER DOES NOT INDICATE A PROPRIETARY SYSTEM, BUT IS INTENDED TO PROVIDE A LEVEL OF ACCEPTABLE QUALITY. REFER TO THE PROJECT SPECIFICATION MANUAL AND ASSOCIATED SECTION FOR EQUIPMENT MANUFACTURERS LIST. EQUAL SUBSTITUTIONS WILL BE REVIEWED AND ACCEPTED IF THEY MEET THE SAME LEVEL OF QUALITY AND ARE SUBMITTED IN ACCORDANCE WITH SPECIFICATION PROCEDURES.
4. PROVIDE SURFACE MOUNTED RACEWAYS FOR ALL NEW OR RELOCATED WALL MOUNTED DEVICES SHOWN IN AREAS OF EXISTING CONSTRUCTION. PAINT SURFACE MOUNTED RACEWAYS TO MATCH EXISTING WALL FINISH.
5. PROVIDE PIPE SLEEVES FOR INSTALLATION OF RACEWAYS AND CABLES THROUGH FIRE RATED WALLS AND CEILING SLABS. ALL CORRIDOR WALLS AND CEILING SLABS SHALL BE ASSUMED TO BE 1-1/2 HOUR RATED. FOR ALL PENETRATIONS PROVIDE FIRE STOPPING USING A UL APPROVED ASSEMBLY FOR THE RESPECTIVE WALL OR SLAB CONSTRUCTION. SEE DETAIL 2/E001.
6. PERFORM ALL CUTTING AND PATCHING NECESSARY TO PERFORM WORK. MATCH EXISTING MATERIALS, FINISHES, FIRE RATINGS, PAINT COLORS, ETC. IN ALL AREAS OF PATCHING.
7. PROVIDE FIRE PROOFING AT PENETRATIONS OF FIRE-RATED ASSEMBLIES.
8. ALL WORK AND INSTALLED EQUIPMENT MUST COMPLY WITH THE NATIONAL ELECTRICAL CODE 2020 EDITION.
9. REMOVE, STORE AND RE-INSTALL EXISTING CEILING SYSTEMS AS NECESSARY TO PERFORM WORK. NOTIFY OWNER OF ANY EXISTING DAMAGE TO CEILING TILE AND SUPPORTS PRIOR TO REMOVAL. REPLACE ANY TILES AND SUPPORTS DAMAGED AS A RESULT OF WORK. AMOUNT OF CEILING TO BE REMOVED IS AT CONTRACTOR'S DISCRETION. REINSTALL ALL REMOVED CEILING AT COMPLETION OF WORK. MAKE EVERY EFFORT TO MINIMIZE OPEN CEILINGS.
10. SYSTEM PROGRAMMING AND IDENTIFICATION LABELS FOR ALL SYSTEMS MUST USE THE OWNER'S ROOM NAME AND NUMBER AND NOT THE ROOM NAMES AND NUMBERS ON THE CONTRACT DOCUMENTS. MEET WITH THE OWNER TO REVIEW AND CONFIRM ROOM NAMES AND ROOM NUMBERS PRIOR TO LABELING SYSTEMS.
11. ELECTRICAL DRAWINGS ARE SCHEMATIC IN NATURE. PROVIDE OFFSETS AND FITTINGS AS REQUIRED TO ACCOMMODATE FIELD CONDITIONS AND ALL TRADE WORK BY OTHERS.
12. COORDINATE AND FIELD VERIFY ALL DIMENSIONS, SIZES, CLEARANCES AND LOCATION PRIOR TO THE START OF CONSTRUCTION. WHEN CONFLICTS ARISE, MAKE ANY NECESSARY CHANGES TO ROUTING OF CONDUIT & WIRING WITHOUT COMPROMISING THE INTEGRITY AND PERFORMANCE OF THE SYSTEM, AND AT NO ADDITIONAL COST TO THE OWNER.
13. ALL WORK SHALL COMPLY WITH THE STANDARDS OF THE AMERICAN INSURANCE ASSOCIATION, INDUSTRIAL RISK INSURANCE UNDERWRITERS (IRI), FACTORY MUTUAL (FW), OR THE APPLICABLE RATING BUREAU, THE NATIONAL ELECTRICAL CODE (NEC), AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AND ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL BUILDING CODES AND THE REQUIREMENTS OF THE PUBLIC UTILITY COMPANIES SERVING THE SITE.
14. ENSURE ALL WORK IS IN CONFORMANCE WITH ALL APPLICABLE BUILDING CODES. WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH THE LATEST EDITIONS OF THE APPLICABLE CONSTRUCTION CODE, AND ALL OTHER FEDERAL, STATE, AND LOCAL AGENCY REGULATIONS HAVING JURISDICTION OVER THIS PROJECT. IN THE EVENT OF ANY DISCREPANCIES BETWEEN AGENCY REQUIREMENTS, OBSERVE THE MORE STRINGENT OF REQUIREMENTS.
15. INCLUDE PROVISIONS FOR THIRTY (30) ADDITIONAL WIRELESS CLOCKS AT A LOCATION TO BE DETERMINED DURING CONSTRUCTION.
16. INCLUDE PROVISIONS FOR SIXTY (60) ADDITIONAL INTERIOR PUBLIC ADDRESS SYSTEM SPEAKERS IN A SURFACE MOUNTED BACKBOX AT A LOCATION TO BE DETERMINED DURING CONSTRUCTION.
17. INCLUDE PROVISIONS FOR THIRTY (30) ADDITIONAL EXTERIOR PUBLIC ADDRESS SYSTEM SPEAKERS IN AN EXTERIOR WEATHERPROOF SURFACE MOUNTED BACKBOX AT A LOCATION TO BE DETERMINED DURING CONSTRUCTION.
18. INCLUDE PROVISIONS FOR THIRTY (30) ADDITIONAL PUBLIC ADDRESS SYSTEM SPEAKER SOUND ATTENUATING STATIONS IN A SURFACE MOUNTED BACKBOX AT A LOCATION TO BE DETERMINED DURING CONSTRUCTION.
19. ADJUST THE SOUND LEVELS FOR THE SPEAKERS BASED ON ROOM SIZE. REFER TO SPECIFICATION 275123 FOR MORE INFORMATION. (△)

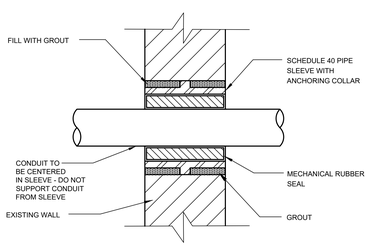
GENERAL NOTE APPLICABLE TO ALL MIDDLE SCHOOL DRAWINGS:

1. THE DESIGN OF THIS PROJECT IS BASED ON THE ASSUMPTION THAT THE GENERATOR UPGRADE WILL BE COMPLETED PRIOR TO THE COMMENCEMENT OF THIS PROJECT. THIS PROJECT INCLUDES REUSING CIRCUIT BREAKERS IDENTIFIED "SPARE" IN PANEL "AV" TO SUPPLY POWER TO NEW INDICATOR LIGHTS, RELAYS AND OTHER PUBLIC ADDRESS RELATED EQUIPMENT AS SHOWN ON NEW WORK DRAWINGS.



ALL WALL PENETRATIONS TO BE SEALED/FIRE STOPPED WITH UL ASSEMBLIES APPROVED FOR THE RESPECTIVE TYPE OF WALL.

1 / 1/E001 — DETAIL-INTERIOR PIPE SLEEVES THRU WALL
NO SCALE



NOTE: ALL PENETRATIONS INTERIOR TO BUILDING TO BE PROVIDED BY ASSOCIATED TRADE CONTRACTOR.

2 / 2/E001 — DETAIL - CONDUIT THRU EXTERIOR WALL
NO SCALE

04/06/2026
ISSUED FOR BID

REFERENCE DIMENSION
0 — 1
INDICATED DIMENSION IS MEASURED AT ONE (1) INCH IN LENGTH AND PROVIDED FOR REFERENCE/VERIFICATION ONLY.

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G&H Project No. 202156
ENGINEER DATE

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4/6/26
Date

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Project Name
Public Address and Clock System Replacement at Various District Schools

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Township of Manalapan / Borough of Englishtown, New Jersey

Project Number
5618

Project Date
04.06.2026

Checked By
DRH

Drawn By
JTM

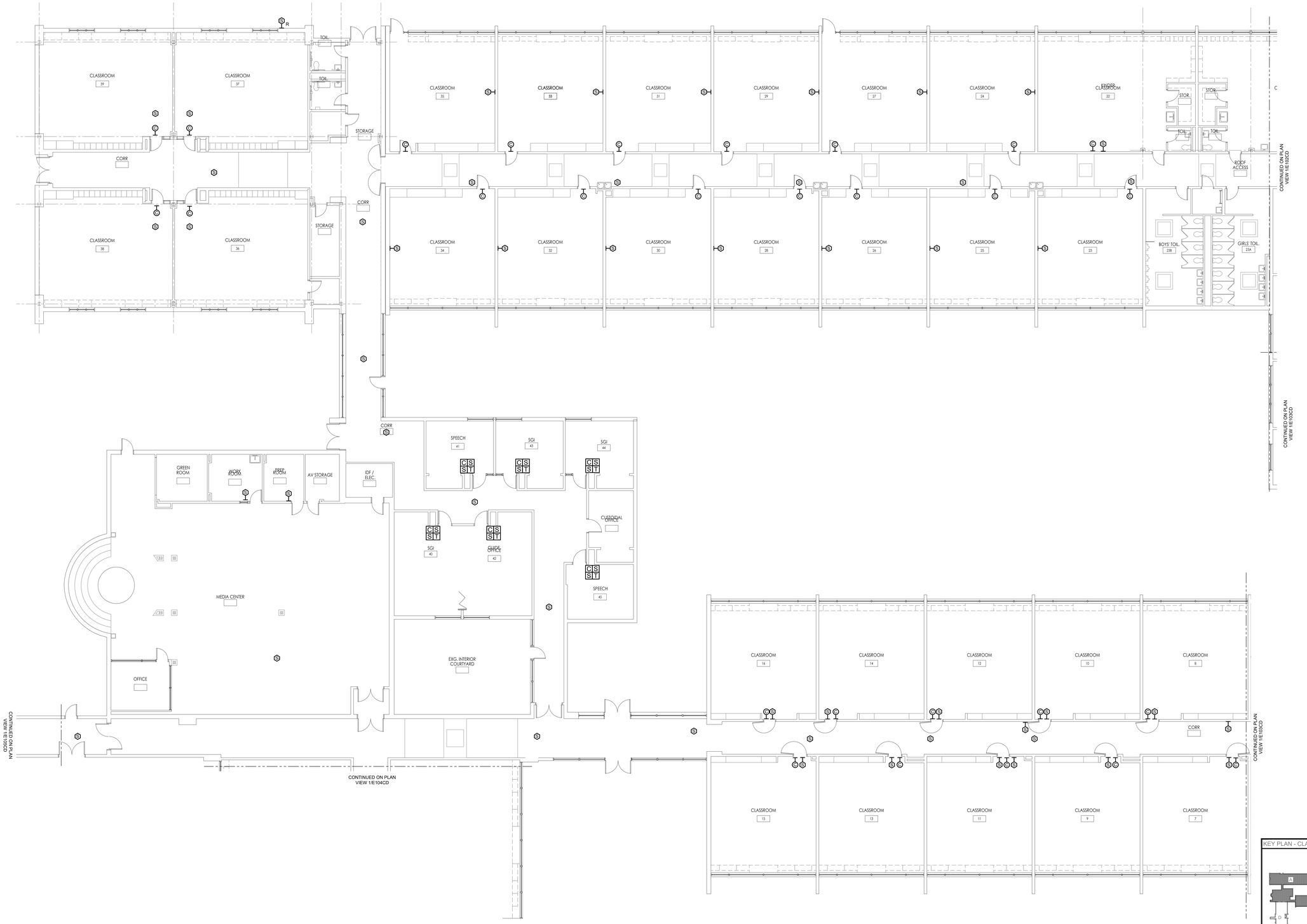
Scale
AS NOTED

Drawing Name
ELECTRICAL LEGEND, NOTES AND DETAILS

Revisions

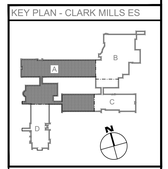
No.	Date	Description
1	05.01.26	ADDENDUM #2

Drawing Number
E001



CLARK MILLS ELEMENTARY SCHOOL
ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN - BLOCK "A"
1/E101CD SCALE: 1/8" = 1'-0"

KEY PLAN - CLARK MILLS ES



REFERENCE DIMENSION

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Project Name
Public Address and Clock System Replacement at Clark Mills Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Clark Mills Elementary School
34 Gordon's Corner Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

Checked By
DRH

Drawn By
JTM

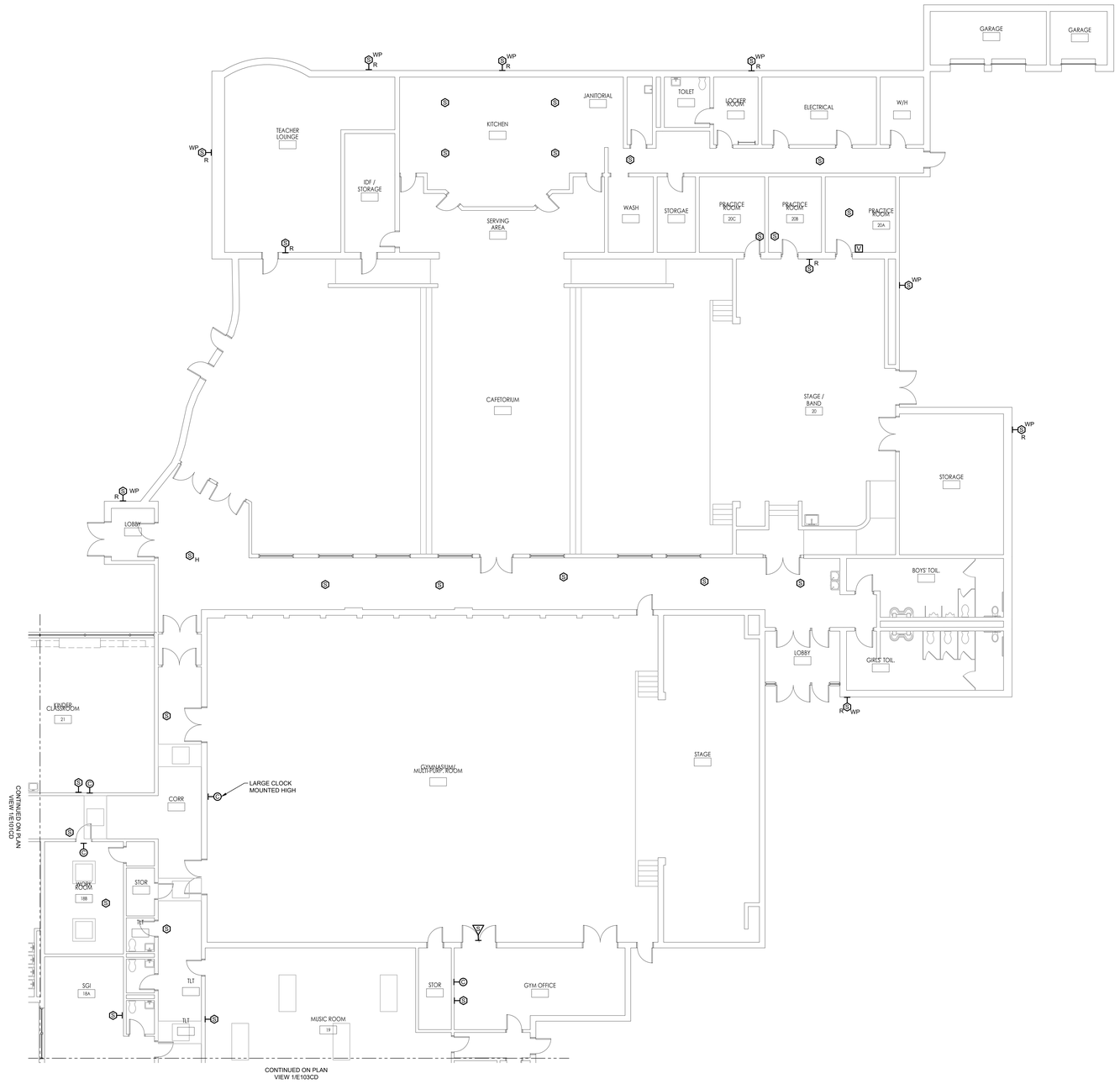
Scale
AS NOTED

Drawing Name
CLARK MILLS ES ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN: BLOCK "A"

Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

Drawing Number
E101CD



1 E102CD CLARK MILLS ELEMENTARY SCHOOL
ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN - BLOCK "B"
SCALE: 1/8" = 1'-0"

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Project Name
Public Address and Clock System Replacement at Clark Mills Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Clark Mills Elementary School
34 Gordon's Corner Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

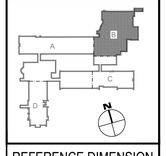
Checked By
DRH

Drawn By
JTM

Scale
AS NOTED

Drawing Name
CLARK MILLS ES ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN: BLOCK "B"

KEY PLAN - CLARK MILLS ES



REFERENCE DIMENSION

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Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

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ISSUED FOR BID

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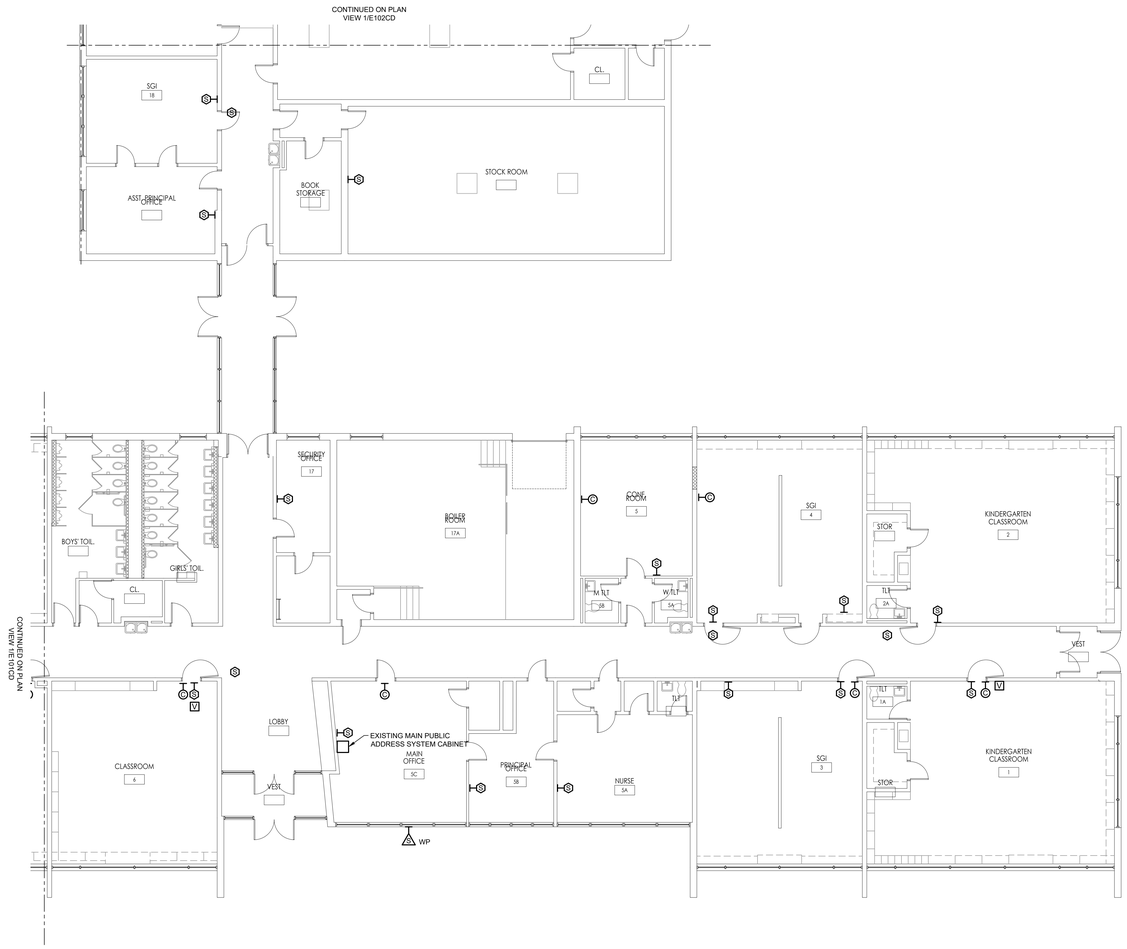
G&H Project No. 2024156

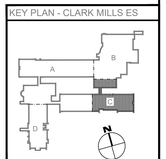
ENGINEER DATE

Drawing Number
E102CD



1 E103CD CLARK MILLS ELEMENTARY SCHOOL
ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN - BLOCK "C"
SCALE: 1/8" = 1'-0"

KEY PLAN - CLARK MILLS ES



REFERENCE DIMENSION

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ENGINEER DATE

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Project Name
Public Address and Clock System Replacement at Clark Mills Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Clark Mills Elementary School
34 Gordon's Corner Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

Checked By
DRH

Drawn By
JTM

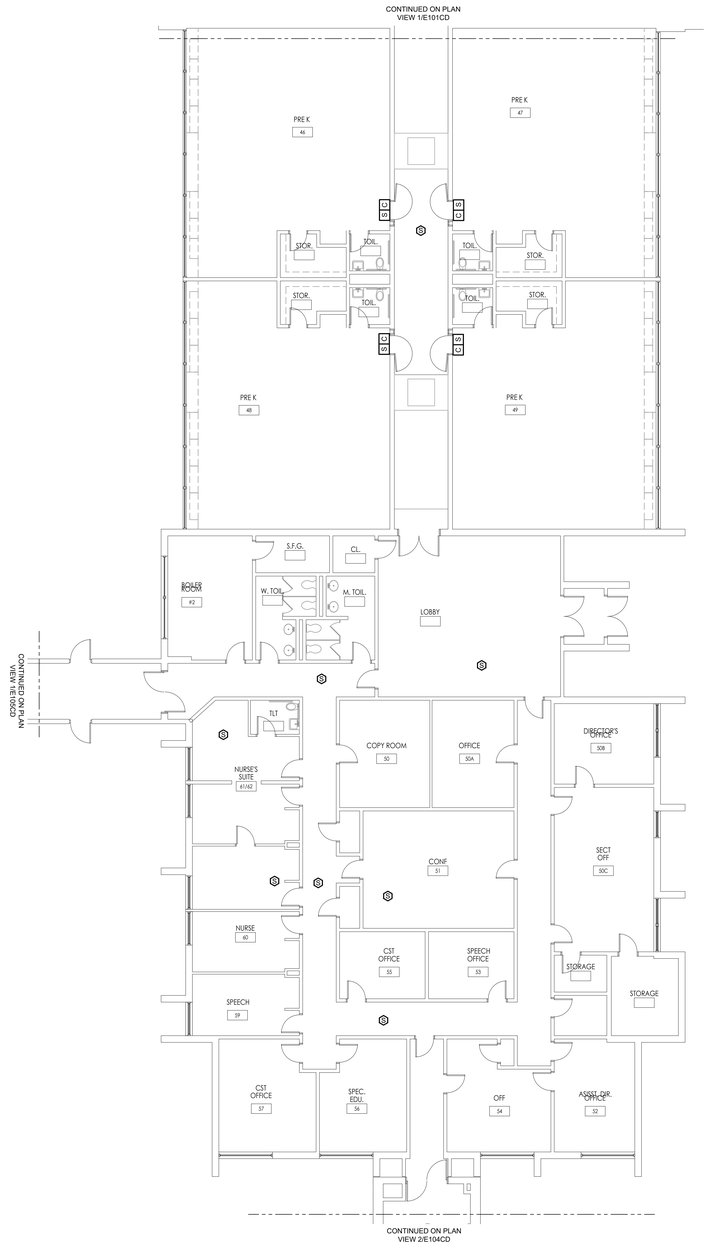
Scale
AS NOTED

Drawing Name
CLARK MILLS ES ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN: BLOCK "C"

Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

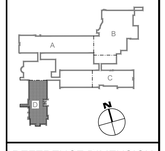
Drawing Number
E103CD



1 E104CD CLARK MILLS ELEMENTARY SCHOOL
ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN - BLOCK "D"
SCALE: 1/8" = 1'-0"

04/06/2026
ISSUED FOR BID

KEY PLAN - CLARK MILLS ES



REFERENCE DIMENSION

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ENGINEER DATE

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Architect Date

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Project Name
Public Address and Clock System Replacement at Clark Mills Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Clark Mills Elementary School
34 Gordon's Corner Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

Checked By
DRH

Drawn By
JTM

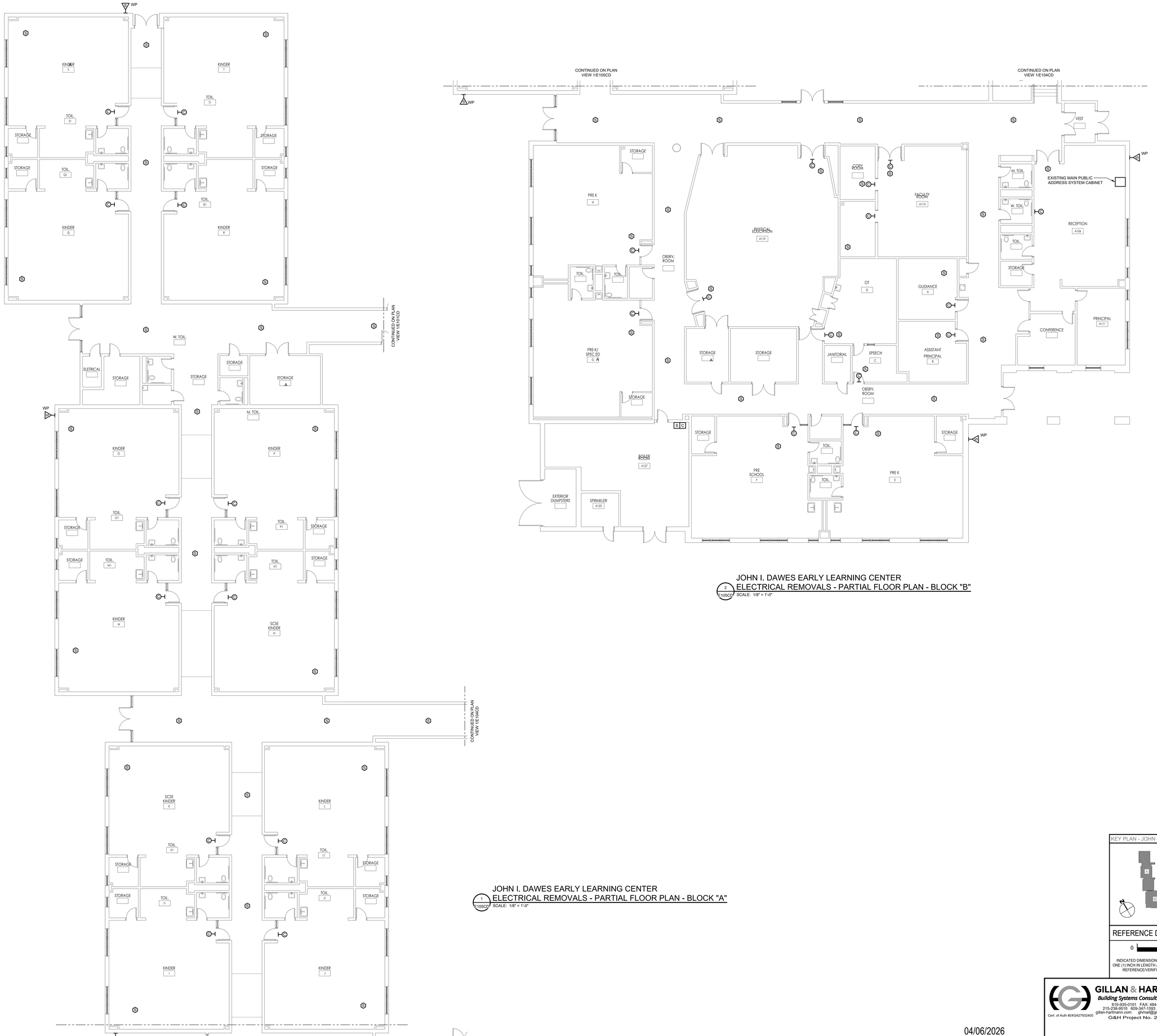
Scale
AS NOTED

Drawing Name
CLARK MILLS ES ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN: BLOCK "D"

Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

Drawing Number
E104CD



JOHN I. DAWES EARLY LEARNING CENTER
2 / E105CD — ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN - BLOCK "B"
SCALE: 1/8" = 1'-0"

JOHN I. DAWES EARLY LEARNING CENTER
1 / E105CD — ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN - BLOCK "A"
SCALE: 1/8" = 1'-0"

04/06/2026
ISSUED FOR BID

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Architect

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G&H Project No. 2024156
ENGINEER DATE

Project Name
Public Address and Clock System Replacement at John I. Dawes Early Learning Center

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
John I. Dawes Early Learning Center
38 Gordon's Corner Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

Checked By
DRH

Drawn By
JTM

Scale
AS NOTED

Drawing Name
JOHN I. DAWES ELC ELECTRICAL REMOVALS - PARTIAL FLOOR PLANS: BLOCKS "A" & "B"

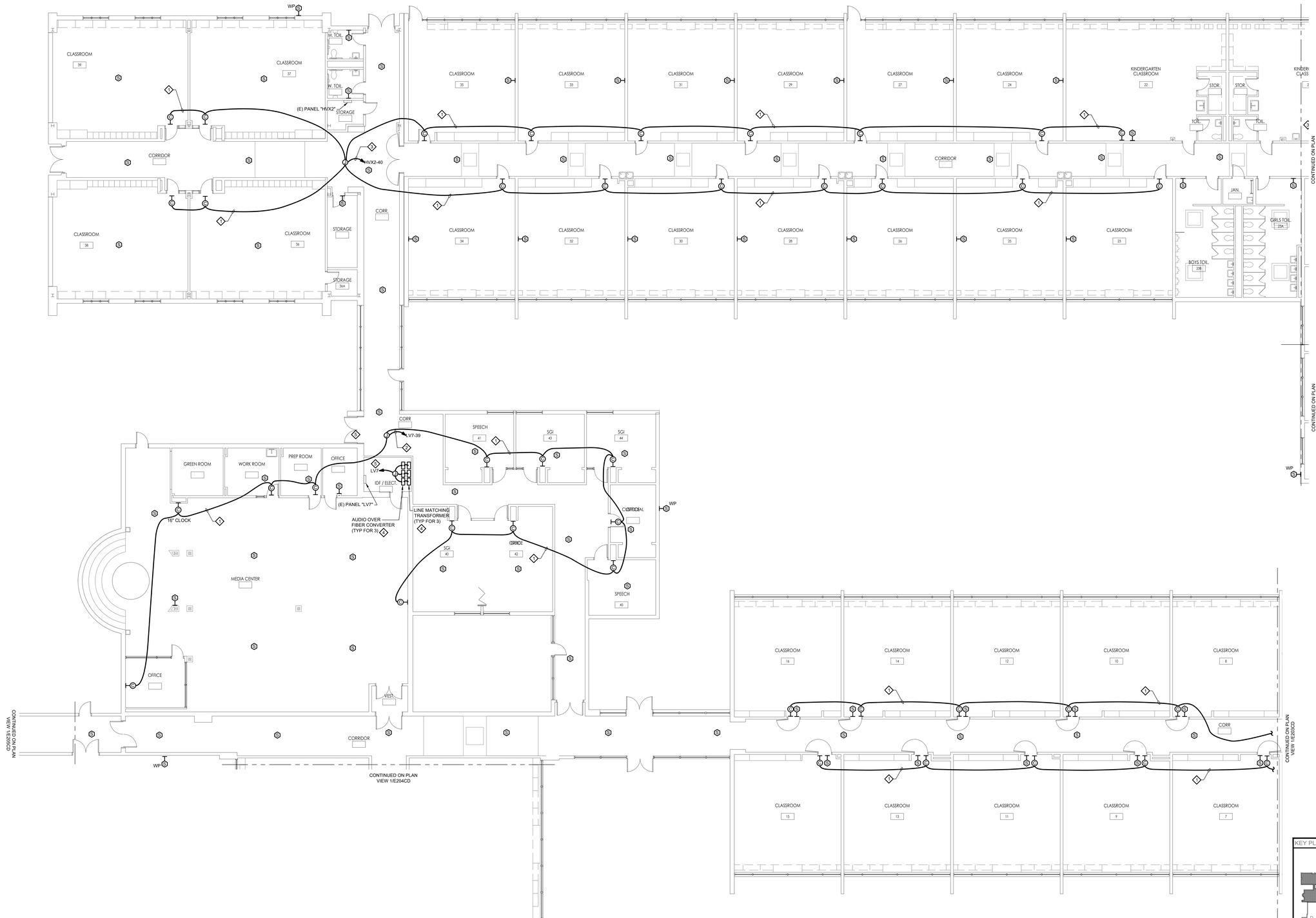
KEY PLAN - JOHN I. DAWES ELC

REFERENCE DIMENSION
0 1
INDICATED DIMENSION IS MEASURED AT ONE (1) INCH IN LENGTH AND PROVIDED FOR REFERENCE/VERIFICATION ONLY.

Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

Drawing Number
E105CD



1 E201CD CLARK MILLS ELEMENTARY SCHOOL
ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN - BLOCK "A"
SCALE: 1/8" = 1'-0"

NEW WORK NOTES

1. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP.
2. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM AN EXISTING SPARE 20 AMP BREAKER IN EXISTING PANEL "LV7" (LOCATED ON THIS DRAWING), TO THE JUNCTION BOX. CIRCUIT ID IS NOTED ON DRAWINGS. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".
3. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM A NEW 20 AMP 1-POLE BREAKER IN EXISTING PANEL "HVX2" (LOCATED ON THIS DRAWING), TO THE JUNCTION BOX. CIRCUIT ID IS NOTED ON DRAWING. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. NEW CIRCUIT BREAKER SHALL MATCH EXISTING PANEL BOARD IN TYPE AND AIC RATING. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".
4. PROVIDE THREE (3) WALL-MOUNTED LINE MATCHING TRANSFORMERS AND THREE (3) WALL-MOUNTED AUDIO OVER FIBER CONVERTER AND ALL ASSOCIATED WIRING AND CONDUIT AS PER THE RISER DIAGRAM ON DETAIL 2/E01CD.
5. PROVIDE A NEW 20 AMP SINGLE POLE CIRCUIT BREAKER IN PANEL "LV7." PROVIDE (2)#12, (1)#12 GROUND, 3/4" CONDUIT FROM THE CIRCUIT BREAKER TO THE JUNCTION BOX.

04/06/2026
ISSUED FOR BID

KEY PLAN - CLARK MILLS ES

REFERENCE DIMENSION

0 1

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G&H Project No. 2024156

ENGINEER DATE

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NJ - 21A01779100
JASON J. DUBOWITCH, AIA
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4/6/26
Date
Architect

FVHD architects planners
ESTD 1911
Fraytak Veisz Hopkins Duthie P C
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Pennsylvania: 820 Adams Ave., Suite 210 - Audubon - Pennsylvania 19403
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Project Name
Public Address and Clock System Replacement at Clark Mills Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Clark Mills Elementary School 34 Gordon's Corner Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

Checked By
DRH

Drawn By
JTM/SW

Scale
AS NOTED

Drawing Name
CLARK MILLS ES ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN: BLOCK "A"

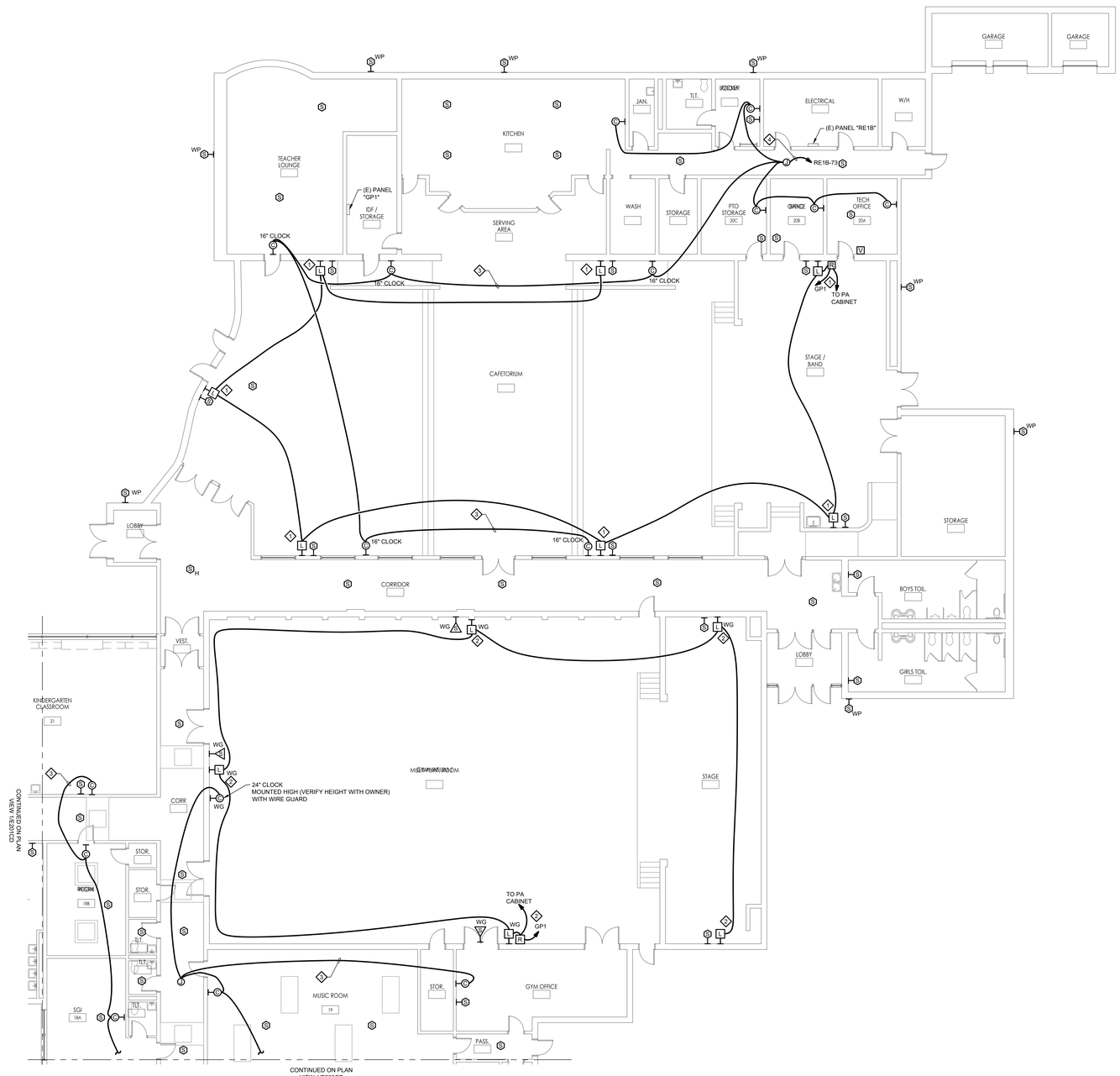
Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

Drawing Number
E201CD

NEW WORK NOTES

1. PROVIDE (2)#12, (1)#12 G, 3/4" C TO A SPARE 20 AMP CIRCUIT BREAKER IN PANEL "GP1" CIRCUIT #8 (LOCATION SHOWN ON THIS SHEET). FOR THE INDICATOR LIGHTS IN THE CAFETERIA, PROVIDE A RELAY AS REQUIRED IN THE SPECIFICATIONS AND PA SYSTEM CONTROLS TO TURN ON THE LIGHTS DURING A PA SYSTEM BROADCAST. PROVIDE (2)#12,(1) #12 G, 3/4" C FROM THE PA CABINET TO THE RELAY. REFER TO THE PUBLIC ADDRESS SYSTEM RISER DIAGRAM ON 2/E601CD.
2. PROVIDE (2)#12, (1)#12 G, 3/4" C TO A SPARE 20 AMP CIRCUIT BREAKER IN PANEL "GP1" CIRCUIT #10 (LOCATION SHOWN ON THIS SHEET). FOR THE INDICATOR LIGHTS IN THE GYMNASIUM, PROVIDE A RELAY AS REQUIRED IN THE SPECIFICATIONS AND PA SYSTEM CONTROLS TO TURN ON THE LIGHTS DURING A PA SYSTEM BROADCAST. PROVIDE (2)#12,(1) #12 G, 3/4" C FROM THE PA CABINET TO THE RELAY. REFER TO THE PUBLIC ADDRESS SYSTEM RISER DIAGRAM ON 2/E601CD.
3. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP.
4. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM AN EXISTING SPARE 20 AMP BREAKER IN EXISTING PANEL "RE1B" (LOCATED ON THIS DRAWING) CIRCUIT #73, TO THE JUNCTION BOX. CIRCUIT ID IS NOTED ON DRAWINGS. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".



CLARK MILLS ELEMENTARY SCHOOL
ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN - BLOCK "B"
1 / E202CD SCALE: 1/8" = 1'-0"

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JASON J. DUBOWITCH, AIA
NJ : 21A01761900 | PA : RA426529
Architect
4/6/26
Date

FVHD architects planners
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ESTABLISHED
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FVHDPC.COM

Project Name
Public Address and Clock System Replacement at Clark Mills Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Clark Mills Elementary School
34 Gordon's Corner Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

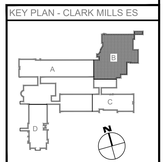
Checked By
DRH

Drawn By
JTM/SW

Scale
AS NOTED

Drawing Name
CLARK MILLS ES ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN: BLOCK "B"

KEY PLAN - CLARK MILLS ES



REFERENCE DIMENSION
0 1
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Revisions

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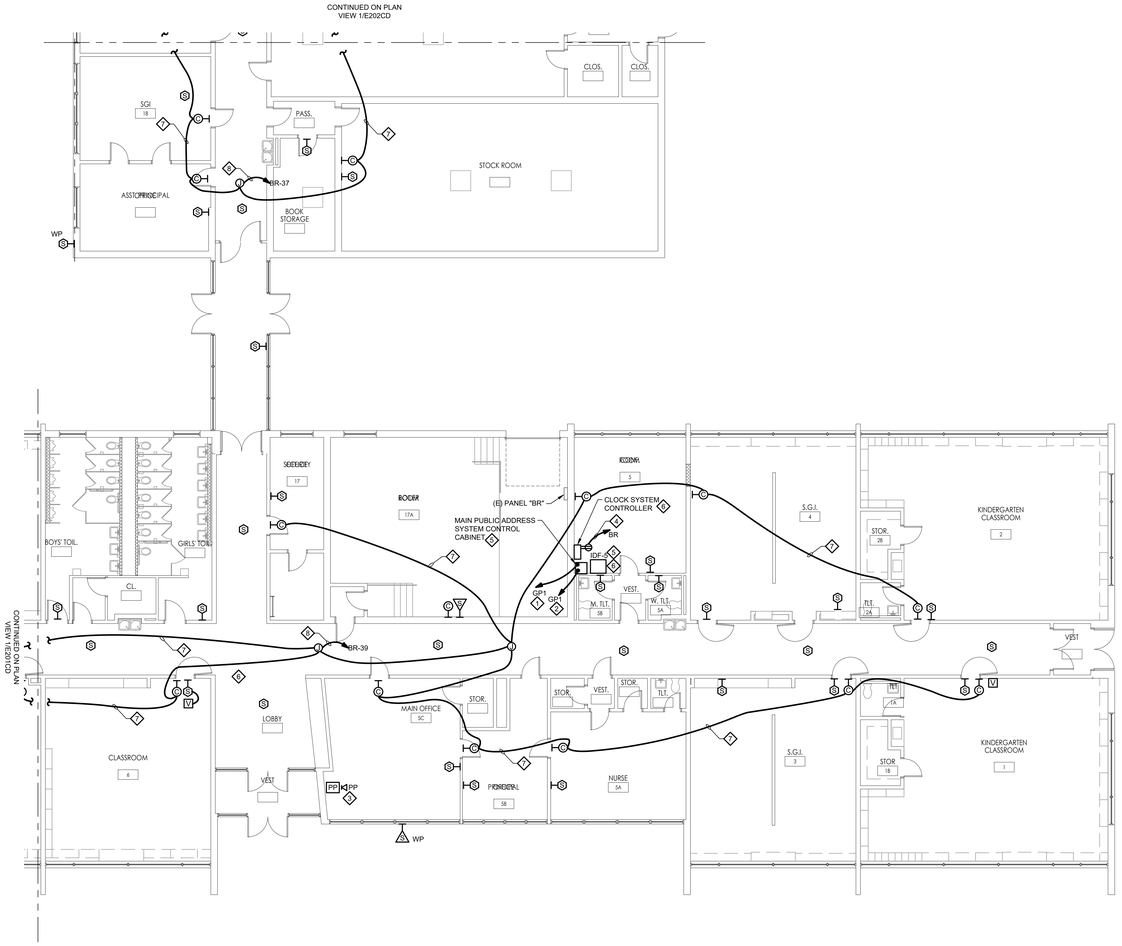
G&H Project No. 2024156

ENGINEER DATE

04/06/2026
ISSUED FOR BID

Drawing Number
E202CD



CLARK MILLS ELEMENTARY SCHOOL
ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN - BLOCK "C"
1 E203CD SCALE: 1/8" = 1'-0"

NEW WORK NOTES

1. PROVIDE (2)#12, (1)#12 GROUND, 3/4" CONDUIT TO A SPARE 20 AMP BREAKER IN EXISTING PANEL "GP1" CIRCUIT #10 (LOCATED IN IDF/STORAGE ROOM SHOWN ON 1/E202CD).
2. PROVIDE (2)#12, (1)#12 GROUND, 3/4" CONDUIT TO A SPARE 20 AMP BREAKER IN PANEL "GP1" CIRCUIT #12 (LOCATED IN IDF/STORAGE ROOM SHOWN ON 1/E202CD).
3. COORDINATE THE EXACT LOCATION OF THE PA SYSTEM HANDSET AND ASSOCIATED WALL MOUNTED TELEPHONE PLUG-IN OUTLET IN THE MAIN OFFICE WITH THE OWNER PRIOR TO ROUGHING IN. SEE DETAIL 2/E601CD AND SPECIFICATION 275123 FOR REQUIREMENTS.
4. PROVIDE (2)#12, (1)#12 GROUND, 3/4" CONDUIT TO A SPARE 20 AMP BREAKER IN EXISTING PANEL "BR" (LOCATED IN BOILER ROOM 17A) TO A NEW SURFACE MOUNTED DUPLEX RECEPTACLE WITH BACK BOX. PROVIDE A WALL MOUNTED SHELF ATTACHED TO THE WALL FOR SUPPORT TO THE CLOCK SYSTEM CONTROLLER. COORDINATE EXACT LOCATION WITH THE OWNER PRIOR TO ROUGH-IN.
5. PROVIDE A CAT-6A CABLE FROM THE NEW MAIN PUBLIC ADDRESS SYSTEM CONTROL CABINET TO EXISTING IDF-5 IN CONFERENCE ROOM 5. REFER TO PUBLIC ADDRESS RISER DIAGRAM ON DETAIL 2/E601CD.
6. PROVIDE A CAT-6A CABLE FROM THE NEW CLOCK SYSTEM CONTROLLER TO EXISTING IDF-5 IN CONFERENCE ROOM 5. REFER TO WIRELESS CLOCK SYSTEM RISER DIAGRAM ON DETAIL 3/E601CD.
7. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP.
8. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM A NEW 20 AMP 1-POLE BREAKER IN EXISTING PANEL "BR" (LOCATED ON THIS DRAWING), TO THE JUNCTION BOX. CIRCUIT ID IS NOTED ON DRAWING. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. NEW CIRCUIT BREAKER SHALL MATCH EXISTING PANEL BOARD IN TYPE AND AIC RATING. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".

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Project Name
Public Address and Clock System Replacement at Clark Mills Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Clark Mills Elementary School
34 Gordon's Corner Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

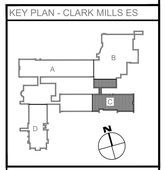
Checked By
DRH

Drawn By
JTM/SW

Scale
AS NOTED

Drawing Name
CLARK MILLS ES ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN: BLOCK "C"

KEY PLAN - CLARK MILLS ES



REFERENCE DIMENSION
0 1
INDICATED DIMENSION IS MEASURED AT ONE (1) INCH IN LENGTH AND PROVIDED FOR REFERENCE/VERIFICATION ONLY.

Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

04/06/2026
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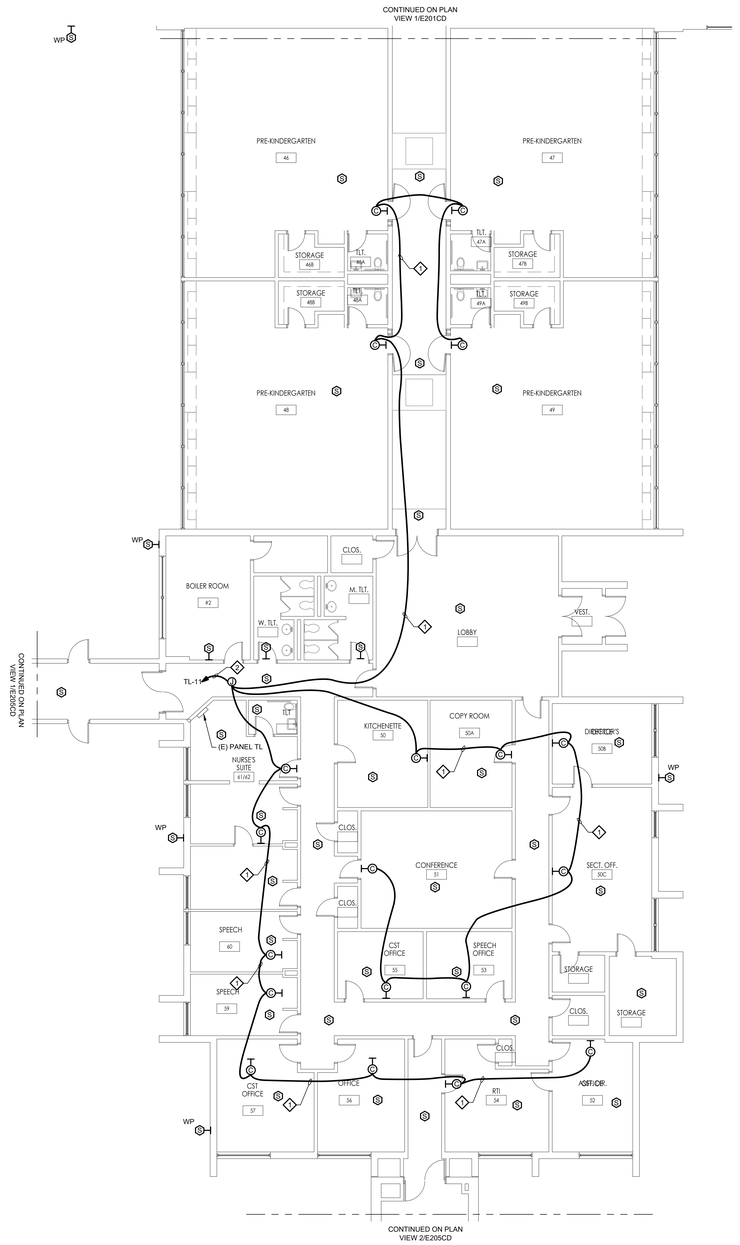
G&H Project No. 2024156

ENGINEER DATE

Drawing Number
E203CD



CONTINUED ON PLAN
VIEW 2/E205CD

NEW WORK NOTES

1. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP.
2. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM A NEW 20 AMP 1-POLE BREAKER IN EXISTING PANEL "TL" (LOCATED ON THIS DRAWING), TO THE JUNCTION BOX. CIRCUIT ID IS NOTED ON DRAWING. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. NEW CIRCUIT BREAKER SHALL MATCH EXISTING PANEL BOARD IN TYPE AND AIC RATING. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".

CLARK MILLS ELEMENTARY SCHOOL
ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN - BLOCK "D"

1 / E204CD — SCALE: 1/8" = 1'-0"

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Date
Architect

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Project Name
Public Address and Clock System Replacement at Clark Mills Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Clark Mills Elementary School
34 Gordon's Corner Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

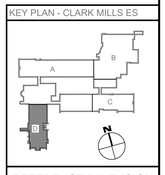
Checked By
DRH

Drawn By
JTM/SW

Scale
AS NOTED

Drawing Name
CLARK MILLS ES ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN: BLOCK "D"

KEY PLAN - CLARK MILLS ES



REFERENCE DIMENSION

0 — 1

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Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

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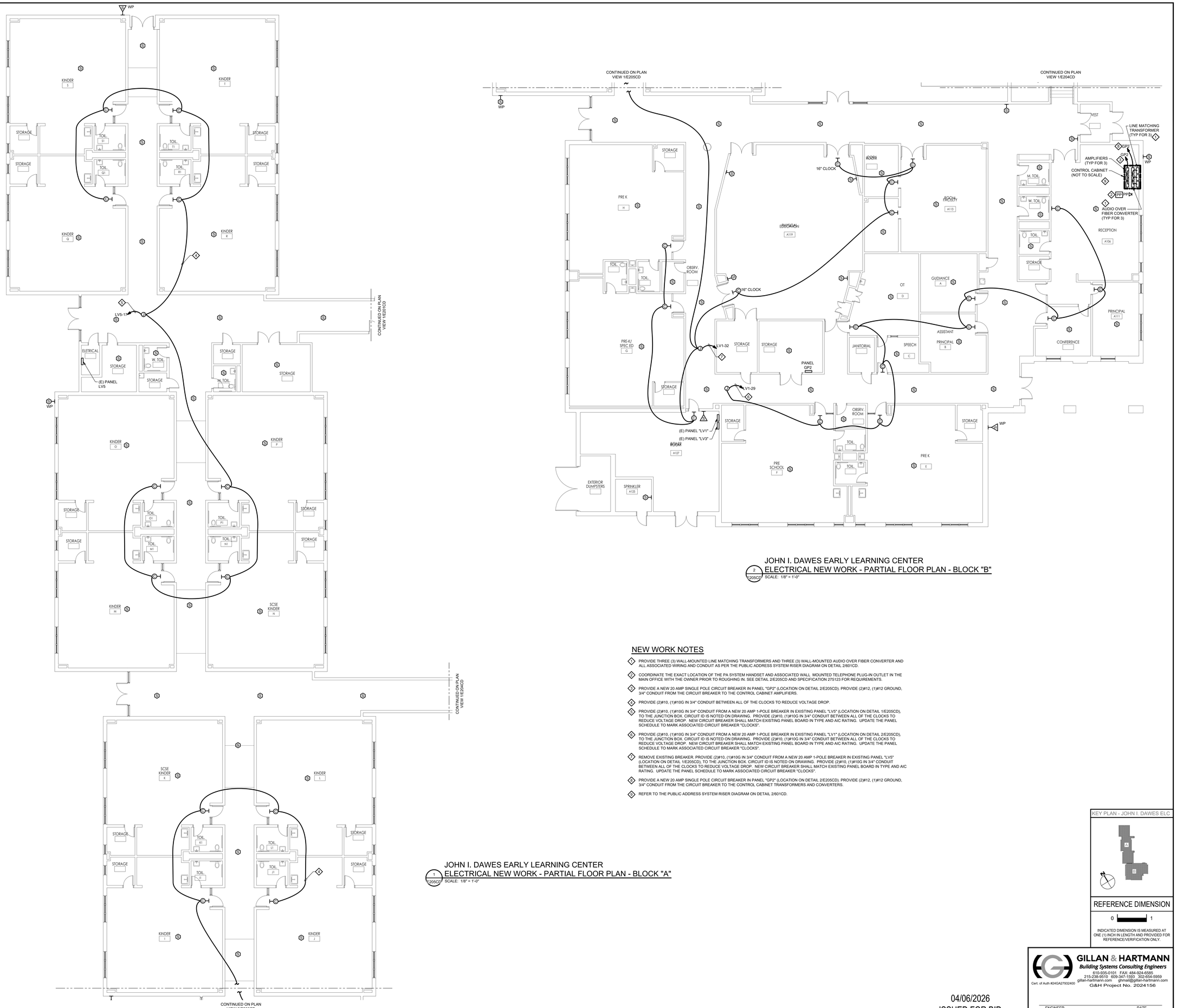
ENGINEER DATE

Drawing Number
E204CD



JOHN I. DAWES EARLY LEARNING CENTER
2 E205CD ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN - BLOCK "B"
SCALE: 1/8" = 1'-0"

JOHN I. DAWES EARLY LEARNING CENTER
1 E205CD ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN - BLOCK "A"
SCALE: 1/8" = 1'-0"

NEW WORK NOTES

1. PROVIDE THREE (3) WALL-MOUNTED LINE MATCHING TRANSFORMERS AND THREE (3) WALL-MOUNTED AUDIO OVER FIBER CONVERTER AND ALL ASSOCIATED WIRING AND CONDUIT AS PER THE PUBLIC ADDRESS SYSTEM RISER DIAGRAM ON DETAIL 2/601CD.
2. COORDINATE THE EXACT LOCATION OF THE PA SYSTEM HANDSET AND ASSOCIATED WALL MOUNTED TELEPHONE PLUG-IN OUTLET IN THE MAIN OFFICE WITH THE OWNER PRIOR TO ROUGHING IN. SEE DETAIL 2/E205CD AND SPECIFICATION 275123 FOR REQUIREMENTS.
3. PROVIDE A NEW 20 AMP SINGLE POLE CIRCUIT BREAKER IN PANEL "GP2" (LOCATION ON DETAIL 2/E205CD). PROVIDE (2)#12, (1)#12 GROUND, 3/4" CONDUIT FROM THE CIRCUIT BREAKER TO THE CONTROL CABINET AMPLIFIERS.
4. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP.
5. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM A NEW 20 AMP 1-POLE BREAKER IN EXISTING PANEL "LV5" (LOCATION ON DETAIL 1/E205CD), TO THE JUNCTION BOX. CIRCUIT ID IS NOTED ON DRAWING. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. NEW CIRCUIT BREAKER SHALL MATCH EXISTING PANEL BOARD IN TYPE AND AIC RATING. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".
6. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM A NEW 20 AMP 1-POLE BREAKER IN EXISTING PANEL "LV1" (LOCATION ON DETAIL 2/E205CD), TO THE JUNCTION BOX. CIRCUIT ID IS NOTED ON DRAWING. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. NEW CIRCUIT BREAKER SHALL MATCH EXISTING PANEL BOARD IN TYPE AND AIC RATING. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".
7. REMOVE EXISTING BREAKER. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM A NEW 20 AMP 1-POLE BREAKER IN EXISTING PANEL "LV5" (LOCATION ON DETAIL 1/E205CD), TO THE JUNCTION BOX. CIRCUIT ID IS NOTED ON DRAWING. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. NEW CIRCUIT BREAKER SHALL MATCH EXISTING PANEL BOARD IN TYPE AND AIC RATING. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".
8. PROVIDE A NEW 20 AMP SINGLE POLE CIRCUIT BREAKER IN PANEL "GP2" (LOCATION ON DETAIL 2/E205CD). PROVIDE (2)#12, (1)#12 GROUND, 3/4" CONDUIT FROM THE CIRCUIT BREAKER TO THE CONTROL CABINET TRANSFORMERS AND CONVERTERS.
9. REFER TO THE PUBLIC ADDRESS SYSTEM RISER DIAGRAM ON DETAIL 2/601CD.

04/06/2026
ISSUED FOR BID

KEY PLAN - JOHN I. DAWES ELC

REFERENCE DIMENSION

0 1

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Project Name
Public Address and Clock System Replacement at John I. Dawes Early Learning Center

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
John I. Dawes Early Learning Center
38 Gordon's Corner Road, Manalapan, NJ 07726

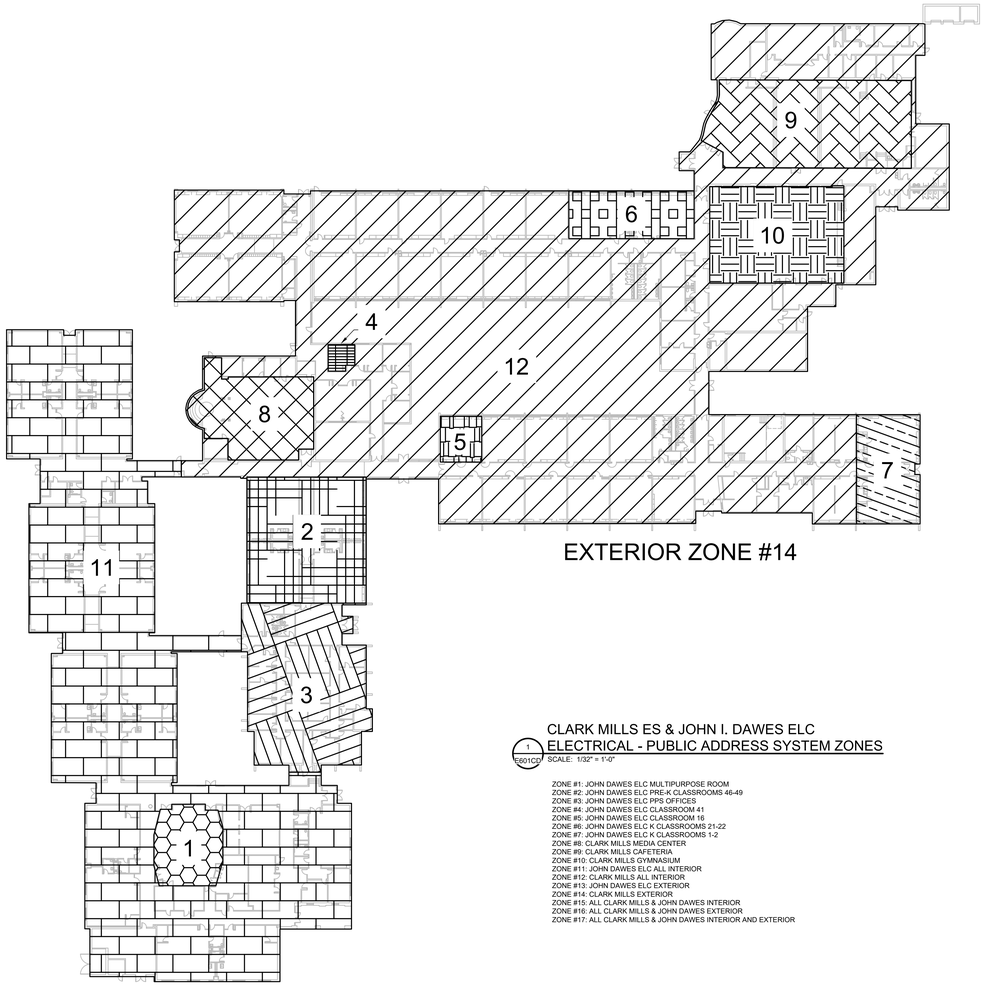
Project Number	5618
Project Date	04.06.2026
Checked By	DRH
Drawn By	JTM
Scale	AS NOTED

Drawing Name
JOHN I. DAWES ELC ELECTRICAL NEW WORK - PARTIAL FLOOR PLANS: BLOCKS "A" & "B"

Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

Drawing Number
E205CD



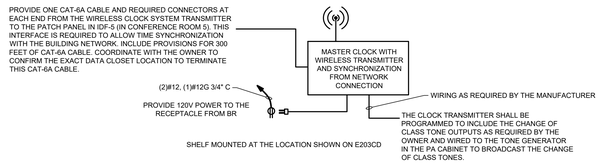
EXTERIOR ZONE #14

EXTERIOR ZONE #13

CLARK MILLS ES & JOHN I. DAWES ELC
ELECTRICAL - PUBLIC ADDRESS SYSTEM ZONES

1 / E601CD — SCALE: 1/32" = 1'-0"

ZONE #1: JOHN DAWES ELC MULTIPURPOSE ROOM
ZONE #2: JOHN DAWES ELC PRE-K CLASSROOMS 46-49
ZONE #3: JOHN DAWES ELC PPS OFFICES
ZONE #4: JOHN DAWES ELC CLASSROOM 41
ZONE #5: JOHN DAWES ELC CLASSROOM 16
ZONE #6: JOHN DAWES ELC K CLASSROOMS 21-22
ZONE #7: JOHN DAWES ELC K CLASSROOMS 1-2
ZONE #8: CLARK MILLS MEDIA CENTER
ZONE #9: CLARK MILLS CAFETERIA
ZONE #10: CLARK MILLS GYMNASIUM
ZONE #11: JOHN DAWES ELC ALL INTERIOR
ZONE #12: CLARK MILLS ALL INTERIOR
ZONE #13: JOHN DAWES ELC EXTERIOR
ZONE #14: CLARK MILLS EXTERIOR
ZONE #15: ALL CLARK MILLS & JOHN DAWES INTERIOR
ZONE #16: ALL CLARK MILLS & JOHN DAWES EXTERIOR
ZONE #17: ALL CLARK MILLS & JOHN DAWES INTERIOR AND EXTERIOR



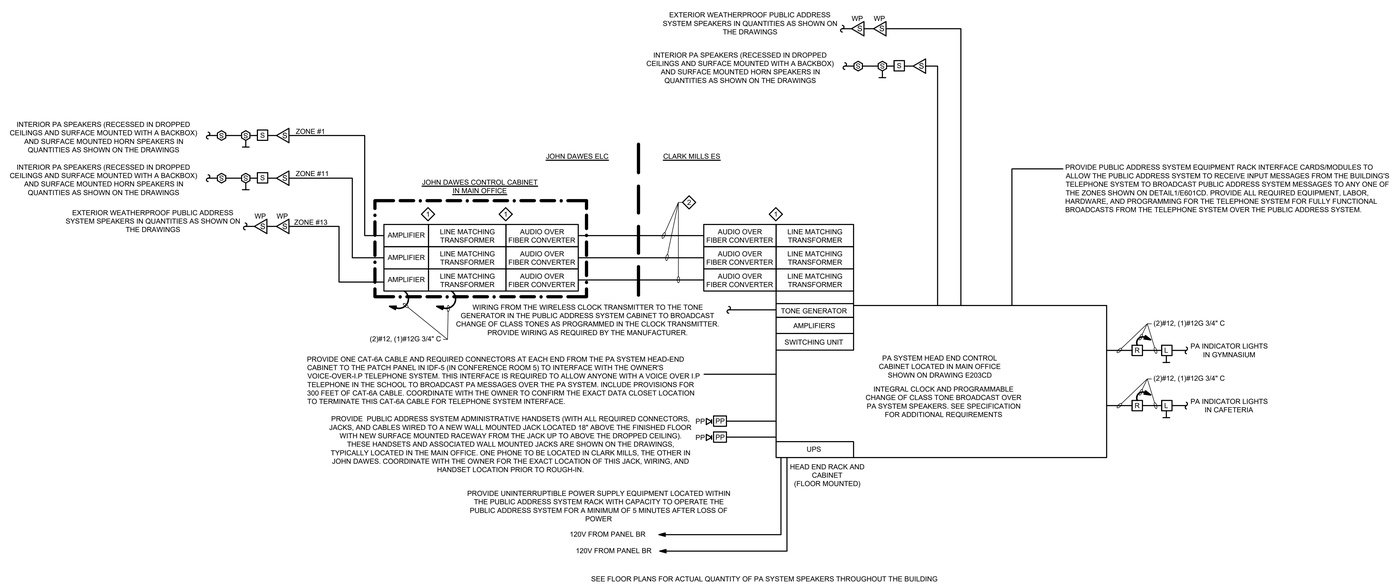
CLARK MILLS ES & JOHN I. DAWES ELC
WIRELESS CLOCK SYSTEM RISER DIAGRAM

3 / E601CD — NO SCALE

UNDER THE BASE BID, INCLUDE PROVISIONS IN THE PUBLIC ADDRESS SYSTEM CONTROL CABINET FOR A NETWORK TIME SYNCHRONIZED PUBLIC ADDRESS SYSTEM CONTROLLER/DIGITAL SIGNAL PROCESSOR/PAGING SERVER WITH ALL REQUIRED SYSTEM PROGRAMMING, SOFTWARE, AND EQUIPMENT THAT CAN PROVIDE (WITHOUT A SEPARATE CLOCK SYSTEM) CHANGE OF CLASS BELL/TONE SIGNALS OVER THE PUBLIC ADDRESS SYSTEM SPEAKERS. THE TIME SYNCHRONIZATION EQUIPMENT SHALL INCLUDE A CAT-6A CABLE CONNECTION EXTENDED TO THE OWNER'S DATA NETWORK PATCH PANEL TO MAINTAIN ACCURATE SYSTEM TIME FROM THE OWNER'S DATA NETWORK SYSTEM. THE CONTROLLER SHALL BE PROVIDED WITH A PROGRAMMABLE SCHEDULING CHANGE OF CLASS/BELL CONTROLLER WITH ALL REQUIRED SOFTWARE TO MAINTAIN A MINIMUM OF THREE DAILY CHANGE OF CLASS CALENDAR BASED SCHEDULES. THE SYSTEM SHALL INCLUDE A TONE GENERATOR (WITH MULTIPLE STYLES OF TONES AS SELECTED BY THE OWNER) AND ALLOW LIVE PAGING PRIORITY OVERRIDE. THE SYSTEM SHALL INCLUDE PROVISIONS FOR THE SCHOOL STAFF TO MANAGE THE CHANGE OF CLASS SCHEDULES USING A DATA NETWORK SYSTEM-BASED INTERFACE THAT IS PROVIDED WITH ALL REQUIRED NETWORK SOFTWARE AND LICENSING. A SEPARATE CAT-6A JACK AND CABLE CONNECTED TO THE SCHOOL'S DATA NETWORK SYSTEM SHALL BE PROVIDED FOR THIS SYSTEM CONTROL IF REQUIRED. IF THE ADD ALTERNATE FOR THE CLOCK SYSTEM IS ACCEPTED, THIS TIME SYNCHRONIZATION AND CHANGE OF CLASS PROGRAMMING CAN BE PROVIDED IN THE CLOCK SYSTEM CONTROLLER.

SHEET NOTES

1. PROVIDE WIRING AS REQUIRED BY THE MANUFACTURER.
2. PROVIDE FIBER CABLE AS REQUIRED BY THE MANUFACTURER.



CLARK MILLS ES & JOHN I. DAWES ELC
PUBLIC ADDRESS SYSTEM RISER DIAGRAM

2 / E601CD — NO SCALE

THE AUTHORITY HAVING JURISDICTION WILL NOT ALLOW 70 VOLT ANALOG WIRING TO BE EXTENDED BETWEEN THE FIRE RATED SEPARATION BETWEEN THE JOHN DAWES SCHOOL AND THE CLARK MILLS ELEMENTARY SCHOOL. THE 70 VOLT ANALOG WIRING FOR THE JOHN DAWES PUBLIC ADDRESS SPEAKER ZONES #1 AND #11 AND THE ANALOG HANDSET LOCATED IN THE JOHN DAWES MAIN OFFICE SHALL BE CONVERTED FROM 70 VOLT ANALOG TO A LINE LEVEL AUDIO SIGNAL (USING A 70 VOLT LINE MATCHING TRANSFORMER) AND THEN CONVERTED TO AN OPTICAL FIBER SIGNAL (USING AN AUDIO OVER FIBER CONVERTER) THAT SHALL BE CONNECTED TO A FIBER OPTIC CABLE (SINGLE MODE OR MULTIMODE AS REQUIRED BY THE EQUIPMENT MANUFACTURER). THE FIBER OPTIC CABLE SHALL EXTEND FROM THE JOHN DAWES SCHOOL OVER TO THE CLARK MILLS SCHOOL (PROVIDE A FIRE RATED SEAL IN THE FIRE RATED SEPARATION BETWEEN THE JOHN DAWES SCHOOL AND THE CLARK MILLS SCHOOL). THE FIBER OPTIC CABLE SIGNAL SHALL THEM BE CONVERTED TO A LINE LEVEL AUDIO (USING AN AUDIO OVER FIBER CONVERTER). THE LINE LEVEL AUDIO SIGNAL SHALL BE CONVERTED TO 70 VOLT ANALOG (USING A 70 VOLT LINE MATCHING TRANSFORMER) AND THEN CONNECTED TO THE EQUIPMENT IN THE PUBLIC ADDRESS SYSTEM HEAD END CABINET IN THE CLARK MILLS SCHOOL.

04/06/2026
ISSUED FOR BID

REFERENCE DIMENSION
0 — 1
INDICATED DIMENSION IS MEASURED AT ONE (1) INCH IN LENGTH AND PROVIDED FOR REFERENCE/VERIFICATION ONLY.

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Project Name
Public Address and Clock System Replacement at Clark Mills Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Clark Mills Elementary School 34 Gordon's Corner Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

Checked By
DRH

Drawn By
JTM

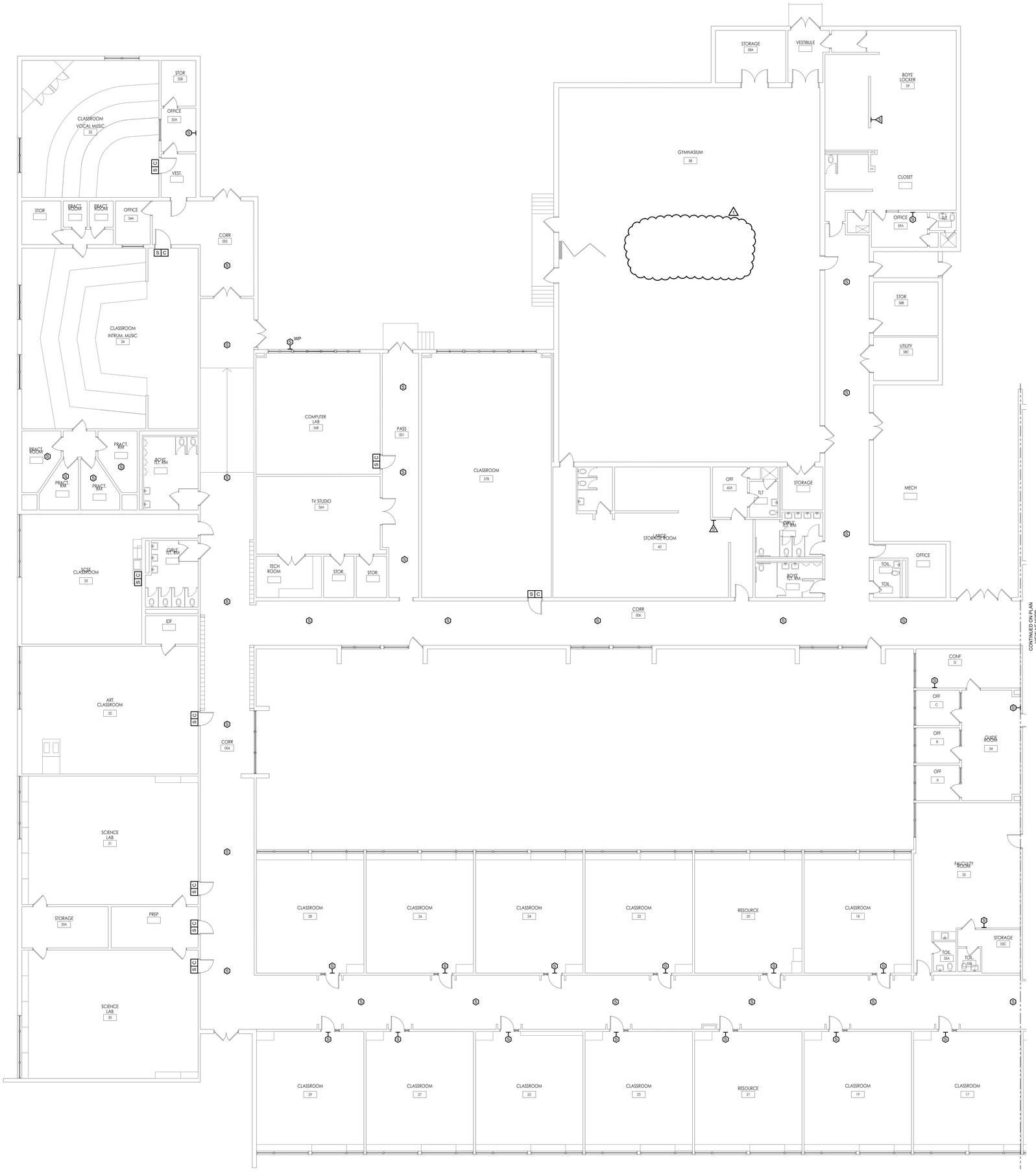
Scale
AS NOTED

Drawing Name
CLARK MILLS ES & JOHN I. DAWES ELC ELECTRICAL PA & CLOCK RISER DIAGRAMS AND PA SYSTEM ZONES

Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

Drawing Number
E601CD



PINE BROOK ELEMENTARY SCHOOL
ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN - BLOCK "A"
1/E101PB SCALE: 1/8" = 1'-0"

04/06/2026
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William D. Hopkins III 4/6/26
Architect Date

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Project Name
Public Address and Clock System Replacement at Pine Brook Elementary School

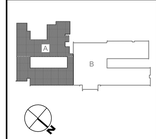
Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Pine Brook Elementary School
155 Pease Road,
Manalapan, NJ
07726

Project Number	5618
Project Date	04.06.2026
Checked By	DRH
Drawn By	JTM
Scale	AS NOTED

Drawing Name
PINE BROOK ES ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN: BLOCK "A"

KEY PLAN - PINE BROOKS ES



REFERENCE DIMENSION
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G&H Project No. 2024156

ENGINEER DATE

Drawing Number
E101PB

1 E102PB PINE BROOK ELEMENTARY SCHOOL
ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN - BLOCK "B"
SCALE: 1/8" = 1'-0"

KEY PLAN - PINE BROOKS ES

REFERENCE DIMENSION

0 1

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04/06/2026
ISSUED FOR BID

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G&H Project No. 2024156

ENGINEER DATE

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William D. Hopkins III 4/6/26
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Project Name
Public Address and Clock System Replacement at Pine Brook Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Pine Brook Elementary School
155 Pease Road,
Manalapan, NJ
07726

Project Number
5618

Project Date
04.06.2026

Checked By
DRH

Drawn By
JTM

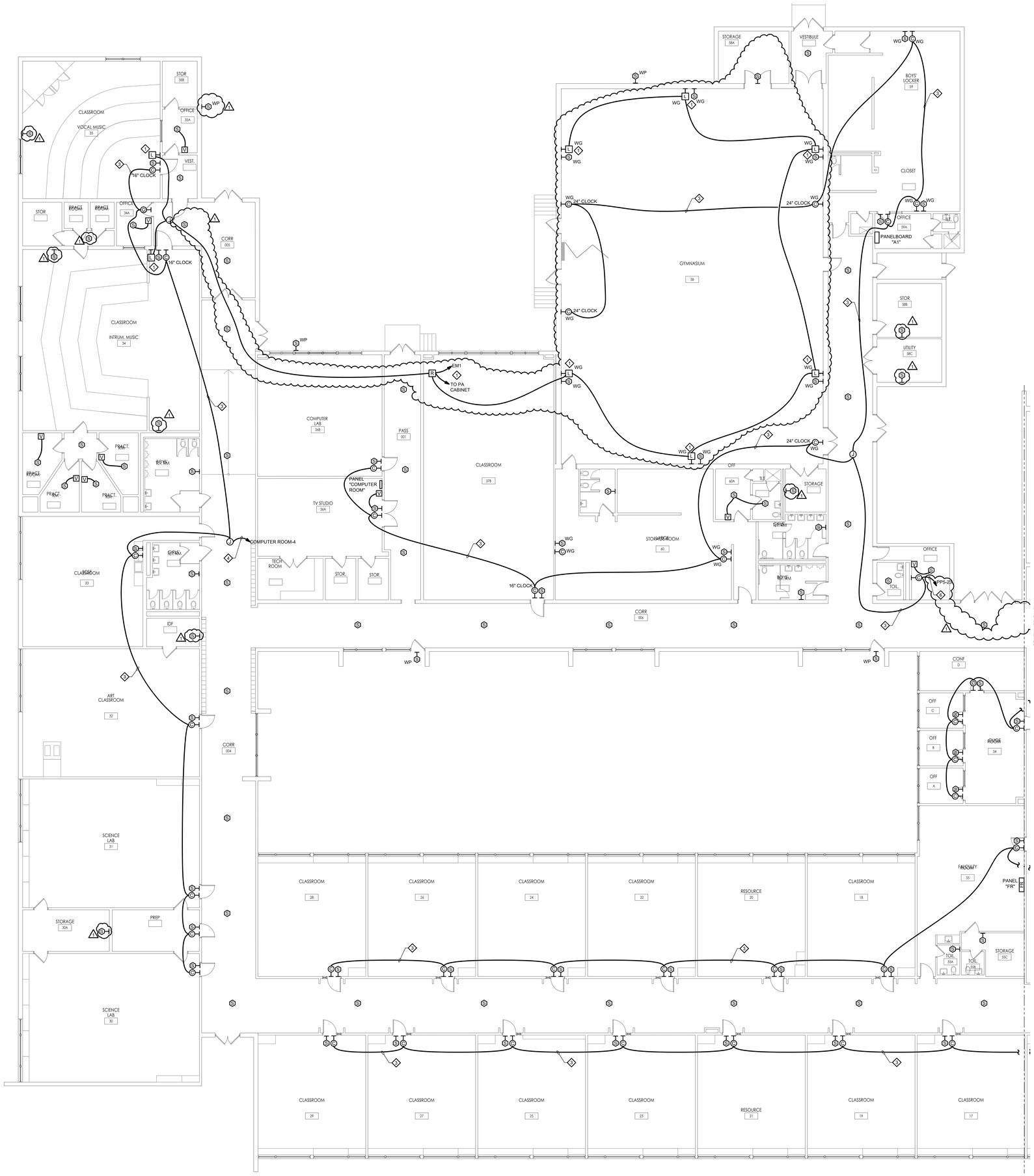
Scale
AS NOTED

Drawing Name
PINE BROOK ES ELECTRICAL REMOVALS - PARTIAL FLOOR PLAN: BLOCK "B"

Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #5

Drawing Number
E102PB



NEW WORK NOTES

1. FOR THE INDICATOR LIGHTS IN THE TWO MUSIC ROOMS AND THE GYMNASIUM, PROVIDE (2)#12, (1)#12 GROUND, 3/4" CONDUIT TO A SPARE CIRCUIT BREAKER IN PANEL "EM1" CIRCUIT #12 (LOCATION SHOWN ON E202-PB). PROVIDE A RELAY AS REQUIRED IN THE SPECIFICATIONS AND PA SYSTEM CONTROLS TO TURN ON THE LIGHTS DURING A PA SYSTEM BROADCAST. PROVIDE (2)#12,(1)#12 G, 3/4" C FROM THE PA CABINET TO THE RELAY. REFER TO THE PUBLIC ADDRESS SYSTEM RISER DIAGRAM ON 2/E601PB.
2. HORN SPEAKERS MOUNTED TO THE BUILDING STEEL AT A HEIGHT TO MATCH THE SPEAKERS THAT WERE REMOVED.
3. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP.
4. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM A NEW 20 AMP 1-POLE BREAKER IN EXISTING PANEL "COMPUTER ROOM" (LOCATED ON THIS DRAWING), TO THE JUNCTION BOX. CIRCUIT ID IS NOTED ON DRAWING. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. NEW CIRCUIT BREAKER SHALL MATCH EXISTING PANEL BOARD IN TYPE AND AIC RATING. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".
5. NOTE NOT USED.
6. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM A NEW 20 AMP , SINGLE POLE BREAKER IN EXISTING PANEL "PPS" (LOCATED ON DRAWING E202PB), TO THE CLOCK. CIRCUIT ID IS NOTED ON DRAWING. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. NEW CIRCUIT BREAKER SHALL MATCH EXISTING PANEL BOARD IN TYPE AND AIC RATING. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".

1 E201PB PINE BROOK ELEMENTARY SCHOOL
ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN - BLOCK "A"
SCALE: 1/8" = 1'-0"

04/06/2026
ISSUED FOR BID

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Date
Architect

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Project Name
Public Address and Clock System Replacement at Pine Brook Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Pine Brook Elementary School
155 Pease Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

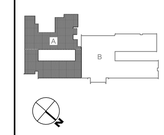
Checked By
DRH

Drawn By
JTM/SW

Scale
AS NOTED

Drawing Name
PINE BROOK ES ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN: BLOCK "A"

KEY PLAN - PINE BROOKS ES



REFERENCE DIMENSION

0 1

INDICATED DIMENSION IS MEASURED AT ONE (1) INCH IN LENGTH AND PROVIDED FOR REFERENCE/VERIFICATION ONLY.

Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

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Cert. of Auth #24GA27932400
G&H Project No. 2024156

ENGINEER DATE

Drawing Number
E201PB

NEW WORK NOTES

1. FOR THE INDICATOR LIGHTS IN THE MEDIA CENTER (TECH LAB 48) PROVIDE A RELAY AS REQUIRED IN THE SPECIFICATIONS AND PA SYSTEM CONTROLS TO TURN ON THE LIGHTS DURING A PA SYSTEM BROADCAST. PROVIDE (2)#12,(1) #12 G, 3/4" C FROM THE PA CABINET TO THE RELAY. REFER TO THE PUBLIC ADDRESS SYSTEM RISER DIAGRAM ON 2/E601PB.
2. PROVIDE (2)#12, (1)#12 GROUND, 3/4" CONDUIT TO A SPARE 20 AMP BREAKER IN PANEL "FR" (LOCATED IN FACULTY ROOM 55) TO A NEW SURFACE MOUNTED DUPLEX RECEPTACLE WITH BACK BOX. PROVIDE A WALL MOUNTED SHELF ATTACHED TO THE WALL FOR SUPPORT TO THE CLOCK SYSTEM CONTROLLER. COORDINATE EXACT LOCATION WITH THE OWNER PRIOR TO ROUGH-IN.
3. UTILIZE THE TWO SPARE 20 AMP CIRCUIT BREAKERS IN PANELBOARD "GP2 CIRCUITS #17 & 19". PROVIDE (2)#12, (1)#12 GROUND IN 3/4" CONDUIT FROM THE CIRCUIT BREAKERS TO THE CABINET. EXTEND THE CONDUCTORS IN SURFACE MOUNTED RACEWAY PAINTED TO MATCH THE WALL FINISH FROM THE CEILING DOWN TO THE PANEL.
4. COORDINATE THE EXACT LOCATION OF THE PA SYSTEM HANDSET AND ASSOCIATED WALL MOUNTED TELEPHONE PLUG-IN OUTLET IN THE MAIN OFFICE WITH THE OWNER PRIOR TO ROUGHING IN. SEE DETAIL 2/E601PB AND SPECIFICATION 275123 FOR REQUIREMENTS.
5. FOR THE INDICATOR LIGHTS IN THE CAFETERIA PROVIDE (2)#12, (1)#12 GROUND, 3/4" CONDUIT TO A SPARE CIRCUIT BREAKER IN PANEL "GP2" CIRCUIT (LOCATION SHOWN ON THIS DRAWING) . PROVIDE A RELAY AS REQUIRED IN THE SPECIFICATIONS AND PA SYSTEM CONTROLS TO TURN ON THE LIGHTS DURING A PA SYSTEM BROADCAST. PROVIDE (2)#12,(1) #12 G, 3/4" C FROM THE PA CABINET TO THE RELAY. REFER TO THE PUBLIC ADDRESS SYSTEM RISER DIAGRAM ON 2/E601PB.
6. PROVIDE A CAT-6A CABLE FROM THE NEW MAIN PUBLIC ADDRESS SYSTEM CONTROL CABINET TO THE EXISTING MDF IN SERVER ROOM 110. REFER TO PUBLIC ADDRESS RISER DIAGRAM ON DETAIL 2/E601PB.

A

7. PROVIDE A CAT-6A CABLE FROM THE NEW CLOCK SYSTEM CONTROLLER TO THE EXISTING MDF IN SERVER ROOM 110. REFER TO WIRELESS CLOCK SYSTEM RISER DIAGRAM ON DETAIL 3/E601PB.
8. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP.
9. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM A NEW 20 AMP 1-POLE BREAKER IN EXISTING PANEL "PPS" (LOCATED ON THIS DRAWING), TO THE JUNCTION BOX. CIRCUIT ID IS NOTED ON DRAWING. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. NEW CIRCUIT BREAKER SHALL MATCH EXISTING PANEL BOARD IN TYPE AND AIC RATING. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".
10. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM A NEW 20 AMP 1-POLE BREAKER IN EXISTING PANEL "FR" (LOCATED ON THIS DRAWING), TO THE JUNCTION BOX. CIRCUIT ID IS NOTED ON DRAWING. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. NEW CIRCUIT BREAKER SHALL MATCH EXISTING PANEL BOARD IN TYPE AND AIC RATING. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".
11. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM A NEW 20 AMP 1-POLE BREAKER IN EXISTING PANEL "KPP" (LOCATED ON THIS DRAWING), TO THE JUNCTION BOX. CIRCUIT ID IS NOTED ON DRAWING. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. NEW CIRCUIT BREAKER SHALL MATCH EXISTING PANEL BOARD IN TYPE AND AIC RATING. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".

PINE BROOK ELEMENTARY SCHOOL
ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN - BLOCK "B"
1 E202PB SCALE: 1/8" = 1'-0"

PINE BROOK ELEMENTARY SCHOOL
ELECTRICAL NEW WORK - CANOPY CONTINUATION
2 E202PB SCALE: 1/8" = 1'-0"

04/06/2026
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Date
Architect

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Cert. of Auth #24GA27932400
G&H Project No. 2024156

ENGINEER DATE

Project Name
Public Address and Clock System Replacement at Pine Brook Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Pine Brook Elementary School
155 Pease Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

Checked By
DRH

Drawn By
JTM/SW

Scale
AS NOTED

Drawing Name
PINE BROOK ES ELECTRICAL NEW WORK - PARTIAL FLOOR PLAN: BLOCK "B"

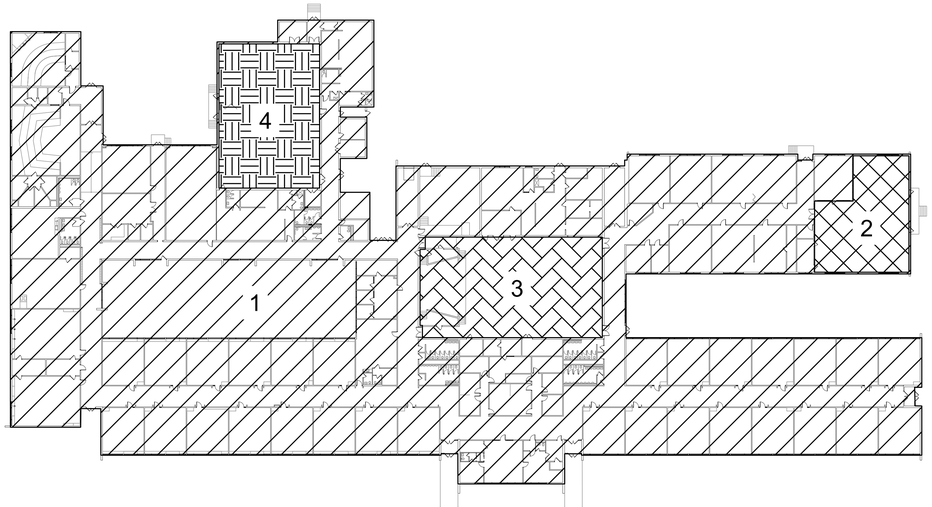
KEY PLAN - PINE BROOKS ES

REFERENCE DIMENSION
0 1
INDICATED DIMENSION IS MEASURED AT ONE (1) INCH IN LENGTH AND PROVIDED FOR REFERENCE/VERIFICATION ONLY.

Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

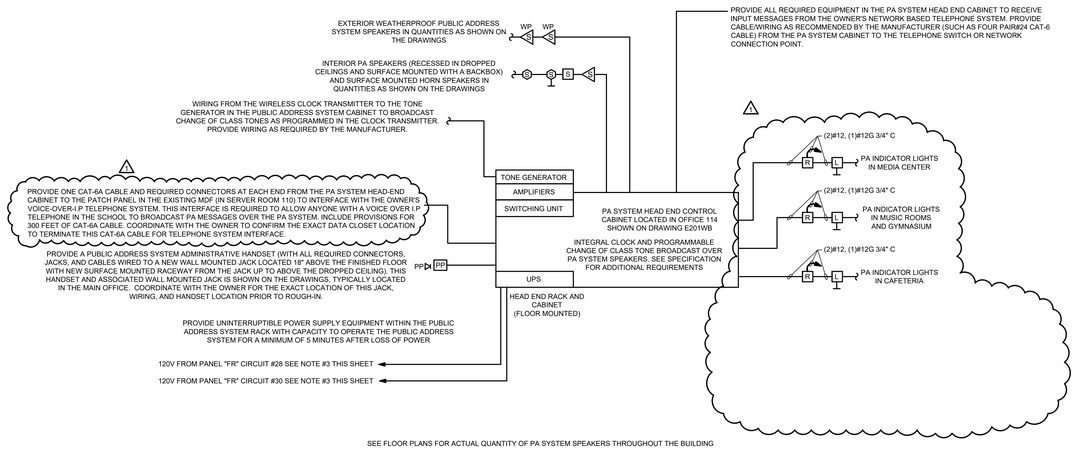
Drawing Number
E202PB



EXTERIOR ZONE #5

PINE BROOK ELEMENTARY SCHOOL
ELECTRICAL PUBLIC ADDRESS SYSTEM ZONES
1 E601PB SCALE: 1/32" = 1'-0"

ZONE #1: ENTIRE BUILDING
ZONE #2: TECH LAB
ZONE #3: CAFETERIA
ZONE #4: GYMNASIUM
ZONE #5: BUILDING EXTERIOR
ZONE #6: ALL INTERIOR & EXTERIOR



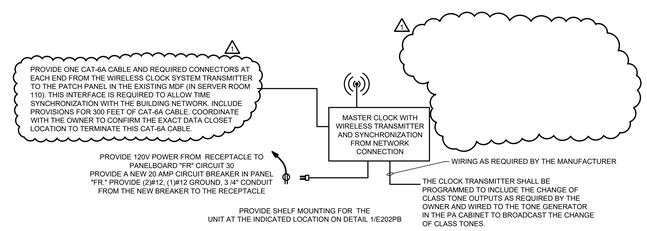
SEE FLOOR PLANS FOR ACTUAL QUANTITY OF PA SYSTEM SPEAKERS THROUGHOUT THE BUILDING

SEE SPECIFICATION 275123 FOR ADDITIONAL REQUIREMENTS

PINE BROOK ELEMENTARY SCHOOL
PUBLIC ADDRESS SYSTEM RISER DIAGRAM
2 E601PB NO SCALE

1

UNDER THE BASE BID, INCLUDE PROVISIONS IN THE PUBLIC ADDRESS SYSTEM CONTROL CABINET FOR A NETWORK TIME SYNCHRONIZED PUBLIC ADDRESS SYSTEM CONTROLLER/DIGITAL SIGNAL PROCESSOR/PAGING SERVER WITH ALL REQUIRED SYSTEM PROGRAMMING, SOFTWARE, AND EQUIPMENT THAT CAN PROVIDE (WITHOUT A SEPARATE CLOCK SYSTEM) CHANGE OF CLASS BELL/TONE SIGNALS OVER THE PUBLIC ADDRESS SYSTEM SPEAKERS. THE TIME SYNCHRONIZATION EQUIPMENT SHALL INCLUDE A CAT-6A CABLE CONNECTION EXTENDED TO THE OWNER'S DATA NETWORK PATCH PANEL TO MAINTAIN ACCURATE SYSTEM TIME FROM THE OWNER'S DATA NETWORK SYSTEM. THE CONTROLLER SHALL BE PROVIDED WITH A PROGRAMMABLE SCHEDULING CHANGE OF CLASS/BELL CONTROLLER WITH ALL REQUIRED SOFTWARE TO MAINTAIN A MINIMUM OF THREE DAILY CHANGE OF CLASS CALENDAR BASED SCHEDULES. THE SYSTEM SHALL INCLUDE A TONE GENERATOR (WITH MULTIPLE STYLES OF TONES AS SELECTED BY THE OWNER) AND ALLOW LIVE PAGING PRIORITY OVERRIDE. THE SYSTEM SHALL INCLUDE PROVISIONS FOR THE SCHOOL STAFF TO MANAGE THE CHANGE OF CLASS SCHEDULES USING A DATA NETWORK SYSTEM-BASED INTERFACE THAT IS PROVIDED WITH ALL REQUIRED NETWORK SOFTWARE AND LICENSING. A SEPARATE CAT-6A JACK AND CABLE CONNECTED TO THE SCHOOL'S DATA NETWORK SYSTEM SHALL BE PROVIDED FOR THIS SYSTEM CONTROL IF REQUIRED. IF THE ADD ALTERNATE FOR THE CLOCK SYSTEM IS ACCEPTED, THIS TIME SYNCHRONIZATION AND CHANGE OF CLASS PROGRAMMING CAN BE PROVIDED IN THE CLOCK SYSTEM CONTROLLER.



PINE BROOK ELEMENTARY SCHOOL
WIRELESS CLOCK SYSTEM RISER DIAGRAM
3 E601PB NO SCALE

REFERENCE DIMENSION
0 1
INDICATED DIMENSION IS MEASURED AT ONE (1) INCH IN LENGTH AND PROVIDED FOR REFERENCE/VERIFICATION ONLY.

04/06/2026
ISSUED FOR BID

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G&H Project No. 2024156

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William D. Hopkins III 4/6/26
Architect Date

FVHD architects planners
ESTD 1981
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Project Name
Public Address and Clock System Replacement at Pine Brook Elementary School

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Pine Brook Elementary School
155 Pease Road,
Manalapan, NJ
07726

Project Number
5618

Project Date
04.06.2026

Checked By
DRH

Drawn By
JTM

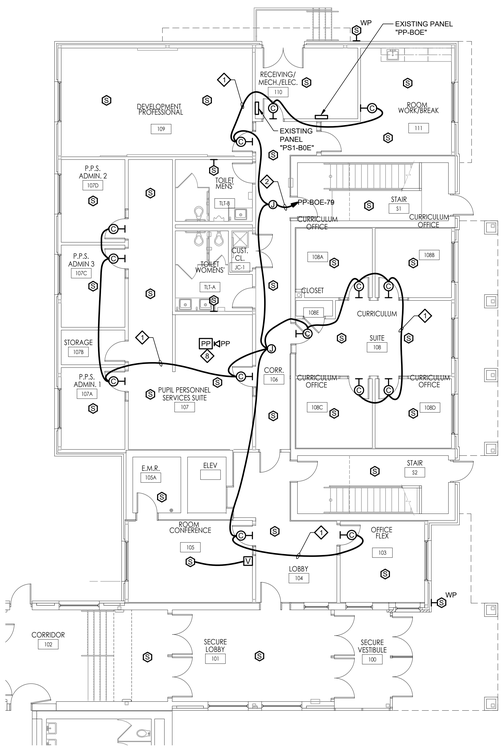
Scale
AS NOTED

Drawing Name
PINE BROOK ES ELECTRICAL PA & CLOCK RISER DIAGRAMS AND PA SYSTEM ZONES

Revisions

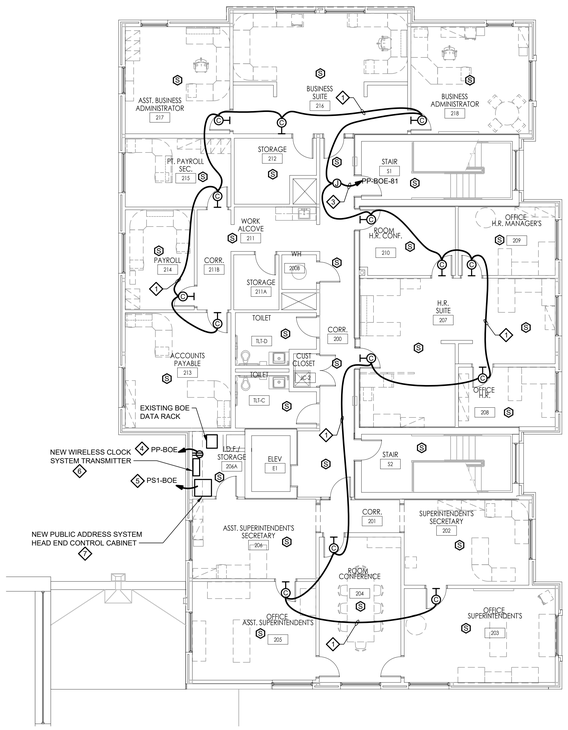
No.	Date	Description
1	05.01.26	ADDENDUM #2

Drawing Number
E601PB



MANALAPAN ENGLISHTOWN MS BOE OFFICE
ELECTRICAL NEW WORK - FIRST FLOOR PLAN

1 E201MS SCALE: 1/8" = 1'-0"



MANALAPAN ENGLISHTOWN MS BOE OFFICE
ELECTRICAL NEW WORK - SECOND FLOOR PLAN

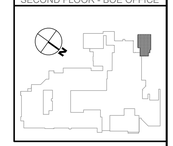
2 E201MS SCALE: 1/8" = 1'-0"

NEW WORK NOTES

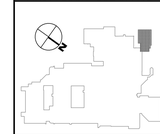
1. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP.
2. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM AN EXISTING SPARE 20 AMP BREAKER IN EXISTING PANEL "PP-BOE" (LOCATED IN ELECTRICAL ROOM 110) CIRCUIT #79, TO THE JUNCTION BOX. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".
3. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT FROM AN EXISTING SPARE 20 AMP BREAKER IN EXISTING PANEL "PP-BOE" (LOCATED IN THE FIRST FLOOR ELECTRICAL ROOM 110), CIRCUIT #81, TO THE JUNCTION BOX. PROVIDE (2)#10, (1)#10G IN 3/4" CONDUIT BETWEEN ALL OF THE CLOCKS TO REDUCE VOLTAGE DROP. UPDATE THE PANEL SCHEDULE TO MARK ASSOCIATED CIRCUIT BREAKER "CLOCKS".
4. PROVIDE (2)#12, (1)#12G IN 3/4" CONDUIT FROM AN EXISTING SPARE 20 AMP BREAKER IN EXISTING PANEL "PP-BOE" (LOCATED IN THE FIRST FLOOR ELECTRICAL ROOM 110),CIRCUIT #82 TO A DUPLEX RECEPTACLE. PROVIDE A WALL MOUNTED SHELF ATTACHED TO THE WALL FOR SUPPORT TO THE CLOCK SYSTEM CONTROLLER. COORDINATE EXACT LOCATION WITH THE OWNER PRIOR TO ROUGH-IN.
5. PROVIDE (2)#12, (1)#12G IN 3/4" CONDUIT FROM AN EXISTING SPARE 20 AMP BREAKER IN EXISTING PANEL "PS1-BOE" CIRCUIT #11 (LOCATED IN THE FIRST FLOOR ELECTRICAL ROOM 110), CIRCUIT #11 TO THE NEW PUBLIC ADDRESS SYSTEM HEAD END CONTROL CABINET.
6. PROVIDE A CAT-6A CABLE FROM THE NEW MAIN PUBLIC ADDRESS SYSTEM CONTROL CABINET TO THE EXISTING IDF IN THE SAME ROOM. REFER TO PUBLIC ADDRESS RISER DIAGRAM ON DETAIL 2/E601MS.
7. PROVIDE A CAT-6A CABLE FROM THE NEW CLOCK SYSTEM CONTROLLER TO EXISTING IDF IN THE SAME ROOM. REFER TO WIRELESS CLOCK SYSTEM RISER DIAGRAM ON DETAIL 3/E601MS.
8. COORDINATE THE EXACT LOCATION OF THE PA SYSTEM HANDSET AND ASSOCIATED WALL MOUNTED TELEPHONE PLUG-IN OUTLET WITH THE OWNER PRIOR TO ROUGHING IN. SEE DETAIL 2/E601MS AND SPECIFICATION 275123 FOR REQUIREMENTS.

04/06/2026
ISSUED FOR BID

KEY PLAN - MIDDLE SCHOOL
SECOND FLOOR - BOE OFFICE



KEY PLAN - MIDDLE SCHOOL
FIRST FLOOR - BOE OFFICE



REFERENCE DIMENSION

0 1

INDICATED DIMENSION IS MEASURED AT ONE (1) INCH IN LENGTH AND PROVIDED FOR REFERENCE/VERIFICATION ONLY.

GILLAN & HARTMANN
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G&H Project No. 2024156

ENGINEER DATE

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NJ - 21AI01299500
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4/6/26
Architect Date

FVHD architects planners
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Project Name
Public Address and Clock System Replacement at Manalapan-Englishtown MS

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Manalapan-Englishtown Middle School, 155 Millhurst Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

Checked By
DRH

Drawn By
JTM/SW

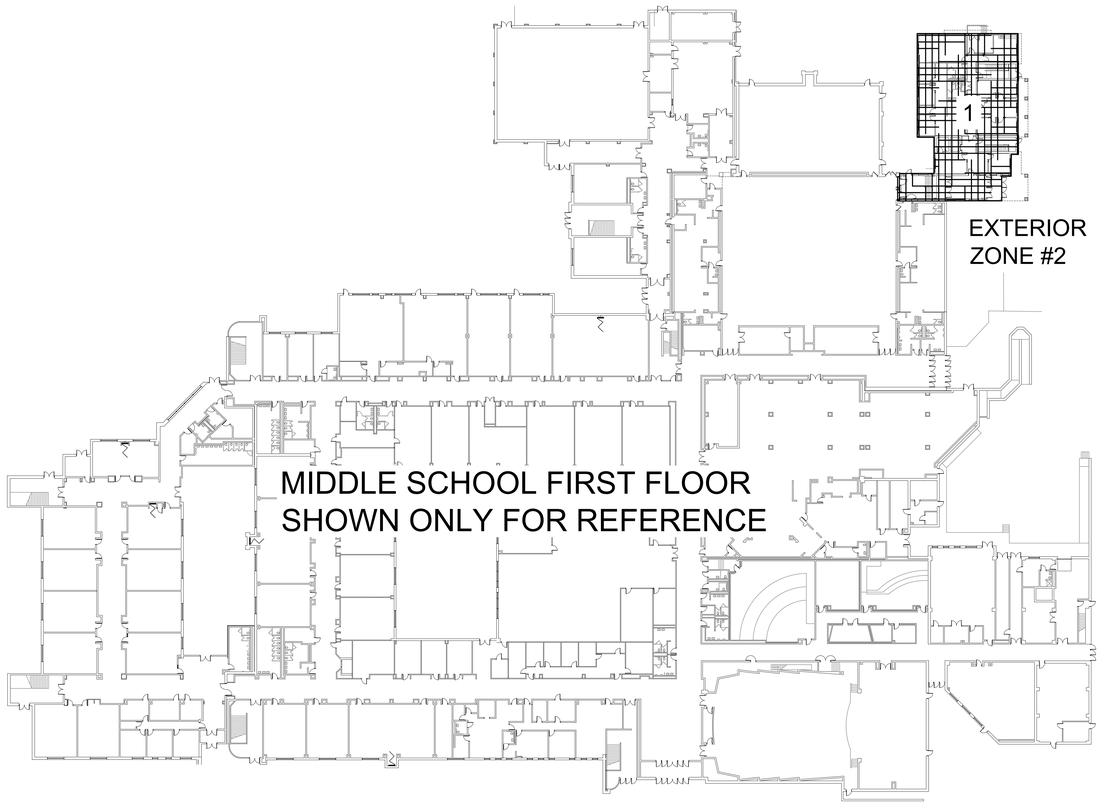
Scale
AS NOTED

Drawing Name
MIDDLE SCHOOL BOE OFFICE ELECTRICAL NEW WORK

Revisions

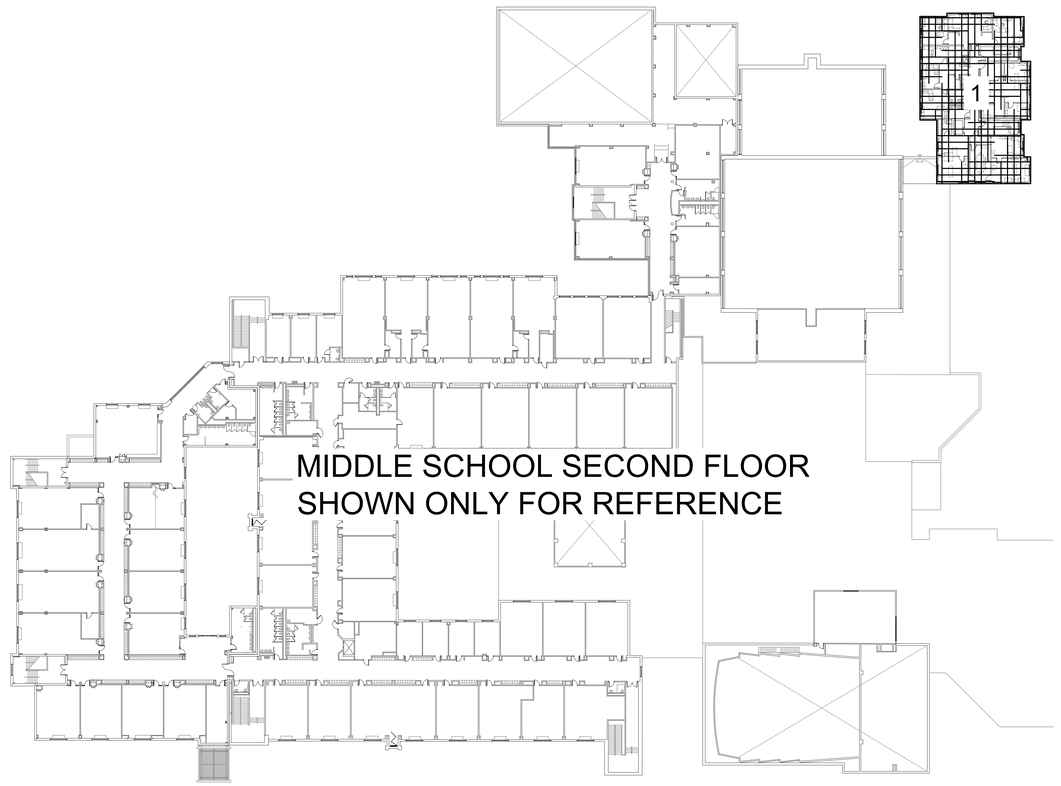
No.	Date	Description
1	05.01.26	ADDENDUM #2

Drawing Number
E201MS



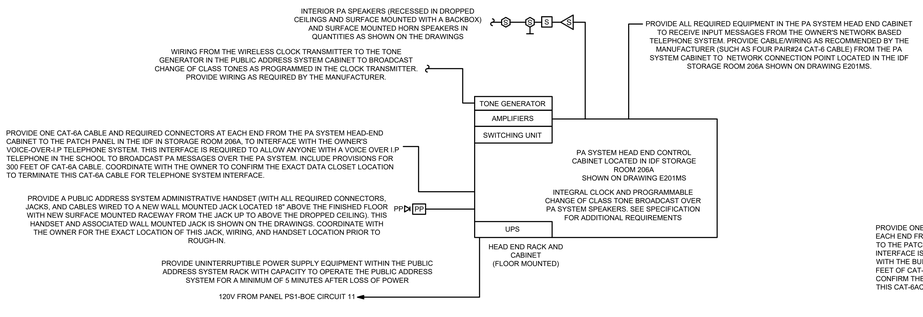
1 E601MS MANALAPAN ENGLISHTOWN MIDDLE SCHOOL
ELECTRICAL PUBLIC ADDRESS SYSTEM ZONES - FIRST FLOOR
SCALE: 1/32" = 1'-0"

ZONE #1: BOARD OF EDUCATION OFFICE INTERIOR
ZONE #2: BOARD OF EDUCATION OFFICE EXTERIOR



2 E601MS MANALAPAN ENGLISHTOWN MIDDLE SCHOOL
ELECTRICAL PUBLIC ADDRESS SYSTEM ZONES - SECOND FLOOR
SCALE: 1/32" = 1'-0"

ZONE #1: BOARD OF EDUCATION OFFICE

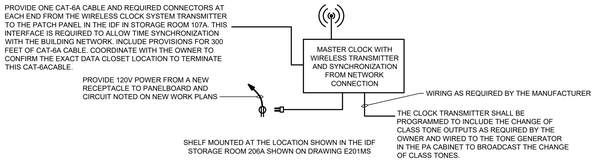


SEE FLOOR PLANS FOR ACTUAL QUANTITY OF PA SYSTEM SPEAKERS THROUGHOUT THE BUILDING

SEE SPECIFICATION 275123 FOR ADDITIONAL REQUIREMENTS

4 E601MS MANALAPAN ENGLISHTOWN MS BOE OFFICE
PUBLIC ADDRESS SYSTEM RISER DIAGRAM
NO SCALE

NOTE: THE PUBLIC ADDRESS SYSTEM OF THE BOE OFFICE IS SEPARATE AND INDEPENDENT FROM THE PUBLIC ADDRESS SYSTEM OF THE MIDDLE SCHOOL.



5 E601MS MANALAPAN ENGLISHTOWN MS BOE OFFICE
WIRELESS CLOCK SYSTEM RISER DIAGRAM
NO SCALE

NOTE: THE CLOCK SYSTEM OF THE BOE OFFICE IS SEPARATE AND INDEPENDENT FROM THE CLOCK SYSTEM OF THE MIDDLE SCHOOL.

SHEET NOTES

1. PROVIDE (2)#12, (1)#12G IN 3/4" CONDUIT.

UNDER THE BASE BID, INCLUDE PROVISIONS IN THE PUBLIC ADDRESS SYSTEM CONTROL CABINET FOR A NETWORK TIME SYNCHRONIZED PUBLIC ADDRESS SYSTEM CONTROLLER/DIGITAL SIGNAL PROCESSOR/PAGING SERVER WITH ALL REQUIRED SYSTEM PROGRAMMING, SOFTWARE, AND EQUIPMENT THAT CAN PROVIDE (WITHOUT A SEPARATE CLOCK SYSTEM) CHANGE OF CLASS BELL/TONE SIGNALS OVER THE PUBLIC ADDRESS SYSTEM SPEAKERS. THE TIME SYNCHRONIZATION EQUIPMENT SHALL INCLUDE A CAT-6A CABLE CONNECTION EXTENDED TO THE OWNER'S DATA NETWORK PATCH PANEL TO MAINTAIN ACCURATE SYSTEM TIME FROM THE OWNER'S DATA NETWORK SYSTEM. THE CONTROLLER SHALL BE PROVIDED WITH A PROGRAMMABLE SCHEDULING CHANGE OF CLASS/BELL CONTROLLER WITH ALL REQUIRED SOFTWARE TO MAINTAIN A MINIMUM OF THREE DAILY CHANGE OF CLASS CALENDAR BASED SCHEDULES. THE SYSTEM SHALL INCLUDE A TONE GENERATOR (WITH MULTIPLE STYLES OF TONES AS SELECTED BY THE OWNER) AND ALLOW LIVE PAGING PRIORITY OVERRIDE. THE SYSTEM SHALL INCLUDE PROVISIONS FOR THE SCHOOL STAFF TO MANAGE THE CHANGE OF CLASS SCHEDULES USING A DATA NETWORK SYSTEM-BASED INTERFACE THAT IS PROVIDED WITH ALL REQUIRED NETWORK SOFTWARE AND LICENSING. A SEPARATE CAT-6A JACK AND CABLE CONNECTED TO THE SCHOOL'S DATA NETWORK SYSTEM SHALL BE PROVIDED FOR THIS SYSTEM CONTROL IF REQUIRED. IF THE ADD ALTERNATE FOR THE CLOCK SYSTEM IS ACCEPTED, THIS TIME SYNCHRONIZATION AND CHANGE OF CLASS PROGRAMMING CAN BE PROVIDED IN THE CLOCK SYSTEM CONTROLLER.

04/06/2026
ISSUED FOR BID

REFERENCE DIMENSION
0 1
INDICATED DIMENSION IS MEASURED AT ONE (1) INCH IN LENGTH AND PROVIDED FOR REFERENCE/VERIFICATION ONLY.

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Project Name
Public Address and Clock System Replacement at Manalapan-Englishtown MS

Project Owner Name
Manalapan - Englishtown Regional School District

Project Location
Manalapan-Englishtown Middle School, 155 Millhurst Road, Manalapan, NJ 07726

Project Number
5618

Project Date
04.06.2026

Checked By
DRH

Drawn By
JTM

Scale
AS NOTED

Drawing Name
MIDDLE SCHOOL BOE OFFICE ELECTRICAL PA & CLOCK RISER DIAGRAMS AND PA SYSTEM ZONES

Revisions

No.	Date	Description
1	05.01.26	ADDENDUM #2

Drawing Number
E601MS