ADDENDUM NO. 1
to
CONTRACT DOCUMENTS

for
RENOVATIONS FOR FIVE (5) PRE-K CLASSROOMS
AT CLAYTON J. DAVENPORT ELEMENTARY SCHOOL
located at 2501 Spruce Avenue, Egg Harbor Township, NJ 08234

for the
EGG HARBOR TOWNSHIP SCHOOL DISTRICT
Egg Harbor Township, Atlantic County, New Jersey

Issued: November 26, 2024

FVHD PROJECT #5481

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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 on the Bid Proposal Form.

This Addendum includes six (6) pages and the following:

1. Board Resolution - Proprietary Specification: Fire Alarm & Door Hardware, 2-pages.

2. Addendum No. 1 as prepared by Gillan and Hartmann, Inc., dated 11/25/24, 3-pages.

3. Revised Specifications: 230923.

4. New Specification Section: 05300, 3-pages; 08700, 16-pages.

5. Revised Drawings:
   a. Architectural: G001, A101, A102, A103, A104, A106, A107, A108, A601.
   b. Mechanical: H201 E, H202 E, H211 E.

REQUESTS FOR INFORMATION (RFI'S)

1. Question: Please provide the existing fire alarm vendor information.

   Response: The name and contact telephone number of the fire alarm Vendor is listed on Drawing E001 in the "General Fire Alarm Work Note #3." The note identifies the existing fire alarm system is a Honeywell Notifier System. Contact: FAST Fire & Security Technologies, Jacob Davis @ T: #908-823-4367.

2. Question: With the new partitions extending to the underside of the deck, can you please provide the deck height? Reference revised partition types on Drawing A103.

   Response: Reference new wall sections on Architectural drawing A106 for approximate height of existing roof decking. Reference revised partition types on Architectural drawing A103.

3. Question: Is a Non-Working Superintendent required to be on-site, at all times, during the course of work, including the off hours work during the school year?

   Response: Please refer to AIA A201, Article 3 - Contractor and Specification Section 01040.

REFER TO DRAWINGS

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

DRAWING NO.	TITLE
G001	TITLE SHEET
A101	BUILDING ANALYSIS AND EGRESS PLANS
A102	DEMOLITION PLANS, FLOOR PLANS, AND NOTES
A103	DOOR AND PARTITION TYPES, DETAILS AND SCHEDULE
A104	REFLECTED CEILING PLANS, TOILET ROOM PLANS AND ACCESSORIES SCHEDULE
A106	CASEWORK PLANS, ELEVATIONS AND DETAILS
A107	RAISED FLOORING PLAN, ROOF PLANS AND DETAILS
A108	ENLARGED PRE-K CLASSROOM LAYOUTS
A601	FINISH PLANS, ELEVATIONS AND FINISH SCHEDULE
H201 E	ELEMENTARY SCHOOL HVAC NEW WORK - DUCTWORK - FIRST FLOOR PARTIAL PLAN
H202 E	ELEMENTARY SCHOOL HVAC NEW WORK - PIPING - FIRST FLOOR PARTIAL PLAN
H211 E	ELEMENTARY SCHOOL HVAC NEW WORK - PARTIAL ROOF PLAN

The following Drawings to be revised or corrected as follows:

DRAWING NO.	CHANGES AND CORRECTIONS
G001, A101, A102, A103, A104, A106, A107, A108, A601	Delete the referenced drawings in their entirety and substitute with the enclosed revised drawings.
H201 E, H202 E, H211 E	Delete the referenced drawings in their entirety and substitute with the enclosed revised drawings.

REFER TO SPECIFICATIONS

TABLE OF CONTENTS

Under Part - 1 Contract Conditions and General Requirements, add the following new document after Section 01600, which is attached to this Addendum:

Egg Harbor Township School District Board of Education Resolution - Naming of a Brand Name Product in the Specifications for the Fire Alarm System and Door Hardware, 2-pages.

Under Part - 2 General Construction Work, add the following new section which is attached to this Addendum:

05300 Metal Decking, 3 pages.
08700 Finish Hardware, 16-pages.

PART 1 - SECTION 01600 - PRODUCT REQUIREMENTS

Insert the following document after Section 01600:

Egg Harbor Township School District Board of Education Resolution - Naming of a Brand Name Product in the Specifications for the Fire Alarm System and Door Hardware, 2-pages, dated 11/19/2024.

PART 1 - SECTION 01900 - GUARANTEES AND WARRANTIES

Page	Paragraph	
01900-3	1.2, I	Add the following subparagraphs:

1. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
   a. Structural failures including excessive deflection, cracking, or breakage.
   b. Faulty operation of the hardware.
   c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
   d. Electrical component defects and failures within the systems operation.

2. Warranty Period: Unless otherwise indicated, warranty shall be **one (1) year** from date of Substantial Completion.

3. Conventional Exit Devices: Exit devices shall have a **five (5) year** warranty.

4. Conventional Push Rail Exit Devices: **Ten (10) year** limited warranty for mechanical features.

5. Door Closers, Surface Mounted (Heavy Duty): Heavy duty surface mounted door closers shall have a **thirty (30) year** warranty.

PART 2 - SECTION 05300 - METAL DECKING

Add new Section 05300, attached to this Addendum.

PART 2 - SECTION 05500 - METAL FABRICATIONS

Page	Paragraph	
05500-1	1.2, B	Add the following subparagraph:

4. Expansion joint covers.

05500-2	1.3	Add the following subparagraph:

E. Furnish joint cover assemblies and accessories manufactured by one firm for each type of joint cover required.

05500-2	1.4, B	Add the following subparagraph:

1. Expansion joint covers: Include joint cover profiles, joints between joint cover sections, corners or intersection details, and installation in adjacent work.
   a. Layout Drawings: Submit to the Architect Showing full extent of locations of joint cover assemblies including intersections, terminations and transitions to different surfaces or substrates.

05500-8	2.4	Add the following subparagraph:

B. Expansion Joint Covers and Control Joint Covers:

1. Basis of Design: Provide extruded aluminum expansion joint covers as manufactured by Balco Inc.; or approved equal.
   a. Other acceptable manufacturers:
      1) CS Construction Specialties,
      2) MM Systems,
      3) Gordon Interior Specialties Division,
      4) Or approved equal.
   b. Aluminum Finish: Provide clear anodized finish or as selected by the Architect to suit adjacent construction conditions, finishes and colors.

2. Provide type and size where shown on drawings, or as required at all building areas to receive expansion joint covers. Where used in rated construction, provide fire rated units.
   a. Submit to the Architect a complete layout drawing indicating all locations of expansion joint and column covers, type, size and detailed construction conditions.

3. Do not proceed with fabrication and/or installation until you receive Architect's approval.

4. Provide assemblies including manufacturer's available anchors, hardware and accessories.

PART 2 - SECTION 08700 - FINISH HARDWARE

Add Section 08700, attached to this Addendum.

PART 2 - SECTION 09250 - GYPSUM DRYWALL

Page Paragraph

09250-1 1.2, B Add the following subparagraph:

8. Fire rated drywall shaft systems

1.3 Add the following subparagraphs:

E. Fire-Resistance Ratings: Where indicated, provide materials and construction which are identical to those of assemblies whose fire resistance rating has been determined per ASTM E 119 by a testing and inspecting organization acceptable to authorities having jurisdiction.

1. Provide fire-resistance-rated assemblies identical to those indicated by reference to GA File No's. in GA-600 "Fire Resistance Design Manual" or to design designations in UL "Fire Resistance Directory" or in listing of other testing and agencies acceptable to authorities having jurisdiction.

F. Structural Performance Characteristics for drywall shaft system: Provide drywall shaft systems designed and tested by manufacturer to withstand the following lateral design loadings (air pressures), applied transiently and cyclically, for maximum heights of partitions required, within the following deflection limits:

1. Lateral Loading: 5 psf.
2. Deflection Limit: 1/240 of partition height.

09250-2 1.5, A Add the following subparagraph:

2. Provide product data for drywall shaft system.

1.5, B In the 1st line, add “drywall shaft system and” after “wall metal stud framing for”.

09250-5 2.2 Add the following subparagraphs:

D. Drywall Shaft System

1. Manufacturer’s standard shapes for shaftwall construction; of profile size and base metal thickness designed to comply with AISI for indicated structural performance characteristics, in compliance with ASTM A525, G60, for hot-dip galvanized products.

2. Stud size: 2½".

3. Stud spacing: 24" o.c.

E. Metal Furring Support Materials

1. Roll-formed, hat-shaped sections made of 20-ga. Corrosion-resistant steel. Designed for screw attachment of gypsum panels. Size 7/8" x 2-9/16"; length 12', and to comply with applicable published instructions and recommendations of gypsum board manufacturer or, if not available, of "Gypsum Construction Handbook" published by United States Gypsum Company; or approved equal.

09250-6 2.3 Add the following subparagraph:

E. Gypsum Shaftwall Board: ASTM C1396, Type X; with moisture-resistant paper facing, in maximum lengths available to eliminate or minimize end-to-end butt joints, tapered edges, and in thickness required for indicated fire-resistance-rated assemblies.

1. 2 Hour fire-rated, UL U415 System B, Shaft Wall -Steel Stud (Non-load-bearing), or approved similar.

PART 2 - SECTION 10440 - SPECIALTY SIGNS

Page Paragraph

10440-4 2.4, B Add the following subparagraph:

8. Room Occupant Capacity Signs:
   a. Provide room occupant capacity signs for room capacity more than 50 persons and as indicated.
      1) Provide sand-carved process, 1/8" thick non-combustible, self-extinguishing solid composite plastic with integral tactile letters, numbers and symbols raised a minimum of 1/32" from sign face.

PART 5 - SECTION 230923 - DIRECT DIGITAL CONTROL (DDC) SYSTEM FOR HVAC

Delete Section 230923 in its entirety and substitute with the enclosed revised document.

END OF ADDENDUM NO. 1

THE EGG HARBOR TOWNSHIP SCHOOL DISTRICT BOARD OF EDUCATION

RESOLUTION

RESOLUTION OF THE EGG HARBOR TOWNSHIP SCHOOL DISTRICT BOARD OF EDUCATION AUTHORIZING THE NAMING OF A BRAND NAME PRODUCT IN THE SPECIFICATIONS FOR THE FIRE ALARM SYSTEM AND DOOR HARDWARE.

WHEREAS the Egg Harbor Township School District Board of Education ("Board) has determined to undertake a project (FVHD #5481) consisting of Renovations for five (5) Pre-K classrooms at Clayton J. Davenport ES (hereinafter collectively referred to as "the Project.").

And

WHEREAS based upon the advice and recommendation of its design professionals, the Board determined that it is in its best interests to require the use of brand name products for Fire Alarm System, and Door Hardware; and

WHEREAS equipment manufactured by Honeywell-Notifier as the only acceptable product for the Fire Alarms system; and equipment manufactured by Dormakaba BEST as the only acceptable product for door hardware locksets, cylinders and cores.

NOW, THEREFORE, BE IT RESOLVED, that the Board authorizes the specifications for the Fire Alarm System and Door Hardware at Clayton J. Davenport ES to name equipment manufactured by Honeywell-Notifier, and Dormakaba BEST, respectively.

CERTIFICATION OF DANIEL SMITH, BUSINESS ADMINISTRATOR/BOARD SECRETARY

I, Daniel Smith, of full age, hereby certifies as follows:

1. I am the Business Administrator/Board Secretary for the Egg Harbor Township School District

2. According to the project architect, the Fire Alarm System, and Door Hardware required for the Clayton J. Davenport ES must be manufactured by the same company, as specified. According to the project architect, requiring the same manufacturer is necessary for the following reasons:

   To simplify parts inventory, service contracts, and to facilitate repair efforts in the future. The new systems will match the existing systems installed

in other school buildings within the District.

I certify that the foregoing statements made by me are true. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

Date: 11/19/24

Daniel Smith
Business Administrator/Board Secretary

ADDENDUM NO. 1

to the

DRAWINGS AND SPECIFICATIONS

for the

RENOVATIONS FOR FIVE (5) PRE-K CLASSROOMS

at the

CLAYTON J. DAVENPORT SCHOOL

Gillan and Hartmann, Inc.

1. This MEP Addendum No. 1 dated November 25, 2024, is issued as part of the Contract Documents, dated November 1, 2024, 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 schedules 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.

2. 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.

3. HVAC TRADE

3.1 ERRATA ON THE DRAWINGS

3.1.1. Drawing H201 E: Remove all notes regarding door undercuts. Door undercuts are not required.

3.1.2. Drawing H202 E, New Work Note 3: Add "Provide surface mounted wiremold/raceway" for temperature sensor wiring. Remove second sentence.

3.1.3. Drawing H202 P, New Work Note 2: Add "Provide surface mounted wiremold/raceway" for temperature sensor wiring. Remove second sentence.

3.1.4. Drawing H211 E, New Work Note 1: Add Refer to Architectural/Structural Drawings for structural steel and framing details.

3.1.5. Drawing H201 P: Locate air handling unit AHU-1C approximately 3 feet east from current location to avoid existing conduits. Coordinate final location in the field.

3.2 ERRATA IN THE SPECIFICATIONS

3.2.1. Replace Section 230923 with the attached.

4. PLUMBING TRADE

4.1 ERRATA ON THE DRAWINGS

4.1.1. Sheet P501, Detail 7: Add the following note; "Refer to Architectural Drawings for roof system and flashing based upon location."

4.1.2. Sheet P501, Plumbing Fixture Schedule

4.1.2.1. Revise LAV-1 model number to 0321.026.

4.1.3. Riser Diagram 3/P601

4.1.3.1. Remove all references to Electric Water Cooler EWC-1.

4.2 ERRATA IN THE SPECIFICATIONS

4.2.1. Section 221119, Article 2.3,

4.2.1.1. Water temperature control shall be +/-3 degrees F.

4.2.1.2. Locate mixing valves above the ceiling.

4.2.1.3. Delete 2.3.A.10.

5. ELECTRICAL TRADE

5.1 ERRATA ON THE DRAWINGS

5.1.1. Drawing E101 P, add the following text to Removal Note 8:

5.1.1.1. Temporarily disconnect and remove 50 feet of rigid conduits and wiring located above the ceiling to facilitate the installation of the mechanical equipment. Extend and replace wiring and conduit back to original condition.

END OF ADDENDUM NO. 1

SECTION 230923 – DIRECT DIGITAL CONTROL (DDC) SYSTEM FOR HVAC

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. Provide an extension to the existing BACnet Building Management System (BMS) incorporating Direct Digital Control (DDC), equipment monitoring, and control consisting of microcomputer based network controls, digital electronic controllers and unit specific controllers interfacing directly with sensors, actuators and environmental delivery systems (i.e., Air handling equipment, etc.); electric controls and mechanical devices for items indicated on drawings or described herein including dampers, panels; a primary communication network to allow data exchange; microcomputer based digital control modules interfacing with sensors, actuators, and terminal equipment control devices; and secondary communication networks interfacing network devices. All Network Control Units and Equipment Controllers shall be tied to the existing Building Management System DDC system front-end. The Building Management System Contractor (BMSC) shall provide all labor, materials and software required for the new devices, their implementation and expansion onto the CM3 Building Solutions Automation System which is currently serving the Egg Harbor Township School District's (EHTSD) Facilities. It is the intention of the EHTSD to standardize on the current District BMS presently installed at the Swift Elementary School and to have a single building automation system controlling the facility. The same system is planned for installation at the Slaybaugh Elementary School. New controllers shall interface seamlessly with the School's existing Schneider Electric Ecostructure Building Operations System and accessed through the District's existing BAS workstations. The System Integration Contractor (SIC) shall integrate the expansion onto the existing infrastructure to create a seamless graphical user interface package. The district has standardized Tridium Niagara Server. The BMSC shall retain the services of the sites System Integration Contractor SIC as described within this specification. The school district's controls contractor (SIC) is CM3 Building Solutions, contact Peter Gregory at 215-360-7960.

B. The work under this Section of the Specification shall include all labor, materials, equipment, software, licenses, and services necessary for and incidental to the proper completion of the new Building Management System (BMS) and related work shown, implied or specified, but is not limited to the following as described hereinafter.

C. Extend the existing BMS for a complete turnkey, stand-alone, fully operational BACnet top to bottom Direct Digital Control (DDC) System. Provide additions and modifications to the existing pneumatic and electronic control systems as required for a fully operational system.

D. Prior to commencing of work, label existing pneumatic control lines to ensure proper identification and removal. Existing pneumatic control system to remain for areas not in project scope.

E. Discharge Air Temperature Sensors:

1. Provide discharge air temperature sensors for all air-side HVAC equipment including but not limited to Unit Ventilators, and Air Handling Units. Include work and materials required for integrating discharge air temperature sensors into the existing building equipment. Obtaining and/or providing all materials, permissions and services as necessary to facilitate integration and accessing of point necessary for pulling discharge air temperature sensor points from existing Building equipment.

F. General: The control system shall consist of a high-speed, peer-to-peer network of DDC controllers and a web-based system, and capable of connecting to a web server with a network interface.

G. The system shall directly control HVAC equipment as specified hereinafter in the Sequence of Operation and Drawing Equipment Schedules. Each zone controller shall provide occupied and unoccupied modes of operation by individual zone. Furnish energy conversation features such as optimal start and stop, night setback, request-based logic, and demand level adjustment of setpoints.

H. System shall use the BACnet protocol for communication to the main panel CPU for communication between control modules. Schedules, setpoints, trends, and alarms specified in Sequences of Operation shall be BACnet objects.

I. All points of user interface shall be on standard PCs that do not require the purchase of any special software from the BMS manufacturer for use as a building operations terminal. The primary point of interface on these PCs will be a standard Web Browser such as Internet Explorer or Mozilla Firefox.

J. Control system must comply with the standard of ASHRAE/ANSI 135-(latest edition) Data Communication Protocol for Building Automation and Control Systems (BACnet).

K. Prior to the submission of the ATC system shop drawing, submit a letter or contract from specified manufacturer indicating authorization from contracting firm to procure, install, and service specified manufacturer's equipment. The ATC shop drawing will not be reviewed until such document is reviewed and approved by Engineer.

L. Provide sufficient site visits to complete installation and provide startup and commission controls for each completed phase of the project, including change of seasons for re-commissioning during alternate mode of operation.

M. The ATC system shall be powered from the building power. Provide wiring and devices as required to extend wires and conduits from the local panels where not indicated on the Electrical Drawings. Wiring shall meet the requirements of national, state and local codes.

N. All setpoints shall be adjustable through the existing head end controller, or any PC connected to the internet via password protection.

1.3 WORK INCLUDED

A. Extend the existing BACnet Building Management System (BMS) incorporating Direct Digital Control (DDC), equipment monitoring, and control consisting of microcomputer based network controls, digital electronic controllers and unit specific controllers interfacing directly with sensors, actuators and environmental delivery systems (i.e., unit ventilators, air handling equipment, etc.); electric controls and mechanical devices for items indicated on drawings or described herein including dampers, valves, panels; a primary communication network to allow data exchange; microcomputer based digital control modules interfacing with sensors, actuators, and terminal equipment control devices; and secondary communication networks interfacing network devices. All Network Control Units and Equipment Controllers shall be tied to the existing Building Management System DDC system front-end.

B. Provide all submittals, data entry, and electrical installation where indicated, programming, start-up, test and validation acceptance documentation, and system warranty.

C. The control system shall consist of all sensors, transmitters, controllers, control panels, software, programming service tools, interconnecting wiring, power wiring and any other devices or installation materials needed to fill the intent of the specification, the Sequence of Operation and to provide for a complete and operable system.

D. All wiring, including interlock and power wiring, required for the operation of the control system shall be provided by the control specialist, except where specifically noted elsewhere. Wiring shall meet the requirements of National, State, and Local codes and the Electrical Sections of this specification.

E. The engineering, installation, calibration, programming and commissioning necessary for a complete and fully operational control system, as specified, shall be provided by the Controls Specialist.

F. Provide surge protection for wiring and all system components.

G. Provide conduit for exposed BMS communication wiring.

H. Label all ATC control wiring as “BMS Cabling” with self-adhering markers at 20' intervals on straight runs, at change of direction and at entrance and exit points through walls, floors and ceilings.

I. All controllers and control points shall be programmed for trending capability and activated through the frontend.

J. Coordinate with the Owner the required levels of alarms, assignments of defined levels and dial out sequences. Remove all nuisance alarms that have been pre-programmed into the software, review with the Owner.

K. Points List, Sequence of Operations and Specification Parts 1, 2 and 3 of this section and sequence indicated in Division 23 sections makeup the entire DDC system requirements including, but not limited to control devices, controller types, O/I's and accessories required to facilitate system sequences and complex operations, and shall be incorporated as a comprehensive Digital/Analog/I/O control solution. Work shall not be limited to only the scheduled I/O list.

L. All setpoints shall be adjustable through the front-end software.

M. Provide all programming to interface new work with operation of existing system. Programming of the controls and system sequences shall be performed utilizing the front-end software.

1. Submit example of graphics for Owner approval.
2. Submit at the completion of work, a copy of the untranslated (not compiled) database for future modifications. Database shall be submitted on a USB drive.

N. Conceal all control wiring in occupied spaces within walls.

O. All cabling to be plenum rated and supported in accordance with the project electrical specifications, local codes and NEC.

1.4 DEFINITIONS

A. Algorithm: A logical procedure for solving a recurrent mathematical problem. A prescribed set of well-defined rules or processes for solving a problem in a finite number of steps.

B. Analog: A continuously varying signal value, such as current, flow, pressure, or temperature.

C. BACnet Specific Definitions:

1. BACnet: Building Automation Control Network Protocol, ASHRAE 135. A communications protocol allowing devices to communicate data over and services over a network.
2. BACnet Interoperability Building Blocks (BIBBs): BIBB defines a small portion of BACnet functionality that is needed to perform a particular task. BIBBs are combined to build the BACnet functional requirements for a device.
3. BACnet/IP: Defines and allows using a reserved UDP socket to transmit BACnet messages over IP networks. A BACnet/IP network is a collection of one or more IP subnetworks that share the same BACnet network number.
4. BACnet Testing Laboratories (BTL): Organization responsible for testing products for compliance with ASHRAE 135, operated under direction of BACnet International.
5. PICS (Protocol Implementation Conformance Statement): Written document that identifies the particular options specified by BACnet that are implemented in a device.

D. Binary: Two-state signal where a high signal level represents ON" or "OPEN" condition and a low signal level represents "OFF" or "CLOSED" condition. "Digital" is sometimes used interchangeably with "Binary" to indicate a two-state signal.

E. Controller: Generic term for any standalone, microprocessor-based, digital controller residing on a network, used for local or global control. Three types of controllers are indicated: Network Controller, Programmable Application Controller, and Application-Specific Controller.

F. Control System Integrator: An entity that assists in expansion of existing enterprise system and support of additional operator interfaces to I/O being added to existing enterprise system.

G. E/P: Voltage to pneumatic.

H. Gateway: Bidirectional protocol translator that connects control systems that use different communication protocols.

I. I/O: System through which information is received and transmitted. I/O refers to analog input (AI), binary input (BI), analog output (AO) and binary output (BO). Analog signals are continuous and represent control influences such as flow, level, moisture, pressure, and temperature. Binary signals convert electronic signals to digital pulses (values) and generally represent two-position operating and alarm status. "Digital," (DI) and (DO), is sometimes used interchangeably with "Binary," (BI) and (BO), respectively.

J. LAN: Local area network.

K. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control, signaling power-limited circuits.

L. Modbus TCP/IP: An open protocol for exchange of process data.

M. MS/TP: Master-slave/token-passing, IEE 8802-3. Datalink protocol LAN option that uses twisted-pair wire for low-speed communication.

N. MTBF: Mean time between failures.

O. Network Controller: Digital controller, which supports a family of programmable application controllers and application-specific controllers, that communicates on peer-to-peer network for transmission of global data.

P. Network Repeater: Device that receives data packet from one network and rebroadcasts it to another network. No routing information is added to protocol.

Q. Peer to Peer: Networking architecture that treats all network stations as equal partners.

R. RAM: Random access memory.

S. Router: Device connecting two or more networks at network layer.

T. Server: Computer used to maintain system configuration, historical and programming database.

U. TCP/IP: Transport control protocol/Internet protocol incorporated into Microsoft Windows.

V. UPS: Uninterruptible power supply.

W. USB: Universal Serial Bus.

X. User Datagram Protocol (UDP): This protocol assumes that the IP is used as the underlying protocol.

Y. VAV: Variable air volume.

Z. WLED: White light emitting diode.

1.5 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site with Owner's representative, Balancing Specialist, and HVAC Prime Contractor. Identify meeting time and date with design professional a minimum of 7 days prior to the meeting taking place.

B. Include on the Agenda a review of the graphics and control sequences, phasing coordination, and final locations of the workstation.

C. Record and product meeting minute notes and submit a copy to the design professional.

1.6 SEQUENCES OF OPERATION

A. Central System Control: Occupied/unoccupied shall be determined by the timed event software. The Direct Digital Control, DDC panel shall control the indicated sequence of operation.

B. Rooftop Air Handling Units (AHU's), Indoor Air Handling Units (AHU's) and Unit Ventilators (UV).

1. General: Provide factory mounted DDC controls and all field installed accessories as required to provide the following basic programmable functions and intended operations. The PI control of installed DDC devices will maintain tight control of temperature and humidity setpoints.

    a. Provide additional controllers, input/output devices, wiring, programming, etc. to meet the sequences of operation, associated points list, and interface with the building LAN and BMS.

2. Schedule: The BMS will interface with the unit through a DDC that transmits system information (schedules Based, setpoints, etc.) through a communication bus connected to a front-end.
3. Warm-up:

    a. Unit will operate as in the occupied mode of operation except that the outside and exhaust dampers will be fully closed, and the return air damper will be fully open.

4. Occupied:

a. Setpoints:

1) Space Heating Temperature: 70 deg F (adj).
2) Space Cooling Temperature: 75 deg F, 50% RH (adj).
3) Heating Limiting Temperature Setpoint: 80 deg F (adj.)

b. The supply fan will run continuously. The exhaust fan (UV only) will vary based on the amount of the outside air flow.
c. The outside air damper will open to minimum position. The return air damper will close a proportionate amount. The exhaust/relief air damper will fully open in response to the outside air damper opening. The exhaust/relief fan will vary based on the amount of the outside airflow damper. Minimum outside air must be maintained during all cycles of operation with the exception of economizer override.
d. Cooling mode:

1) When space temperature rises above the cooling setpoint, the economizer will be energized as the first stage of cooling.
2) The economizer controller will check outside air temperature and humidity.
3) When the cooling demand increases more than the economizer mode is capable of, the cooling coil control valve shall modulate open to maintain cooling setpoint and the economizer system shall revert back to minimum outside air.
4) On a drop in temperature, the reverse will occur.

e. Heating mode:

1) The supply fan will be at minimum speed.
2) When the space temperature falls below the heating setpoint, the heating coil control valve shall modulate open to maintain heating setpoint.
3) On an increase in temperature, the reverse will occur.

5. Unoccupied:

a. Setpoints:

1) Space Heating Temperature: 60 deg F (adj).
2) Space Cooling Temperature: 80 deg F (adj).

b. Cycle Operation: During schedule unoccupied periods, the outside air damper will be in the closed position and the supply and exhaust/relief fans will be de-energized.
c. Cooling Mode: When space temperature rises above the cooling setpoint temperature, the supply fan will be energized, cooling coil control valve shall modulate open and operate until space temperature falls below this elevated setting. Economizer will operate as the first stage of cooling provided outside air conditions permit.
d. Heating Mode: When space temperature drops below the night setback temperature, the supply fan will be energized, heating coil control valve shall

modulate open and operate until space temperatures rises above the heating setpoint.

6. Enthalpy Controlled Economizer: Provide full modulating economizer with adjustable enthalpy changeover. Controller to modulate return and outside air dampers to maintain the desired mixed air temperature, using outside air wet and dry bulb temperatures.

7. System Functions and Safeties:

   a. Freeze stat, located downstream of the heating coil, shall shut down the air handling unit, close the outside air damper, and send an alarm to the BAS. Set freeze stat at 38 deg. F (adj.).

1.7 I/O SCHEDULE

System I/O Schedule - Specialist is responsible to review the plans and specifications in their entirety to determine the final quantity of control devices and I/O points to provide operational systems of the specified equipment for their intended use.

SYSTEM I/O SCHEDULE	Inputs		Outputs		Interlock	Alarms		
POINT DESCRIPTION	**AI**	**BI**	**AO**	**BO**	**Hardwire**	**Hi**	**Low**	**State**
AHU's and UV's								
Unit Status		X						
Start/Stop				X				
Supply/Relief Fan Status		X						
Space Temperature		X						
Heating Coil Control Valve			X					
Cooling Coil Control Valve			X					
Freeze Stat		X				X		
Outside, Return, Relief Air Dampers			X					
Discharge Air Temperature	X							

1.8 ACTION SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specifications Sections.

B. Product Data for each type of product specified. Include manufacturer's technical Product Data for each control device furnished, indicating dimensions, capacities, performance characteristics, electrical characteristics, finishes of materials, installation instructions, and startup instructions, including third party equipment data.

C. Shop Drawings from manufacturer detailing equipment assemblies and indicating dimensions, weights, loadings, required clearances, method of field assembly, components, and location and size of each field connection. Submit damper leakage and flow characteristics, plus size schedule for controlled dampers. Control valve schedule to identify flow characteristics.

D. Shop Drawings containing the following information for each control system:

1. CAD developed schematic flow diagram showing all HVAC equipment, dampers, valves, control devices, etc. (BMS software developed drawings will not be accepted).
2. Each control device labeled with setting or adjustable range of control.
3. Diagrams for all required electrical wiring. Clearly differentiate between factory-installed and field-installed wiring.
4. Details of control panel faces, including controls, instruments, and labeling.
5. Written description of sequence of operation.
6. Trunk cable schematic showing programmable control unit locations and trunk data conductors.
7. Listing of connected data points, including connected control unit and input device.
8. System graphics indicating monitored systems, data (connected and calculated) point addresses, and operator notations.
9. System configuration showing peripheral devices, batteries, power supplies, diagrams, modems, and interconnections.
10. Software description and sequence of operation.
11. Building wiring diagram including panel locations and connection to bus line.
12. Bill of materials.
13. Provide panel layout including controllers, electronic devices and unused I/O's. Include panel dimensions.
14. Provide bus (network) wiring riser diagrams.
15. Provide controller terminal diagrams, points, point names and field device connections, field device points, and field device names. Label and color code wiring connections.
16. Details of third party compatible devices including wiring diagrams, integrators and devices.

E. Submittal shall consist of:

1. System architecture showing all digital devices.
2. Equipment lists of all proposed devices and equipment including data sheets of all products, including third party equipment.
3. Valve, damper, and well and tap schedules showing size, configuration, capacity and location of all equipment.
4. Wiring and piping interconnection diagrams including panel and device power and sources, including third party diagrams, with terminal point designation for each wire connection.

F. Wiring diagrams detailing wiring for power, signal, and control systems and differentiating clearly between manufacturer-installed and field-installed wiring.

G. Maintenance data for control systems equipment to include in the operation and maintenance manual. Include the following:

1. Maintenance instructions and spare parts lists for each type of control device and compressed-air stations (if required).
2. Interconnection wiring diagrams with identified and numbered system components and devices.
3. Keyboard illustrations and step-by-step procedures indexed for each operator function.
4. Inspection period, cleaning methods, cleaning materials recommended, and calibration tolerances.
5. Calibration records and list of set points.

H. Field Test Reports: Procedure and certification of the control system, communication wiring, sensor wiring, and all bus wiring.

I. Project Record Documents: Record actual locations of control components, including control units, thermostats, and sensors. Revise Shop Drawings to reflect actual installation and operating sequences, including all third party vendor information. Provide all BMS files developed specifically for installed system such as graphics, control programming and network communications.

J. Software Manuals: The software manual shall describe programming and testing, starting with a system overview and proceeding to a detailed description of each software feature. The manual shall instruct the user on programming or re-programming any portions of the BMS. This shall include all control programs, algorithms, mathematical equations, variables, set points, time periods, messages, and other information necessary to load, alter, test and execute the system. The manual shall include:

1. Complete description of programming language, including commands, editing and writing control programs, algorithms, printouts and logs, mathematical calculations and passwords.
2. Instructions on modifying any control algorithm or parameter, verifying errors, status, changing passwords and initiating or disabling control programs.

K. Software Documentation: All software programs shall be easily referenced from summary sheets which compare control programs with pertinent information about hardware and wiring information in the field. Documentation shall include:

1. Complete point identification, including terminal number, symbol, engineering units and control program reference number.
2. Field information including location, device, device type and function, electrical parameters and installation drawing number.
3. Location identification BMS control hardware.

L. Software: Upon successful completion of the operational acceptance test, provide a medium, and hardware for bulk storage of the accepted versions and an untranslated (not complied) copy of the program database.

M. Provide data summary forms to be approved by the Engineer to define the following information for inclusion into the BMS for each point in the system by the ATC Specialist:

1. Description of each piece of equipment and the functions to be controlled.

2. For each BMS function, a listing of digital and/or analog hardware required to interface the BMS to the equipment.
3. Listing of all digital and analog alarms.
4. Listing of all BMS application programs associated with each piece of equipment. This listing shall include all control algorithms and mathematical equations. The listing shall be in easy to understand English format.

N. All application programs must be submitted. No unauthorized BMS manufacturers proprietary control front-ends will be accepted.

O. BMS Manufacturer authorized Contractors must submit letter or contract from specified manufacturer indicating authorization from contracting firm to procure, install and service specified manufacturer's equipment.

P. Licenses, guarantees, and warranty documents for equipment and systems.

1.9 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For DDC system to include in emergency, operation and maintenance manuals.

1. In addition to items specified in applicable Division 01 sections include the following:

a. Project Record Drawings of as-built versions of submittal Shop Drawings provided in electronic PDF format.
b. Testing reports and checklists of completed final versions of reports, checklists, and trend logs.
c. As-built versions of submittal Product Data.
d. Names, addresses, e-mail addresses and 24-hour telephone numbers of Installer and service representatives for DDC system and products.
e. Operator's manual with procedures for operating control systems including logging on and off, handling alarms, producing point reports, trending data, overriding computer control and changing set points and variables.
f. Programming manuals with description of programming language and syntax, of statements for algorithms and calculations used, of point database creation and modification, of program creation and modification, and of editor use.
g. Engineering, installation, and maintenance manuals that explain how to:

1) Design and install new points, panels, and other hardware.
2) Perform preventive maintenance and calibration.
3) Debug hardware problems.
4) Repair or replace hardware.

h. Documentation of all programs created using custom programming language including set points, tuning parameters, and object database.
i. Backup copy of graphic files, programs, and database on electronic media such as DVDs.
j. List of recommended spare parts with part numbers and suppliers.

k. Complete original-issue documentation, installation, and maintenance information for furnished third-party hardware including computer equipment and sensors.
l. Complete original-issue copies of furnished software, including operating systems, custom programming language, operator workstation software, and graphics software.
m. Licenses, guarantees, and warranty documents.
n. Recommended preventive maintenance procedures for system components, including schedule of tasks such as inspection, cleaning, and calibration; time between tasks; and task descriptions.
o. Owner training materials.

1.10 QUALITY ASSURANCE

A. Prime Contractor Qualifications: Engage an experienced specialist specializing in direct digital control system installations. Specialist shall be certified in writing by BMS manufacturer.

B. Manufacturer Qualifications: Engage a firm experienced in manufacturing control systems similar to those indicated for this Project and that have a record of successful in-service performance.

C. The complete BMS installation shall be in strict accordance to the national and local electrical codes and the electrical section of these specifications. All devices designed for or used in line voltage applications shall be UL listed. All microprocessor based remote and central devices connection onto the primary bus (including link devices) shall be UL864 Listed.

D. Provide satisfactory operation without damage at 110% above and 85% below rated voltage and at 3 hertz variation in line frequency. Provide static, transient, and short circuit protection on all inputs and outputs. Communication lines shall be protected against incorrect wiring, static transients lightning strikes, and induced magnetic interference. All bus connected devices shall be a.c. coupled, or equivalent so that any single device failure will not disrupt or halt bus communication. Surge suppression and isolations devices shall be provided.

E. Startup Personnel Qualifications: Engage specially trained personnel in direct employ of manufacturer of primary temperature control system. Personnel shall be capable of administering training, system diagnostics, and trouble shooting.

F. Comply with NFPA 90A.

G. Comply with NFPA 70.

H. Coordinate equipment selection with applicable Division 26 Sections to achieve compatibility with equipment that interfaces with the fire alarm system.

I. All wiring between controller and sensors and control devices including any power wiring of devices and necessary conduit shall be provided under this section of the specification. All control and power wiring which is provided under this section of the specification shall be in accordance with requirements set forth in the National Electrical Code (NEC) latest edition.

1.11 CONDITIONS:

A. Bids by Wholesalers, Contractors, Franchised Dealers or any firm whose principal business is not that of installing automatic temperature control systems shall not be acceptable.

B. The system shall be engineered, programmed, and installed by personnel trained and regularly employed by the BMS manufacturer, or certified contractors.

C. Manufacturer and specialist shall have an in-place support facility within 100 miles of the site with technical staff, spare parts inventory and all necessary test and diagnostic equipment.

1.12 DELIVERY, STORAGE, AND HANDLING

A. Store equipment and materials inside and protected from weather.

B. Factory-Mounted Components: Where control devices specified in this Section are indicated to be factory mounted on equipment, arrange for shipping control devices to unit manufacturer and in factory testing of components installed in designated equipment.

1.13 COORDINATION

A. Coordinate location of thermostats, humidistats, and other exposed control sensors with plans and room details before installation.

B. Coordinate supply of conditioned electrical branch circuits for control units and operator workstation.

C. Coordinate equipment with applicable Division 26 Sections to achieve compatibility with starter coils and annunciation devices for panelboards.

D. Coordinate equipment with applicable Division 26 Sections to achieve compatibility with motor starters and annunciation devices.

1.14 WARRANTY

A. Warrant labor and materials for specified control system free from defects for a period of 12 months after project substantial completion. Control system failures during warranty period shall be adjusted, repaired, or replaced at no additional cost or reduction in service to Owner. Respond during normal business hours within 24 hours of Owner's warranty service request.

B. Work shall have a single warranty date, even if Owner received beneficial use due to early system start-up. If specified work is split into multiple contracts or a multi-phase contract, each contract or phase shall have a separate warranty start date and period.

C. Provide an extended service contract beyond first year warranty period if so desired by Owner.

PART 2 - PRODUCTS

2.1 EXISTING BMS SYSTEM

A. Refer to Article 1.2.

B. Connect to existing DDC panels. If additional panels, equipment, etc. are required, provide as necessary for a fully functional system.

2.2 MANUFACTURERS

A. Acceptable manufacturers/Authorized Installer: According to District's BMS Provider.

B. Building Management System Architecture:

1. The BMS system architecture will be BACnet top to bottom with a web base server/controller.
2. Control products, communication media, connectors, repeaters, hubs, and routers shall comprise a BACnet internetwork. Controller and operator interface communication shall conform to ASHRAE/ANSI Standard BACnet.
3. Web server and controllers shall communicate using BACnet protocol. Web server network backbone shall communicate using ISO 8802-3 (Ethernet) Data Link/Physical layer protocol and BACnet/IP addressing as specified in ASHRAE/ ANSI 135, BACnet Annex J. Provide data drop for IT/internet access.
4. The network shall be based on a PC industry standard of Ethernet TCP/IP. Where used, LAN controller cards shall be standard "off the shelf" products available through normal PC vendor channels. All controllers on the BMS shall communicate via BACnet MS/TP protocol. The BMS shall network multiple user interface clients, universal network controllers, system controllers and application-specific controllers.
5. Access to system shall not be restricted by the hardware configuration of the building management system. The hardware configuration of the BMS shall be totally transparent to the user when accessing data or developing control network programs from either over the IT LAN or remote access.
6. Controller/panels to be wired to the server and the server to be connected to IT LAN for remote access. Provide an Ethernet drop for connection to School District's IT LAN at each school.
7. Controller/panels to be wired to the master CPU serve and connected to IT LAN for front-end access. Provide an Ethernet drop for connection to IT LAN, BMS programming and provide technical support for setup and interface with the IT LAN. The Owner will provide a fixed IP Address, Domain and IT LAN system programming to facilitate BMS access through the LAN/Firewall to the WAN for remote access.
8. Graphics will be developed using the manufacturer's graphics software. Coordinate graphics with the Owner.
9. BMS is to be a full open system for modification and upgrades, and is the licensed Institution with all password knowledge.
10. Provide gateway interface in appropriate protocol as required.
11. Provide LCD access at the master panels.

12. Building controls to be tied into front-end.

2.3 DDC SYSTEM DESCRIPTION

A. Microprocessor-based monitoring and control including analog/digital conversion and program logic. A control loop or subsystem in which digital and analog information is received and processed by a microprocessor, and digital control signals are generated based on control algorithms and transmitted to field devices to achieve a set of predefined conditions.

1. DDC system shall consist of a high-speed, peer-to-peer network of distributed DDC controllers, other network devices, operator interfaces, and software.

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

2.4 CONTROLLER HARDWARE

A. The Building Management System (BMS) shall integrate multiple building functions including equipment supervision and control, alarm management, energy management and historical data collection.

B. The system shall be a modular distributed control system. Expansion in capacity and functionality shall be provided through the addition of sensors, actuators, standalone DDC panels and operator devices.

C. System architectural design shall eliminate dependence upon any single device for alarm reporting and control execution. Each DDC panel/controller shall operate independently by performing its own specified control, alarm management, operator I/O, and historical data collection functions. The failure of any single component or network connection (including a wire break) shall not interrupt the execution of any control strategy, reporting, alarming and trending function, or any function at any operator interface device.

D. Network Control Units shall be highest available capacity with a minimum 32-bit microprocessor based within panel operating system. DDC programs and data files shall be non-volatile memory or flash memory to allow simple and reliable additions and changes. Each unit shall have an on-board 30-day battery backed real-time clock. Unit(s) shall be provided where shown or specified with capacity to accommodate input/output (I/O) points required for the application. Each panel shall be provided with a socket for a Portable Network Terminal, and a port for network communications. Units outputs shall be binary for On-Off control, and true variable voltage (0-10v) for driving analog or pneumatic transducer devices. Analog outputs shall have a minimum incremental resolution of one percent of the operating range of the controlled device. Units shall have LEDs for continuous indication of all bus communications, power, and operational status. All panel electronics and associated equipment shall be installed in suitable enclosures.

E. DEC (Digital Electronic Controllers) control modules or unit specific DDC controllers shall be UL916 standalone digital based configured to perform the sequences specified, and with I/O

selected for the application. Controller enclosures shall be compact plastic conforming to UL94-5V or plated steel. Each device shall be provided with LED type annunciation to continually display its operational mode; power, normal, or in an alarm state.

F. Network terminal shall be provided for mounting in network control panel.

G. System integrator shall monitor and control all third party equipment. HVAC Contractor and ATC Specialist shall coordinate all devices and determine unit mounted third party items vs. field installed devices

2.5 SYSTEM SOFTWARE

A. Control Software:

1. Time Programs: Each control unit shall contain up to 20 unique user modifiable time programs (TP). Each TP shall consist of daily, weekly, and annual programs plus a "TODAY" temporary function. DAILY programs shall be definable for day types such as working day, half day, holiday, weekend, etc. Each daily program shall allow a list of time based (or optimum time based) analog and digital commands to be issued to user selected plant elements and points. WEEKLY programs shall allow a user selected set of daily programs to be defined for each day of the week (Monday through Sunday). The ANNUAL program shall initially be an automatic compilation of 52 weekly programs. Selecting a date of the ANNUAL program shall allow modification of the daily selection entered into the weekly program (such as changing Dec. 25 from a working day to a holiday).
2. Control Application Software shall be customized to meet the detailed requirements of the "Sequence of Operation". Control units, control modules and unit specific controllers network management devices shall be programmable. All BMS control software shall be designed via a graphic programming facility, the flow chart output of which shall be provided as system documentation.
3. In addition to Proportional, Proportional-Plus-Integral (PI), and Proportional-Plus-Integral-Plus-Derivative (PID) algorithms, an HVAC enhanced PID (EPID) algorithm shall be provided and implemented where specified. The EPID shall be a full PID, but modified and/or appended to perform as follows:

    a. The user shall be allowed to specify a start output value to which subsequent corrective signals are added. For example, a variable speed pump may be specified to start at 20% to assure a timely proof-of-operation signal to result without false failure-to-respond alarms being issued during slow startups; or a discharge air EPID loop may be specified to start at 33% (at which point the heating and cooling valves and the outside air damper are all closed) and enter into control without overshoot or undershoot.
    b. The user shall be allowed to specify a start-up ramp duration of 1 to 300 seconds, during which time the error (EPID set point minus EPID input) varies from 0 to the actual value, thus allowing gradual and direct assumption of control with no hunting, overshoot, or undershoot. Ramping of the PID output (which will cause integral wind-up) is not allowed.

c. The EPID shall be provided with a limit signal port such that the connection of an external limit signal (such as providing a fan discharge pressure high limit signal into a VAV duct static pressure control EPID) allows the limit signal to override the EPID without integral windup occurring during the limit-control period.

B. Management Software:

1. Trending: In addition to supporting temperature and humidity trending specified elsewhere, each network control unit shall be provided with a trend archive of at least the last 8000 events (digital transitions or analog value changes) of any user selected group of up to 50 points. A stored event shall include date and time, and value or status. Events occurring in excess of 8000 shall overwrite the oldest events.
2. Alarms: BMS shall monitor and report all analog input points and specified digital points for off-normal conditions. Each alarm shall have an "alarm delay" attribute which shall determine how long (in seconds) a point must be off-normal prior to being considered in an alarm state.
3. DEC Support: Network control units and devices managing sub-networks of DECs shall report DEC alarms and shall be programmed to perform data reduction, sorting, and optimizing routines.

2.6 SOFTWARE

A. Software shall be configured to meet the requirements of the "Sequence of Operation" specified and shall be field reconfigurable. Software shall support full PID control, and shall utilize separate PID gains for heating and cooling. Where space sensors are provided with temperature set point knobs, DDC controllers shall be provided with unique software set point limits. Each controller shall have continuously running hardware diagnostics to detect malfunctions of the flow sensor, the temperature sensor, the remote set point sensor, and the A to D converter.

B. Controllers shall have preconfigured air flow calibration software to assist the test and balance (TAB) specialist in final calibrations. Using the DEC contractor’s calibration tool, the TAB Specialist shall be provided with a display allowing a simple command entry to place the DEC in zero, minimum, and maximum CFM control modes. At each mode, a display field shall be provided for the TAB Specialist to enter the actual measured value in CFM. Upon completion of entering the three values, the DEC shall automatically recalibrate based upon the actual values

2.7 DATA COMMUNICATIONS

A. All network control unit and DEC network management devices shall be interconnected and tied into the communications network. DECs shall also be connected together via secondary networks managed by network management devices to provide data concentration and parallel processing such that system expansion does not noticeably affect system response. All communications shall be via three wire, shielded where required, RS-485. DDC microprocessor failures shall not cause loss of communications of the remainder of any

network. All networks shall support sensor sharing, global application programs, and bus-to-bus communications in a true peer-to-peer token passing manner.

B. For reliability, maintainability, and performance communication busses shall be extendible to 4000 feet without active links, hubs, or repeaters.

C. DECs shall be managed by network management devices to provide alarm detection and reporting, data sharing, trending, and response to data requests and commands.

2.8 COLLECTION AND ANALYSIS OF HISTORICAL DATA

A. Provide trending capabilities that allow the user to easily monitor and preserve records of system activity over an extended period of time. Any system point may be trended automatically at time-based intervals or changes of value, both of which shall be user-definable. Trend data must be automatically stored on hard disk for future diagnostics and reporting.

B. Trend data report graphics shall be provided to allow the user to view all trended point data. Reports may be customized to include individual points or pre-defined groups of at least 6 points. Provide additional functionality to allow any trended data to be transferred easily to an off-the-shelf spreadsheet package such as Excel. This shall allow the user to perform custom calculations such as energy usage, equipment efficiency and energy costs and shall allow for generation of these reports on high-quality plots, graphs and charts.

C. Provide additional functionality that allows the user to view trended data on trend graph displays. Displays shall be actual plots of both static and/or real-time dynamic point data. A minimum of 4 points may be viewed simultaneously on a single graph, with color selection and line type for each points being user-definable. Displays shall include an ‘X’ axis indicating elapsed time and a ‘Y’ axis indicating a range scale in engineering units for each point. The ‘Y’ axis shall have the ability to be manually or automatically scaled at the user’s option. Different ranges for each point may be used with minimum and maximum values listed at the bottom and top of the ‘Y’ axis. All ‘Y’ axis data shall be color-coded to match the line color for the corresponding point.

1. Static graphs shall represent actual point data that has been trended and stored on disk. Exact point values may be viewed on a data window by pointing or scrolling to the place of interest along the graph. Provide capability to print any graph on the system printer for use as a building management and diagnostics tool.
2. Dynamic graphs shall represent real-time point data. Any point or group of points may be graphed, regardless of whether they have been predefined for trending. The graphs shall continuously update point values. At any time the user may redefine sampling times or range scales for any point. In addition, the user may pause the graph and take “snapshots” of screens to be stored on the workstation disk for future recall and analysis. As with static graphs, exact point values may be viewed and the graphs may be printed.

2.9 DYNAMIC COLOR GRAPHIC DISPLAYS

A. Color graphic floor plan displays and system schematics for each piece of mechanical equipment. Provide optimize system performance analysis and speed alarm recognition as required by the Owner and this specification.

B. The operator interface shall allow users to access the various system schematics and floor plans via a graphical penetration scheme, menu selection or text-based commands.

C. Dynamic temperature values, humidity values, flow values and status indication shall be shown in their actual respective locations and shall automatically update to represent current conditions without operator intervention.

D. The windowing environment of the PC operator workstation shall allow the user to simultaneously view several graphics at a time to analyze total building operation or to allow the display of a graphic associated with an alarm to be viewed without interrupting work in progress.

E. Provide a dynamic display of the site specific BMS architecture indicating the status of all controllers, PC workstations and networks.

2.10 ELECTRIC AND MECHANICAL DEVICES

A. Provide Building Controllers (BC), Advanced Application Controllers (AAC), Application Specific Controllers (ASC), Smart Actuators (SA), and Smart Sensors (SS) as required to achieve performance specified Article System Performance. Every device in the system which executes control logic and directly controls HVAC equipment must conform to a standard BACnet Device Profile as specified in ASHRAE/ANSI 135-2003, BACnet Annex L. Unless otherwise specified, hardwired actuators and sensors may be used in lieu of BACnet Smart Actuators and Smart Sensors.

B. All electric switch devices shall be selected for the applied load and UL listed for the application. Miscellaneous, electric, pneumatic, and mechanical devices shall include:

1. Automatic control valves 2 1/2 " and smaller shall be screwed type, and valves 3" and larger shall be flanged. Valves shall be ANSI-rated to withstand the pressures and temperatures encountered. Valves shall have stainless-steel stems and spring loaded Teflon packaging with replaceable discs.

    a. All modulating straight-through water valves shall be provided with equal-percentage contoured throttling plugs. Valves shall be sized for a pressure drop equal to the coil they serve but not to exceed 4 psi.
    b. Unitary valves shall be straight-through type as specified in the sequence of operation. Stems shall be polished stainless-steel and packing shall be glycol suitable for chilled water service. Pressure ratings shall be as required for the intended service.

C. All automatically controlled devices, unless specified otherwise elsewhere, shall be provided with electric actuators sized to operate their appropriate loads with sufficient reserve power to provide smooth modulating action or two-position action and tight close-off.

D. Transformers: Provide step-down control transformers where required to power controls. Control transformers shall be sized such that 80% of the rated capacity equals the connected load.

2.11 ACTUATORS

A. Electric Motors: Size to operate with sufficient reserve power to provide smooth modulating action or 2-position action.

1. Permanent Split-Capacitor or Shaded-Pole Type: Gear trains completely oil immersed and sealed. Equip spring-return motors with integral spiral-spring mechanism in housings designed for easy removal for service or adjustment of limit switches, auxiliary switches, or feedback potentiometer.
2. Nonspring-Return Motors for Valves Larger than 2-1/2 Inches: Size for running torque of 150 inch-pounds and breakaway torque of 300 inch-pounds.
3. Spring-Return Motors for Valves Larger than 2-1/2 Inches: Size for running and breakaway torque of 150 inch-pounds.
4. Nonspring-Return Motors for Dampers Larger than 25 sq. ft.: Size for running torque of 150 inch-pounds and breakaway torque of 300 inch-pounds.
5. Spring-Return Motors for Dampers Larger than 25 sq. ft.: Size for running and breakaway torque of 150 inch-pounds.

2.12 DATA INPUTS AND OUTPUTS

A. Input/output sensors and devices shall be closely matched to the requirements of the remote panel for accurate, responsive, noise-free signal input/output. Control input response shall be high sensitivity and matched to the loop gain requirements for precise and responsive control.

B. Temperature sensors shall be thermistor type of 10,000 ohm at 77deg F, equal to PreCon Type III. Sensors shall have + or - 0.36 deg F accuracy between 32deg F and 158 deg F.

1. DEC space temperature sensors shall be provided with blank commercial type locking covers with the following features:

a. Sensors shall be provided with plug-in port to respective network for software maintenance and/or reconfiguration. Each part to be wired for communication. Plastic used on subbase or housing shall be UL94-5V rated.
b. Do not included override switch to initiate change from unoccupied to occupied mode.
c. Do not include setpoint adjustment by occupant limited by programmable range +/- setting (do not provide temperature gradients, provide tick marks), unless otherwise noted.
d. Do not provide LED display, unless otherwise noted.

e. Space sensors to be sensor type only where adjustments are made through front-end, unless otherwise noted.
f. Space temperature adjustments and displays shall be provided for all locations. Duct temperature sensors shall be rigid stem or averaging type as specified in the sequence of operation. Water sensors shall be provided with a separable copper, monel or stainless-steel well.

2. Outside Air Sensors: Watertight inlet fitting, shielded from direct sunlight.

C. Current sensing relays used for proof-of-loading for fans and pumps shall be suitable for 2 to 200 amperes and shall have adjustable trip thresholds of plus or minus two percent of range. Each relay shall be provided with an LED to allow ready observation of the relay status.

D. All Inputs and Outputs (including I/O Summary) shall be displayed and commandable from all workstations, including all off-site PC computers.

E. Relays:

1. Control Relays: Control relays shall be plug-in type, UL listed, and shall have dust cover and LED "energized" indicator. Contact rating, configuration, and coil voltage shall be suitable for application.
2. Time Delay Relays. Time delay relays shall be solid-state plug-in type, UL listed, and shall have adjustable time delay. Delay shall be adjustable +/-100% from setpoint shown. Contact rating, configuration, and coil voltage shall be suitable for application. Provide NEMA 1 enclosure for relays not installed in local control panel.

F. Current Transformer:

1. AC current transformer shall be UL/CSA recognized and shall be completely encased (except for terminals) in approved plastic material.
2. Transformers shall be available in various current ratios and shall be selected for +/-1% accuracy at 5 A full-scale output.
3. Use fixed-core transformers for new wiring installation and split-core transformers for existing wiring installation.

G. Voltage Transmitters:

1. AC voltage transmitters shall be self-powered single-loop (two-wire) type, 4-20 mA output with zero and span adjustment.
2. Adjustable full-scale unit ranges shall be 100-130 Vac, 200-250 Vac, 25-330 Vac, and 400-600 Vac. Unit accuracy shall be +/-1% full-scale at 500 ohm maximum burden.
3. Transmitters shall meet or exceed ANSI/ISA S50.1 requirements and shall be UL/CSA recognized at 600 Vac rating.

H. Voltage Transformers:

1. AC voltage transformers shall be UL/CSA recognized, 600 Vac rated, and shall have built-in fuse protection.

2. Transformers shall be suitable for ambient temperatures of 40 deg F - 130 deg F and shall provide +/-0.5% accuracy at 24 Vac and 5 VA load.
3. Windings (except for terminals) shall be completely enclosed with metal or plastic.

2.13 CONTROL PANELS

A. Local Control Panels: Unitized cabinet with suitable brackets for wall or floor mounting, located adjacent to each system under automatic control. Provide common keying for all panels.

1. Fabricate panels of 0.06-inch-thick, furniture-quality steel, or extruded-aluminum alloy, totally enclosed, with hinged doors and keyed lock, with manufacturer's standard shop-painted finish and color.
2. Panel-Mounted Equipment: Temperature relays, and automatic switches; except safety devices.
3. Provide clear plastic pocket bonded to door and copies of as-built control diagrams, wiring diagrams, and sequences of operation enclosed inside pocket

PART 3 - EXECUTION

3.1 GENERAL

A. The BMS shall be designed, installed, and commissioned in a turnkey operational manner; including all labor not noted in Work by Others paragraph of PART 1 of this section of these specifications, and not noted in other sections of these specifications.

3.2 EXAMINATION

A. Verify that conditioned power supply is available to control units and operator workstation. Verify that field end devices, wiring, and communication network are installed before proceeding with installation. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 DATA CONTROL (D/C) AND GRAPHICS SUMMARY

A. All hardware, custom software, application software, graphics, etc., necessary to accomplish the control sequences and display the graphics specified shall be provided as part of this contract. Provide all controllers, inputs, outputs, valves, dampers, actuators and flow meters required to provide the control and graphic data described. Provide software set points required for display in logical groups and graphics.

B. Each digital output shall have a software-associated monitored input. Any time the monitored input does not track its associated command output within a programmable time interval, a "command failed" alarm shall be reported.

C. Where calculated points (such as CFM) are shown, they shall appear in their respective logical groups.

D. Unless otherwise specified or approved prior to bidding, the primary analog input and the analog output of each DDC loop shall be resident in a single remote panel containing the DDC algorithm and shall function independent of any primary or DEC communication links. Secondary (reset type) analog inputs may be received from the primary network, but approved default values and/or procedures shall be substituted in the DDC algorithm for this secondary input if network communications fail or if the secondary input becomes erroneous or invalid.

E. The graphics shall be displayed on workstations.

3.4 DATA ENTRY

A. Perform all data entry into the Building Management System, in consultation with the Owner. The following data shall be reviewed with the Owner and specific information developed as a prerequisite to data entry.

1. Occupancy Schedules.
2. Alarm Limits (high, low and critical).
3. All temperature setpoints for occupied and unoccupied times.
4. Passwords and priority levels.
5. Alarm and maintenance messages.
6. All input and output point names and symbols, including specific names indicated in this specification section.

B. As needed, changes in the programming shall be performed by the Specialist using dial-up telephone access.

3.5 INSTALLATION

A. All wiring shall be properly supported and run in a neat and workmanlike manner. All wiring exposed and in equipment rooms shall run parallel to or at right angles to the building structure. All wiring within enclosures shall be neatly bundled and anchored to prevent obstruction to devices and terminals. All wiring shall be in accordance with all local and national codes. All line voltage wiring, all wiring exposed, and all wiring in equipment rooms shall be installed in conduit in accordance to the electrical specifications. All electronic wiring shall be #18 AWG minimum THHN and shielded if required, except standard network (Ethernet, Eschelon, etc.) cabling shall be as tested and recommended.

B. Communication network shall be an overall shielded cable to prevent electrical noise from interfering with data transmission. All network cable splices shall be at controller locations. Splices elsewhere in the communication network are not acceptable.

C. Enter all computer data into the related computers including all graphics, control programs and initial approved parameters and settings, and English descriptors. Maintain USB drive copies of all data file and application software for reload use in the event of a system crash or

memory failure including an untranslated copy (2nd copy provided to Owner). One copy shall be delivered to the Owner during training sessions, and one copy shall be archived in the BMS Specialist's local software vault.

D. Install equipment as indicated to comply with manufacturer's written instructions.

E. Verify location of space sensors, thermostats, and other exposed control sensors with plans and room details before installation. Locate concealed type space sensors 60 inches above floor, otherwise, 48 inches above floor from center of highest operable adjustment control in accordance to ADA requirements. Space mounted devices are to be identical in appearance. All devices shall be mounted under the same style cover.

F. Install labels and nameplates to identify control components according to Division 23 Sections specifying mechanical identification.

G. Install controls so that adjustments and calibrations can be readily made. Controls are to be installed by the control equipment manufacturer.

H. Provide all relays, switches, sources of electricity and all other auxiliaries, accessories and connections necessary to make a complete operable system in accordance with the sequences specified.

I. Patch all ductwork and floor penetrations resulting in either equipment removal or new work. Patch to match existing materials and finishes.

J. Install labels and nameplates to identify control components according to applicable Division 23 Sections specifying mechanical identification.

K. Install control valves horizontally with the power unit up.

L. General System Requirements:

1. Time of Day Scheduling

    a. The Building Management System (BMS) shall be programmed to start and stop the HVAC equipment based on occupancy schedules coordinated with the Owner. The BMS shall also provide equipment interlocks as required.

2. All safeties shall be automatically and remotely reset from BMS.
3. All setpoints shall be adjustable from BMS console via single point commands.
4. All reset schedule parameters shall be adjustable from BMS console via single point commands.

3.6 ELECTRICAL WIRING AND CONNECTIONS

A. Install raceways, boxes, and cabinets according to applicable Division 26 Section.

B. Install building wire and cable according to applicable Division 26 Section.

C. Install signal and communication cable according to BMS manufacturer's written instructions.

1. Conceal cable, except in mechanical rooms and areas where other conduit and piping are exposed.
2. Install exposed cable in raceway.
3. Install concealed cable in raceway.
4. Bundle and harness multiconductor instrument cable in place of single cables where a number of cables follow a common path.
5. Fasten flexible conductors, bridging cabinets and doors, neatly along hinge side; protect against abrasion. Tie and support conductors neatly.
6. Number-code or color-code conductors, except local individual room controls, for future identification and servicing of control system.

D. Connect electrical components to wiring systems and to ground as indicated and instructed by manufacturer. Tighten connectors and terminals, including screws and bolts, according to equipment manufacturer's published torque-tightening values for equipment connectors. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals according to tightening requirements specified in UL 486A.

E. Connect manual reset limit controls independent of manual control switch positions. Automatic duct heater resets may be connected in interlock circuit of power controllers.

F. Connect HAND-OFF-AUTO selector switches to override automatic interlock controls when switch is in HAND position.

G. Provide and install low voltage transformers connected to spare circuits in electrical panels. Install power wiring from spare breaker to transformer. Run all low voltage control wiring.

H. Provide 120V power to all ATC panels not shown on the Electrical Documents, required by the ATC system.

3.7 START-UP

A. Manufacturer's Field Services: Provide the services of a factory-authorized service representative to start control systems, load all software, configure network communications, inspect installation of HVAC equipment, obtain and coordinate third party controls, and provide a written report.

B. The BMS Specialist shall completely check out, calibrate and test all connected hardware and software to insure that the system performs in accordance with the approved specifications and sequences of operation approved.

C. Witnessed acceptance demonstration shall display and demonstrate each type of data entry to show site specific customizing capability; demonstrate parameter changes; execute digital and analog commands; and demonstrate DDC loop stability via trend of inputs and outputs, verify component's address and communication loop functions.

D. Test and adjust controls and safeties. Provide copies of alarm logs to verify alarm operation.

E. Replace damaged or malfunctioning controls and equipment.

F. Start, test, and adjust control systems. Provide programming of schedules and operating units after consultation with Owner's Representative and Building's Operating Personnel.

G. Demonstrate compliance with requirements.

H. Adjust, calibrate, and fine tune circuits and equipment to achieve sequence of operation specified.

I. Assist testing, balancing, and adjusting specialist as required.

3.8 ATC COMMISSIONING

A. Manufacturer's Field Services: Provide the services of a factory-authorized service representative to start control systems.

B. The ATC Specialist shall perform a commissioning procedure consisting of field I/O calibration and commissioning, system commissioning and integrated system program commissioning. Document all commissioning information on commissioning data sheets which shall be submitted to the engineer. The commissioning must be coordinated with the Owner to ensure systems are available when needed. Notify the Owner in writing of the testing schedule so that authorized personnel from the Owner are present throughout the commissioning procedure.

1. Field I/O Calibration and Commissioning: Prior to system program commissioning, verify that each control panel has been installed according to plans, specifications and approved shop drawings. Test, calibrate and bring on line each control sensor and device. Commissioning to include, but not limited to:

    a. Sensor accuracy at setpoint.
    b. Sensor range.
    c. Verify analog limit and binary alarm reporting.
    d. Point value reporting.
    e. Binary alarm and switch settings.
    f. Actuator and positioner spring ranges.
    g. Fail safe operation on loss of control signal, electric power, network communications, etc.

2. Record calibration and test data on commissioning data sheets. Sufficient space should be provided near each point name for sign off.
3. Comply with standards and documentation formats as indicated in ASHRAE Guidelines 1989 for commissioning of HVAC systems.
4. Submit completed (description filled-in) "Input/Output Summary Table" to Engineer as shown in ASHRAE Guidelines prior to commissioning for Engineer's review. Commissioning shall not start until Specialist receives approved data sheets from Engineer.

C. System Programming Commissioning:

1. After control devices have been commissioned (i.e. calibrated, tested and signed off), each DDC program shall be put on line and commissioned. The Specialist shall, in the presence of Owner personnel, demonstrate each programmed sequence of operation and compare the results in writing. In addition, each control loop shall be tested to verify proper response and stable control, within specified accuracy's. System program test results shall be recorded on commissioning data sheets and submitted for record. Any discrepancies between the specification and the actual performance will be immediately rectified and retested.

D. Integrated System Commissioning:

1. After all DDC programs have been commissioned, the Specialist shall verify the overall system performance as specified. Tests shall include, but not be limited to:

a. Data communication, both normal and failure modes.
b. Impact of component failures on system performance and system operation.
c. Time/Date changes.
d. Global application programs and point sharing.
e. System backup and reloading.
f. System status displays.
g. Diagnostic functions.
h. Power failure routines.
i. Battery backup.
j. Testing of all electrical and HVAC systems. Train Owner's maintenance personnel on procedures and schedules related to startup and shutdown, troubleshooting, servicing, and preventive maintenance.

3.9 INSTRUCTION OF OWNER'S PERSONNEL

A. Provide the services of controls manufacturer's authorized instructors who will give full instruction to designated personnel in the operation, maintenance and programming of the DDC system. Orient the training specifically to the system installed rather than a general training course. Instructors shall be thoroughly familiar with the subject matter they are to teach. A minimum of sixteen (16) hours of training shall be provided. One (1) eight (8) hour training session shall be conducted at system completion, and the other one (1) eight (8) hour session shall be conducted within forty-five (45) days after system completion.

B. Training on the functional operation of the system shall include.

1. Operation of equipment.
2. Programming.
3. Diagnostics.
4. Failure recovery procedures.
5. Alarm formats (where applicable).
6. Modifying text and graphics.
7. Password assignment and modifications

8. Report eventing and modification.
9. Sequence of Operation review.
10. Use of operators' terminals.
11. Maintenance and calibration.
12. Trouble shooting, diagnostics, and repair instructions.

C. Provide an additional eight (8) hours of programming time for Owner requirements and sequencing refinement. During the first year of operation, trends and equipment operations reports are to be used as a tool in determining actual operating characteristics of the building which will allow setpoint adjustments and modification of software programming to adapt to the building's operating parameters.

END OF SECTION 230923

SECTION 05300 - METAL DECKING

PART 1 - GENERAL

1.1 SUMMARY

A. Extent of metal decking is indicated on Drawings, including basic layout and type of deck units required.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's specifications and installation instructions for each type of decking and accessories. Include manufacturer's certification as may be required to show compliance with these specifications.

B. Shop Drawings: Submit detailed drawings showing layout and types of deck panels, anchorage details and conditions requiring closure panels, pour stops, supplementary framing, or other accessories.

1.3 QUALITY ASSURANCE

A. Code and Standards: Comply with provisions of the following codes and standards, except as otherwise indicated or specified:

1. AISI "Specification for the Design of Cold-Formed Steel Structural Members - Allowable Stress Design".

2. AWS D1.3 "Structural Welding Code - Sheet Steel".

3. SDI "Design Manual for Floor Decks and Roof Decks"

B. Qualification of Field Welding: Qualify welding processes and welding operators in accordance with "Welder Qualification" procedures of AWS D1.1.

C. Welded decking in place is subject to inspection and testing. Expense of removing and replacing portions of decking for testing purposes will be borne by Owner if welds are found to be satisfactory. Remove work found to be defective and replace with new acceptable work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

1. Metal Roof Deck Units: United Steel Deck, Inc.
2. Composite Metal Floor Deck Units: United Steel Deck, Inc.
3. Or approved equal.

2.2 MATERIALS

A. Steel for Galvanized Metal Deck Units: ASTM A 446, Grade A.

B. Sheet Metal Accessories: ASTM A 526, commercial quality, galvanized.

C. Galvanizing: ASTM A 525, G60.

D. Galvanizing Repair Paint: High zinc-dust content paint for repair of damaged galvanized surfaces complying with Military Specifications MIL-P-21035 (Ships).

E. Flexible Closure Strips: Manufacturer's standard vulcanized, closed-cell, synthetic rubber.

2.3 FABRICATION

A. General: Form deck units in lengths to span three (3)or more supports, with flush, telescoped or nested 2" laps at ends and interlocking or nested side laps, unless otherwise indicated.

B. Deck Units: Provide deck configurations complying with SDI and AISI "Deck Specifications" of metal thickness, depth and width as shown.

C. Pour Stops: Fabricate metal pour stops, to form all edges of concrete slabs, of a minimum thickness not less than 0.045" (18 gage) sheet steel. Form to provide tight closure to full height of concrete slab.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install deck units and accessories in accordance with manufacturer's recommendations and final shop drawings, and as specified herein.

B. Place deck units on supporting steel framework and adjust to final position with ends accurately aligned and bearing on supporting members before being permanently fastened. Do not stretch or contract side lap interlocks.

C. Place deck units in straight alignment for entire length of run of cells and with close alignment between cells at ends of abutting units.

D. Place deck units flat and square, secured to adjacent framing without warp or excessive deflection.

E. Coordinate and cooperate with Contractor in locating decking bundles to prevent overloading of structural members.

F. Fastening Deck Units:

1. Fasten deck units to steel supporting members by not less than 5/8" diameter fusion welds or elongated welds of equal strength, spaced not more than 12" o.c. In addition, secure deck to each supporting member in ribs where side laps occur.

G. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds methods used in correcting welding work.

H. Cutting and Fitting: Cut and neatly fit deck units and accessories around other work projecting through or adjacent to the decking, as shown.

I. Mechanically fasten side laps of adjacent deck units between supports, at intervals not exceeding 36" o.c. using self-tapping No. 8 or larger machine screws, unless a closer spacing or a larger screw is called for on the drawing.

J. Joint Covers: Provide metal joint covers at abutting ends and changes in direction of floor deck units, except where taped joints are required.

J. Touch-Up Painting: After deck installation, wire brush, clean and paint scarred areas, welds and rust spots on top and bottom surfaces of decking units and supporting steel members.

1. Touch-up galvanized surfaces with galvanizing repair paint applied in accordance with manufacturer's instructions.

2. Touch-up painted surface with same type of shop paint used on adjacent surfaces.

K. In areas where shop-painted surfaces are to be exposed, apply touch-up paint to blend into adjacent surfaces.

L. Touch-Up Painting: Cleaning and touch-up painting of field welds, abraded areas and rust spots, as required after erection and before proceeding with field painting, is included in Division 9 under Painting.

M. Pour Stops: Weld continuous pour stops to supporting decking units or structural steel supports with a minimum 1" long weld at 12" on center. Install pour stop with a minimum of 2" of bearing on supports.

3.2 QUALITY CONTROL

A. The Contractor will employ a testing laboratory satisfactory to the Architect to perform the following tests and to submit testing and inspection reports.

1. Welding: Inspect welding to determine if welds are at proper locations, are proper size and material, and meet AWS standards.

2. Sidelap Connections: Inspect sidelap connections to determine if the connections are in accordance with Bid Documents.

END OF SECTION 05300

SECTION 08700 - FINISH HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Sliding doors.
3. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Cylinders specified for doors in other sections.

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. State Building Codes, Local Amendments.

D. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:

1. ANSI/BHMA Certified Product Standards - A156 Series.
2. UL10C - Positive Pressure Fire Tests of Door Assemblies.
3. ANSI/UL 294 - Access Control System Units.
4. UL 305 - Panic Hardware.
5. ANSI/UL 437- Key Locks.

1.3 SUBMITTALS

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

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
3. Content: Include the following information:

    a. Type, style, function, size, label, hand, and finish of each door hardware item.
    b. Manufacturer of each item.
    c. Fastenings and other pertinent information.
    d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
    e. Explanation of abbreviations, symbols, and codes contained in schedule.
    f. Mounting locations for door hardware.
    g. Door and frame sizes and materials.
    h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

D. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

1.4 CLOSEOUT SUBMITTALS

A. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.

B. Project Record Documents: Provide record documentation of as-built door hardware sets in digital format (.pdf, .docx, .xlsx, .csv) and as required in Division 01, Project Record Documents.

1.5 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).

C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.

F. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.

G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.
2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

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

1.6 DELIVERY, STORAGE AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.7 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.8 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Warranty Period: Unless otherwise indicated, warranty shall be **one (1) year** from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 BUTT HINGES

A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity:

   a. Two Hinges: For doors with heights up to 60 inches.
   b. Three Hinges: For doors with heights 61 to 90 inches.
   c. Four Hinges: For doors with heights 91 to 120 inches.
   d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

   a. Widths up to 3’0”: 4-1/2” standard or heavy weight as specified.
   b. Sizes from 3’1” to 4’0”: 5” standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

   a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
   b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following:

   a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for all out-swinging lockable doors.

5. Manufacturers:

a. McKinney (MK) - TA/T4A Series, 5-knuckle.
b. Hager Companies (HA) - BB Series, 5-knuckle.
c. dormakaba BEST (ST) - F/FBB Series, 5-knuckle.
d. Or Approved Equal

2.2 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: Provide products conforming to ANSI/BHMA A156.3 and A156.16, Grade 1.

1. Flush bolts to be furnished with top rod of sufficient length to allow bolt retraction device location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8″ in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
5. Manufacturers:

a. Rockwood (RO).
b. Burns Manufacturing (BU).
c. Hiawatha, Inc. (HI).
d. Or Approved Equal

B. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Pulls, where applicable, shall be provided with a 10″ clearance from the finished floor on the push side to accommodate wheelchair accessibility.
5. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets. When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
6. Manufacturers:

a. Rockwood (RO).
b. Or approved equal

2.3 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years' experience designing secured master key systems and have on record a published security keying system policy.

1. Manufacturers:

a. Match Existing, Field Verify.

B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:

1. Threaded mortise cylinders with rings and cams to suit hardware application.
2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
4. Tubular deadlocks and other auxiliary locks.
5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
6. Keyway: Manufacturer's Standard.

C. Keying System: Each type of lock and cylinders to be factory keyed.

1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Field verify and key cylinders to match Owner's existing system.

D. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).

E. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.4 MECHANICAL LOCKS AND LATCHING DEVICES

A. Cylindrical Locksets, Grade 1 (Heavy Duty): Provide ANSI/BHMA A156.2, Series 4000, Grade 1 Certified Products Directory (CPD). Listed manufacturer shall meet all functions and features as specified herein.

1. Manufacturer:

a. BEST (BE) – 9K Series.

2.5 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.36.
4. Dustproof Strikes: BHMA A156.16.

2.6 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. Exit devices shall have a **five (5) year** warranty.
2. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
3. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer’s catalog and template book for specific requirements.
4. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
5. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

    a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
    b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

7. Vertical Rod Exit Devices: Where surface or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise

indicated. Provide dust proof strikes where thermal pins are required to project into the floor.

8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed exit devices. Listed manufacturers shall meet all functions and features as specified herein.

1. Provide exit devices with functions and features as follows:

   a. Where required by code, provide knurling or abrasive coating on all levers leading to hazardous areas.
   b. Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
   c. No catch points: addition of applied deflectors or other added components are not allowed.
   d. No visible plastic.
   e. Heavy duty end caps with flush and overlapping options made of stainless steel, brass, or bronze with architectural finishes.
   f. Constructed of all stainless steel.
   g. Stainless steel pullman type latch with deadlock feature.
   h. Narrow or wide style exterior trim as specified in the hardware sets.
   i. Center case adjustability on concealed vertical rod exit devices; single operation with hex key individually adjusts top or bottom latches. No retainer screws or clips required to maintain adjustment.
   j. **Ten (10) year** limited warranty for mechanical features.

2. Manufacturers:

   a. Corbin Russwin Hardware (RU) - PED4000 / PED5000 Series.
   b. Sargent Manufacturing (SA) - PE80 Series.
   c. Or Approved Equal

2.7 SURFACE DOOR CLOSERS

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

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.

4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Heavy duty surface mounted door closers shall have a **thirty (30) year** warranty.

2. Manufacturers:

a. Norton Rixson (NO) - 7500 Series.
b. ASSA ABLOY ACCENTRA, formerly known as Yale (YA) - 4400 Series.
c. Sargent Manufacturing (SA) - 351 Series.
d. Or Approved Equal

2.8 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:

a. Stainless Steel: 300 grade, 050-inch thick.

5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
6. Manufacturers:

a. Rockwood (RO).

b. Burns Manufacturing (BU).
c. Hiawatha, Inc. (HI).
d. Or Approved Equla

2.9 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Manufacturers:

a. Rockwood (RO).
b. Hiawatha, Inc. (HI).
c. Trimco (TC).
d. Or Approved Equal

2.10 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Manufacturers:

1. Pemko (PE).
2. National Guard Products (NG).
3. Reese Enterprises, Inc. (RE).
4. Or Approved Equal

2.11 FABRICATION

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

2.12 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware

C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Push Plates and Door Pulls: When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.

E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 ADJUSTING

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

3.5 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.6 DEMONSTRATION

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

3.7 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door.
2. The supplier is responsible for handing and sizing all products.
3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.
4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.

1. MK - McKinney
2. RO - Rockwood
3. SA - SARGENT
4. OT - Other
5. NO - Norton
6. PE - Pemko
7. BE - BEST

Hardware Sets

Set: 1.0
Doors: DE-001, DE-002

6	Hinge (heavy weight)	T4A3786	US26D	MK
1	Mortise Exit Device	LC 12 V01 PE8916 WEL	US32D	SA
1	Surface Vert Rod Exit, Exit Only	12 PE8710 EO	US32D	SA
1	Mortise Cylinder	- Match Owner's existing key system	626	OT
1	Thumb turn Cylinder	127-XX Type	626	SA
1	Surface Closer	CPS7500	689	NO
1	Surface Closer	PR7500	689	NO
2	Kick Plate	K1050 10" high CSK BEV	US32D	RO
1	Wall Stop	406 / 409	US32D	RO
1	Astragal	S772C		PE
1	Gasketing	S88BL		PE

Set: 2.0
Doors: PK-1B, PK-2B

3	Hinge	TA2714	US26D	MK
1	Storeroom/Closet Cylindrical Lock	9K3-7D15D	US26D	BE
1	Mortise Cylinder	- Match Owner's existing key system	626	OT
1	Wall Stop	406 / 409	US32D	RO
3	Silencer	608 / 609		RO

Set: 3.0
Doors: PK-P1B

3	Hinge	TA2714	US26D	MK
1	Storeroom/Closet Lock	9K3-7D15D	US26D	BE
1	Mortise Cylinder	- Match Owner's existing key system	626	OT
1	Surface Closer	PR7500	689	NO
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO
1	Wall Stop	406 / 409	US32D	RO
3	Silencer	608 / 609		RO

Set: 4.0
Doors: PK-P3B

3	Hinge	TA2714	US26D	MK
1	Office	9K3-7AB15D	US26D	BE
1	Mortise Cylinder	- Match Owner's existing key system	626	OT
1	Surface Closer	CPS7500	689	NO
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO
3	Silencer	608 / 609		RO

Set: 5.0
Doors: PK-1A, PK-2A, PK-P1A, PK-P2A, PK-P3A1

4	Hinge	TA2714	US26D	MK
1	Surface Bolt	580-8	US26D	RO
1	Passage Latch	9K3-0N15D	US26D	BE
1	Wall Stop	406 / 409	US32D	RO
1	Door Stop & Holder	494-RKW	US26D	RO
3	Silencer	608 / 609		RO

Set: 6.0
Doors: PK-P3A2

3	Hinge	TA2714	US26D	MK
1	Asylum/Inst.Cylindrical Lock	9K3-7W15D	US26D	BE
2	Mortise Cylinder	- Match Owner's existing key system	626	OT
1	Wall Stop	406 / 409	US32D	RO
3	Silencer	608 / 609		RO

Set: 7.0
Doors: TR-1A, TR-1B

3	Hinge, Full Mortise	TA2714	US26D	MK
1	Hotel Lock	45H-7H15H VIB	US26D	BE
1	Surface Closer	7500 - pull side mount	689	NO
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO
1	Wall Stop	406 / 409	US32D	RO
1	Gasketing	S88BL		PE

Set: 8.0
Doors: MC-1, PK-1, PK-P1, PK-P2, PK-P3

3	Hinge (heavy weight)	T4A3786	US26D	MK
1	Office/Entry Cylindrical Lock	9K3-7AB15D (No Indicator)	US26D	BE
1	Mortise Cylinder	- Match Owner's existing key system	626	OT
1	Surface Closer	PR7500	689	NO
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO
1	Wall Stop	406 / 409	US32D	RO
1	Gasketing	S88BL		PE

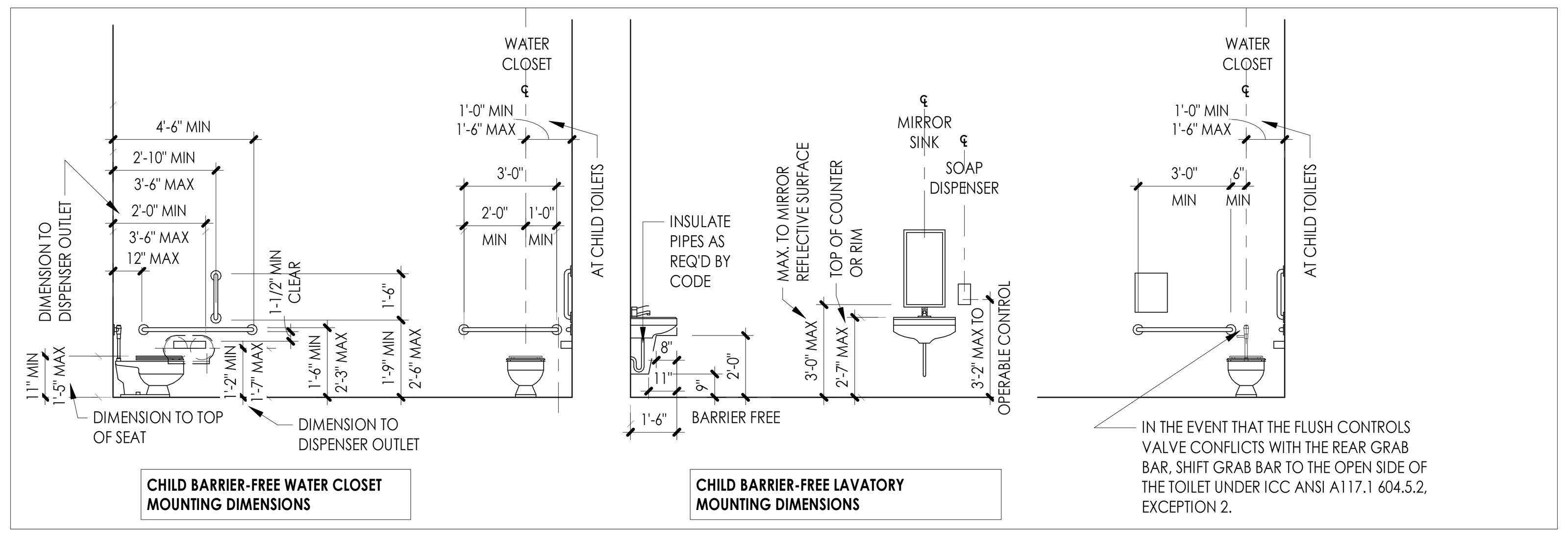
Set: 9.0
Doors: PK-2

3	Hinge (heavy weight)	T4A3786	US26D	MK
1	Office/Entry Cylindrical Lock	9K3-7AB15D (No Indicator)	US26D	BE
1	Mortise Cylinder	- Match Owner's existing key system	626	OT
1	Surface Closer	PR7500	689	NO
1	Kick Plate	K1050 10" high CSK BEV	US32D	RO
1	Wall Stop	406 / 409	US32D	RO
1	Gasketing	S88BL		PE

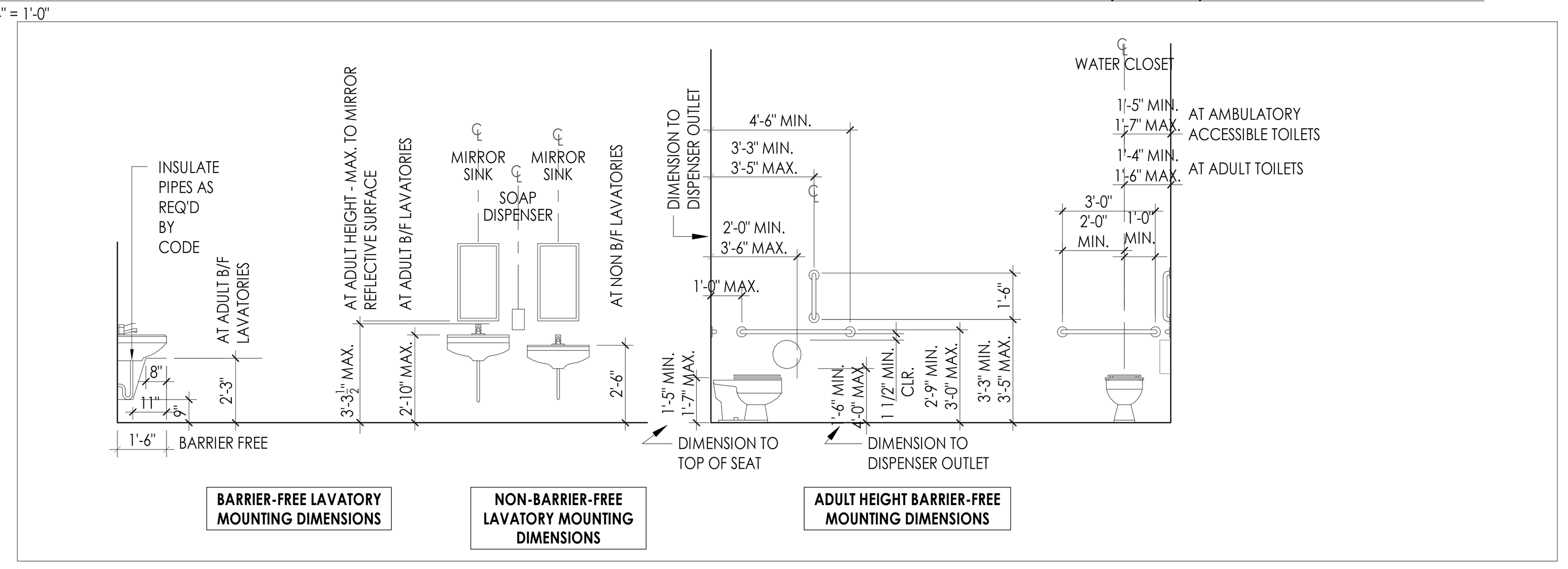
Notes:

*****FIELD VERIFY SPECIFIED HARDWARE IS COMPATIBLE WITH EXISTING CONDITIONS******

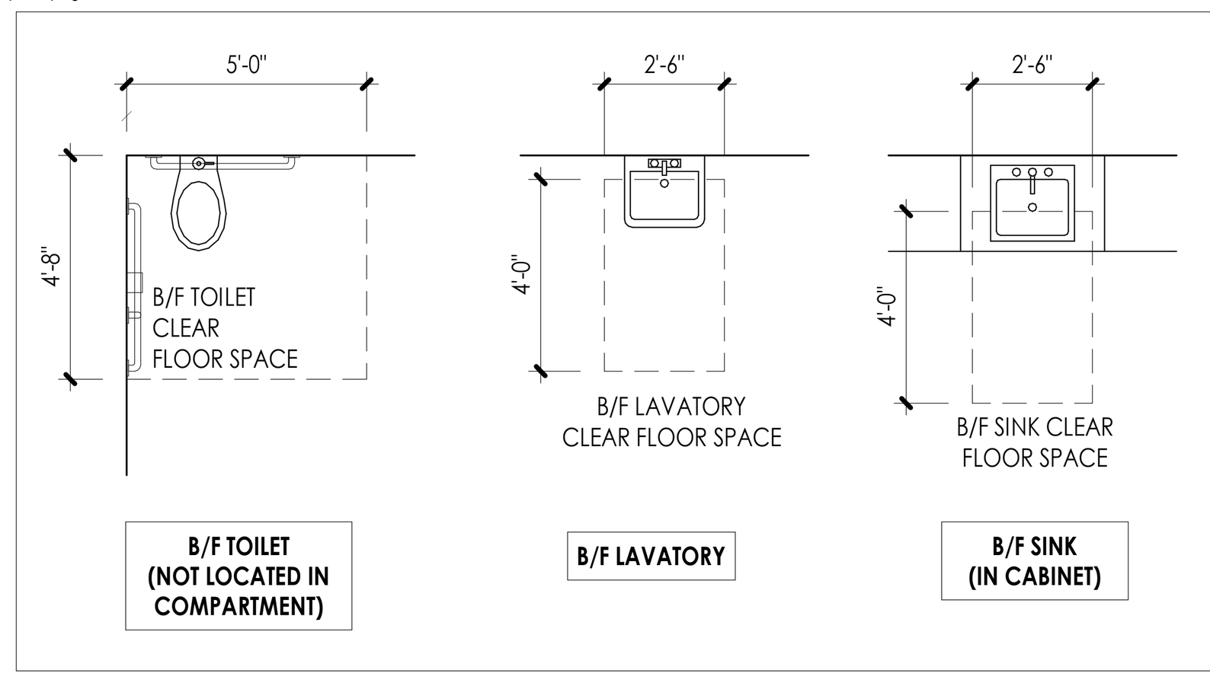
END OF SECTION 08700



1 TYPICAL TOILET ROOM FIXTURE/ ACCESSORY MOUNTING HEIGHTS AND CLEARANCES (CHILD)
1/4" = 1'-0"

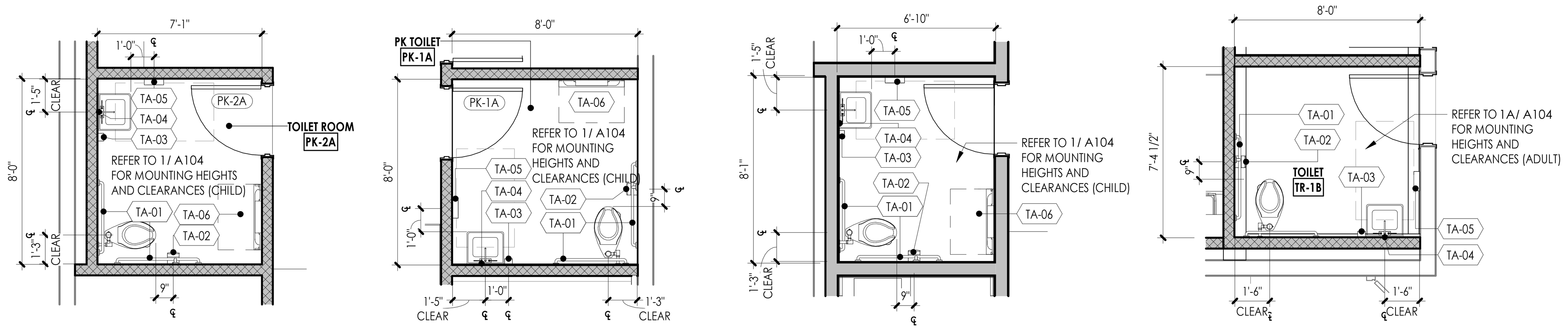


1A TYPICAL TOILET ROOM FIXTURE/ ACCESSORY MOUNTING HEIGHTS AND CLEARANCES (ADULT)
1/4" = 1'-0"



NOTES:
1. DIMENSIONS SHALL BE NET CLEAR DISTANCES MEASURED TO WALL FINISHES (EG CERAMIC OR PORCELAIN TILE), TO FACE OF TOILET PARTITIONS AND TO EDGES OF ADJACENT FIXTURES, CABINETS, ETC.
2. ALL DIMENSIONS ARE MINIMUM UNLESS NOTED OTHERWISE.
3. INSTALLATIONS SHALL COMPLY WITH ALL PROVISIONS OF ICC-ANSI A117 . 1 - 2017, INCLUDING BUT NOT LIMITED TO:
   3.1. SECTION 602 (DRINKING FOUNTAINS)
   3.2. SECTION 603 (TOILET AND BATHING ROOMS)
   3.3. SECTION 604 (WATER CLOSETS AND TOILET COMPARTMENTS)
   3.4. SECTION 605 (URINALS)
   3.5. SECTION 606 (LAVATORIES AND SINKS)
   3.6. SECTION 608 (SHOWER COMPARTMENTS)
   3.7. SECTION 609 (GRAB BARS)
   3.8. SECTION 610 (SEATS)
4. CLEAR FLOOR SPACES MAY OVERLAP WHERE SPECIFICALLY PERMITTED IN ICC-ANSI A117 . 1 - 2017 CHAPTER 6.

2 STANDARD PLUMBING FIXTURE AND ACCESSORY MOUNTING HEIGHTS
1/4" = 1'-0"



3 ENLARGED TOILET PLAN PK-2A
1/4" = 1'-0"

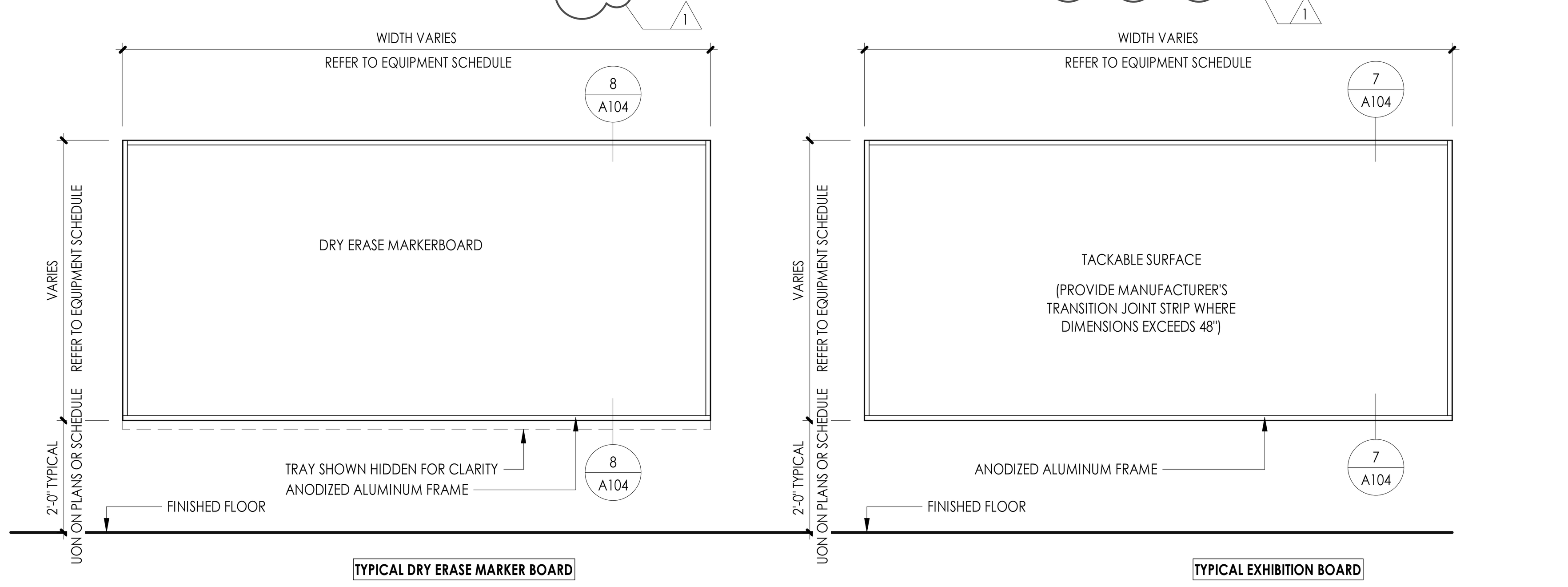
4 ENLARGED TOILET PLAN PK-1A
1/4" = 1'-0"

5 TYP. TOILET PLAN (PK-P1A, PK-P2A, PK-P3A)
1/4" = 1'-0"

6 TYP. TOILET PLAN (TR-1A, TR-1B)
1/4" = 1'-0"

TOILET ACCESSORY LEGEND

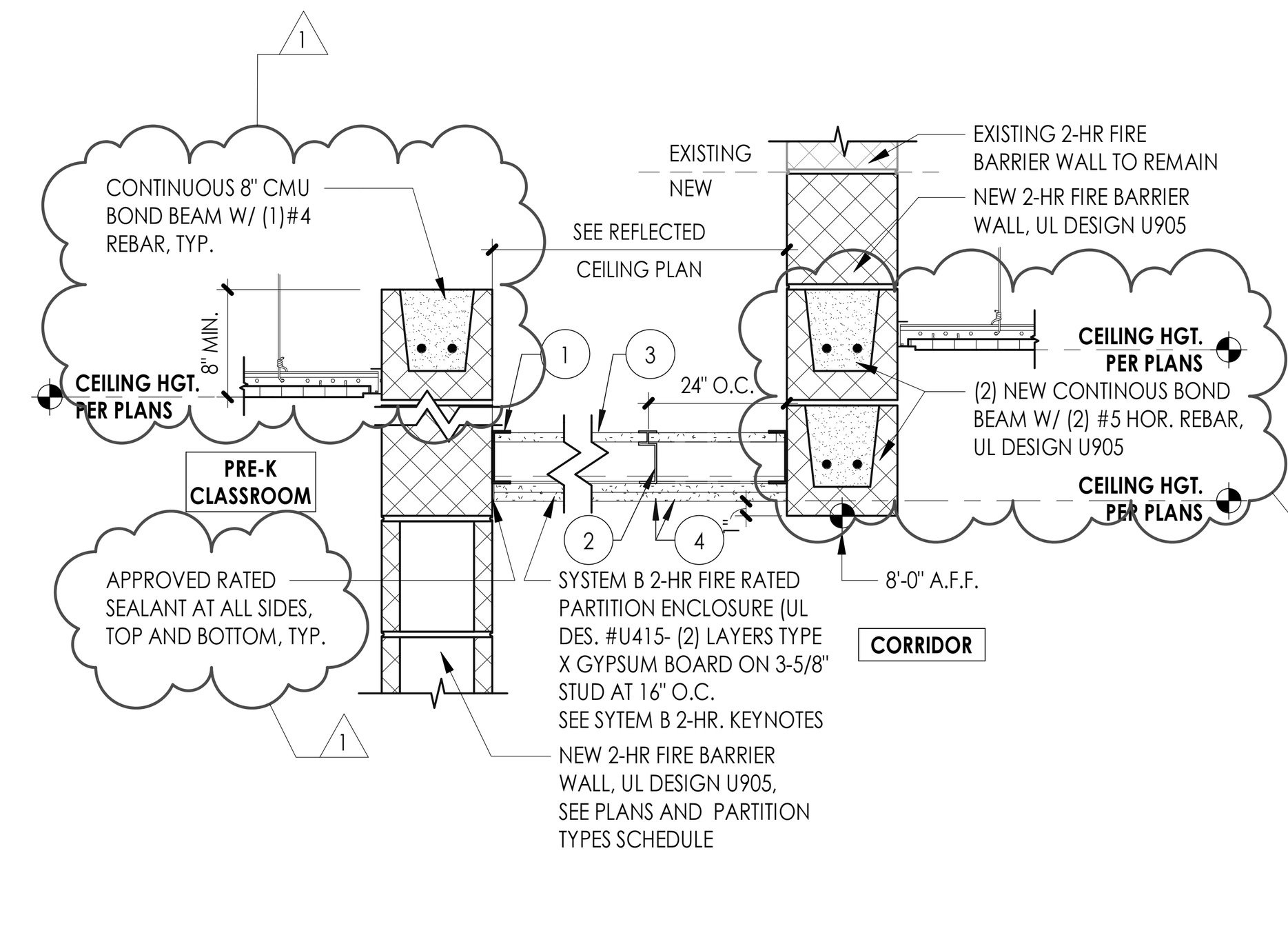
MARK	DESCRIPTION	MOUNTING TYPE	MANUF.	MODEL #	FURNISHED BY	INSTALLED BY	COMMENTS
TA-01	ADA GRAB BARS (COMBINATION)	WALL MOUNT	BRADLEY OR APPROVED EQUAL	8122-001420 (42"), 001360 (36"), 001180 (18")	CONTRACTOR	CONTRACTOR	MOUNTING HEIGHT VARIES
TA-02	TOILET PAPER DISPENSER	WALL MOUNT	BRADLEY OR APPROVED EQUAL	5224	OWNER	CONTRACTOR	MOUNTING HEIGHT VARIES
TA-03	SOAP DISPENSER	SURFACE	BRADLEY OR APPROVED EQUAL	6562	OWNER	CONTRACTOR	MOUNTING HEIGHT VARIES
TA-04	LAVATORY MIRROR	SURFACE	BRADLEY OR APPROVED EQUAL	781-1830 BRADEX	CONTRACTOR	CONTRACTOR	MOUNTING HEIGHT VARIES
TA-05	PAPER TOWEL DISPENSER	WALL MOUNT	BRADLEY OR APPROVED EQUAL	250-15	OWNER	CONTRACTOR	MOUNTING HEIGHT VARIES
TA-06	DIAPER CHANGING STATION	WALL MOUNT	KOALA KARE OR APPROVED EQUAL	KB300-00	CONTRACTOR	CONTRACTOR	REFER TO SPECIFICATIONS



9 DRY MARKERBOARD AND EXHIBITION BOARD MOUNTING HEIGHTS
1/2" = 1'-0"

EQUIPMENT SCHEDULE

TYPE MARK	DESCRIPTION	MOUNTING TYPE	MANUFACTURER	MODEL #	RESPONSIBILITY MATRIX: FURNISHED BY CONTRACTOR	FURNISHED BY OWNER	INSTALLED BY CONTRACTOR	INSTALLED BY OWNER	COMMENTS
DMB-3A	DRY ERASE MARKERBOARD 120"W x 54"H	WALL MOUNT	CLARIDGE OR APPROVED EQUAL	REFER TO SPECIFICATIONS	X		X		INSTALL AT 30" AFF
DMB-4	DRY ERASE MARKERBOARD 144"W x 60"H	WALL MOUNT	CLARIDGE OR APPROVED EQUAL	REFER TO SPECIFICATIONS	X		X		INSTALL AT 24" AFF
EB-1	EXHIBITION BOARD 60"W x 60"H	WALL MOUNT	CLARIDGE OR APPROVED EQUAL	REFER TO SPECIFICATIONS	X		X		INSTALL AT 24" AFF
EB-2	EXHIBITION BOARD 72"W x 60"H	WALL MOUNT	CLARIDGE OR APPROVED EQUAL	REFER TO SPECIFICATIONS	X		X		INSTALL AT 24" AFF
EB-3	EXHIBITION BOARD 120"W x 54"H	WALL MOUNT	CLARIDGE OR APPROVED EQUAL	REFER TO SPECIFICATIONS	X		X		INSTALL AT 30" AFF
SB-1	75" SMART SCREEN	WALL MOUNT	TBD	TBD		X		X	COORDINATE INSTALL WITH OWNER



17 BULKHEAD DETAIL AT 2-HR CORRIDOR FIRE BARRIER WALL
1" = 1'-0"

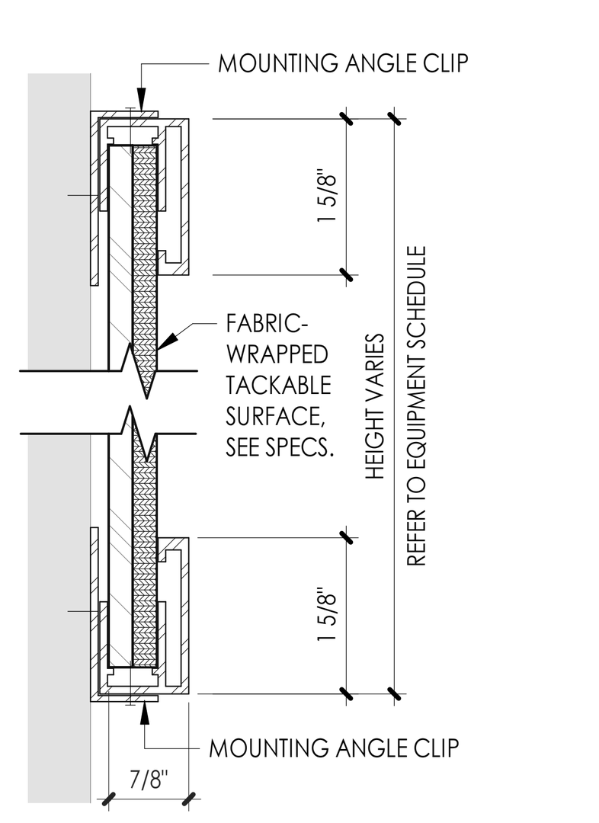
SYSTEM B- 2-HOUR KEYNOTES

1. **FLOOR, SIDE AND CEILING RUNNERS** - "J" - SHAPED RUNNER, MIN 2-1/2 IN. DEEP WITH UNEQUAL LEGS OF 1 IN. AND 2 IN., FABRICATED FROM MIN 24 MSG GALV STEEL. RUNNERS POSITIONED WITH SHORT LEG TOWARD FINISHED SIDE OF WALL. RUNNERS ATTACHED TO STRUCTURAL SUPPORTS WITH STEEL FASTENERS LOCATED NOT GREATER THAN 2 IN. FROM ENDS AND NOT GREATER THAN 24 IN.

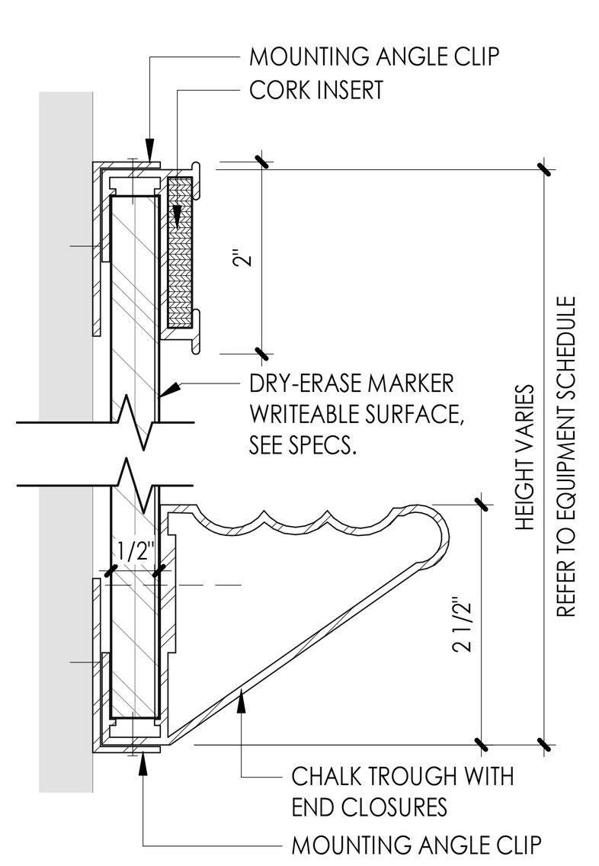
2. **STEEL STUDS** - "C.H" - SHAPED STUDS, MIN 2-1/2 IN. DEEP FABRICATED FROM MIN 25 MSG GALV STEEL.

3. **GYPSUM BOARD*** - GYPSUM LINER PANELS, MON 1 IN. THICK, 24 IN. OR 600 MM (FOR METRIC SPACING) WIDE. VERTICAL EDGES INSERTED IN "H" PORTION OF "C-H" STUDS. FREE EDGE OF END PANELS ATTACHED TO LONG LEG OF VERTICAL "J" - RUNNERS WITH 1-5/8 IN. LONG TYPE S STEEL SCREWS SPACED NOT GREATER THAN 12 IN. OC.

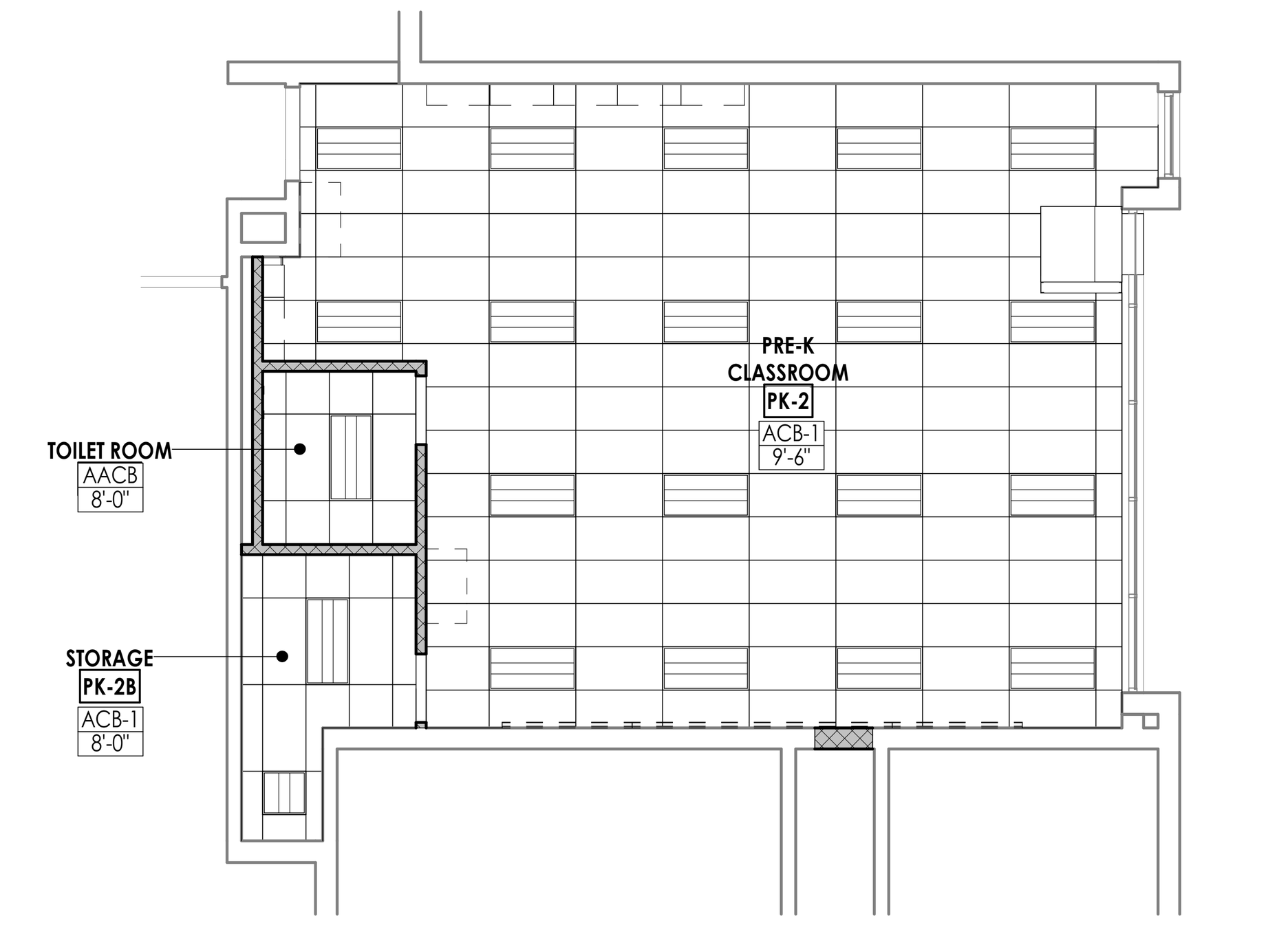
4. **GYPSUM BOARD*** - SYSTEM B - 2 HR. - GYPSUM PANELS, WITH BEVELED, SQUARE OR TAPERED EDGES, NOM 1/2 IN. OR 5/8 IN. THICK, 48 IN. OR 1200 MM WIDE, APPLIED VERTICALLY OR HORIZONTALLY IN TWO LAYERS. INNER OR BASE LAYER ATTACHED TO STUDS WITH 1 IN. LONG TYPE S STEEL SCREWS SPACED 24 IN. OC WHEN INSTALLED VERTICALLY OR 16 IN. OC WHEN INSTALLED HORIZONTALLY. OUTER OR FACE LAYER ATTACHED TO STUDS WITH 1-5/8 IN. LONG TYPE S STEEL SCREWS SPACED 12 IN. OC WHEN INSTALLED VERTICALLY AND STAGGERED 12 IN. FROM BASE LAYER SCREWS OR 8 IN. OC WHEN INSTALLED HORIZONTALLY AND STAGGERED 8 IN. FROM BASE LAYER SCREWS. HORIZONTAL JOINTS BETWEEN INNER AND OUTER LAYERS STAGGERED A MIN OF 12 IN. HORIZONTAL JOINTS NEED NOT BE BACKED BY STEEL FRAMING.VERTICAL JOINTS CENTERED OVER STUDS AND STAGGERED 24 IN.



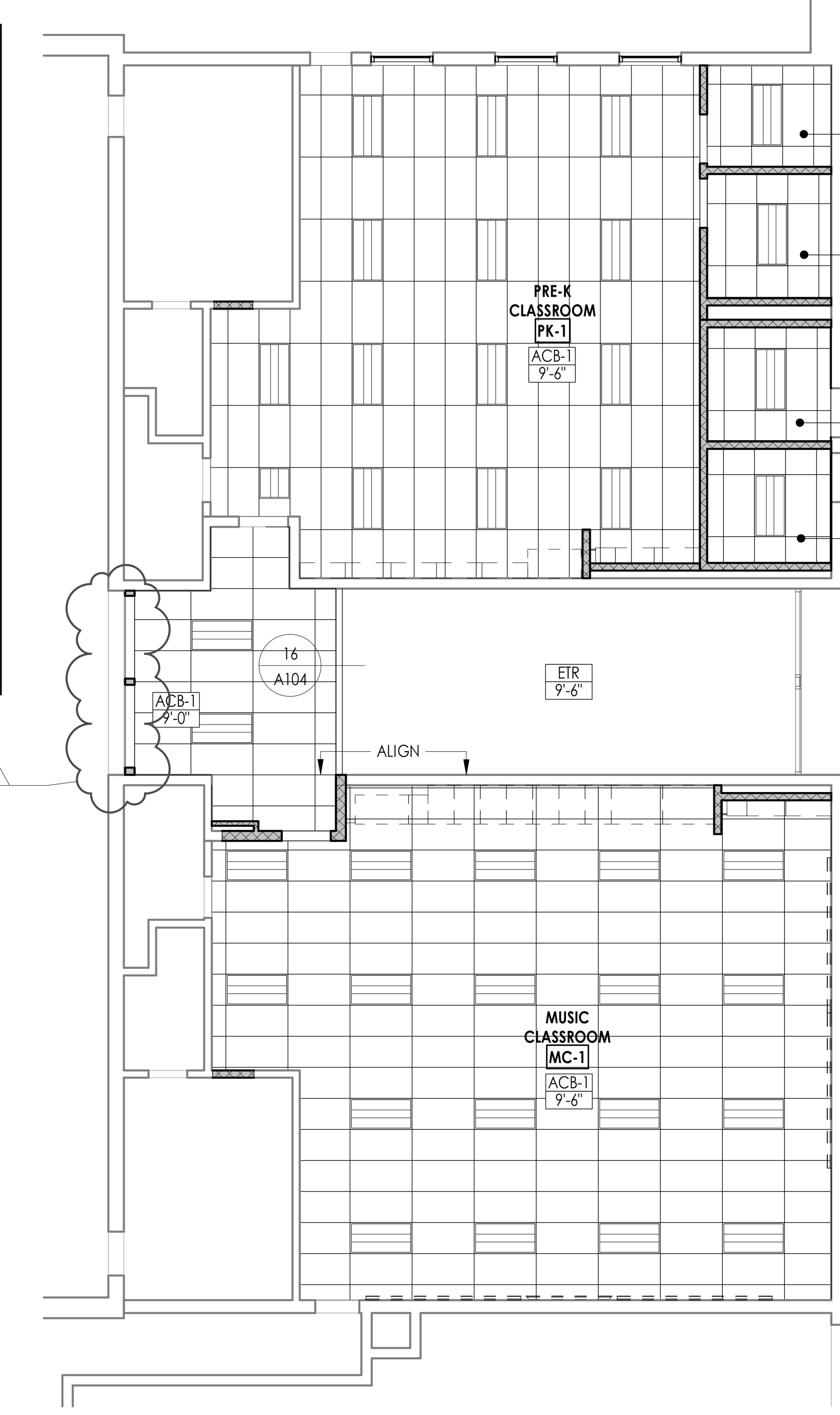
7 TYP. EXHIBITION BOARD SECTION
6" = 1'-0"



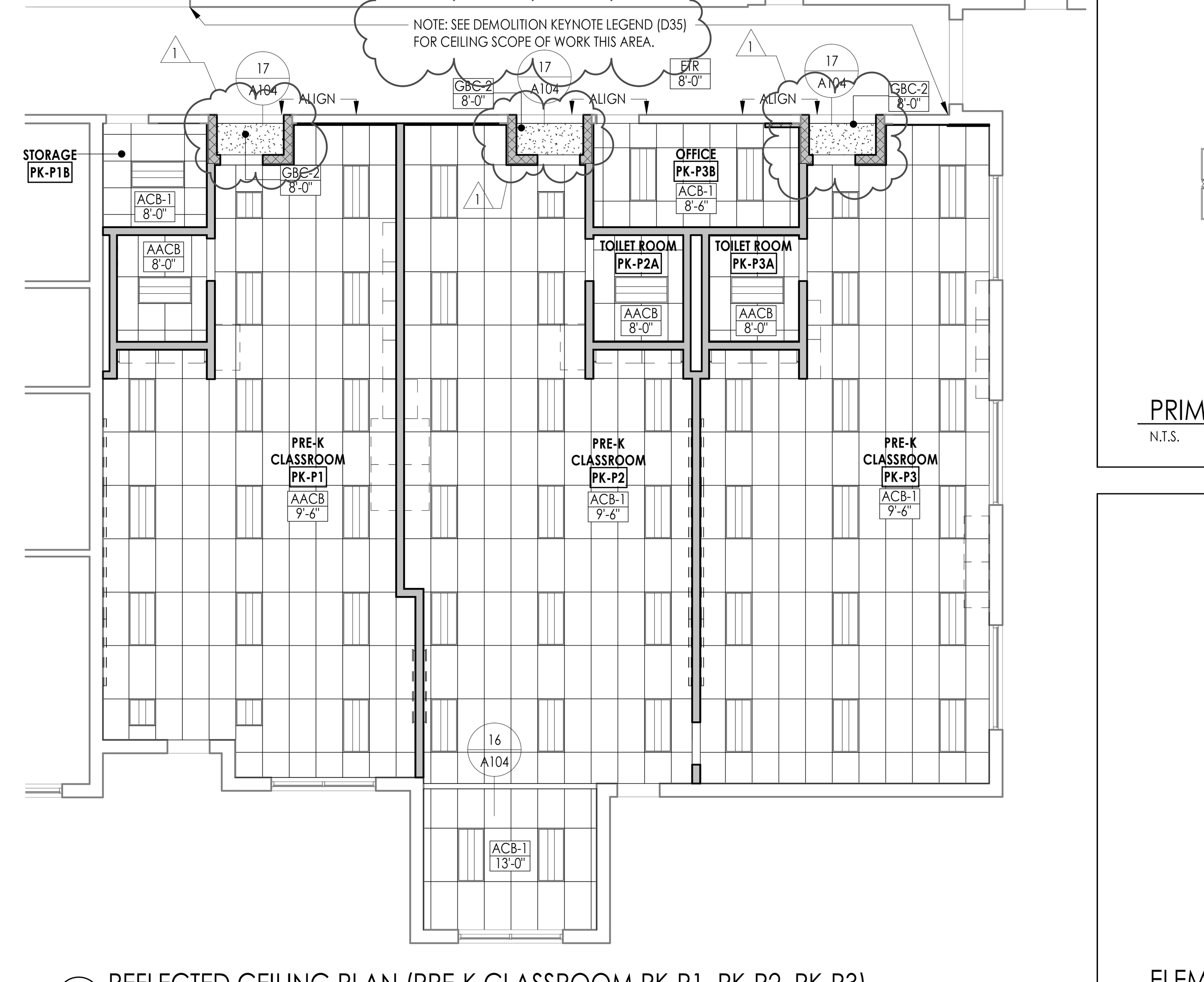
8 TYP. DRY MARKER BOARD SECTION
6" = 1'-0"



11 REFLECTED CEILING PLAN (PRE-K CLASSROOM PK-3)
1/8" = 1'-0"



10 REFLECTED CEILING PLAN (PRE-K CLASSROOM PK-1, MUSIC CLASSROOM MC-1)
1/8" = 1'-0"



12 REFLECTED CEILING PLAN (PRE-K CLASSROOM PK-P1, PK-P2, PK-P3)
1/8" = 1'-0"

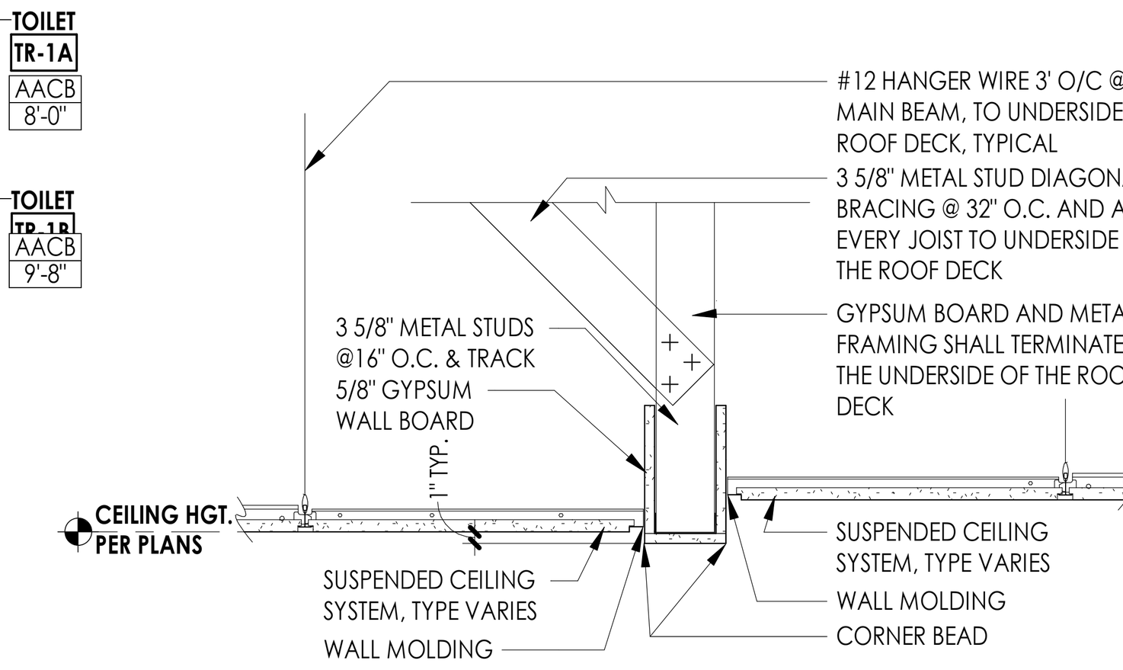
CEILING TYPE SCHEDULE

TYPE MARK	DESCRIPTION
AACB	ACOUSTIC CEILING PANEL CEILING 24"x48"- DAMP LOCATION
ACB-1	ACOUSTIC CEILING PANEL CEILING 24"x48"
ETR	EXISTING CEILING TO REMAIN (TYPE VARIES)
GBC-2	GYPSUM BOARD CEILING- 2-HR ASSEMBLY, SEE DETAIL 17/A104

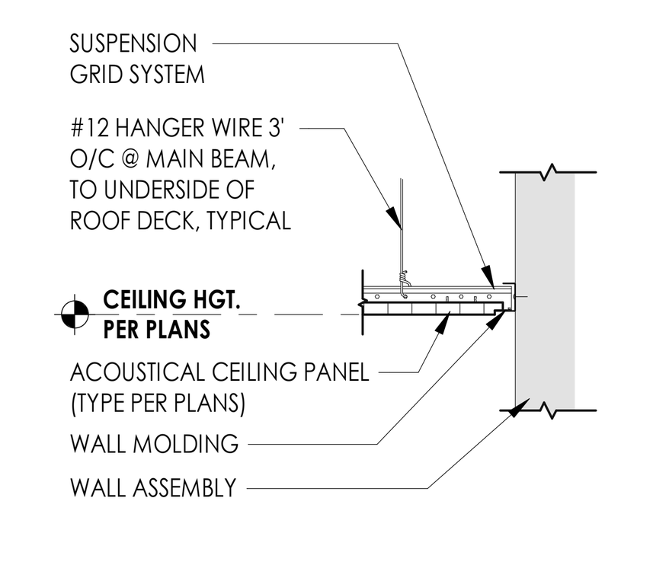
CEILING LEGEND

- AFF: SPOT ELEVATION (IN RELATIVE TO FINISHED FLOOR) UNLESS NOTED OTHERWISE
- XXX-# / 88'-88": CEILING TYPE / HEIGHT ABOVE FINISHED FLOOR
- 24"x24" ACOUSTIC CEILING PANEL SYSTEM
- 24"x48" ACOUSTIC CEILING PANEL SYSTEM
- GYPSUM BOARD CEILING
- 24"x48" LAY IN LIGHT FIXTURE
- 24"x24" LAY IN LIGHT FIXTURE

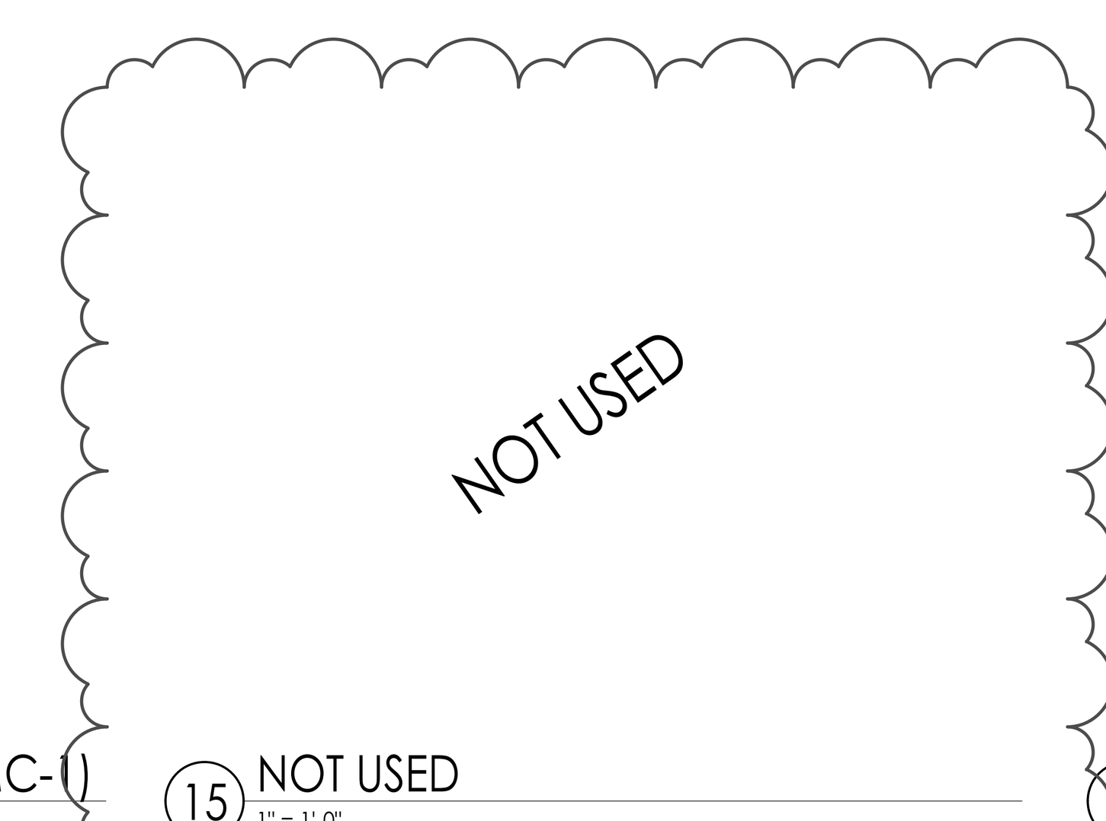
NOTES:
1. INCLUSION OF SYMBOL IN LEGEND DOES NOT IMPLY SCOPE OF WORK. REFER TO PLANS.
2. CONTRACTORS SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO INSTALLATION OF FIXTURES AND OTHER CEILING DEVICES.
3. REFER TO M/E/P DRAWINGS FOR SIZES, TYPES, QUANTITIES AND INSTALLATION REQUIREMENTS OF FIXTURES AND CEILING DEVICES.
4. WHERE CEILING HEIGHTS ARE BELOW WINDOW HEADS THE CONTRACTOR SHALL PROVIDE FASCIA MOLDING OR TRIM TO MATCH SIZE AND COLOR OF CEILING TRIM.
5. COORDINATE ALL AUDIO AND VISUAL DEVICES WITH A/V DRAWINGS. A/V EQUIPMENT SHOWN HERE, INCLUDING PROJECTORS AND PROJECTION SCREENS ARE DIAGRAMMATIC AND ARE SHOWN HERE TO DEPICT ADJACENCIES WITH OTHER LIGHTING AND CEILING DEVICES.



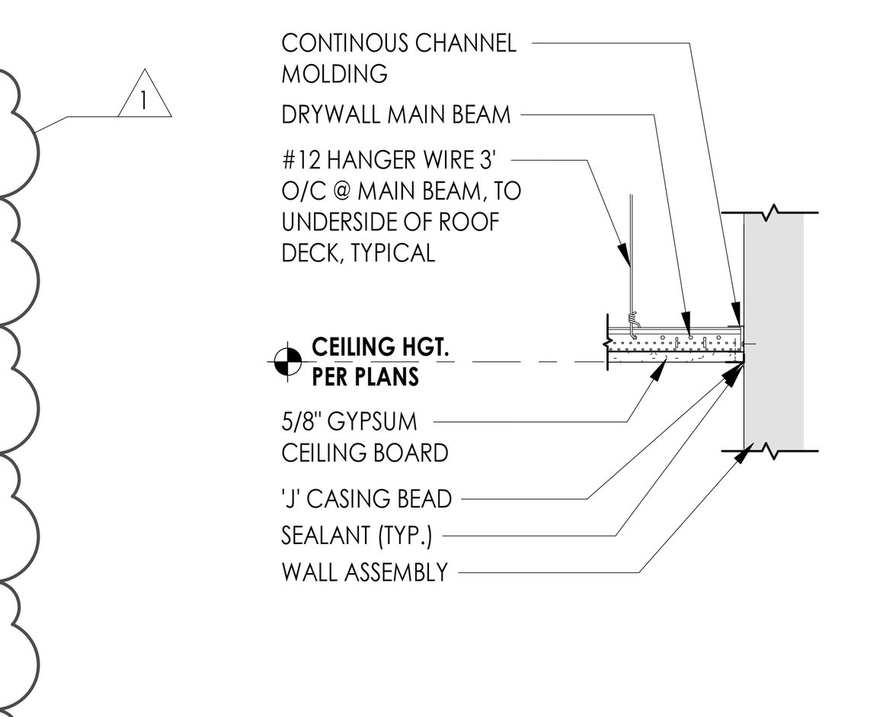
16 CEILING DETAIL AT BULKHEAD
1" = 1'-0"



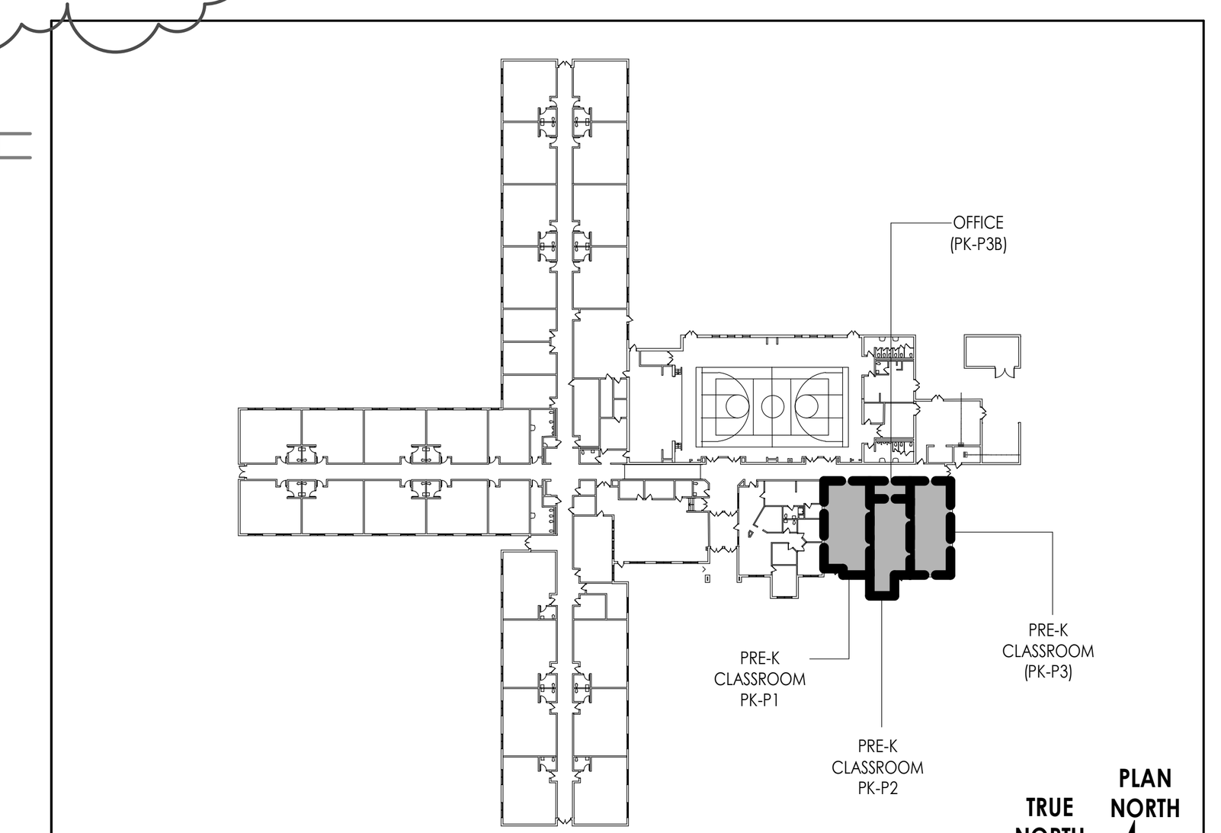
13 TYP. EDGE DETAIL AT ACOUSTIC CEILING
1" = 1'-0"



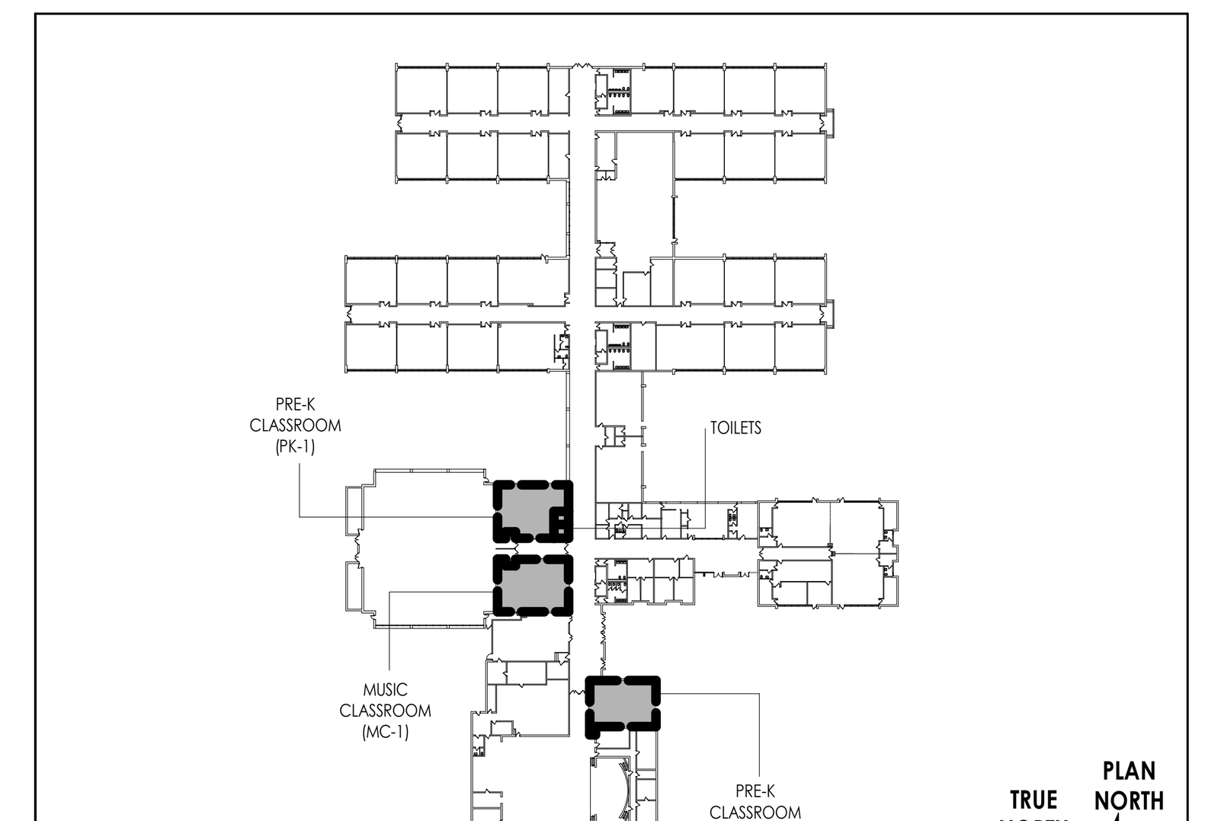
15 NOT USED
1" = 1'-0"



14 TYP. EDGE DETAIL AT GYP BOARD CEILING
1" = 1'-0"



PRIMARY SCHOOL BLDG. KEYPLAN
N.T.S.



ELEMENTARY SCHOOL BLDG. KEYPLAN
N.T.S.

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Project Name
Renovations for Five (5) Pre-K Classrooms at
Clayton J. Davenport Elementary School

Project Owner Name
Egg Harbor Township School District

Project Location
2501 Spruce Avenue
Egg Harbor Township, NJ 08234

Project Number
5481
Project Date
11/01/2024
Checked By
SWS
Drawn By
IVA
Scale
AS NOTED

Drawing Name
REFLECTED CEILING PLANS, TOILET ROOM PLANS AND ACCESSORIES SCHEDULE

Revisions

No.	Date	Description
1	11/26/2024	Addendum 1

Drawing Number:
A104

Renovations for Five (5) Pre-K Classrooms at

Clayton J. Davenport Elementary School

2501 Spruce Avenue Egg Harbor Township, NJ 08234

Egg Harbor Township School District

13 Swift Dr, Egg Harbor Township, NJ 08234

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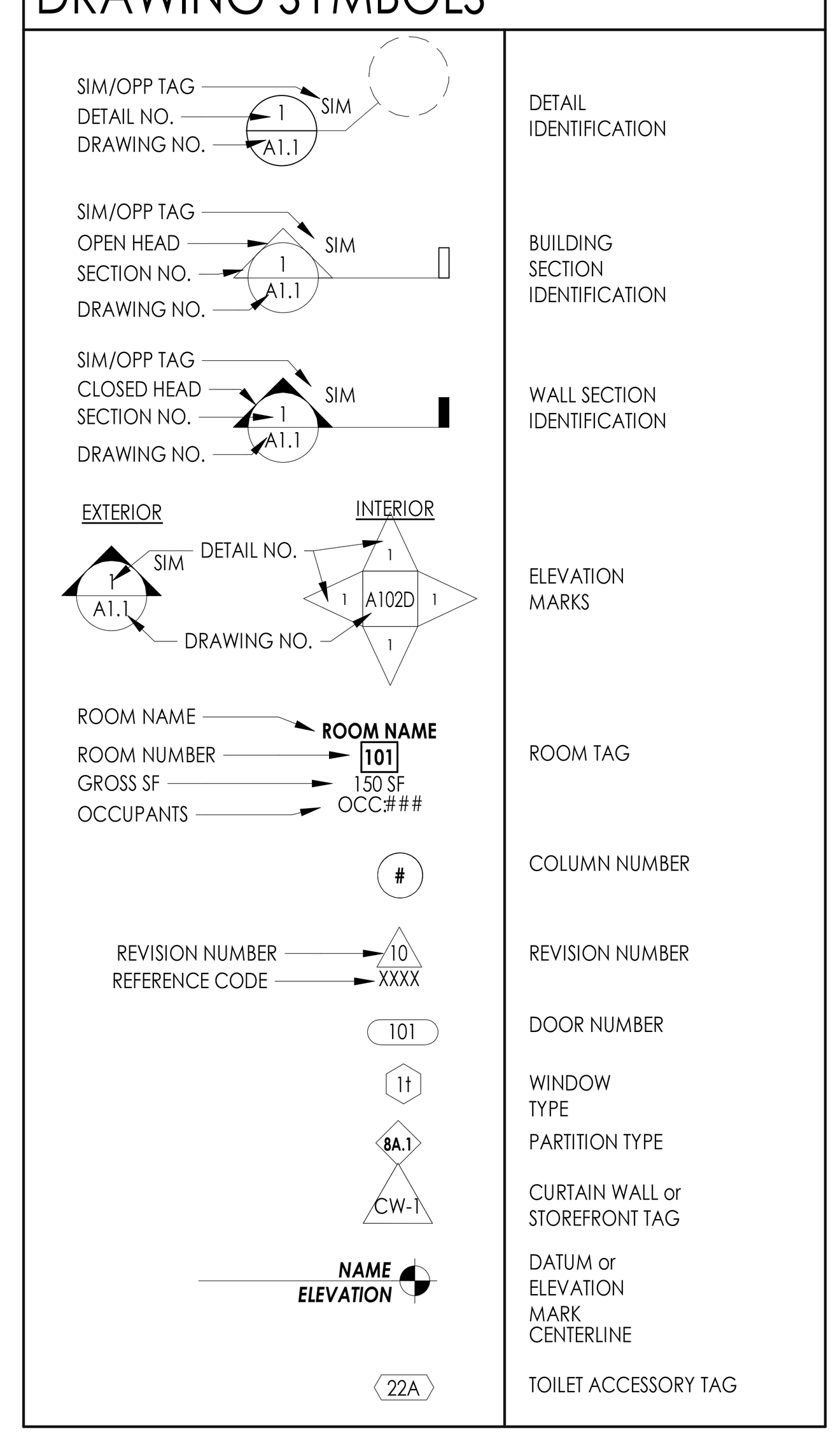
Gillan and Hartmann, Inc.
CONSULTING M / E / P ENGINEERS

OWNER APPROVAL:

[signature] 5-16-23	
SUPERINTENDENT	DATE
[signature] 5-16-23	
PRESIDENT OF BOARD OF EDUCATION	DATE

DRAWING SYMBOLS



ABBREVIATIONS

CJ	CONTROL JOINT
CMU	CONCRETE MASONRY UNIT
CFMF	COLD FORMED METAL FRAMING
DN	DOWN
DWG	DRAWING
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EL	ELEVATION
EQ	EQUAL
EJ	EXPANSION JOINT
EWC	ELECTRIC WATER COOLER
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER (BRACKET MOUNTED)
FEC	FIRE EXTINGUISHER CABINET
FT	FOOT or FEET
FRTW	FIRE RETARDANT TREATED WOOD
GALV	GALVANIZED
GSF	GROSS SQUARE FEET
GWB	GYPSUM WALL BOARD
HM	HOLLOW METAL
HP	HIGH POINT
LP	LOW POINT
MAX	MAXIMUM
MIN	MINIMUM
MO	MASONRY OPENING
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NSF	NET SQUARE FEET
OC	ON CENTER
OD	OVERFLOW DRAIN OR OUTSIDE DIAMETER
PTD	PAINT or PAINTED
PTW	PRESSURE TREATED WOOD
PVC	POLYVINYL CHLORIDE
RD	ROOF DRAIN
REINF	REINFORCED OR REINFORCING
RWC	RAIN WATER CONDUCTOR
SF	SQUARE FEET
TOS	TOP OF STEEL
TYP	TYPICAL
VIF	VERIFY IN FIELD

DRAWING INDEX

GENERAL

G001	TITLE SHEET

ARCHITECTURAL

A101	BUILDING ANALYSIS AND EGRESS PLANS
A102	DEMOLITION PLANS, FLOOR PLANS, AND NOTES
A103	DOOR AND PARTITION TYPES, DETAILS AND SCHEDULE
A104	REFLECTED CEILING PLANS, TOILET ROOM PLANS AND ACCESSORIES SCHEDULE
A105	CASEWORK PLANS AND ELEVATIONS
A106	CASEWORK PLANS, ELEVATIONS AND DETAILS
A107	RAISED FLOORING PLAN, ROOF PLANS AND DETAILS
A108	ENLARGED PRE-K CLASSROOM LAYOUTS
A109	ENLARGED PRE-K AND MUSIC CLASSROOM LAYOUTS
A601	FINISH PLANS, ELEVATIONS AND FINISH SCHEDULE

1

PLUMBING

P001	PLUMBING LEGEND, ABBREVIATIONS, AND GENERAL NOTES
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P101P	PRIMARY SCHOOL PLUMBING REMOVALS-SANITARY-FIRST FLOOR PARTIAL PLAN
P102E	ELEMENTARY SCHOOL PLUMBING REMOVALS-DOMESTIC WATER-FIRST FLOOR PARTIAL PLAN
P102P	PRIMARY SCHOOL PLUMBING REMOVALS-DOMESTIC WATER-FIRST FLOOR PARTIAL PLAN
P111E	ELEMENTARY SCHOOL PLUMBING REMOVALS-PARTIAL ROOF PLAN
P201E	ELEMENTARY SCHOOL PLUMBING NEW WORK-SANITARY-FIRST FLOOR PARTIAL PLAN
P201P	PRIMARY SCHOOL PLUMBING NEW WORK-SANITARY- FIRST FLOOR PARTIAL PLAN
P202E	ELEMENTARY SCHOOL PLUMBING NEW WORK-DOMESTIC WATER-FIRST FLOOR PARTIAL PLAN
P202P	PRIMARY SCHOOL PLUMBING NEW WORK-DOMESTIC WATER- FIRST FLOOR PARTIAL PLAN
P211E	ELEMENTARY SCHOOL PLUMBING NEW WORK-PARTIAL ROOF PLAN
P501	PLUMBING DETAILS AND SCHEDULES
P601	PLUMBING RISER DIAGRAMS-ELEMENTARY SCHOOL
P602	PLUMBING RISER DIAGRAMS-PRIMARY SCHOOL

FIRE PROTECTION

FP001P	PRIMARY SCHOOL-FIRE PROTECTION LEGEND, ABBREVIATIONS, AND GENERAL NOTES
FP101P	PRIMARY SCHOOL FIRE PROTECTION REMOVALS-FIRST FLOOR PARTIAL PLAN
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HVAC

H001	HVAC LEGENDS, ABBREVIATIONS, AND GENERAL NOTES
H101E	ELEMENTARY SCHOOL HVAC REMOVALS-DUCTWORK-FIRST FLOOR PARTIAL PLAN
H101P	PRIMARY SCHOOL HVAC REMOVALS-DUCTWORK-FIRST FLOOR PARTIAL PLAN
H102E	ELEMENTARY SCHOOL HVAC REMOVALS-PIPING-FIRST FLOOR PARTIAL PLAN
H102P	PRIMARY SCHOOL HVAC REMOVALS-PIPING-FIRST FLOOR PARTIAL PLAN
H111E	ELEMENTARY SCHOOL HVAC REMOVALS- PARTIAL ROOF PLAN
H201E	ELEMENTARY SCHOOL HVAC NEW WORK-DUCTWORK-FIRST FLOOR PARTIAL PLAN
H201P	PRIMARY SCHOOL HVAC NEW WORK-DUCTWORK-FIRST FLOOR PARTIAL PLAN
H202E	ELEMENTARY SCHOOL HVAC NEW WORK-PIPING-FIRST FLOOR PARTIAL PLAN
H202P	PRIMARY SCHOOL HVAC-NEW WORK-PIPING- FIRST FLOOR PARTIAL PLAN
H211E	ELEMENTARY SCHOOL HVAC NEW WORK-PARTIAL ROOF PLAN
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E001	ELECTRICAL LEGEND, ABBREVIATIONS, AND GENERAL NOTES
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E101P	PRIMARY SCHOOL ELECTRICAL REMOVALS-FIRST FLOOR PARTIAL PLAN
E201E	ELEMENTARY SCHOOL NEW WORK- LIGHTING PARTIAL PLAN
E201P	PRIMARY SCHOOL LIGHTING NEW WORK- FIRST FLOOR PARTIAL PLAN
E202E	ELEMENTARY SCHOOL ELECTRICAL NEW WORK-PARTIAL PLAN
E202P	PRIMARY SCHOOL ELECTRICAL NEW WORK- FIRST FLOOR PARTIAL PLAN
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E203P	PRIMARY SCHOOL PARTIAL KEY PLAN
E401	ELECTRICAL DIAGRAMS
E402	ELECTRICAL SCHEDULES
E601	ELECTRICAL DETAILS

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F V H D P C . C O M

Project Name

Renovations for Five (5) Pre-K Classrooms at **Clayton J. Davenport Elementary School**

Project Owner Name

Egg Harbor Township School District

Project Location

2501 Spruce Avenue Egg Harbor Township, NJ 08234

Project Number
5481

Project Date
11/01/2024

Checked By
SWS, WDH

Drawn By
IVA

Scale
AS NOTED

Drawing Name

TITLE SHEET

Revisions

No.	Date	Description
1	11/26/2024	Addendum 1

Drawing Number:

G001

CODE ANALYSIS: CLAYTON J. DAVENPORT ELEMENTARY SCHOOL

(DAVENPORT PRIMARY SCHOOL)

USE GROUP (SECTION 305) -	'EDUCATIONAL GROUP E'
CONSTRUCTION CLASSIFICATION (602.2) -	TYPE IIB
AUTOMATIC SPRINKLER SYSTEMS (903)	FULLY-SPRINKLERED IN AREA OF RENOVATION (THROUGHOUT BUILDING)

(DAVENPORT ELEMENTARY SCHOOL)

USE GROUP (SECTION 305) -	'EDUCATIONAL GROUP E'
CONSTRUCTION CLASSIFICATION (602.2) -	TYPE IIB
AUTOMATIC SPRINKLER SYSTEMS (903)	NON-SPRINKLERED IN AREA OF RENOVATION

APPLICABLE CODES

CONSTRUCTION CODE	:	BASED ON INTERNATIONAL BUILDING CODE 2021, NEW JERSEY EDITION
CONSTRUCTION CODE	:	NEW JERSEY REHABILITATION SUBCODE 5:23-6
BUILDING SUBCODE	:	INTERNATIONAL BUILDING CODE 2021 - NEW JERSEY EDITION
BARRIER FREE SUBCODE	:	CC-ANSI A117.1-2017 - TOILET ROOMS COMPLY WITH THE BARRIER FREE SUBCODE TO THE FULLEST EXTENT POSSIBLE
PLUMBING CODE	:	NATIONAL STANDARD PLUMBING CODE 2021
MECHANICAL CODE	:	INTERNATIONAL MECHANICAL CODE 2021
ELECTRIC CODE	:	NATIONAL ELECTRIC CODE 2020
REHAB. SUBCODE	:	NEW JERSEY UNIFORM CONSTRUCTION CODE, SUBCHAPTER 6

EXISTING FIRE ALARM SYSTEM NOTE:

IF ANY PORTION OF THE EXISTING FIRE ALARM SYSTEM MUST BE TAKEN OUT OF SERVICE FOR ANY LENGTH OF TIME, THE LOCAL FIRE MARSHAL MUST BE CONTACTED AND MUST APPROVE SHUTDOWN PLANS, PROCEDURES AND FIRE WATCH PLANS THAT WILL BE IMPLEMENTED.

CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR COMPLYING WITH THE REQUIREMENTS OF THE LOCAL FIRE MARSHAL CONCERNING THE EXISTING FIRE ALARM SYSTEM SHUTDOWN PLANS, PROCEDURES AND FIRE WATCH PLANS THAT WILL BE IMPLEMENTED FOR SYSTEM INTERRUPTIONS DURING CONSTRUCTION.

NOTE THAT TEMPORARILY COVERING EXISTING DETECTION DEVICES TO PREVENT ACCIDENTAL ALARM ACTIVATIONS DUE TO DUST AND DIRT CONSTITUTES A PARTIAL SHUTDOWN OF THE EXISTING FIRE ALARM SYSTEM.

BUILDING ANALYSIS

(FROM INTERNATIONAL BUILDING CODE 2021 NEW JERSEY EDITION)

THE FLOOR PLAN AREA AND HEIGHT OF THE SCHOOL BUILDINGS ARE NOT CHANGED UNDER THIS PROJECT, THEREFORE NO ANALYSIS OF THE EXISTING BUILDINGS HAS BEEN PROVIDED.

EGRESS ANALYSIS

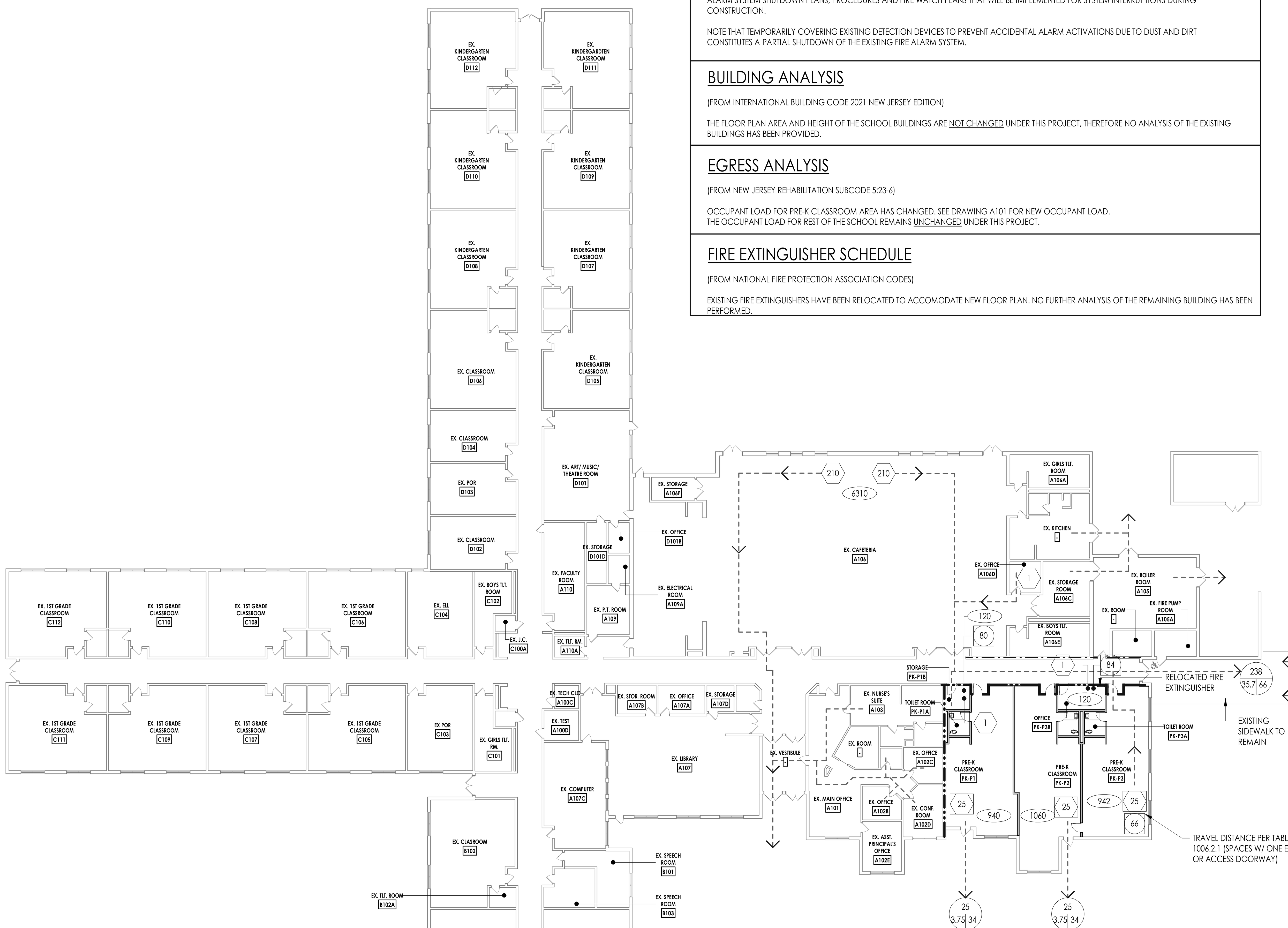
(FROM NEW JERSEY REHABILITATION SUBCODE 5:23-6)

OCCUPANT LOAD FOR PRE-K CLASSROOM AREA HAS CHANGED. SEE DRAWING A101 FOR NEW OCCUPANT LOAD.
THE OCCUPANT LOAD FOR REST OF THE SCHOOL REMAINS UNCHANGED UNDER THIS PROJECT.

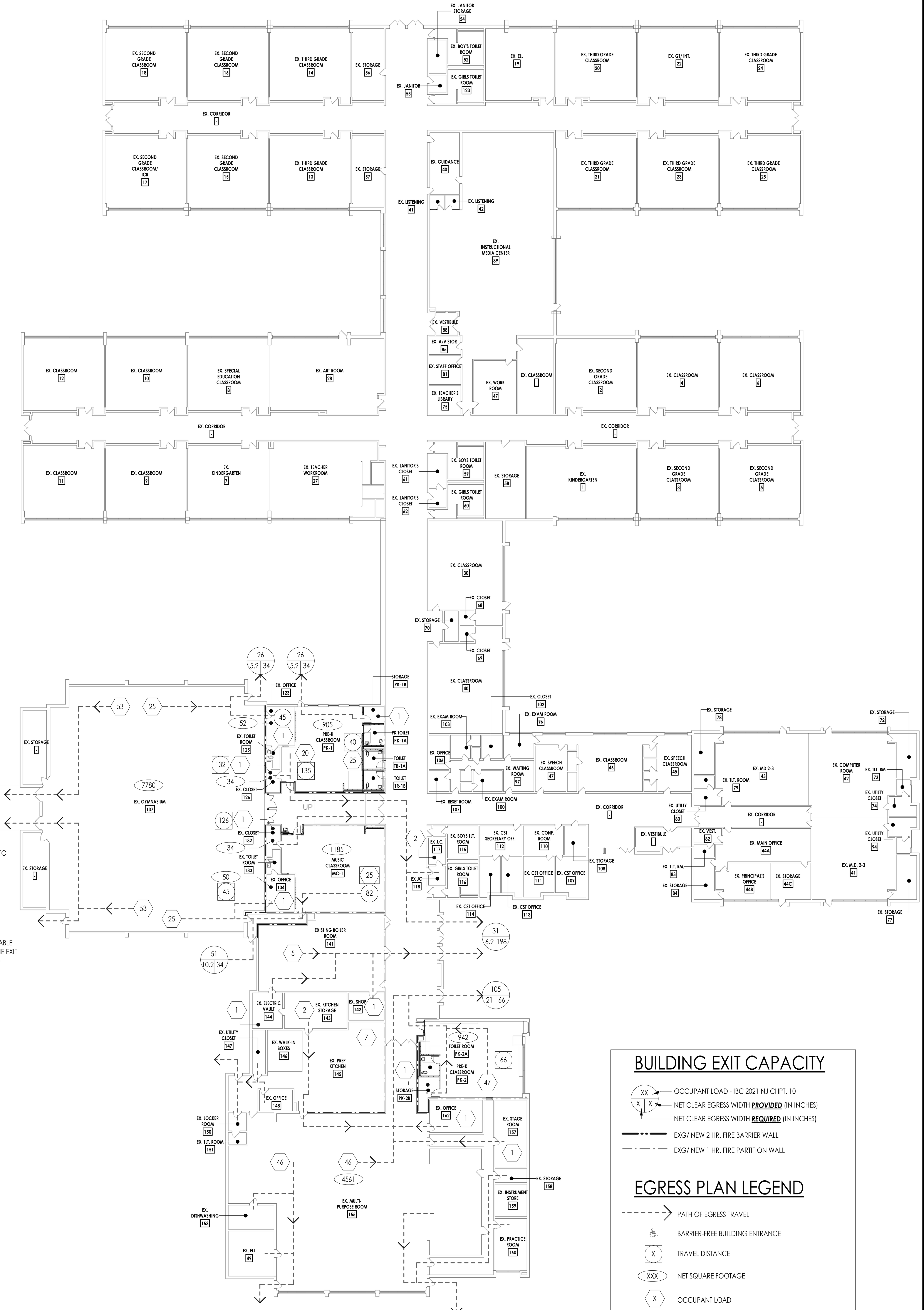
FIRE EXTINGUISHER SCHEDULE

(FROM NATIONAL FIRE PROTECTION ASSOCIATION CODES)

EXISTING FIRE EXTINGUISHERS HAVE BEEN RELOCATED TO ACCOMODATE NEW FLOOR PLAN. NO FURTHER ANALYSIS OF THE REMAINING BUILDING HAS BEEN PERFORMED.



1 EGRESS PLAN (DAVENPORT PRIMARY SCHOOL)
3/64" = 1'-0"



BUILDING EXIT CAPACITY

- OCCUPANT LOAD - IBC 2021 NJ CHPT. 10
- NET CLEAR EGRESS WIDTH ***PROVIDED*** (IN INCHES)
- NET CLEAR EGRESS WIDTH ***REQUIRED*** (IN INCHES)
- EXG/ NEW 2 HR. FIRE BARRIER WALL
- EXG/ NEW 1 HR. FIRE PARTITION WALL

EGRESS PLAN LEGEND

- PATH OF EGRESS TRAVEL
- BARRIER-FREE BUILDING ENTRANCE
- TRAVEL DISTANCE
- NET SQUARE FOOTAGE
- OCCUPANT LOAD
- POSTED OCCUPANT LOAD

2 EGRESS PLAN DAVENPORT (ELEMENTARY SCHOOL)
3/64" = 1'-0"

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10/21/2024
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Project Name	Renovations for Five (5) Pre-K Classrooms at **Clayton J. Davenport Elementary School**
Project Owner Name	Egg Harbor Township School District
Project Location	2501 Spruce Avenue Egg Harbor Township, NJ 08234
Project Number	5481
Project Date	11/01/2024
Checked By	SWS, WDH
Drawn By	IVA
Scale	AS NOTED
Drawing Name	BUILDING ANALYSIS AND EGRESS PLANS

Revisions

No.	Date	Description
1	11/26/2024	Addendum 1

Drawing Number:
A101

11/26/2024 2:59:23 PM

GENERAL DEMOLITION NOTES

A. ALL CONTRACTORS ARE ADVISED TO VISIT THE SITE AND VERIFY ALL AREAS AND CONDITIONS PRIOR TO SUBMITTING THEIR BIDS. THE CONTRACTOR MUST NOTIFY THE ARCHITECT OF ANY DISCREPANCIES AND/OR OMISSIONS IN WRITING AT LEAST SEVEN DAYS PRIOR TO THE RECEIPT OF BIDS. FAILURE TO SO NOTIFY THE ARCHITECT INDICATES THAT ANY ADDITIONAL COSTS ASSOCIATED WITH THE DISCREPANCIES AND / OR OMISSIONS ARE INCLUDED IN THE CONTRACTOR'S BID AND THAT NO CHANGE TO THE CONTRACT AMOUNT WILL BE MADE AFTER THE RECEIPT OF BIDS OR THE AWARD OF CONTRACTS.

B. ALL PLUMBING, MECHANICAL OR ELECTRICAL DISCONNECTS SHALL BE MADE BY THE RESPECTIVE TRADE SUBCONTRACTOR. ALL EQUIPMENT, DEVICES, FIXTURES, ETC. SHALL BE REMOVED FROM THE SITE BY THE RESPECTIVE SUBCONTRACTOR. NOTE: THE EXISTING FIRE ALARM SYSTEM SHALL NOT BE DIMINISHED NOR SHALL EXISTING FIRE ALARM DEVICES BE REMOVED UNTIL NEW DEVICES ARE READY FOR SWITCHOVER.

C. UNLESS NOTED OTHERWISE ALL DEMOLITION MATERIAL SHALL BE REMOVED OFF SITE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

D. THERE ARE SOME SPECIFIC ITEMS DESIGNATED BY THE ARCHITECT FOR SALVAGE. THESE ITEMS ARE INTENDED FOR REUSE IN THE NEW CONSTRUCTION. THE CONTRACTOR MUST TAKE CARE IN THE REMOVAL AND STORAGE OF THESE ITEMS UNTIL THEY ARE NEEDED IN THE NEW CONSTRUCTION.

E. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PROTECT PORTIONS OF THE EXISTING CONSTRUCTION WHICH ARE ADJACENT TO AREAS TO BE DEMOLISHED. MAKE ALL CUTS AS NEATLY AS POSSIBLE. REFER TO FLOOR PLAN DRAWINGS FOR FINISHING OF THESE AREAS.

F. IF NOT OTHERWISE NOTED OR DETAILED, ALL SURFACES LEFT ROUGH OR UNFINISHED BY DEMOLITION AND WHICH ARE EXPOSED TO VIEW, SHALL BE PATCHED TO MATCH ADJACENT SURFACES AND FINISHED TO PROVIDE A UNIFORM APPEARANCE WITH REGARD TO SIZE, SHAPE, COLOR, TEXTURE AND MATERIAL.

G. THE CONTRACTOR SHALL PROVIDE A PHYSICAL BARRIER TO CONTAIN DUST AND DIRT AROUND THE DEMOLITION AREA AND SHALL MAKE EVERY EFFORT TO KEEP THE DEMOLITION SITE AND SURROUNDING AREAS AS CLEAN AS POSSIBLE. ALL TEMPORARY PARTITIONS SHALL BE 1 HOUR RATED CONSTRUCTION AND INCLUDE A DOOR.

H. NO DEMOLITION SHALL BEGIN UNTIL PROPER PROTECTION IS IN PLACE AND APPROVED BY ARCHITECT & OWNER TO ENSURE THE SAFETY OF THE PUBLIC, THE BUILDING OCCUPANTS, CONSTRUCTION WORKERS AND TO CONTAIN DUST AND DIRT WITHIN THE AREA OF DEMOLITION.

I. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REGARDING THE REMOVAL AND DISPOSAL OF ALL MATERIALS & EQUIPMENT.

J. THE CONTRACTOR SHALL PROVIDE PROTECTION AGAINST INCLEMENT WEATHER FOR THE EXISTING BUILDING DURING THE INTERIM PERIOD BETWEEN DEMOLITION AND THE COMPLETION OF NEW CONSTRUCTION.

K. THE CONTRACTORS SHALL TAKE INTO ACCOUNT THEIR METHODS OF CONSTRUCTION FOR THE NEW WORK AND INCLUDE IN THEIR BID THE COST OF ADDITIONAL DEMOLITION WORK NECESSARY TO FACILITATE THE CONSTRUCTION. THIS WORK INCLUDES, BUT IS NOT LIMITED TO THE PARTIAL DEMOLITION OF WALLS AT THE POINTS WHERE NEW STEEL CONNECTS TO EXISTING BEAMS OR COLUMNS, THE AREA AROUND JOINTS BETWEEN NEW AND EXISTING CONSTRUCTION IN WALLS, FLOORS AND CEILINGS, AREAS OF SIDEWALK AND PAVING, ETC. MUCH OF THIS WORK IS INDICATED IN SECTIONS AND DETAILS RELATING TO THE NEW CONSTRUCTION.

L. THE DEMOLITION WORK SHOWN ON THIS PLAN IS INTENDED TO BE A GENERAL OVERVIEW OF MAJOR DEMOLITION WORK REQUIRED. IT IS NOT A COMPLETE AND EXCLUSIVE REPRESENTATION OF ALL DEMOLITION WORK NEEDED FOR EXECUTION OF THE PROJECT. WHEN PREPARING THEIR BIDS, CONTRACTORS MUST REFER TO THE FULL SET OF CONSTRUCTION DOCUMENTS FOR VARIOUS MISCELLANEOUS ITEMS WHICH MUST BE REMOVED AND/OR RELOCATED AS PART OF THE WORK.

M. ALL PRIME CONTRACTORS ARE RESPONSIBLE FOR THEIR OWN CUTTING AND PATCHING - SEE SPECIFICATION.

N. IF DURING THE DEMOLITION, RENOVATION AND ALTERATION WORK IN THE EXISTING BUILDING, STRUCTURAL ELEMENTS ARE UNCOVERED AND ARE FOUND TO BE UNSOUND OR OTHERWISE STRUCTURALLY DEFICIENT, THE GENERAL CONTRACTOR SHALL IMMEDIATELY ADVISE THE ARCHITECT AND THE STRUCTURAL ENGINEER OF RECORD OF THE CONDITION SO THAT APPROPRIATE MEASURES TO REINFORCE, SUPPORT OR REPLACE THE UNSOUND ELEMENTS CAN BE DESIGNED AND IMPLEMENTED.

O. CONTRACTOR SHALL MAINTAIN ALL EXISTING FIRE-RATED CONSTRUCTION ASSEMBLIES, INCLUDING PROTECTED OPENINGS (DOORS, ETC.) DURING DEMOLITION AND ALTERATION WORK IN ORDER TO MAINTAIN EXISTING LIFE SAFETY AND EGRESS. CONTRACTOR IS RESPONSIBLE FOR ALL SEQUENCING AND SHALL NOT REMOVE ANY EXISTING FIRE-RATED ASSEMBLIES UNTIL NEW WORK IS READY FOR INSTALLATION. CONTRACTOR SHALL NOT REMOVE ANY EXISTING FIRE-RATED ASSEMBLIES BEYOND THAT WHICH CAN BE REPLACED IN A SINGLE DAY.

P. THE OWNER HAS THE RIGHT OF FIRST REFUSAL FOR ALL EQUIPMENT AND FIXTURES (CABINETS, SHELVING, PLUMBING FIXTURES, ETC.) REMOVED UNDER CONTRACT. IF THE OWNER DOES NOT EXERCISE THIS RIGHT FOR AN INDIVIDUAL PIECE OF EQUIPMENT, THE CONTRACTOR SHALL REMOVE SAID EQUIPMENT FROM THE SITE.

D DEMOLITION KEYNOTE LEGEND

D1	REMOVE INTERIOR FRAMED WALL ASSEMBLY AS INDICATED.
D2	BRACE AND SHORE UP EXISTING ADJACENT WALL CONSTRUCTION INDICATED TO REMAIN. SAWCUT AND REMOVE PORTION OF INTERIOR MASONRY WALL ASSEMBLY TO WIDTH INDICATED, AND FULL HEIGHT, UNLESS FOR EXPANDING AN EXISTING DOOR OPENING. NO EXISTING STRUCTURAL COLUMNS SHALL BE REMOVED OR COMPROMISED IN ANY WAY. PATCH AND REPAIR ALL VOIDS AND DAMAGE CREATED IN EXISTING CONSTRUCTION TO REMAIN, DUE TO DEMOLITION, TO MATCH EXISTING ADJACENT CONSTRUCTION.
D3	REMOVE EXISTING BASE. REMOVE EXISTING EPOXY FLOOR COATING DOWN TO CONCRETE SLAB. CLEAN, PREPARE & LEVEL EXISTING FLOOR SLAB WITH SELF-LEVELING UNDERLAYMENT (COMPATIBLE WITH NEW FLOOR FINISHES) OVER ENTIRE SURFACE OF EXISTING FLOOR TO MAKE FLOOR LEVEL AND FLUSH. INSTALL NEW FLOOR FINISH AND BASE. SEE ROOM FINISH SCHEDULE AND SPECIFICATION SECTION 03450.
D4	REMOVE DOOR, FRAME, HARDWARE, TRIM MOLDING AND ANY ASSOCIATED ACCESSORIES IN THEIR ENTIRETY. PREPARE THE OPENING FOR THE SPECIFIED WORK AND FINISH.
D5	REMOVE EXISTING BASE. REMOVE FLOOR FINISH DOWN TO CONCRETE SLAB, INCLUDING ALL ADHESIVES. CLEAN, PREPARE & LEVEL EXISTING FLOOR SLAB WITH SELF-LEVELING UNDERLAYMENT (COMPATIBLE WITH NEW FLOOR FINISHES) OVER ENTIRE SURFACE OF EXISTING FLOOR TO MAKE FLOOR LEVEL AND FLUSH. INSTALL NEW FLOOR FINISH AND BASE. SEE ROOM FINISH SCHEDULE AND SPECIFICATION SECTION 03450.
D7	REMOVE SUSPENDED CEILING SYSTEM IN ITS ENTIRETY INCLUDING LIGHTING FIXTURES. SAFE-OFF CONDUITS WHERE SCHEDULED TO BE REUSED OTHERWISE TERMINATE CONDUIT AND WIRING BACK TO NEAREST PANEL. SEE ELECTRICAL DRAWINGS.
D8	REMOVE PLUMBING FIXTURES AS INDICATED. SEE PLUMBING DRAWINGS.
D10	BRACE AND SHORE UP EXISTING WALL CONSTRUCTION ABOVE. REMOVE EXISTING BORROWED LIGHT FRAME AND GLAZING, INCLUDING TRIM MOLDING AND ANY ASSOCIATED ACCESSORIES IN THEIR ENTIRETY. REFERENCE FLOOR PLAN FOR NEW WORK.
D11	BRACE EXISTING ADJACENT WALL CONSTRUCTION. SAWCUT AND REMOVE PORTION OF CONCRETE FLOOR ASSEMBLY AS INDICATED TO ACCOMODATE NEW WORK. PATCH AND REPAIR ALL VOIDS AND DAMAGE CREATED IN EXISTING CONSTRUCTION TO REMAIN, DUE TO DEMOLITION. REFERENCE DETAIL 7/A102 FOR TYP. INFILL DETAIL.
D12	REMOVE EXISTING TOILET ACCESSORIES, INCLUDING BUT NOT LIMITED TO: TOILET PARTITIONS, PAPER TOWEL AND TOILET TISSUE DISPENSERS, SOAP DISPENSERS, MIRRORS, GRAB BARS AND HAND DRYERS. PATCH AND REPAIR SURFACES DAMAGED BY THE REMOVAL.
D14	REMOVE INDICATED EXISTING DOOR AND FRAME IN THEIR ENTIRETY. INFILL OPENING WITH NEW CONSTRUCTION TO MATCH EXISTING ADJACENT CONSTRUCTION, AS INDICATED IN FLOOR PLAN. PATCH AND REPAIR ALL DAMAGE AND VOIDS CAUSED BY REMOVAL TO MATCH EXISTING ADJACENT FINISH, INCLUDING BRICK, TILE, BASE, PLASTER, ETC., OR PREP SUBSTRATE TO CONDITION SUITABLE FOR NEW FINISH.
D15	CAREFULLY REMOVE, SALVAGE, AND TURN OVER TO OWNER ALL WALL MOUNTED ITEMS INCLUDING, BUT NOT LIMITED TO, TACK STRIPS, PICTURE SIGNAGE, FLAGS, HOOKS, NAILS, TRIM, BRACKETS.
D16	REMOVE DOOR, HARDWARE, TRIM MOLDING AND ANY ASSOCIATED ACCESSORIES IN THEIR ENTIRETY.FRAME TO REMAIN. PREP FRAME TO RECEIVE NEW HARDWARE.
D19	BRACE AND SHORE UP EXISTING CONSTRUCTION TO REMAIN ABOVE OPENING. SAWCUT AND REMOVE EXISTING WALL CONSTRUCTION TO WIDTH INDICATED ON DEMOLITION PLAN AND TO FIRST MASONRY COURSE ABOVE OPENING. SEE FLOOR PLAN AND WINDOW DETAILS FOR NEW LINTEL AND CONSTRUCTION. TOOTH NEW BRICK INTO EXISTING BRICK PATTERN AT BOTH SIDES OF THE JAMB OPENINGS. CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO ENSURE BUILDING SECURITY AND WEATHERTIGHTNESS. FINISH ALL NEWLY EXPOSED SURFACES AND PATCH AND REPAIR ALL DAMAGE CAUSED BY RENOVATION TO MATCH EXISTING ADJACENT FINISH.
D21	CAREFULLY REMOVE PORTION OF EXISTING WINDOW/ OR STOREFRONT (GLAZING, INSULATED METAL PANEL, MULLION OR RAIL) INCLUDING ASSOCIATED ACCESSORIES, TO ACCOMODATE MECHANICAL WORK (REFER TO MECHANICAL DWGS). INFILL,REPAIR, FRAME AND REFINISH PORTION TO REMAIN, WITH GLAZING OR INSULATED METAL PANELING TO MATCH EXISTING ADJACENT CONSTRUCTION, CONDITION AND FINISH.
D27	REMOVE EXISTING FIRE EXTINGUISHER AND/OR EXTINGUISHER CABINET IN ITS ENTIRETY. SALVAGE AND REINSTALL TO LOCATION AS INDICATED IN PLAN.
D28	BRACE AND SHORE UP EXISTING WALL CONSTRUCTION ABOVE. SAWCUT AND CAREFULLY REMOVE PORTION OF INTERIOR MASONRY WALL ASSEMBLY TO WIDTH AND HEIGHT BASED ON NEW DOOR FRAME. REFER TO DOOR SCHEDULE.NO EXISTING STRUCTURAL COLUMNS SHALL BE REMOVED OR COMPROMISED IN ANY WAY. INSTALL NEW BOND BEAM LINTEL. PATCH AND REPAIR ALL VOIDS AND DAMAGE CREATED IN EXISTING CONSTRUCTION TO REMAIN DUE TO DEMOLITION, TO MATCH EXISTING ADJACENT CONSTRUCTION AND FINISH.
D33	CAREFULLY REMOVE EXISTING BUILT-IN METAL LOCKERS AND CONCRETE BASE, INCLUDING HARDWARE, ACCESSORIES AND ASSOCIATED SYSTEM AS INDICATED ON DEMO DRAWINGS. SALVAGE AND TURN OVER TO OWNER. INFILL, REPAIR AND REFINISH FLOOR AND WALL SURFACE WHERE LOCKERS AND CONCRETE BASE WAS REMOVED, TO MATCH EXISTING ADJACENT CONSTRUCTION AND CONDITION, UNO IN FINISH DRAWINGS.
D35	REMOVE AND STORE EXISTING CEILING PANELS, SUSPENSION GRID AND APPLIANCES TO ACCOMMODATE RENOVATION. AFTER RENOVATION IS COMPLETE, RE-INSTALL (WITH NEW HANGAR WIRE TO EXISTING STRUCTURE) ALL PANELS, GRID AND APPLIANCES IN PREVIOUS LOCATIONS UNLESS SUPERSEDED BY REFLECTED CEILING PLAN OR PLUMBING/HVAC/ELECTRICAL DRAWINGS. REPLACE ALL DAMAGED OR DETERIORATED CEILING PANELS AND SUSPENSION GRID WITH NEW TO MATCH EXISTING. SEE PLUMBING/HVAC/ELECTRICAL DRAWINGS FOR ADDITIONAL WORK REQUIRED. ALL PLUMBING/HVAC/ ELECTRICAL WORK, INCLUDING REMOVAL AND RE-INSTALLATION OF CEILING SYSTEM, DEMOLITION, PATCHING AND REPAIR, BY RESPECTIVE TRADE CONTR..
D37	BRACE AND SHORE UP EXISTING WALL CONSTRUCTION. SAW CUT AND REMOVE EXISTING WALL CONSTRUCTION TO ACCOMMODATE NEW MECHANICAL DUCTWORK AND FIRE DAMPER. INSTALL NEW LOOSE LINTEL AS PER LOOSE LINTEL SCHEDULE. FOLLOWING DUCTWORK AND FIRE DAMPER INSTALLATION, INFILL ALL VOIDS WITH APPROVED THROUGH PENETRATION FIRE STOPPING.
D38	BRACE AND SHORE UP EXISTING ROOF CONSTRUCTION. DEMOLISH EXISTING LINTEL AND WALL CONSTRUCTION TO 3 COURSES ABOVE NEW OPENING, TO WIDTH INDICATED ON DEMOLITION PLAN AND A MINIMUM 8" BELOW FINISHED FLOOR. INSTALL NEW CMU BOND BEAM LINTEL AS PER DETAIL 16/A106. INFILL FLOOR SLAB WITH NEW CONCRETE TO ALIGN WITH EXISTING FLOOR SURFACE. SEE FLOOR PLAN FOR NEW WORK AND WALL CONSTRUCTION.
D39	BRACE AND SHORE UP EXISTING WALL CONSTRUCTION ABOVE. DEMOLISH EXISTING WALL CONSTRUCTION TO WIDTH INDICATED ON DEMOLITION PLAN AND TO HEIGHT TO ACCOMMODATE NEW WORK. ALL NEW CMU SHALL BE TOOTHED INTO EXISTING WALL CONSTRUCTION. SEE REFLECTED CEILING PLAN FOR ADDITIONAL WORK. PATCH AND REPAIR ALL DAMAGE CAUSED BY REMOVAL TO MATCH EXISTING ADJACENT FINISH.
D40	REMOVE EXISTING WALL-MOUNTED CLOCKS, INCLUDING ACCESSORIES.SALVAGE AND TURN OVER TO OWNER. INFILL, REPAIR AND REFINISH WALL SURFACE TO MATCH EXISTING ADJACENT CONSTRUCTION, CONDITION AND FINISH.

Ⓒ- NEW WORK KEYNOTE LEGEND

C1	INSTALL SIGNAGE (SEE SIGN TYPE 3) ADJACENT TO EXISTING DOOR. REFER TO ROOM SIGNAGE MOUNTING FOR DETAILS.
C2	PATCH AND REPAIR EXISTING FLOOR AND WALL AFFECTED BY THE REMOVAL OF INTERIOR WALL ASSEMBLY AND PREP SURFACE TO CONDITION SUITABLE TO RECEIVE NEW FLOOR, AND/OR WALL FINISH. FINISH FLOOR/ WALL TO MATCH EXISTING ADJACENT FLOOR FINISH, UNLESS NOTED OTHERWISE. NEW CMU WALL CONSTRUCTION SHALL BE TOOTHED INTO EXISTING CMU WALL CONSTRUCTION.
C6	INFILL OPENING WITH WALL TYPE TO MATCH EXISTING ADJACENT CONSTRUCTION AND RATING. PATCH AND REPAIR ALL DAMAGE AND VOIDS CAUSED BY REMOVAL TO MATCH EXISTING ADJACENT FINISH OR PREP SUBSTRATE TO CONDITION SUITABLE FOR NEW FINISH.
C7	INSTALL SIGNAGE (SEE SIGN TYPE 25) ADJACENT TO EXISTING DOOR. REFER TO ROOM SIGNAGE MOUNTING FOR DETAILS.
C8	4" 2-HOUR RATED CMU NOTE:IN LOCATIONS WHERE 4" SOLID 2-HOUR RATED CMU IS INDICATED, PROVIDE AND INSTALL CMU OF LIGHTWEIGHT CLASSIFICATION USING AGGREGATE OF EXPANDED CLAY, EXPANDED SHALE OR EXPANDED SLATE WITH A MINIMUM THICKNESS OF 3.6", IN COMPLIANCE WITH ANSI/ACI 216.1-97, TMS 0216-97 AND IBC-2021 TABLE 721.1(2) ITEM 3-1.2.
C9	REINSTALL FIRE EXTINGUISHER AND/OR EXTINGUISHER CABINET TO LOCATION AS INDICATED.

1 PARTIAL DEMOLITION PLAN (ELEMENTARY SCHOOL)
1/8" = 1'-0"

2 PARTIAL FLOOR PLAN (PRE-K CLASSROOM PK-1, MUSIC CLASSROOM MC-1)
1/8" = 1'-0"

7 TYP. CONCRETE FLOOR INFILL DETAIL
1" = 1'-0"

8 CMU TIE-IN PLAN DETAIL
1 1/2" = 1'-0"

PLAN LEGEND

- PROPOSED STUD WALL (SEE PARTITION TYPES)
- PROPOSED CMU WALL (SEE PARTITION TYPES)
- EXISTING WALL TO REMAIN
- PROPOSED DOOR
- EXISTING DOOR TO REMAIN

GENERAL NOTES

1. ELEVATION AT TOP OF FINISHED FLOOR SLAB SHALL BE REFERENCED AS DATUM ELEVATION 0'-0".
2. DO NOT SCALE THE DRAWINGS. IF A DIMENSION IS UNCLEAR OR A DISCREPANCY IS FOUND IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
3. ALL DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO THE COMMENCEMENT OF WORK. WHERE FABRICATION IS REQUIRED, DIMENSIONS SHALL BE VERIFIED PRIOR TO THE PRODUCTION OF SHOP DRAWINGS.
4. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, STATUTES, AND REGULATIONS IN PERFORMANCE OF THE WORK.
5. REFER TO THE FIRE RESISTANCE DIRECTORY (LATEST EDITION) BY UNDERWRITER'S LABORATORIES FOR THE REQUIREMENTS OF ALL SPECIFIED FIRE RATED ASSEMBLIES.
6. DETAILS AND SECTIONS ON THE DRAWINGS ARE SHOWN AT SPECIFIC LOCATIONS AND ARE INTENDED TO SHOW GENERAL REQUIREMENTS THROUGHOUT. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE CONSTRUCTED IN A SIMILAR MANNER OR BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION. MODIFICATIONS MAY BE REQUIRED BY THE CONTRACTOR TO ACCOMMODATE FOR MINOR VARIATIONS IN THE WORK.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND INSTALLATION OF OWNER SUPPLIED EQUIPMENT AS IDENTIFIED IN THE DRAWINGS AND SPECIFICATIONS, INCLUDING THE RELOCATION OF EXISTING EQUIPMENT.
8. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND UTILITIES AND COORDINATING WITH NEW WORK. ADVISE ARCHITECT/ENGINEER OF CONFLICTS PRIOR TO COMMENCEMENT OF WORK.
9. PRIOR TO POURING OF CONCRETE FOOTINGS, THE CONCRETE REINFORCEMENT STEEL SHALL BE GROUNDED AND BONDED BY THE ELECTRICAL CONTRACTOR IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) SECTION 250-50. A CONDUCTIVE REINFORCING BAR MEASURING AT LEAST 1/2" IN DIAMETER AND A MINIMUM OF 20 FEET IN LENGTH THAT IS ENCASED IN A MINIMUM OF 2" CONCRETE COVER SHALL SUFFICE FOR USE AS AN ELECTRODE.
10. THE CONTRACTOR SHALL CONSTRUCT CHASES AND/OR RECESSES AS SHOWN, AND AS REQUIRED TO CONCEAL THE WORK OF OTHER TRADES AS DIRECTED BY THE ARCHITECT TO MATCH ADJACENT CONSTRUCTION, REGARDLESS IF SHOWN ON THE DRAWINGS.
11. THE CONTRACTOR SHALL INSTALL LOOSE LINTELS FOR ALL WALL PENETRATIONS WIDER THAN 6" AS A RESULT OF DUCT, PIPE OR OTHER EQUIPMENT INSTALLATIONS. REF. LOOSE LINTEL SCHEDULE.
12. ALL WALL AND FLOOR PENETRATIONS SHALL BE PATCHED AND SEALED BY THEIR RESPECTIVE TRADES.
13. ALL FLOORS SHALL BE SLEEVED AND SEALED IN PLUMBING CHASES.
14. PARTITIONS SHALL BE LAYED OUT STARTING FROM CONDITIONS WHERE ALIGNMENT WITH EXISTING CONSTRUCTION IS SHOWN. UNLESS OTHERWISE NOTED, DIMENSIONS ARE TAKEN TO THE FACE OF WALLS/PARTITIONS.
15. DIMENSIONS TO MASONRY CONSTRUCTION ARE GIVEN TO THE NOMINAL FACE OF THE WALL. EXTERIOR MASONRY DIMENSIONS ARE TAKEN TO THE NOMINAL FACE OF THE WALL, UNLESS OTHERWISE NOTED. CLEAR DIMENSIONS SHALL BE TAKEN FROM THE FINISHED FACE OF WALLS.
16. WALLS OVERLAPPING COLUMN LINES SHALL BE ASSUMED CENTERED ON THE COLUMN UNLESS OTHERWISE INDICATED.
17. THE CONTRACTOR SHALL FURNISH AND INSTALL BLOCKING IN FRAMED WALL ASSEMBLIES WHERE WALL MOUNTED ACCESSORIES, CABINETS OR OTHER ACCESSORIES ARE INDICATED.
18. TERMINATE ALL INTERIOR WALLS TO THE UNDERSIDE OF DECKING, UNLESS OTHERWISE NOTED OR INDICATED BY SPECIFIC PARTITION TYPES.
19. ALL OUTSIDE CMU CORNERS OF INTERIOR WALLS SHALL BE BULLNOSED, UNLESS OTHERWISE NOTED.
20. PROVIDE ANGLED BLOCKS AND BRICKS FOR OUTSIDE CORNERS OF MASONRY WALLS OR OTHER SPECIAL SHAPES AVAILABLE FROM MANUFACTURER.
21. REFER TO ROOM FINISH LEGEND AND PROJECT SPECIFICATIONS FOR FINISH REQUIREMENTS.

3 PARTIAL DEMOLITION PLAN
1/8" = 1'-0"

4 PARTIAL FLOOR PLAN (PRE-K CLASSROOM PK-3)
1/8" = 1'-0"

ROOM FINISH SCHEDULE

NUMBER	ROOM NAME	FLOOR FINISH	BASE FINISH	WALL FINSH				CEILING	NOTES
				WEST WALL	SOUTH WALL	NORTH WALL	EAST WALL		
PK-1	PRE-K CLASSROOM	VCT-1	RB-1	P-1	P-1	P-1	P-1	ACB-1	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-1A	PK TOILET	PT-4	PT-4A	VARIES	PT-2	VARIES	VARIES	AACB	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
-	CORRIDOR	VCT-1	RB-1	P-1	P-1	P-1	P-1	ACB-1	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
MC-1	MUSIC CLASSROOM	VCT-1	RB-1	P-1	P-1	P-1	P-1	ACB-1	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-2	PRE-K CLASSROOM	VCT-1	RB-1	P-1	P-1	P-1	P-1	ACB-1	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-2B	STORAGE	VCT-1	RB-1	P-1	P-1	P-1	P-1	ACB-1	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-2A	TOILET ROOM	PT-4	PT-4A	PT-2	VARIES	VARIES	VARIES	AACB	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
TR-1A	TOILET	PT-4	PT-4A	VARIES	VARIES	PT-2	VARIES	AACB	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-1B	STORAGE	VCT-1	RB-1	P-1	P-1	P-1	P-1	ACB-1	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
TR-1B	TOILET	PT-4	PT-4A	VARIES	PT-2	VARIES	VARIES	AACB	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-P2A	TOILET ROOM	PT-4	PT-4A	VARIES	VARIES	VARIES	PT-2	AACB	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-P2	PRE-K CLASSROOM	VCT-1	RB-1	P-1	P-1	P-1	P-1	ACB-1	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-P1	PRE-K CLASSROOM	VCT-1	RB-1	P-1	P-1	P-1	P-1	ACB-1	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-P3	PRE-K CLASSROOM	VCT-1	RB-1	P-1	P-1	P-1	P-1	ACB-1	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-P3B	OFFICE	VCT-1	RB-1	P-1	P-1	P-1	P-1	ACB-1	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-P1B	STORAGE	VCT-1	RB-1	P-1	P-1	P-1	P-1	ACB-1	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-P3A	TOILET ROOM	PT-4	PT-4A	PT-2	VARIES	VARIES	VARIES	AACB	SEE A601 DWGS. FINISH PLANS & ELEVATIONS
PK-P1A	TOILET ROOM	PT-4	PT-1A	PT-2	VARIES	VARIES	VARIES	AACB	SEE A601 DWGS. FINISH PLANS & ELEVATIONS

ROOM FINISH ABBREVIATIONS

P	-	PAINT
PT	-	PORCELAIN TILE
RB	-	RUBBER BASE
VCT	-	VINYL COMPOSITE TILE

5 PARTIAL DEMOLITION PLAN (PRIMARY SCHOOL)
1/8" = 1'-0"

6 PARTIAL FLOOR PLAN (PRE-K CLASSROOM PK-P1, PK-P2, PK-P3)
1/8" = 1'-0"

PRIMARY SCHOOL BLDG. KEYPLAN
N.T.S.

ELEMENTARY SCHOOL BLDG. KEYPLAN
N.T.S.

WILLIAM D. HOPKINS III, AIA, LEED AP
NJ - 21AI01706000 / PA - RA012520X
GEORGE R. DUTHIE JR., AIA, PP
NJ - 21AI01299200
JASON DUBOWITCH, AIA
NJ - 21AI01979800 / PA - RA406009

BID SET

William D. Hopkins
Architect

11/01/2024
Date

FVHD architects planners
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Corporate: 1515 Lower Ferry Road - Trenton - New Jersey 08618
Pennsylvania: 140 Whitaker Ave - Mont Clare - Pennsylvania 19453
F V H D P C . C O M

Project Name
Renovations for Five (5) Pre-K Classrooms at
Clayton J. Davenport Elementary School

Project Owner Name
Egg Harbor Township School District

Project Location
2501 Spruce Avenue
Egg Harbor Township, NJ 08234

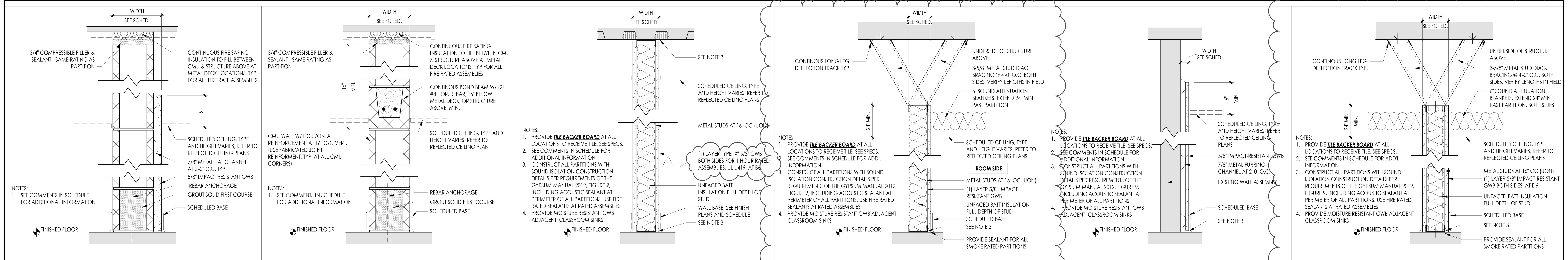
Project Number
5481
Project Date
11/01/2024
Checked By
SWS, WDH
Drawn By
IVA
Scale
AS NOTED

Drawing Name
DEMOLITION PLANS, FLOOR PLANS, AND NOTES

Revisions

No.	Date	Description
1	11/26/2024	Addendum 1

Drawing Number:
A102



"CMU-A" PARTITION TYPE SCHEDULE

TYPE MARK	CMU SIZE (NOMINAL)	FIRE RATING	TEST NUMBER	STC RATING	WIDTH	COMMENTS
8A	8"	2 HR	-	-	9 1/8"	2-HR FIRE BARRIER WALL U.L. DESIGN U905

CMU PARTITION TYPE SCHEDULE

TYPE MARK	CMU SIZE (NOMINAL)	FIRE RATING	TEST NUMBER	STC RATING	WIDTH	COMMENTS
4	4"		-	-	3 5/8"	
4.2	4"	2 HR	-	-	3 5/8"	SEE NEW WORK KEYNOTE C8
6	6"		-	-	5 5/8"	
8.1	8"	1 HR	-	-	7 5/8"	1-HR FIRE PARTITION WALL UL DESIGN U905
12	12"		-	-	11 5/8"	

METAL STUD PARTITION TYPE 'B' SCHEDULE

TYPE MARK	STUD SIZE	FIRE RATING	TEST NUMBER	STC RATING	WIDTH	COMMENTS
B6.1	6"	1 HR	UL U419	-	7 1/4"	1-HR FIRE PARTITION WALL UL DESIGN U419

METAL STUD PARTITION TYPE 'C' SCHEDULE

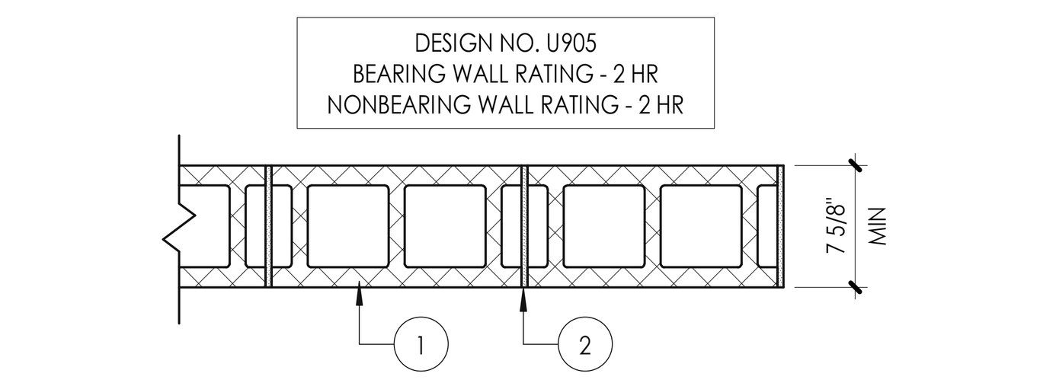
TYPE MARK	STUD SIZE	FIRE RATING	TEST NUMBER	STC RATING	WIDTH	COMMENTS
C6	6"		-	-	6 5/8"	TERMINATE 24" ABOVE CEILING, MIN.

METAL HAT PARTITION TYPE 'F' SCHEDULE

TYPE MARK	STUD SIZE	FIRE RATING	TEST NUMBER	STC RATING	WIDTH	COMMENTS
F	7/8"		-	-	1 1/2"	

METAL STUD PARTITION TYPE 'D' SCHEDULE

TYPE MARK	STUD SIZE	FIRE RATING	TEST NUMBER	STC RATING	WIDTH	COMMENTS
D6	6"		-	-	7 1/4"	TERMINATE 24" ABOVE CEILING, MIN.

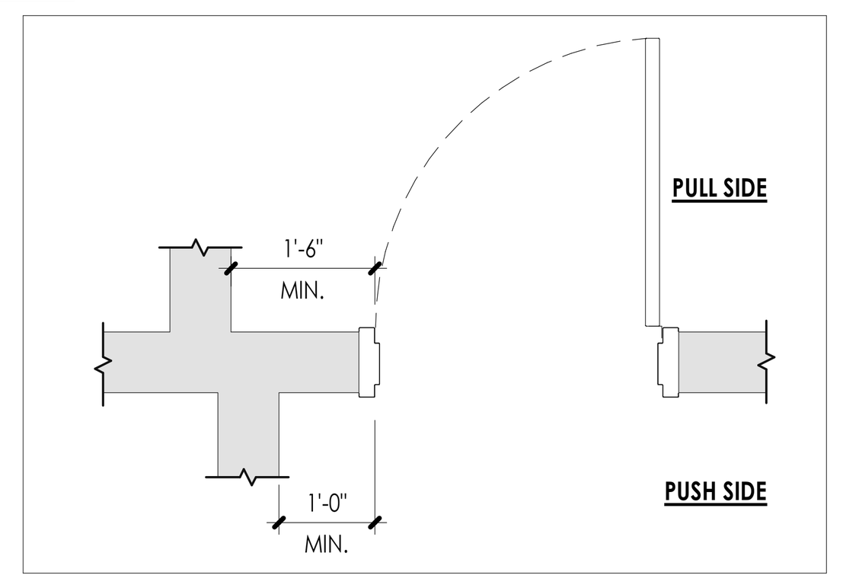


1. CONCRETE BLOCKS*- VARIOUS DESIGNS. CLASSIFICATIONS D-2 (2HR). SEE CONCRETE BLOCKS CATEGORY FOR LIST OF ELIGIBLE MANUFACTURERS.
2. MORTAR- BLOCKS LAID IN FULL BED OF MORTAR, NOM 3/8 IN. THICK, OF NOT LESS THAN 2-1/4 AND NOT MORE THAN 3-1/2 PARTS OF CLEAN SHARP SAND TO 1 PART PORTLAND CEMENT (PROPORTIONED BY VOLUME) AND NOT MORE THAN 50 PERCENT HYDRATED LIME (BY CEMENT VOLUME). VERTICAL JOINTS STAGGERED.

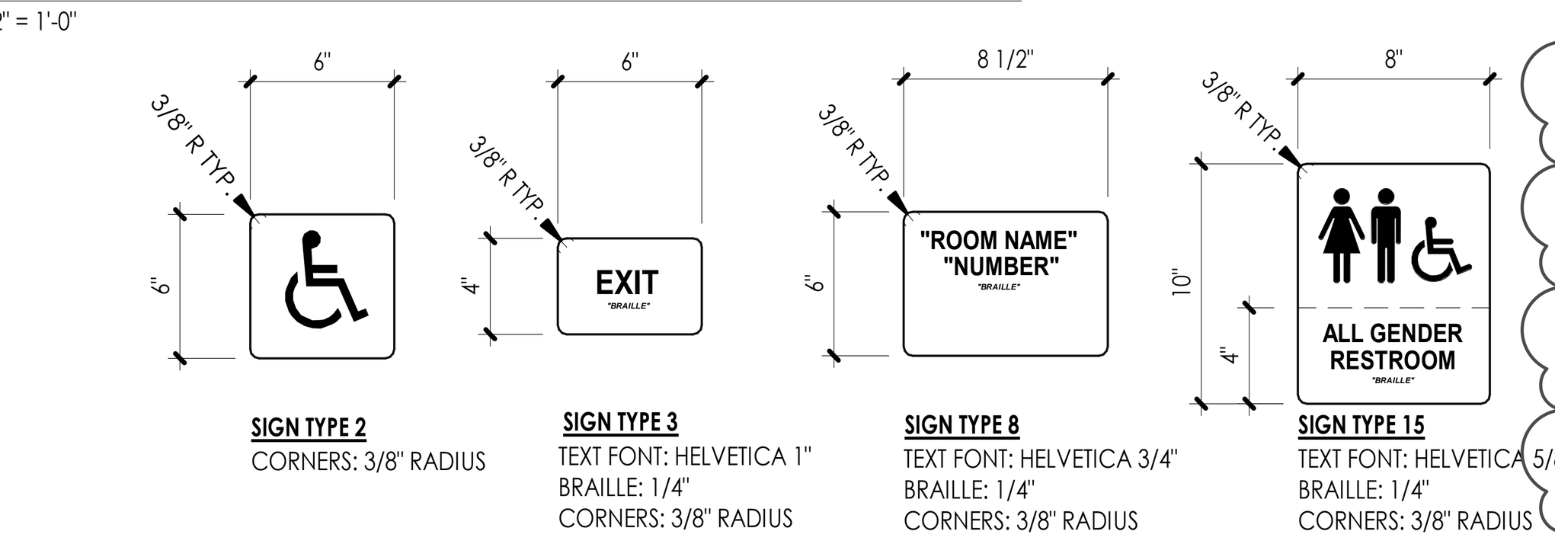
*BEARING THE UL CLASSIFICATION MARKING

NOTE: 1-RATED CMU WALLS SHALL BE CONSTRUCTED SAME AS 2-HOUR RATED CMU WALLS.

8 TYPICAL RATED CONSTRUCTION 8" MIN. CMU
1" = 1'-0"



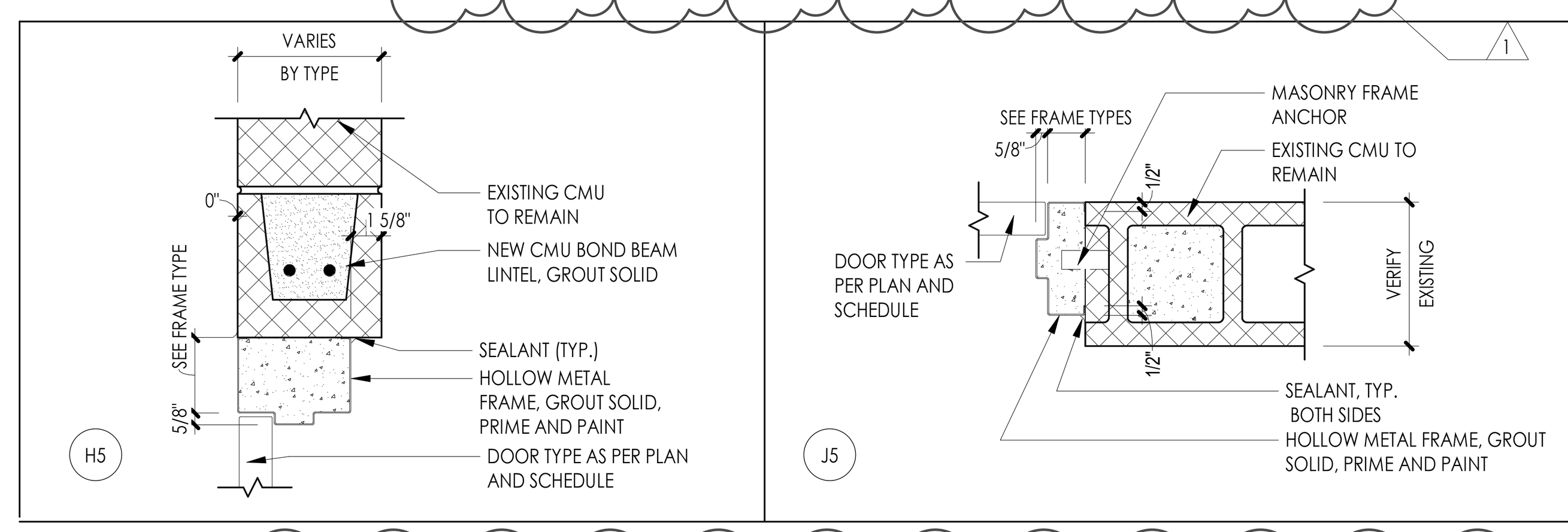
6 DOOR SWING DIAGRAM
1/2" = 1'-0"

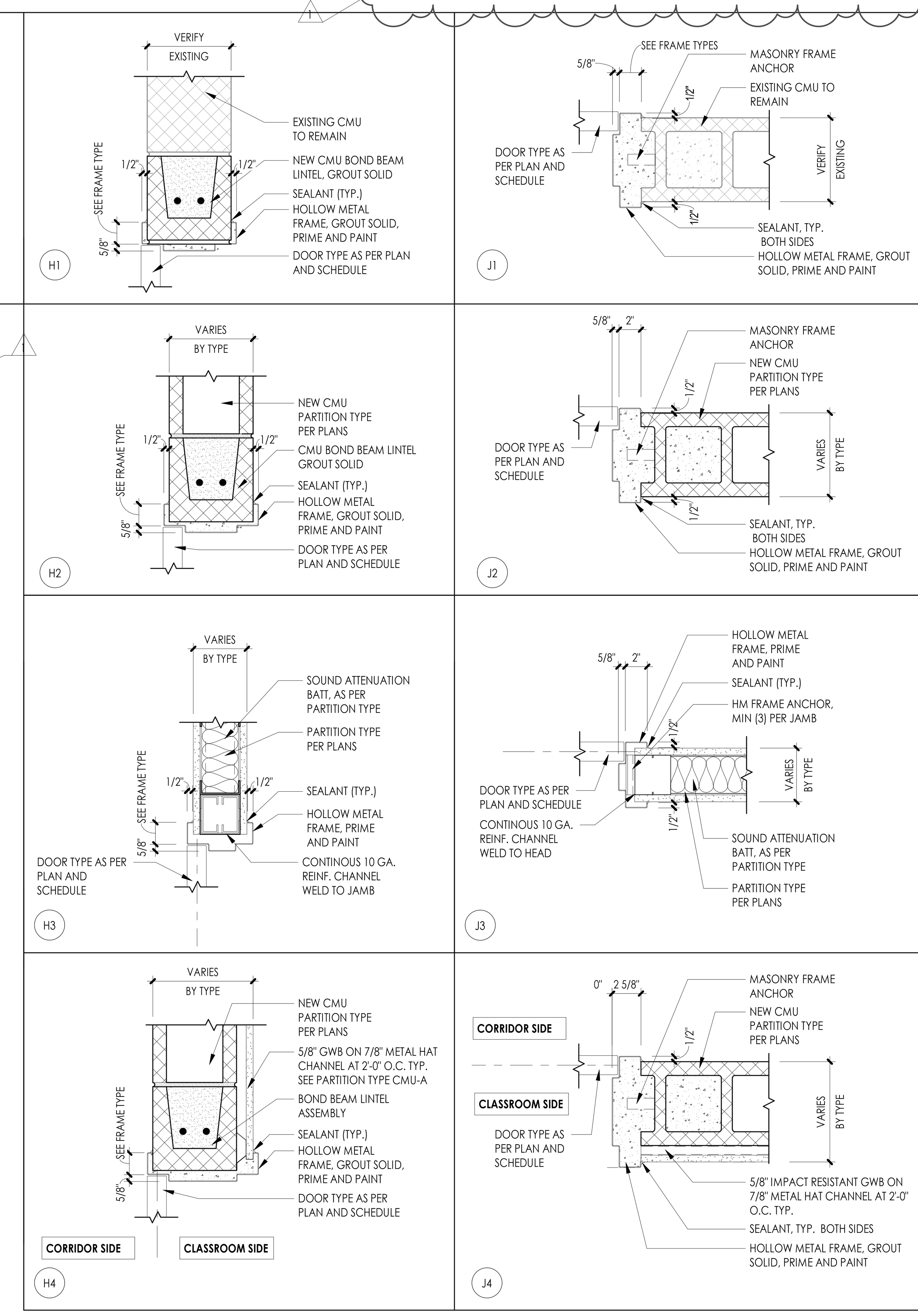


SIGNAGE TYPE NOTES:

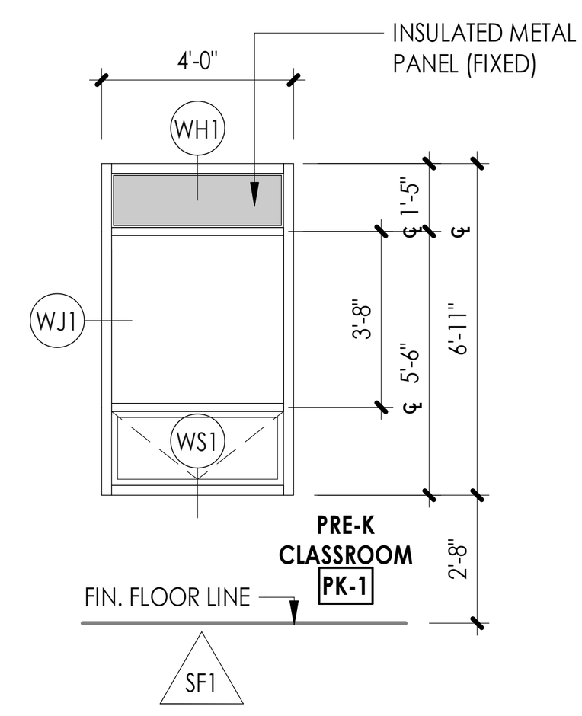
1. ALL LETTERS, NUMBERS, SYMBOLS, AND PICTOGRAPHS SHALL BE RAISED MINIMUM 1/32" FROM SIGN FACE AND SHALL MEET ALL REQUIREMENTS FOR COLOR CONTRAST RATIO.
2. CONTRACTOR IS ADVISED HEREBY THAT FINAL SIGN VERBIAGE AND LAYOUT, INCLUDING THE ADDITION OR DELETION OF PICTOGRAMS, WILL BE FINALIZED BY THE ARCHITECT AND OWNER DURING THE SHOP DRAWING PROCESS.
3. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION ON ROOM SIGNAGES.
4. **SIGN TYPE 25 NOTES:**
   - INSTALL ADJACENT TO DOOR
   - CAPACITY NUMBERS SHALL BE AS SHOWN ON EGRESS PLAN
   - SEE SPECIFICATIONS FOR ADDT'L. INFORMATION

7 TYPICAL ROOM IDENTIFICATION SIGNAGE
1 1/2" = 1'-0"

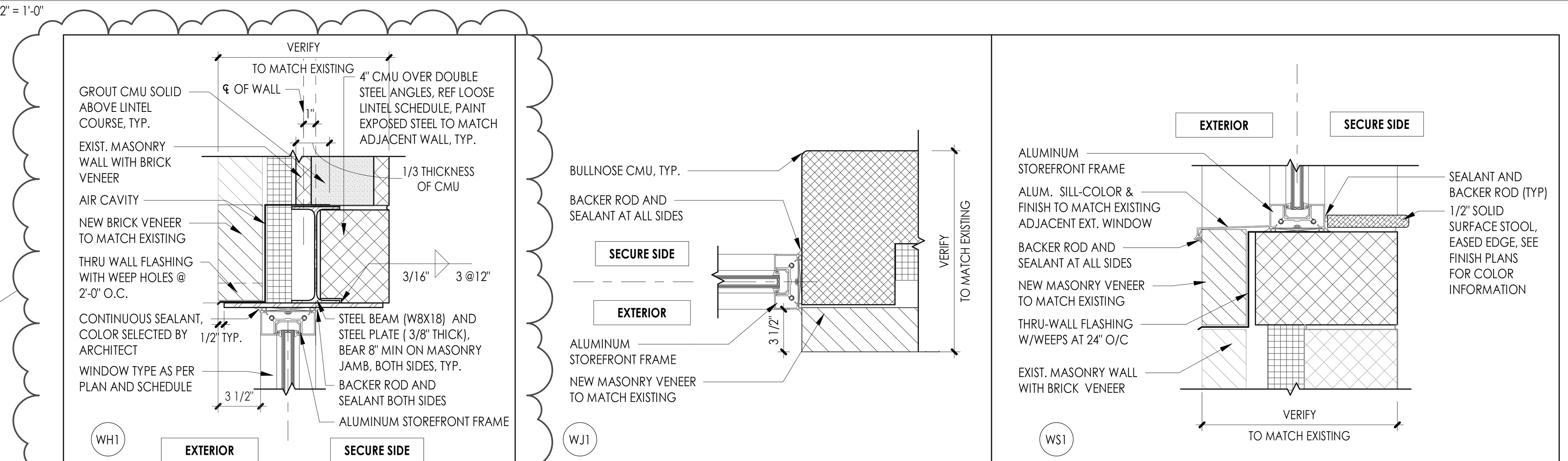




9 FRAME TYPES
1 1/2" = 1'-0"

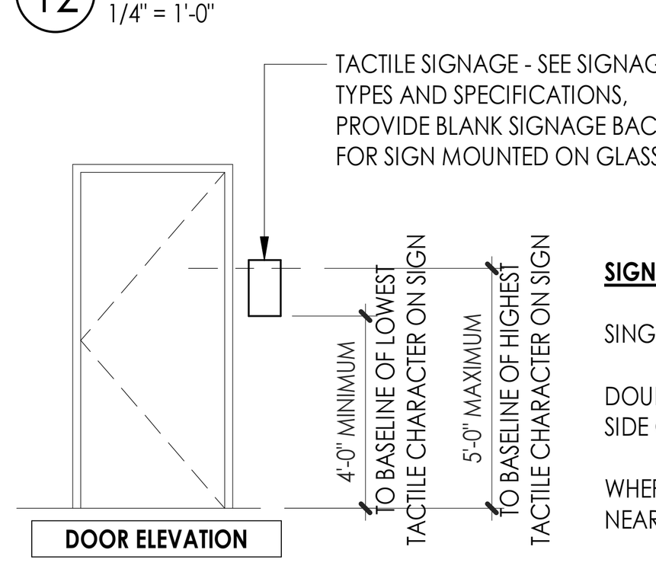


12 TYPICAL WINDOW TYPES AND ELEVATIONS
1/4" = 1'-0"



NOTE: WHERE OPENING OCCURS NEXT TO COLUMN, (1'-4" OR LESS) CONNECT LINTEL TO COLUMN. WHERE OPENING OCCURS NEXT TO EXPOSED COLUMN COPE >AROUND COL. FACE.

13 WINDOW / STOREFRONT FRAME TYPES
1 1/2" = 1'-0"



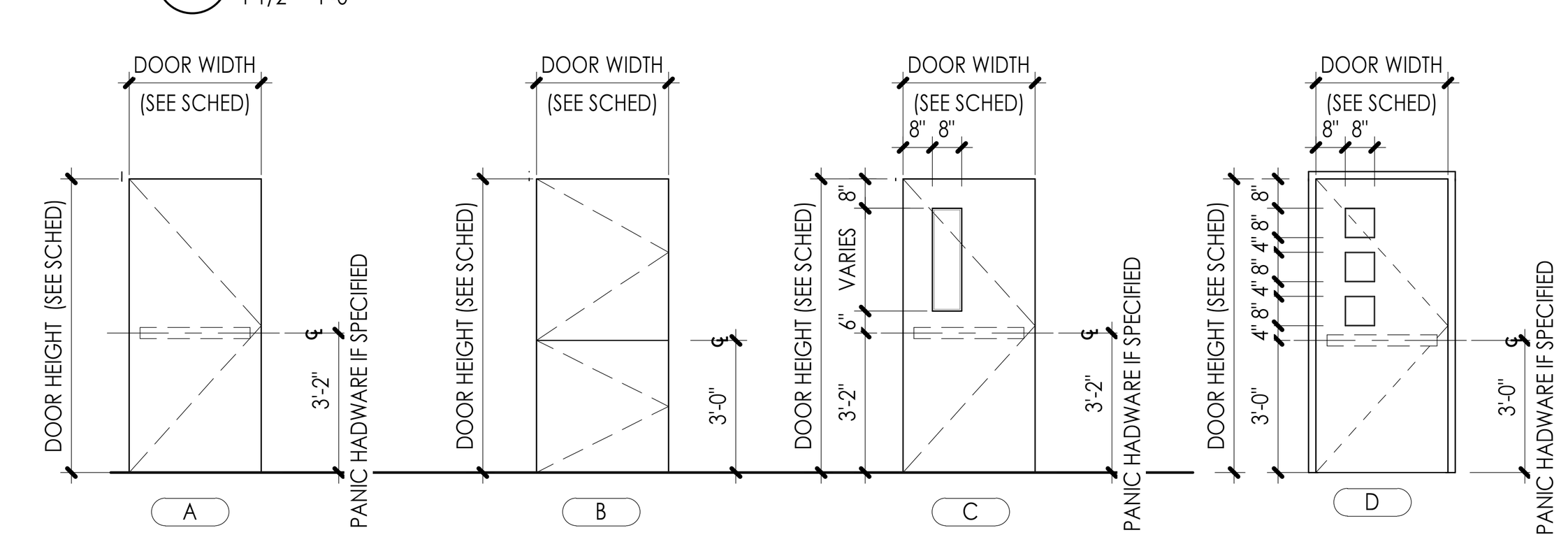
SIGNAGE LOCATIONS

SINGLE LEAF DOORS - LATCH SIDE

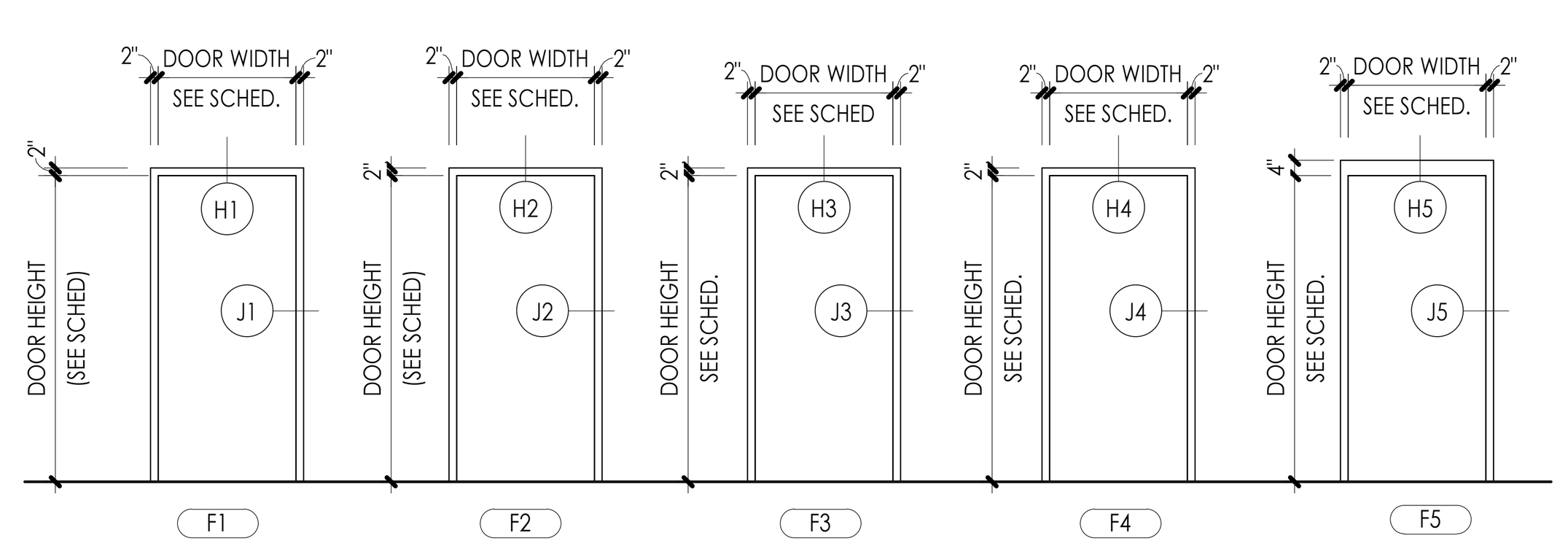
DOUBLE LEAF DOORS - TO THE RIGHT SIDE OF RIGHT LEAF

WHERE NO SPACE IS AVAILABLE - NEAREST ADJACENT WALL

5 TYPICAL ROOM SIGNAGE MOUNTING
1/4" = 1'-0"



10 TYPICAL DOOR TYPES
1/4" = 1'-0"



11 TYPICAL FRAME TYPES
1/4" = 1'-0"

DOOR AND FRAME NOTES

1. ALL DOORS ARE 1-3/4" UNLESS NOTED OTHERWISE.
2. CONTRACTOR TO COORDINATE NEW HARDWARE WITH EXISTING HM DOOR FRAME TO REMAIN.
3. CONTRACTOR IS TO FIELD VERIFY SIZEAND QUANTITIES OF ALL DOORS AND OPENINGS PRIOR TO PLACING ORDER.
4. PROVIDE KICK PLATE AT BOTH SIDES OF THE DOOR AS INDICATED ON DOOR TYPES EXCEPT AT EXTERIOR SIDE OF DOOR U.N.O.
5. PAINT ALL EXPOSED STEEL (COLOR AS SELECTED BY ARCHITECT).
6. PROVIDE COMPATIBLE FLASHING MATERIALS BETWEEN DISSIMILAR MATERIALS SUCH AS STEEL TO ALUMINUM.
7. SHIM ASSEMBLIES AS REQUIRED FOR PLUMB AND LEVEL. PROVIDE SEALANT AND BACKER RODS AT ALL JOINTS BETWEEN WINDOW SYSTEMS, DOOR FRAMES AND OTHER SURROUNDING CONSTRUCTION.
8. THE MINIMUM LATCH SIDE CLEARANCE BETWEEN THE EDGE OF DOOR AND ADJACENT WALL OR OBSTRUCTIONS ON PULL SIDE SHALL BE 1'-6" MINIMUM. SEE DETAIL 6/A103.
9. THE MINIMUM LATCH SIDE CLEARANCE BETWEEN THE EDGE OF DOOR AND ADJACENT WALL OR OBSTRUCTIONS ON PUSH SIDE SHALL BE 1'-0" MINIMUM. SEE DETAIL 6/A103.
10. DO NOT APPLY WALL BASE TO HOLLOW METAL OR ALUMINUM FRAMES, UNLESS OTHERWISE NOTED.
11. THE CONTRACTOR SHALL COORDINATE FOR INSTALLATION OF POWER, CONDUIT AND/OR WIRING, ETC. AT OPENINGS SCHEDULED TO RECEIVE DEVICES SUCH AS DOOR CONTACTS. CARD READERS, ELECTRIC LOCKS AND AUTOMATIC DOOR OPENERS.

SG: SECURITY GLAZING SHALL MEET SAFETY GLAZING REQUIREMENTS AS SPECIFIED UNDER IBC SECTION 2406; TESTED IN ACCORDANCE WITH CPSC 16 PART 1202 AND SHALL BE IDENTIFIED BY MANUFACTURER'S DESIGNATION

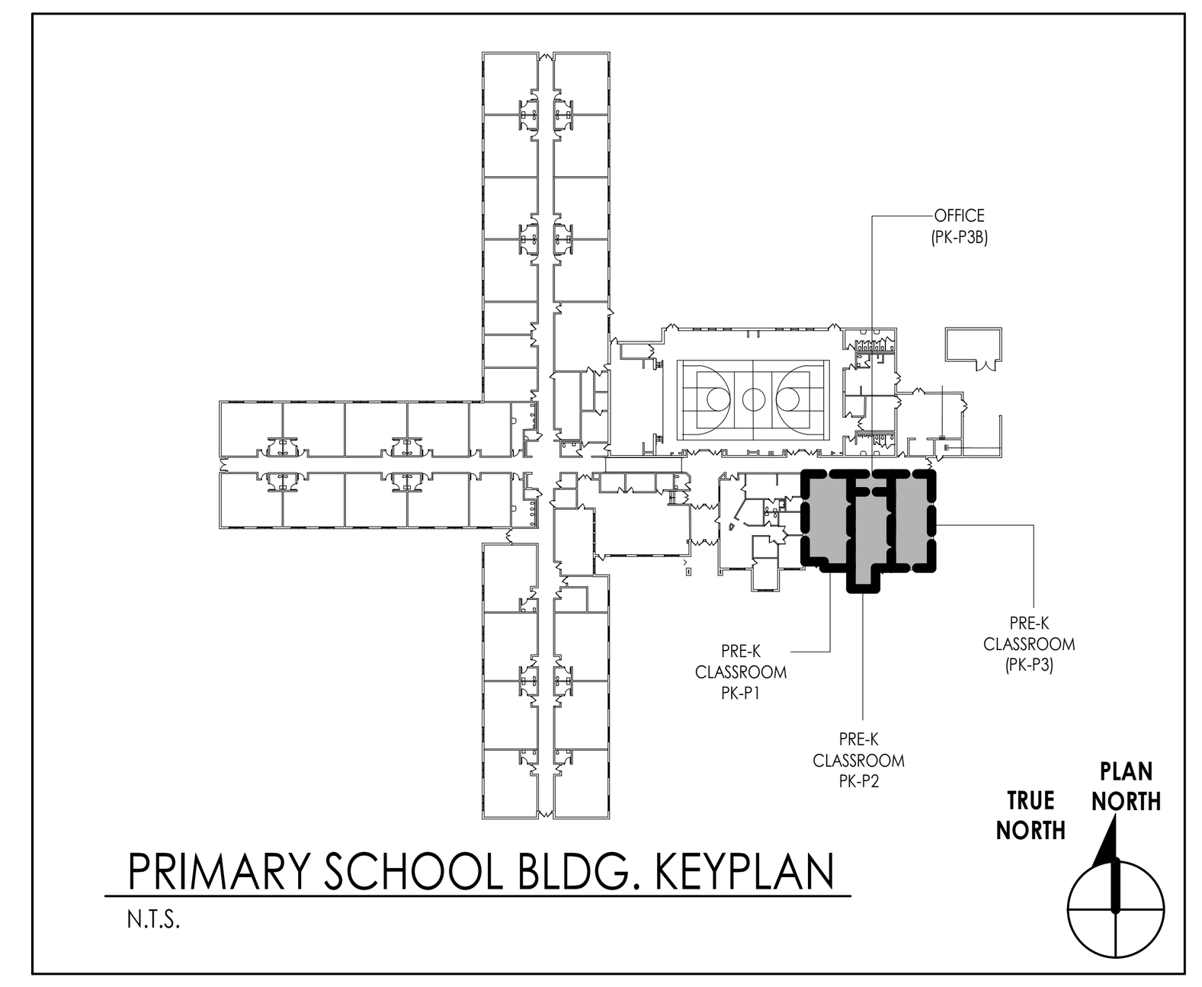
DOOR AND FRAME ABBREVIATIONS

HM- HOLLOW METAL ***SG-*** SECURITY GLAZING ***WD-*** WOOD
FRIG-1 FIRE RATED SECURITY GLAZING ***SWF-*** SECURITY WINDOW FILM

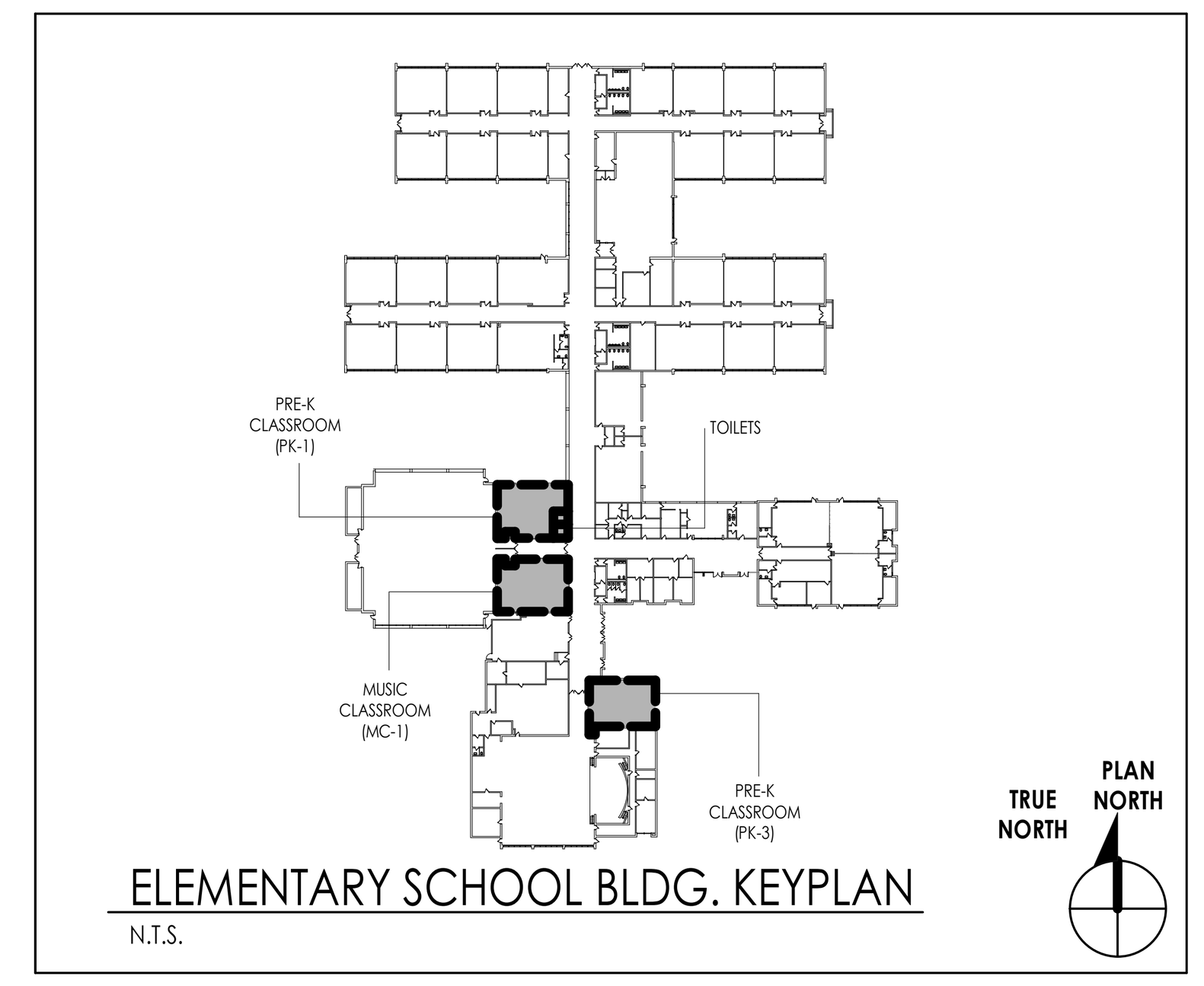
DOOR AND FRAME SCHEDULE

	DOOR							FRAME								
DR. NO.	DOOR LOCATION	WIDTH	HEIGHT	THICKNESS	TYPE	MATERIAL	GLAZING	TYPE	MATERIAL	HEAD TYPE	JAMB TYPE	SILL/ FLRG. TRANSITION TYPE	HARDWARE SET	FIRE RATING	SIGN TYPE	REMARKS
DE-001	CORRIDOR	5'-0"	6'-8"	1 3/4"	C	WD	FRIG-1	F2	HM	H2	J2	SEE 18/A106	1.0	20 MIN	8	VARIABLE DOUBLE DOOR (3'-0"AND 2'-0" WIDE PANELS)
DE-002	CORRIDOR	5'-0"	6'-8"	1 3/4"	C	WD	FRIG-1	F2	HM	H2	J2	SEE 18/A106	1.0	20 MIN	-	VARIABLE DOUBLE DOOR (3'-0"AND 2'-0" WIDE PANELS)
MC-1	MUSIC CLASSROOM MC-1	3'-0"	6'-8"	1 3/4"	C	WD	FRIG-1	F5	HM	H5	J5	S1	8.0	20 MIN	8, 25	-
PK-1	PRE-K CLASSROOM PK-1	3'-0"	6'-8"	1 3/4"	C	WD	FRIG-1	F5	HM	H5	J5	S1	8.0	20 MIN	8	-
PK-1A	PK TOILET PK-1A	3'-0"	6'-8"	1 3/4"	B	WD	NONE	F2	HM	H2	J2	S2	5.0	-	15	DUTCH DOOR
PK-1B	STORAGE ROOM PK-1B	3'-0"	6'-8"	1 3/4"	A	WD	NONE	F2	HM	H2	J2	NONE	2.0	-	8	-
PK-2	PRE-K CLASSROOM PK-2	3'-0"	7'-0"	1 3/4"	C	WD	FRIG-1	ETR	ETR	ETR	ETR	S1	9.0	20 MIN	8	NEW DOOR IN EXISTING FRAME, VERIFY SIZE
PK-2A	TOILET ROOM PK-2A	3'-0"	6'-8"	1 3/4"	B	WD	NONE	F2	HM	H2	J2	S2	5.0	-	15	DUTCH DOOR
PK-2B	STORAGE PK-2B	3'-0"	6'-8"	1 3/4"	A	WD	NONE	F2	HM	H2	J2	S1	2.0	-	8	-
PK-P1	PRE-K CLASSROOM PK-P1	3'-0"	6'-8"	1 3/4"	D	WD	FRIG-1	F4	HM	H5	J5	S1	8.0	90 MIN	8, 25	-
PK-P1A	TOILET ROOM PK-P1A	3'-0"	6'-8"	1 3/4"	B	WD	NONE	F3	HM	H3	J3	S2	5.0	-	15	DUTCH DOOR
PK-P1B	STORAGE ROOM PK-1B	3'-0"	6'-8"	1 3/4"	A	WD	NONE	F1	HM	H1	J1	S1	3.0	90 MIN	8	-
PK-P2	PRE-K CLASSROOM PK-P2	3'-0"	6'-8"	1 3/4"	D	WD	FRIG-1	F4	HM	H5	J5	S1	8.0	90 MIN	8, 25	-
PK-P2A	TOILET ROOM PK-P2A	3'-0"	6'-8"	1 3/4"	B	WD	NONE	F3	HM	H3	J3	S2	5.0	-	15	DUTCH DOOR
PK-P3	PRE-K CLASSROOM PK-P3	3'-0"	6'-8"	1 3/4"	D	WD	FRIG-1	F4	HM	H5	J5	S1	8.0	90 MIN	8, 25	-
PK-P3A1	PRE-K CLASSROOM PK-P3A	3'-0"	6'-8"	1 3/4"	B	WD	FRIG-1	F3	HM	H3	J3	S1	5.0	-	15	DUTCH DOOR
PK-P3A2	PRE-K CLASSROOM PK-P3	3'-0"	6'-8"	1 3/4"	C	WD	SG	F3	HM	H3	J3	NONE	6.0	-	8	-
PK-P3B	OFFICE PK-3B	3'-0"	6'-8"	1 3/4"	D	WD	FRIG-1	F1	HM	H1	J1	S1	4.0	90 MIN	8	-
TR-1A	TOILET TR-1A	3'-0"	6'-8"	1 3/4"	A	WD	NONE	F1	HM	H1	J1	S2	7.0	20 MIN	15	-
TR-1B	TOILET TR-1B	3'-0"	6'-8"	1 3/4"	A	WD	NONE	F1	HM	H1	J1	S2	7.0	20 MIN	15	-

NOTE: REFER TO A601 FOR SILL/ FLOORING TRANSITION TYPES AND FINISH.



PRIMARY SCHOOL BLDG. KEYPLAN
N.T.S.



ELEMENTARY SCHOOL BLDG. KEYPLAN
N.T.S.

WILLIAM D. HOPKINS III, AIA, LEED AP
NJ - 21AI01706000 / PA - RA012520X
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NJ - 21AI01299200
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Architect

BID SET
11/01/2024
Date

FVHD architects planners
Fraytak Veisz Hopkins Duthie P C
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Project Name
Renovations for Five (5) Pre-K Classrooms at
Clayton J. Davenport Elementary School

Project Owner Name
Egg Harbor Township School District

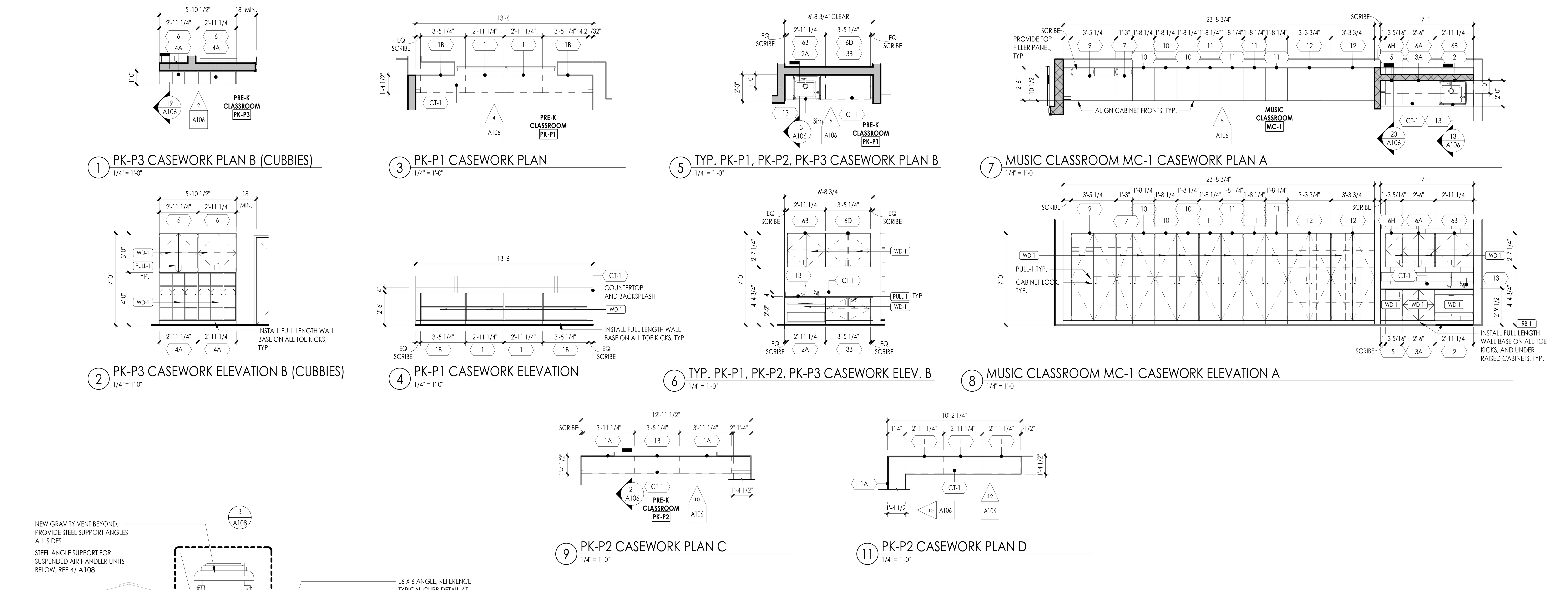
Project Location
2501 Spruce Avenue Egg Harbor Township, NJ 08234

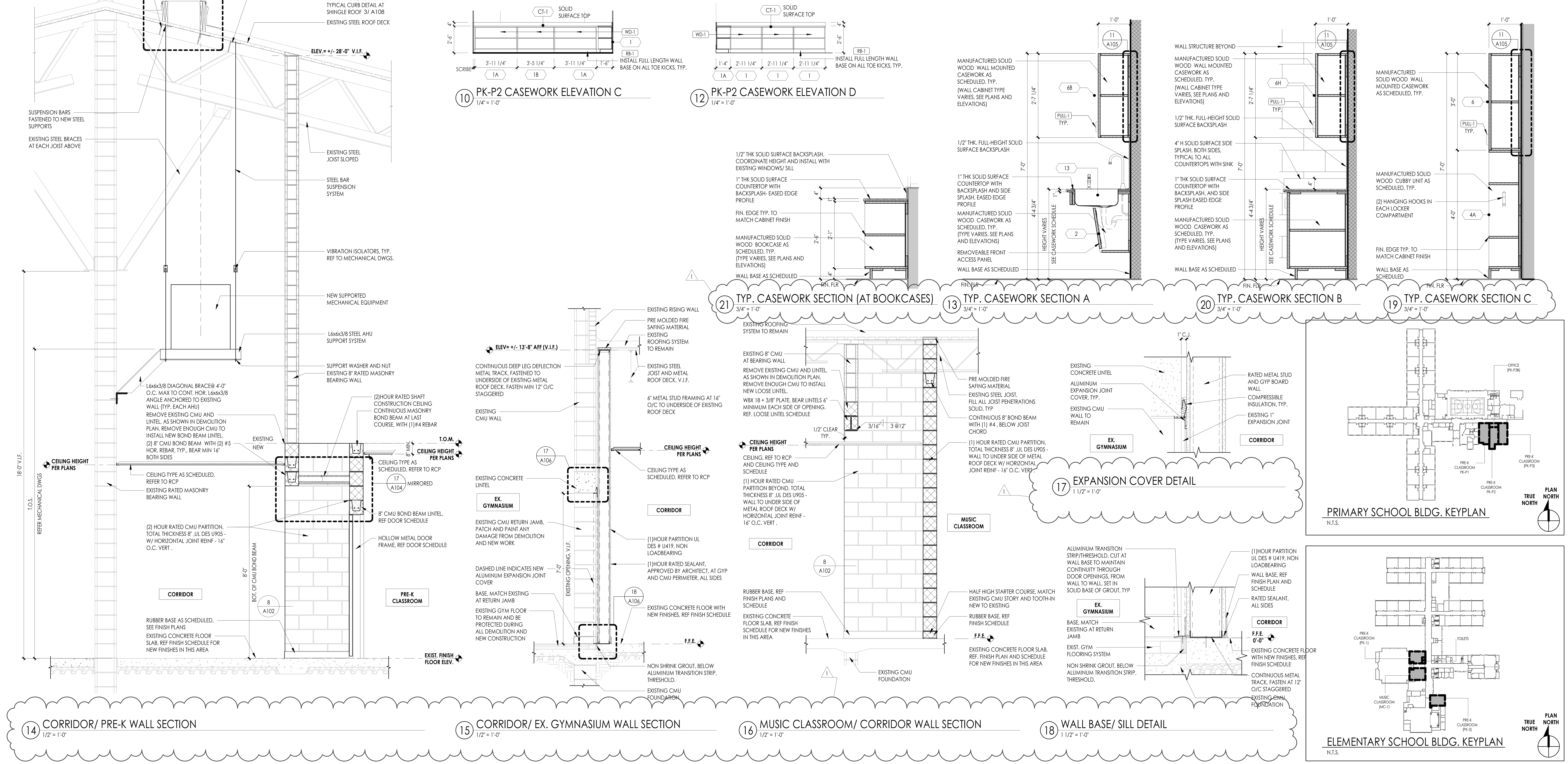
Project Number
5481
Project Date
11/01/2024
Checked By
SWS, WDH
Drawn By
IVA
Scale
AS NOTED

Drawing Name
DOOR AND PARTITION TYPES, DETAILS AND SCHEDULE

Revisions		
No.	Date	Description
1	11/26/2024	Addendum 1

Drawing Number:
A103





CASEWORK NOTES

1. ALL PRE- MANUFACTURED WOOD CASEWORK AND MODEL NUMBERS ARE BASED ON THE MOST CURRENT CAMPBELL RHEA CATALOG UNLESS NOTED OTHERWISE.
2. ALL FURNITURE AND EQUIPMENT SHOWN DASHED AND/OR INDICATED AS (N.I.C.) IS NOT IN CONTRACT.
3. THE CASEWORK & EQUIPMENT SUB-CONTRACTOR(S) SHALL TURN OVER TO THE PLUMBING AND ELECTRICAL CONTRACTOR(S) IN A PACKAGE, ALL SINKS, FIXTURES, FAUCETS, TAILPIECES, STRAINERS, ETC, AND ELECTRICAL DEVICES, NIPPLES AND LOCKNUTS, ETC., FOR INSTALLATION AND FINAL CONNECTION.
4. THE CASEWORK AND EQUIPMENT SUB-CONTRACTOR SHALL PROVIDE AN ITEMIZED LIST AND A DESIGNATED SITE LOCATION FOR THE TRANSFER OF THE MATERIALS REFERENCED IN NOTE 3 TO THE PLUMBING AND ELECTRICAL CONTRACTORS. THE LIST SHALL HAVE A DESCRIPTION OF THE ITEMS AND QUANTITY ALONG WITH A SIGN-OFF LINE FOR THE PLUMBING AND ELECTRICAL CONTRACTORS. A COPY OF THE SIGNED LIST IS TO BE SUBMITTED TO THE ARCHITECT/OWNER PRIOR TO BILLING FOR THIS EQUIPMENT.
5. EQUIPMENT SUB-CONTRACTOR SHALL MAKE SINK CUT-OUTS.
6. ALL CONTRACTORS TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY ARCHITECT IN WRITTEN FORM OF ANY DISCREPANCIES.
7. ALL ALL WOOD VENEER AND SOLID WOOD FINISH SHOULD RUN WITH VERTICAL GRAIN PATTERN.
8. OUTSIDE FASCIA CORNERS TO BE MITERED.
9. ALL EXPOSED SIDE PANELS ON WALL CABINETS AND LIGHT VALANCES TO BE ONE PIECE OF WOOD VENEER.
10. ALL SINK FRONTS TO ALIGN WITH ADJACENT DOOR AND DRAWER FACE. THERE SHOULD NOT BE A VERTICAL MULLION IN CABINETS WITH DOUBLE DOORS, 24" WIDE OR LESS.
11. SEE CASEWORK ELEVATIONS FOR WOOD VENEER/ LAMINATE SEAM LOCATIONS, UNLESS NOTED OTHERWISE.
12. RUBBER BASE SHALL BE INSTALLED ON ALL CASEWORK.
13. ALL CASEWORK DOORS AND DRAWERS SHALL HAVE LOCKS AND KEYED ALIKE PER ROOM AND MASTER KEYED.
14. ALL TOPS SHALL BE 1" THICK (1/2" SOLID SURFACE ON 1/2" PLYWOOD) UNLESSS NOTED OTHERWISE.
15. ALL BACKSPLASH SHALL BE 1/2" SOLID SURFACE.

SINK NOTE "A"

CRB-ADA-2225-A-GR "JUST" STAINLESS STEEL SINK W/ BUBBLER COMBINATION, "THE ACADEMIC GROUP A" SERIES, TYPE 304, WHEELCHAIR ACCESSIBLE SINK, LEDGE TYPE, FAUCET LEDGE REAR, BUBBLER LEDGE RIGHT, SINGLE COMPARTMENT, SELF-RIM, 18 GAUGE STAINLESS STEEL, 25" x 22" x 5" DEEP, SINK UNDERCOATED W/ SOUND DEADENING MATERIAL. FURNISH COMPLETE WITH JUST FAUCET (#J-1174-KS) CONCEALED HOT & COLD WATER MIXING FAUCET WITH SWIVEL GOOSENECK SPOUT, 1.5 GPM AERATOR AND WRIST BLADE HANDLES. INCLUDE ONE JUST BUBBLER (#JBB5) W/ SELF-CLOSING LEVER HANDLE. INCLUDE ONE JUST OFFSET DRAIN ASSEMBLY (#J-ADA-35-FS) W/ DRAIN INSULATING KIT (#J-ADA-150) W/ STAINLESS STEEL FLAT STRAINER & 4" LONG STAINLESS STEEL TAILPIECE (#J-35-SSF).

SINK, FAUCET, STRAINER AND TAILPIECE TO BE SUPPLIED BY EQUIPMENT CONTRACTOR. THE PLUMBING SUBCONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAPS, VALVES, WASTE LINES, ETC. AS REQUIRED TO MAKE THE SYSTEM FULLY FUNCTIONAL. THE PLUMBING SUBCONTRACTOR SHALL MAKE THE FINAL PLUMBING CONNECTIONS REQUIRED TO MAKE THE SYSTEM FULLY FUNCTIONAL.

EQUIPMENT LEGEND

DESIGNATION	DESCRIPTION
EB	EXHIBITION BOARD
TS	TACKSTRIP
DMB	DRY ERASE MARKERBOARD
CT	COUNTERTOP (SOLID SURFACE)
WD	WOOD FINISH
SB	SMART BOARD/ SMART SCREEN
LB	FIXED-MOUNTED LOCKER BENCH

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Architect 11/01/2024 Date
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Project Name

Renovations for Five (5) Pre-K Classrooms at

Clayton J. Davenport Elementary School

Project Owner Name

Egg Harbor Township School District

Project Location

2501 Spruce Avenue Egg Harbor Township, NJ 08234

Project Number	5481
Project Date	11/01/2024
Checked By	SWS
Drawn By	IVA
Scale	AS NOTED

Drawing Name

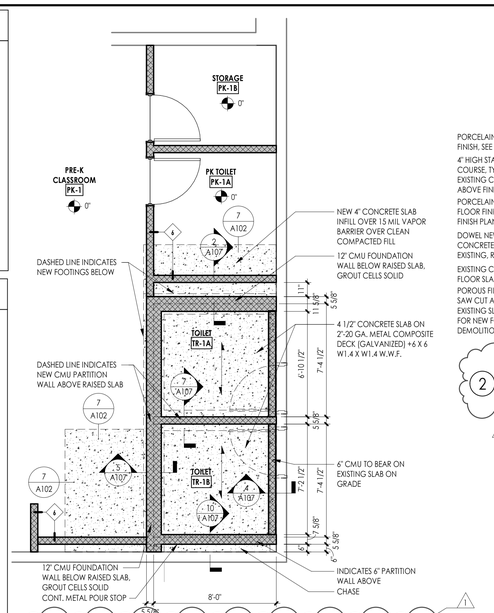
CASEWORK PLANS, ELEVATIONS AND DETAILS

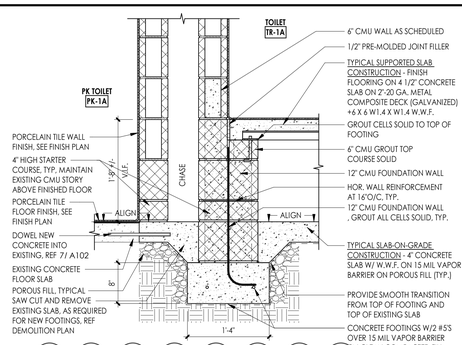
Revisions

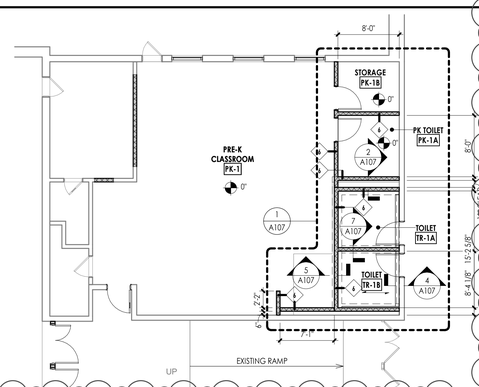
No.	Date	Description
1	11/26/2024	Addendum 1

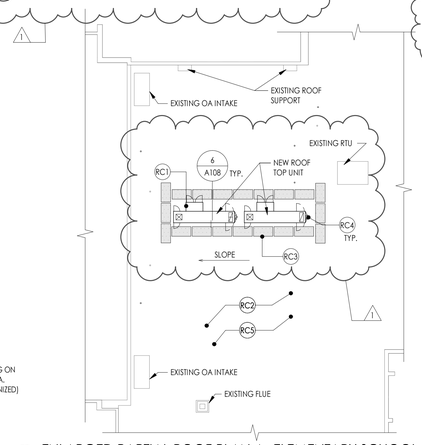
Drawing Number:

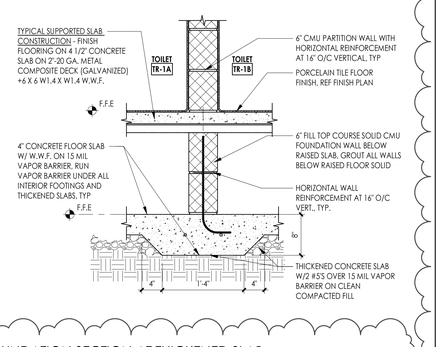
A106

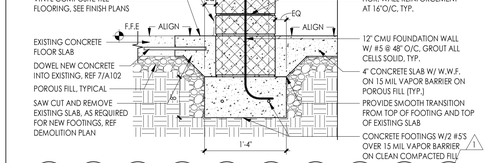


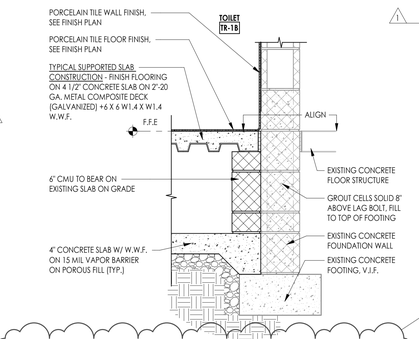


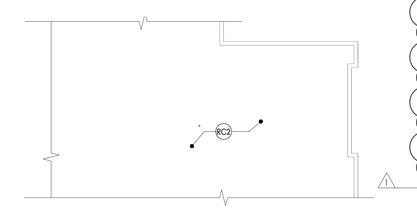


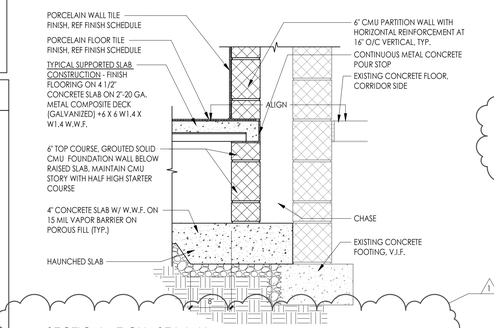


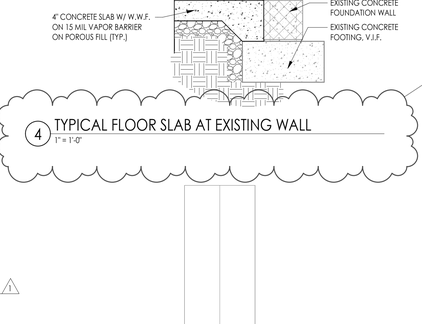


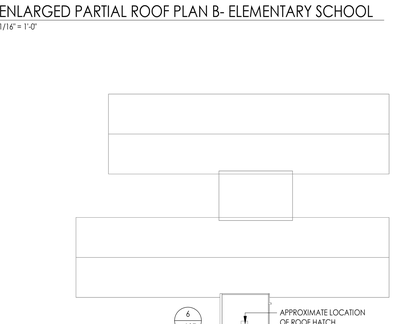


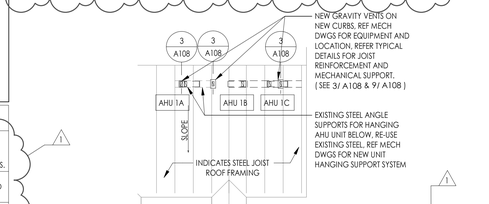


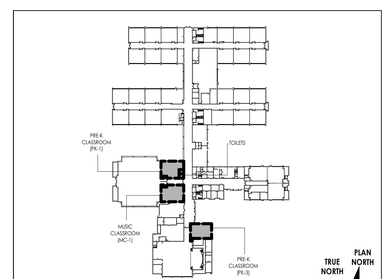












ROOF WARRANTY NOTES

1. THE EXISTING SBS ROOFS ARE UNDER WARRANTY AND CONTRACTOR SHALL PROTECT DURING ALL PHASES OF WORK. CURRENT ROOFING MANUFACTURER WARRANTIES ON FILE INCLUDE BUT ARE NOT LIMITED TO:

   DAVENPORT ES- "GARLAND" WARRANTY No. 0900909 (09/2009).
   DAVENPORT PS- "WARRANTY INFORMATION UNKNOWN AT SHINGLE ROOF"

2. CONTRACTOR SHALL CONTACT ROOFING MANUFACTURER ("GARLAND") TO INFORM THEM THAT WORK WILL BE PERFORMED ON THE WARRANTED ROOFS AND INITIATE THE MANUFACTURER'S PROCESS FOR DOCUMENTATION THEREOF.

3 CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM HIS DEMOLITION CAREFULLY CAUSING NO DAMAGE TO EXISTING MATERIALS TO REMAIN. ANY EXISTING FINISHES OR CONSTRUCTION TO REMAIN DAMAGED BY THE CONTRACTOR WILL BE HIS RESPONSIBILITY TO REPAIR TO THE SATISFACTION OF THE ARCHITECT AT NO ADDITIONAL COST TO OWNER. PRIOR TO THE COMMENCEMENT OF WORK, THE ARCHITECT AND CONTRACTOR WILL INSPECT THE PROJECT SITE AND NOTE ANY EXISTING DAMAGES TO FINISHES OR CONSTRUCTION.

4. ALL ROOFING AND FLASHING WORK ON WARRANTED ROOFS SHALL BE PERFORMED BY A ROOFING SUB-CONTRACTOR WHO MUST BE A CERTIFIED "GARLAND" INSTALLER. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND SHALL MAINTAIN THE EXISTING ROOF WARRANTY.

ROOF LEGEND

▨	CRICKET - SLOPE TO DRAIN (TYPICAL) 1/2"/FT. MIN. (TYPICAL)
☰	TAPERED RIGID INSULATION SLOPE TO DRAIN (TYPICAL) 1/4"/FT. MIN. (TYPICAL)
▒	36" PROTECTIVE WALKWAY PAD
1 SIM / A1.1	DETAIL NUMBER DRAWING NUMBER
LOW HIGH	ROOF TRANSITION or ROOF STEP
RD OD	ROOF DRAIN OVERFLOW DRAIN
RTU	ROOF TOP UNIT
EF	EXHAUST FAN
RV	ROOF VENT
DS	DOWN SPOUT
PV	PLUMBING VENT
TWS	THRU-WALL SCUPPER
DST	DUCT SUPPORT
HP	HIGH POINT
LP	LOW POINT

ROOF CONSTRUCTION NOTES

1. PROVIDE ROOFING MATERIALS THAT COMPLY WITH A CLASS "A" SYSTEM.
2. NEW IMPOSED DEAD LOAD IS EQUAL TO OR LESS THAN EXISTING DEAD LOAD.
3. INSTALL WATER DIVERTING CRICKETS ON HIGH SIDE OF ROOF AT ROOFTOP UNIT.
4. ALL WORK PERTAINING TO THESE DRAWINGS SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES AND WITH ALL AGENCIES HAVING JURISDICTION.
5. ALL CONDITIONS MEETING THE ROOF SURFACE PERPENDICULAR MUST HAVE A MINIMUM 8" FLASHING HEIGHT.
6. ALL LOW SLOPED ROOF AREAS ARE 1/4" PER FOOT IN THE FIELD AND 1/2" PER FOOT AT THE CRICKETS. SLOPE OF CRICKET IS PERPENDICULAR TO CRICKET VALLEY LINE.
7. THE ROOFING CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL GOOD ROOFING PRACTICES INCLUDING THOSE SET FORTH BY THE ROOFING MATERIALS' MANUFACTURER, THE SMACNA SHEET METAL MANUAL, FACTORY MUTUAL, UNDERWRITERS LABORATORIES, AND THE NRCA'S ROOFING AND WATERPROOFING MANUAL.
8. THE ROOFING CONTRACTOR IS RESPONSIBLE FOR FLASHING ALL ROOF TOP PENETRATIONS, UNITS, AND CURBS ON THE ROOFS TO A WATERTIGHT CONDITION TO BE INCLUDED IN THE MANUFACTURER'S WARRANTY. REVIEW ALL DRAWINGS INCLUDED IN THIS SET FOR ROOFTOP PENETRATIONS.
9. UNLESS NOTED OTHERWISE ALL ROOFING, ACCESSORIES, MATERIALS, ETC. SHALL BE CONSIDERED NEW.
10. CONTRACTOR SHALL MAKE NECESSARY TIE-INS AND ALTERATIONS TO EXISTING ROOF IN ACCORDANCE WITH ORIGINAL ROOF MANUFACTURERS REQUIREMENTS, SO AS TO MAINTAIN ORIGINAL WARRANTY ON EXISTING ROOF.
12. ROOFING CONTRACTOR SHALL RETAIN A LICENSED ELECTRICAL SUBCONTRACTOR FOR ALL ELECTRICAL WORK.
13. ROOFING CONTRACTOR SHALL RETAIN A LICENSED HVAC SUBCONTRACTOR FOR ALL HVAC WORK.
14. ROOFING CONTRACTOR SHALL RETAIN A LICENSED HVAC SUBCONTRACTOR FOR ALL HVAC WORK.
15. a. PRIME ALL SURFACES WHICH ARE TO RECEIVE BITUMINOUS ROOFING.
    b. INSTALL ENVELOPE EDGES TO ELIMINATE THE POTENTIAL FOR BITUMEN AND ADHESIVE DRIPPAGE INTO THE BUILDING
    c. ALL WOOD BLOCKING TO BE FRT, (FIRE RETARDANT LUMBER).

GENERAL ROOF DEMOLITION NOTES

1. THE M/E/P CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MECHANICAL AND ELECTRICAL DISCONNECTIONS AND RE-CONNECTIONS REQUIRED FOR THE INSTALLATION OF ALL WORK REQUIRED BY THE DOCUMENTS INCLUDING, REMOVAL, PROTECTION AND REINSTALLATION OF ALL EXISTING ROOF MOUNTED EQUIPMENT. IF REQUIRED FOR REINSTALLATION, EXTEND OR REVISE EXISTING ELECTRICAL CIRCUITS, DUCTWORK, ETC. THE M/E/P CONTRACTOR IS RESPONSIBLE TO NOTIFY AND COORDINATE WITH THE OWNER TO DE-ENERGIZE ALL ELECTRICAL EQUIPMENT PRIOR TO DISCONNECTION AND REMOVAL OF ALL ELECTRICAL AND MECHANICAL EQUIPMENT.
2. THE ROOFING CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM DEMOLITION CAREFULLY CAUSING NO DAMAGE TO EXISTING CONSTRUCTION TO REMAIN. ANY DAMAGES MUST BE REPAIRED AND OR REPLACED BY THE ROOFING CONTRACTOR TO THE OWNER'S AND ARCHITECTS SATISFACTION AND AT NO ADDITIONAL COST TO THE CONTRACT PRICE. PRIOR TO THE COMMENCEMENT OF WORK, THE ROOFING CONTRACTOR IS RESPONSIBLE TO INSPECT AND PHOTOGRAPH EXISTING CONDITIONS WHICH COULD BE MISCONSTRUED AS DAMAGE RESULTING FROM DEMOLITION AND INSTALLATION WORK.
3. FOR PURPOSES OF THIS PROJECT, REMOVE SHALL MEAN REMOVE AND DISPOSE OF SAME OFF SITE IN AN APPROVED AND LEGAL MANNER.
4. THE ROOFING CONTRACTOR SHALL COORDINATE ALL DUMPSTER STAGING AND TRUCK ROUTES WITH THE OWNER. THE ROOFING CONTRACTOR SHALL PROTECT ALL EXISTING PAVED AND PLANTED AREAS. THE ROOFING CONTRACTOR SHALL REPAIR ANY PAVED OR PLANTED AREAS TO THE SATISFACTION OF THE OWNER. THE REPAIRS ARE TO INCLUDE, BUT ARE NOT LIMITED TO, REPAVING OF ASPHALT DRIVEWAYS AND PARKING LOTS, REGRADING AND SEEDING OF LAWN AND PLAYGROUND AREAS AND REPLACING DAMAGED PLANTS, SHRUBS, ETC. ALL REPAIRS AND RESTORATIONS SHALL BE DONE AT NO ADDITIONAL COST TO THE CONTRACT PRICE.
5. THE BUILDING IS OCCUPIED. THE ROOFING CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL MEANS AND METHODS OF CONSTRUCTION AND FOR THE SAFETY OF ALL PERSONS AT THE PROJECT SITE.
6. CONTRACTOR TO PROVIDE LETTER TO ROOF MANUFACTURER THAT ROOF TIE-INS ARE PREFORMED TO MANUFACTURER'S STANDARDS TO MAINTAIN EXISTING WARRANTY

RC - ROOF CONSTR. KEYNOTE LEGEND

RC1	REFERENCE MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR EQUIPMENT AND ITEMS BEING REMOVED AND NEW INSTALLATIONS. EXISTING ROOF OPENING SHALL BE INFILLED IN ACCORDANCE WITH DECK INFILL DETAIL 2/A108, THE NEW ROOF SYSTEM SHALL BE TIED-IN AND IN ACCORDANCE WITH MANUFACTURER'S DETAILS AND INSTRUCTIONS. REFERENCE WARRANTY NOTES.
RC2	EXISTING ROOF TO REMAIN IS UNDER WARRANTY, INSTALLATION OF ROOFTOP EQUIPMENT IN THIS AREAS SHALL BE DONE IN ACCORDANCE WITH THE ROOFING MANUFACTURER'S REQUIREMENTS TO MAINTAIN SAID WARRANTY, TYPICAL. SEE ROOF WARRANTY NOTES THIS SHEET.
RC3	INSTALL WALKWAY PADS AROUND NEW MECHANICAL UNIT AS INDICATED. MODIFY WALKWAY PADS AS REQUIRED, NOT TO IMPEDE THE FREE FLOW OF WATER TO THE DRAINAGE POINTS. REFER TO 7/A108 DETAIL.
RC4	INSTALL WATER DIVERTING CRICKET COMPOSED OF TAPERED INSULATION AT HIGH SIDE OF ROOFING UNIT.
RC5	ROOFTOP EQUIPMENT: ROOFING CONTRACTOR TO PROVIDE TEMPORARY ROOFING IF REQUIRED PRIOR TO UNIT INSTALLATION AND TO PROVIDE PERMANENT WEATHERTIGHTNESS AS REQUIRED AFTER UNITS/ SUPPORTS, ETC. HAVE BEEN SET.

1 FOUNDATION PLAN AT RAISED FLOOR
1/4" = 1'-0"

2 TYPICAL FOOTING/ WALL SECTION A
1" = 1'-0"

3 RAISED FLOOR FOUNDATION PLAN (PK-1, TR-1A, TR-1B)
1/8" = 1'-0"

6 ENLARGED PARTIAL ROOF PLAN A- ELEMENTARY SCHOOL
1/16" = 1'-0"

7 FOUNDATION SECTION AT THICKENED SLAB
1" = 1'-0"

5 TYPICAL FOOTING/ WALL SECTION B
1" = 1'-0"

4 TYPICAL FLOOR SLAB AT EXISTING WALL
1" = 1'-0"

9 ENLARGED PARTIAL ROOF PLAN B- ELEMENTARY SCHOOL
1/16" = 1'-0"

10 SECTION AT CHASE WALL
1" = 1'-0"

8 ENLARGED PARTIAL ROOF PLAN- PRIMARY SCHOOL
1" = 30'-0"

11 PRIMARY SCHOOL ROOF KEYPLAN
1" = 60'-0"

12 ELEMENTARY SCHOOL ROOF KEYPLAN
1" = 60'-0"

GENERAL FRAMING NOTES

CAST-IN-PLACE CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF THE ACI BUILDING CODE.
2. ALL CONCRETE, EXCEPT SLABS ON GRADE, SHALL ATTAIN 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. ALL CONCRETE FOR SLABS ON GRADE SHALL ATTAIN 3500 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
3. READY MIX:
   A. COMPLY WITH ACI-301, ACI-304 AND ASTM C-94.
   B. MAXIMUM TIME BETWEEN INTRODUCTION OF WATER AND PLACING TO BE 1-1/2 HOURS.
   C. MINIMUM CEMENT CONTENT SHALL BE 470 POUNDS PER CUBIC YARD FOR 3000 PSI CONCRETE, AND 520 POUNDS PER CUBIC YARD FOR 3500 PSI CONCRETE.
   D. MAXIMUM WATER CEMENT RATIO SHALL BE 0.51 FOR 3000 PSI CONCRETE, AND 0.47 FOR 3500 PSI CONCRETE.
   E. MAXIMUM SLUMP OF CONCRETE SHALL BE 4 INCHES AS DETERMINED BY ASTM C-143. MAXIMUM SLUMP OF CONCRETE SHALL BE 3 INCHES: AND 8" AFTER ADDITION OF HRWR TO SITE VERIFIED 3" SLUMP FOR CONCRETE CONTAINING HRWR ADMIXTURE AS DETERMINED BY ASTM C-143.
   F. ALL CONCRETE EXPOSED TO THE GROUND OR WEATHER SHALL BE AIR ENTRAINED BETWEEN 4-5% AS DETERMINED BY ASTM C-231 OR C-173.
   G. DO NOT LOAD TRUCKS ABOVE RATED CAPACITY.
   H. HIGH-RANGE WATER-REDUCING ADMIXTURE (SUPER PLASTICIZER) SHALL CONFORM TO ASTM C-494, TYPE F OR G AND CONTAIN NOT MORE THAN 0.1 PERCENT CHLORIDE IONS.
4. COLD WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI-306.
5. PREPARE CONCRETE TEST CYLINDERS FROM EACH DAY'S POUR. CYLINDERS SHALL BE PROPERLY CURED, STORED AND TESTED. SUBMIT RESULTS TO ARCHITECT.
6. THROUGHOUT CONSTRUCTION THE CONCRETE WORK SHALL BE ADEQUATELY PROTECTED AGAINST DAMAGE DUE TO EXCESSIVE LOADING, CONSTRUCTION EQUIPMENT, MATERIALS OR METHODS, ICE, RAIN, SNOW, EXCESSIVE HEAT AND FREEZING TEMPERATURES.
7. EARLY DRYING OUT OF CONCRETE, ESPECIALLY DURING THE FIRST 24 HOURS, SHALL BE CAREFULLY GUARDED AGAINST. ALL SURFACES SHALL BE MOIST CURED OR PROTECTED USING A MEMBRANE CURING AGENT APPLIED AS SOON AS FORMS ARE REMOVED. IF MEMBRANE CURING AGENT IS USED, EXERCISE CARE NOT TO DAMAGE COATING.
8. BENDING, TACK WELDING, CUTTING OR SUBSTITUTE REINFORCING OTHER THAN AS SHOWN ON THE CONTRACT DRAWING IS PROHIBITED UNLESS SPECIFIC APPROVAL FOR EACH CASE IS GIVEN BY ARCHITECT.
9. CONCRETE SHALL BE CONVEYED, PLACED AND FINISHED IN A WORKMANLIKE MANNER.
10. PRIOR TO MAKING REPAIRS, CONTRACTOR SHALL OBTAIN PERMISSION FROM ARCHITECT TO MAKE PATCHES FOR OTHER THAN MINOR HONEYCOMBING.
11. CONTRACTOR TO COORDINATE REQUIREMENTS OF STRUCTURAL, ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
12. ALL MATERIALS SHALL BE STORED TO PROTECT THEM AGAINST THE ELEMENTS.

REINFORCING

1. ALL REINFORCING BAR DETAILS SHALL CONFORM TO THE LATEST ACI CODE AND DETAILING MANUAL.
2. ALL BARS SHALL BE ASTM A-615, GRADE 60.
3. WELDED WIRE FABRIC SHALL BE ASTM A-185.
4. SYNTHETIC FIBER REINFORCEMENT SHALL BE EQUAL TO FIBERSTRAND 100 BY EUCLID CHEMICAL COMPANY.
5. PROVIDE AND SCHEDULE WITH THE SHOP DRAWINGS ALL NECESSARY ACCESSORIES TO HOLD REINFORCING SECURELY IN POSITION.
6. CLEARANCE OF MAIN REINFORCING FROM ADJACENT SURFACES UNLESS SHOWN OTHERWISE SHALL BE:
   A. UNFORMED SURFACES IN CONTACT WITH GROUND OR EXPOSED TO THE WEATHER: 3"
   B. BOTTOM SURFACES OF SLABS ON GRADE: 3"
   C. FORMED SURFACES IN CONTACT WITH GROUND OR EXPOSED TO WEATHER:
      1. #5 BARS OR SMALLER: 1-1/2"
      2. BARS LARGER THAN #5: 2"
   D. EXTERIOR WALL SURFACES: 2"
   E. IN ALL CASES NOT LESS THAN THE DIAMETER OF THE BAR.
7. ALL REINFORCEMENT SHALL BE INSPECTED AND APPROVED BEFORE CONCRETE IS POURED.
8. TOLERANCES FOR PLACING REINFORCING SHALL BE:
   A. +OR- 1/4 INCH FOR MEMBERS WITH AN EFFECTIVE DEPTH OF 24 INCHES OR LESS.
   B. +OR- 1/2 INCH FOR MEMBERS WITH AN EFFECTIVE DEPTH OF MORE THAN 24 INCHES.
9. WHERE CONTINUOUS BARS ARE CALLED FOR, THEY SHALL BE RUN CONTINUOUSLY AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS. LAPS SHALL BE 40 BAR DIAMETERS. BAR LAPS MAY BE OFFSET TO AVOID CONTROL OR CONSTRUCTION JOINTS.
10. PROVIDE #5 TOP AND BOTTOM IN SLABS AND #5 EACH FACE IN WALLS AT ALL FOUR SIDES OF AN OPENING, UNLESS OTHERWISE NOTED. EXTEND BARS 2'-0" BEYOND OPENING OR HOOK WHERE 2'-0" NOT POSSIBLE.
11. ELECTRICAL CONTRACTOR TO PROVIDE GROUNDING ELECTRODE SYSTEM AS REQUIRED BY NEC SECTION 250-52(A). COORDINATE LOCATION AND SCHEDULE WITH GENERAL CONTRACTOR.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL DETAILS SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST ISSUE OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN".
2. CONNECTIONS SHALL BE DESIGNED TO DEVELOP THE FULL STRENGTH OF THE MEMBER OVER THE REQUIRED SPAN.
3. PROVIDE DOUBLE ANGLE CONNECTIONS AT ALL BEAM TO WIDE FLANGE COLUMNS AND BEAM TO BEAM CONNECTIONS WHENEVER POSSIBLE. THE STEEL FABRICATOR MUST NOTIFY THE STRUCTURAL ENGINEER IF THERE ARE TO BE ANY CHANGES. SEE TYPICAL THRU-PL DETAIL FOR BEAM TO TUBE COLUMN CONNECTIONS.
4. FIELD CONNECTIONS SHALL BE MADE BY HIGH STRENGTH BOLTS 3/4" MINIMUM IN DIAMETER OR WELDED AS SHOWN ON DRAWINGS.
5. HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO A BOLT TENSION NOT LESS THAN THE PROOF LOAD GIVEN IN ASTM A-325 SPECIFICATIONS.
6. WELDING SHALL BE DONE IN CONFORMITY WITH THE LATEST CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION OF THE AMERICAN WELDING SOCIETY. ALL WELDS SHALL DEVELOP THE FULL STRENGTH OF THE MATERIAL BEING WELDED, UNLESS OTHERWISE NOTED.
7. ALL STRUCTURAL STEEL SHALL RECEIVE ONE SHOP COAT OF PAINT EXCEPT CONTACT SURFACES, WITHIN 4 INCHES OF FIELD WELDS.
8. ALL STRUCTURAL STEEL SHALL BE ACCURATELY SET AND PROPERLY HELD IN POSITION WITH SUITABLE TEMPORARY BRACES AND STAYS UNTIL PERMANENTLY SECURED. THE BUILDING SHALL BE TRUE AND PLUMB BEFORE CONNECTIONS MAY BE FINALLY WELDED OR BOLTED.
9. SHOP DRAWINGS OF ALL STRUCTURAL STEEL SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL.
10. ALL PIPE SHAPES SHALL BE ASTM A53, GRADE B, FY= 35 KSI.
11. ALL TUBES SHAPES SHALL BE ASTM A500, GRADE B, FY=46 KSI.
12. ALL STRUCTURAL WIDE FLANGE SHAPES TO BE ASTM A-992/A572, GRADE 50.
13. ALL STEEL PLATES, ANGLES, CHANNELS ARE TO BE ASTM A-36 UNLESS INDICATED OTHERWISE.

STEEL FLOOR DECK

1. DECK SHALL BE 20 GAGE GALVANIZED EQUAL TO 2" LOK-2 FLOOR BY ROOF DECK, INC. OR P-3623 BY CANAM STEEL WITH RESPECT TO LOAD CARRYING CAPACITY, DEFLECTION, SLAB WEIGHT AND U.L. LABEL. SUBMIT DATA TO STRUCTURAL ENGINEER.
2. DECK SHALL BE 20 GAGE MINIMUM.
3. DECK INSTALLATION TO BE IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. ALL BEAMS TO HAVE PUDDLE WELDS AT 12" O.C. (MAX).
5. INSTALLATION TO BE 2 SPAN CONTINUOUS.
6. FLOOR CONSTRUCTION IS UNSHORED COMPOSITE DESIGN. THE STEEL WILL DEFLECT UNDER THE WEIGHT OF THE CONCRETE PLACED. THE GENERAL CONTRACTOR IS TO POUR SUFFICIENT CONCRETE, OVER AND ABOVE THE SPECIFIED DEPTH, TO PROVIDE A LEVEL FLOOR.

MASONRY

1. ALL BLOCK WORK SHALL BE IN ACCORDANCE WITH IBC2021 W/ NJ MODIFICATION AND OTHER APPLICABLE CODES.
2. ALL BLOCK SHALL BE LIGHTWEIGHT AGGREGATE AND CONFORM TO ASTM C 90.
3. MORTAR SHALL BE ASTM C 270, TYPE M FOR BELOW GRADE AND TYPE M OR S FOR ABOVE GRADE WORK.
4. HORIZONTAL REINFORCING SHALL BE NO. 9 GAGE "DUR-O-WALL OR EQUIVALENT. PROVIDE FABRICATED CORNER SECTIONS AT ALL CORNERS. WHERE MASONRY IS LAID IN OTHER THEN RUNNING BOND, HORIZONTAL JOINT REINFORCEMENT IS TO BE PROVIDED AT EVERY HORIZONTAL JOINT.
5. WHERE BLOCK FILL IS CALLED FOR ON DRAWINGS, USE TYPE M MORTAR OR CONCRETE WITH A COMPRESSIVE STRENGTH OF 2500 PSI IN ACCORDANCE WITH ASTM C 476, AND INSTALLED IN ACCORDANCE WITH ACI-531 FOR HIGH OR LOW LIFT PROCEDURES.
6. COORDINATE MASONRY WITH ALL TRADES REQUIRING ITEMS TO BE BUILT-IN.

LOOSE LINTEL SCHEDULE

MASONRY OPENING	LINTEL SIZE	REMARKS
(FOR 4", 8", 12", & 16" WALLS)		
UP TO 4'-0"	L - 3 1/2" x 3 1/2" x 1/4"	
4'-1 TO 6'-0"	L - 5" x 3 1/2" x 5/16"	
6'-1" TO 8'-0"	L - 6" x 3 1/2" x 5/16"	
OVER 8'-0"	W 8 x 18 + PLATE	
(FOR 6" WALLS)		
MASONRY OPENING	LINTEL SIZE	REMARKS
2'-0" TO 6'-0"	WT 7 x 11	
6'-1" TO 8'-0"	WT 8 x 13	

NOTES:

1. PROVIDE ONE (1) ANGLE FOR EACH 4" OF MASONRY WIDTH.
2. BEAR LINTELS 6" MINIMUM EACH SIDE OF OPENING.
3. ALL LINTELS IN EXTERIOR WALLS TO BE GALVANIZED.
4. WHERE OPENINGS LOCATED NEXT TO COLUMNS OR BEAMS, ATTACH TO STRUCTURAL STEEL, CONNECTION NOT TO POTRUDE INTO OPENING.
5. CONSULT ARCHITECTURAL, MECHANICAL & ELECTRICAL DRAWINGS FOR OPENING SIZE & LOCATION.
6. UNLESS OTHERWISE SPECIFIED ON DRAWINGS PROVIDE & INSTALL LINTELS FOR ALL SQUARE HEAD MASONRY OPENINGS IN ALL MASONRY WALLS IN ACCORDANCE WITH THE FOLLOWING SCHEDULES & COMMENTS.

ELEMENTARY SCHOOL BLDG. KEYPLAN
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BID SET

William D. Hopkins
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11/01/2024
Date

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Project Name
Renovations for Five (5) Pre-K Classrooms at
Clayton J. Davenport Elementary School

Project Owner Name
Egg Harbor Township School District

Project Location
2501 Spruce Avenue
Egg Harbor Township,
NJ 08234

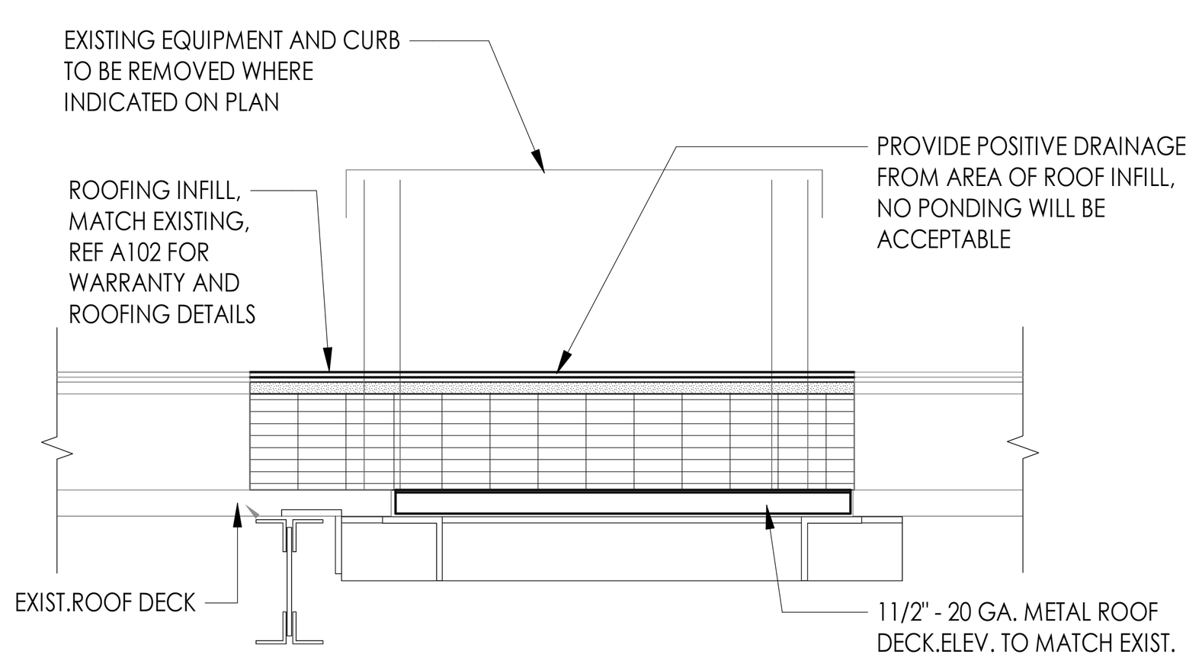
Project Number
5481
Project Date
11/01/2024
Checked By
WDH, SWS
Drawn By
IVA
Scale
AS NOTED

Drawing Name
RAISED FLOORING PLAN, ROOF PLANS AND DETAILS

Revisions

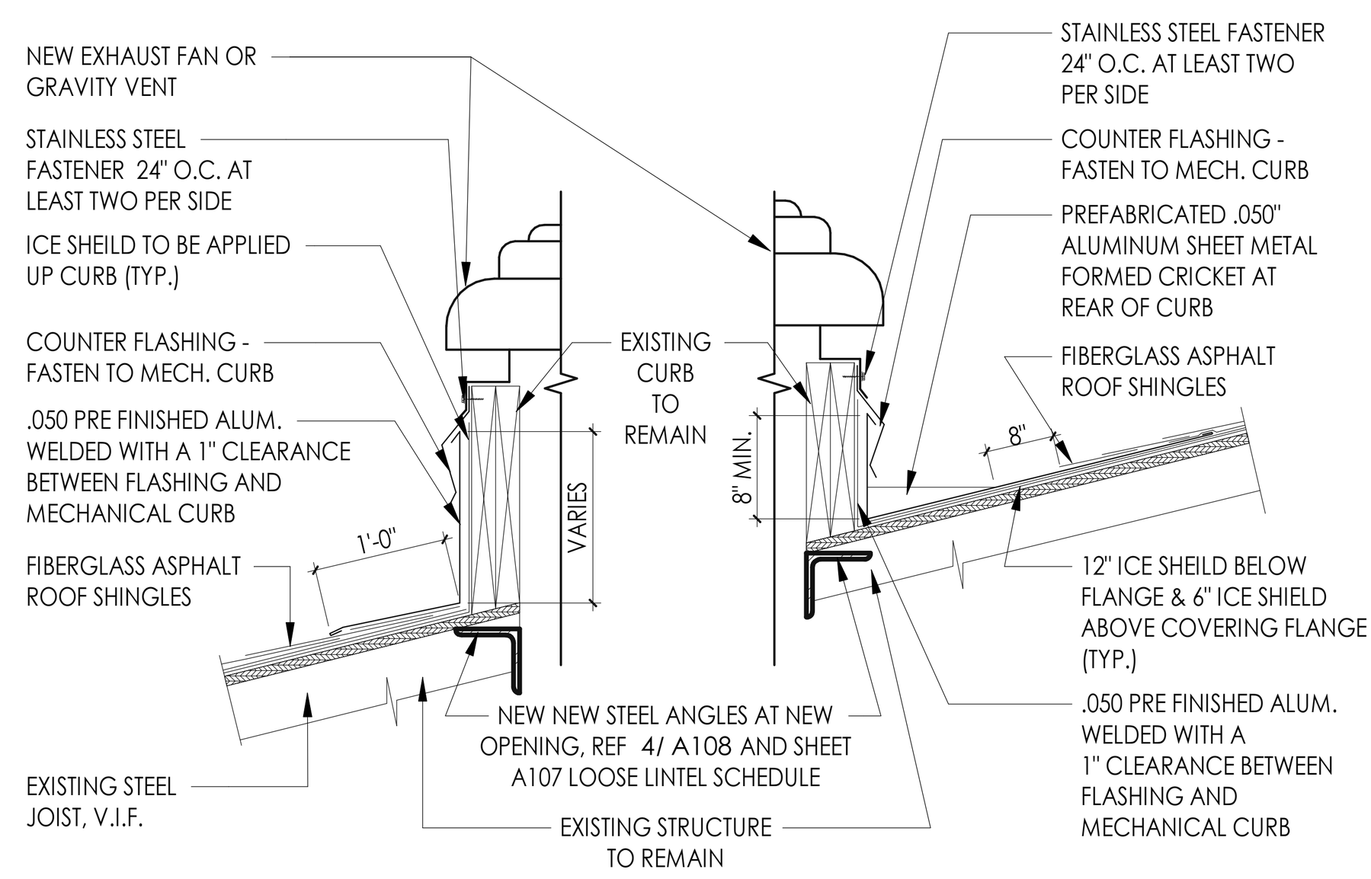
No.	Date	Description
1	11/26/2024	Addendum 1

Drawing Number:
A107

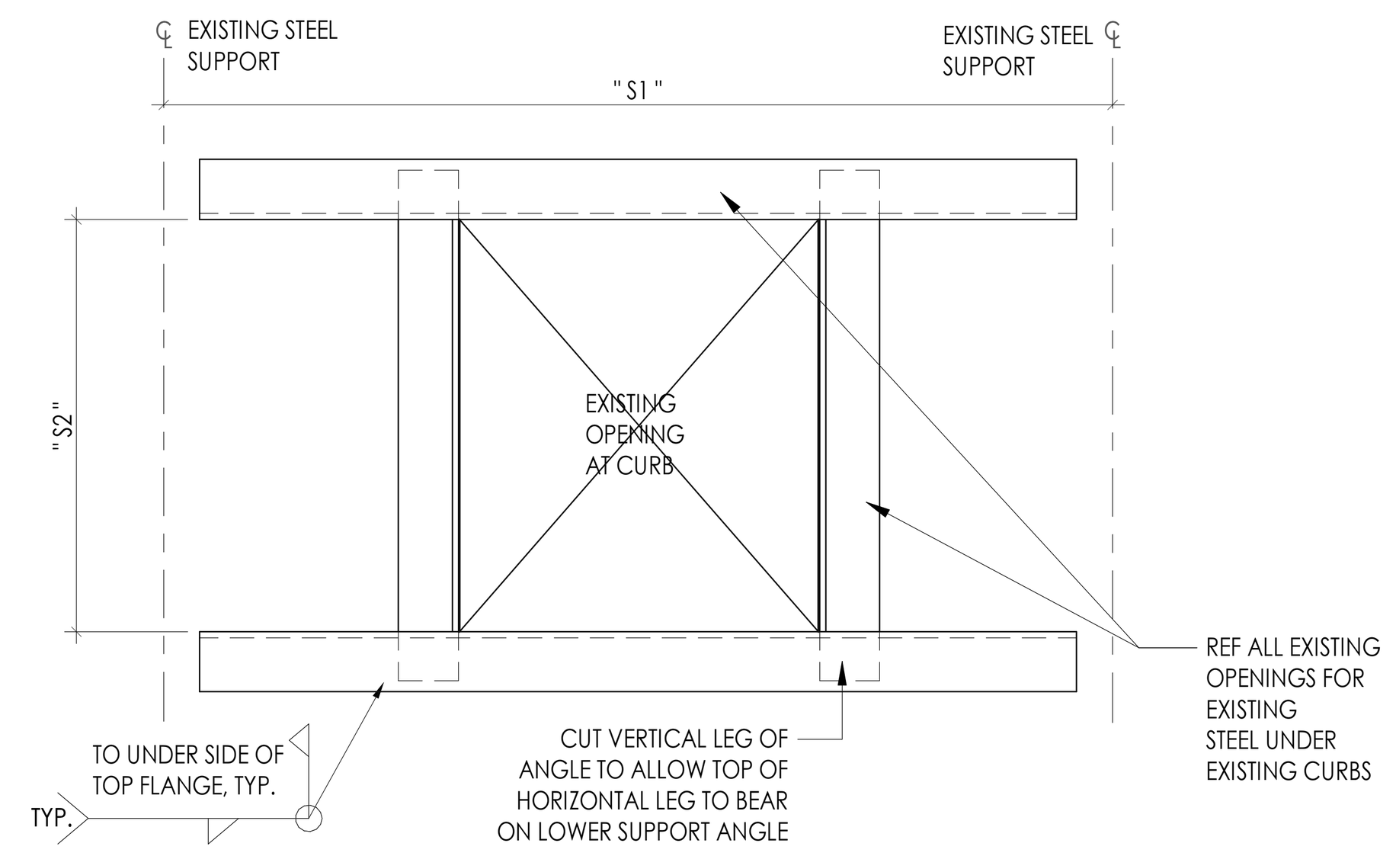


NOTES:
1. PROVIDE 1 ½" - 20 GA. TYPE "B" (WIDE RIB) METAL ROOF DECK (GALV.) INFILL + INSULATION TO MATCH EXIST. ROOF ELEV. @ EXISTING OPENING, PROVIDE MINIMUM 2" BEARING FOR NEW DECK.
2. PROVIDE TEK SCREW FASTENERS @ EACH DECK FLUTE.
3. IF EXISTING CONDITIONS DIFFER FROM THOSE ON PLAN, CONTACT ARCHITECT.

2 DECK INFILL- STEEL SECTION
1 1/2" = 1'-0"

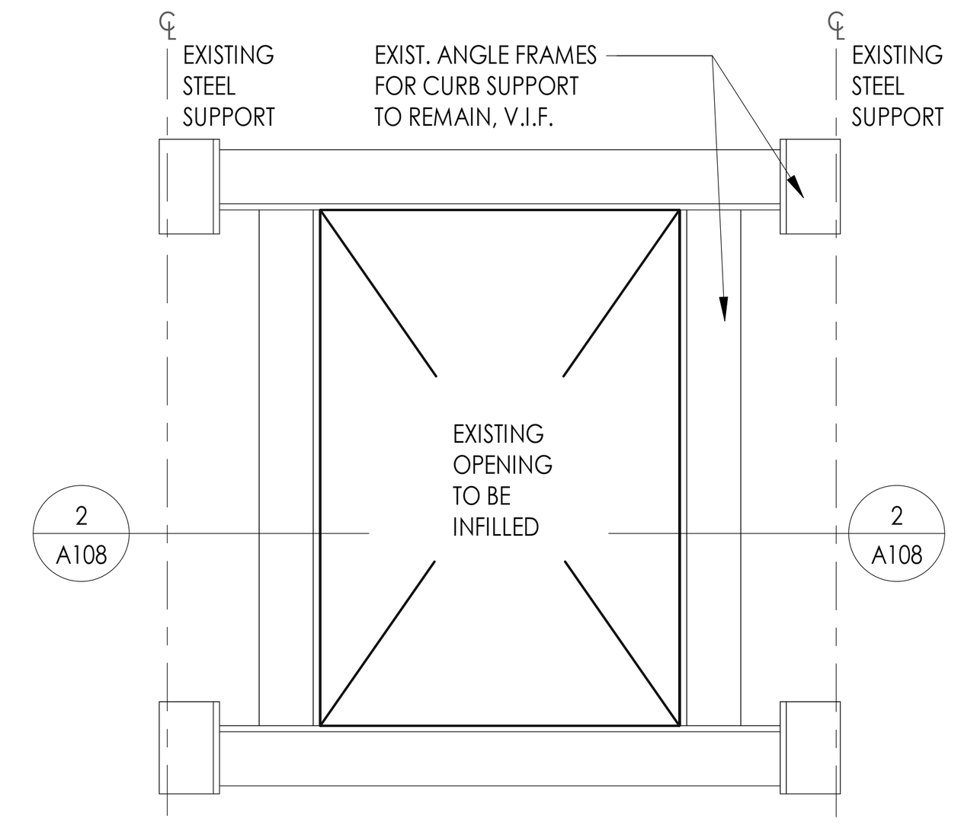


3 TYP. CURB DETAIL AT SHINGLE ROOF
1" = 1'-0"

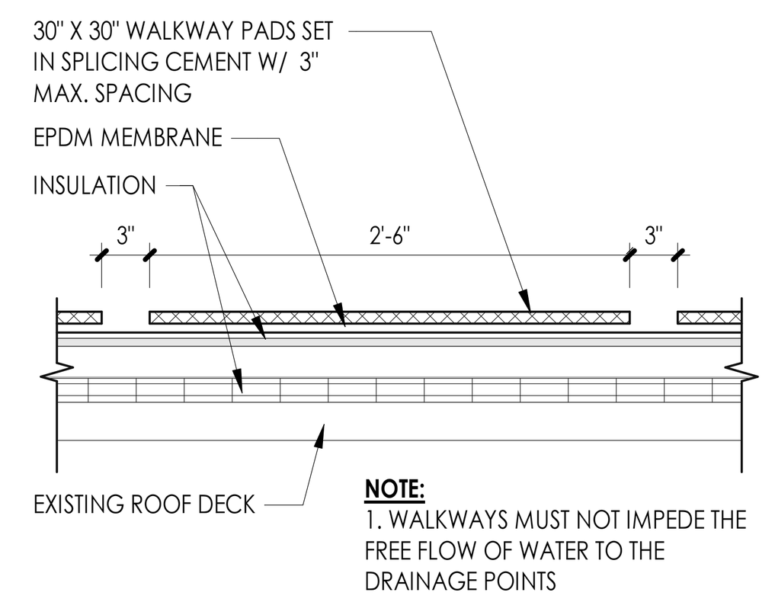


4 TYP. OPNG DETAIL AT EXIST'G ROOF & UNDER MECH'L CURB OR MECH'L SUPPORT
1 1/2" = 1'-0"

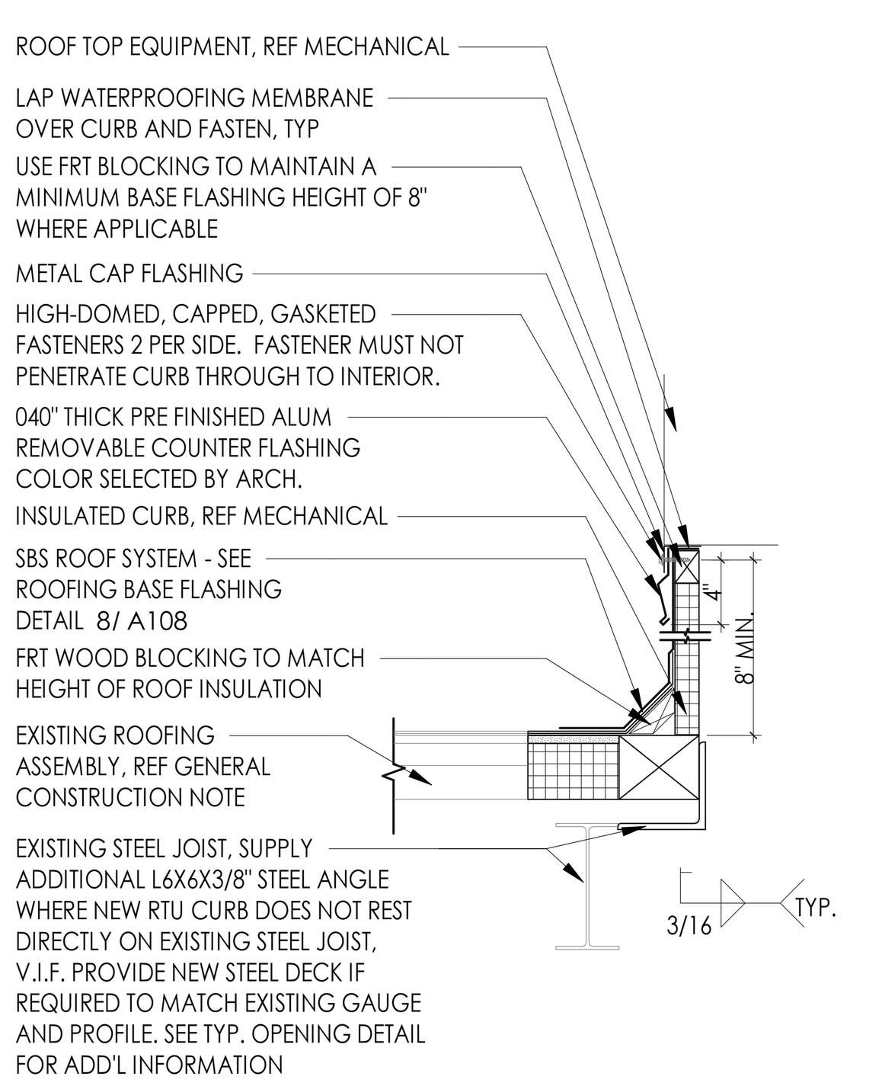
NOTES:
1. FOR SIZE & LOCATION OF OPENINGS SEE ARCHITECTURAL & MECHANICAL DRAWINGS.
2. STEEL CONTRACTOR SHALL VERIFY ALL OPENINGS AND EXACT LOCATIONS WITH THE TRADE CONTRACTOR REQUIRING SAID OPENINGS PRIOR TO FABRICATION & ERECTION OF STEEL FRAMES.
3. PROVIDE STEEL FRAMES AS SHOWN AROUND ALL REQUIRED OPENINGS LARGER THAN 8" AT ROOF.
4. PROVIDE STEEL ANGLES ON ALL SIDES OF OPENINGS UNLESS BEAM IS SHOWN ON PLAN, ANGLE SIZES TO BE:
FOR "S1" OR "S2" ≤ 6'-6" L-4"x4"x5/16"
FOR "S1" OR "S2" > 6'-6" L-6"x6"x3/8"
5. PROVIDE STEEL ANGLES ON ALL SIDES OF MECH'L CURBS OR AT MECHANICAL SUPPORT UNLESS BEAM IS SHOWN ON PLAN. ANGLE SIZES TO BE L-6"x6"x3/8".
6. FOR SIZE & LOCATION OF MECH'L UNITS, SEE ARCH'L & MECH'L DWGS.



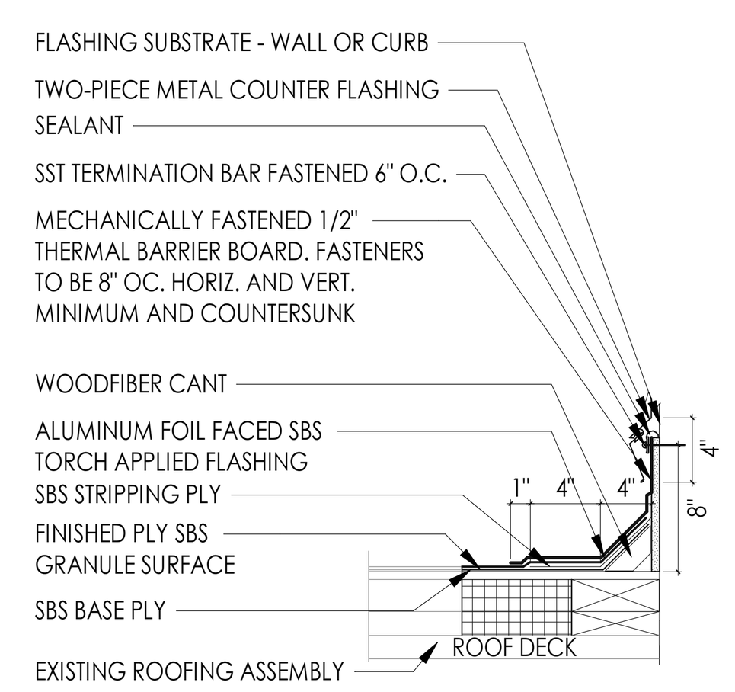
5 DECK INFILL- STEEL
1 1/2" = 1'-0"



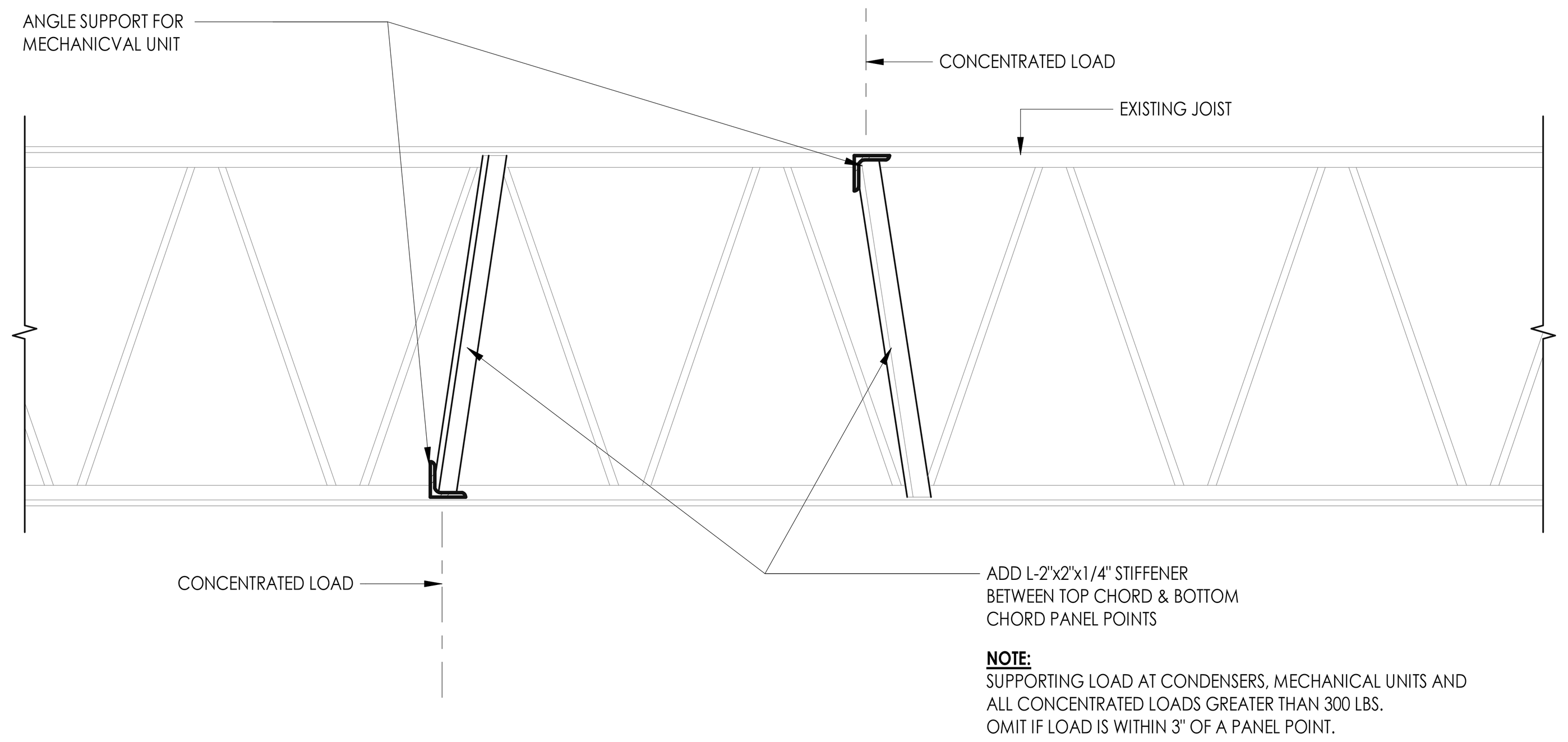
7 TYP. WALKWAY PAD DETAIL
1" = 1'-0"



6 TYP. ROOF TOP UNIT FLASHING AND STEEL DETAIL
1" = 1'-0"

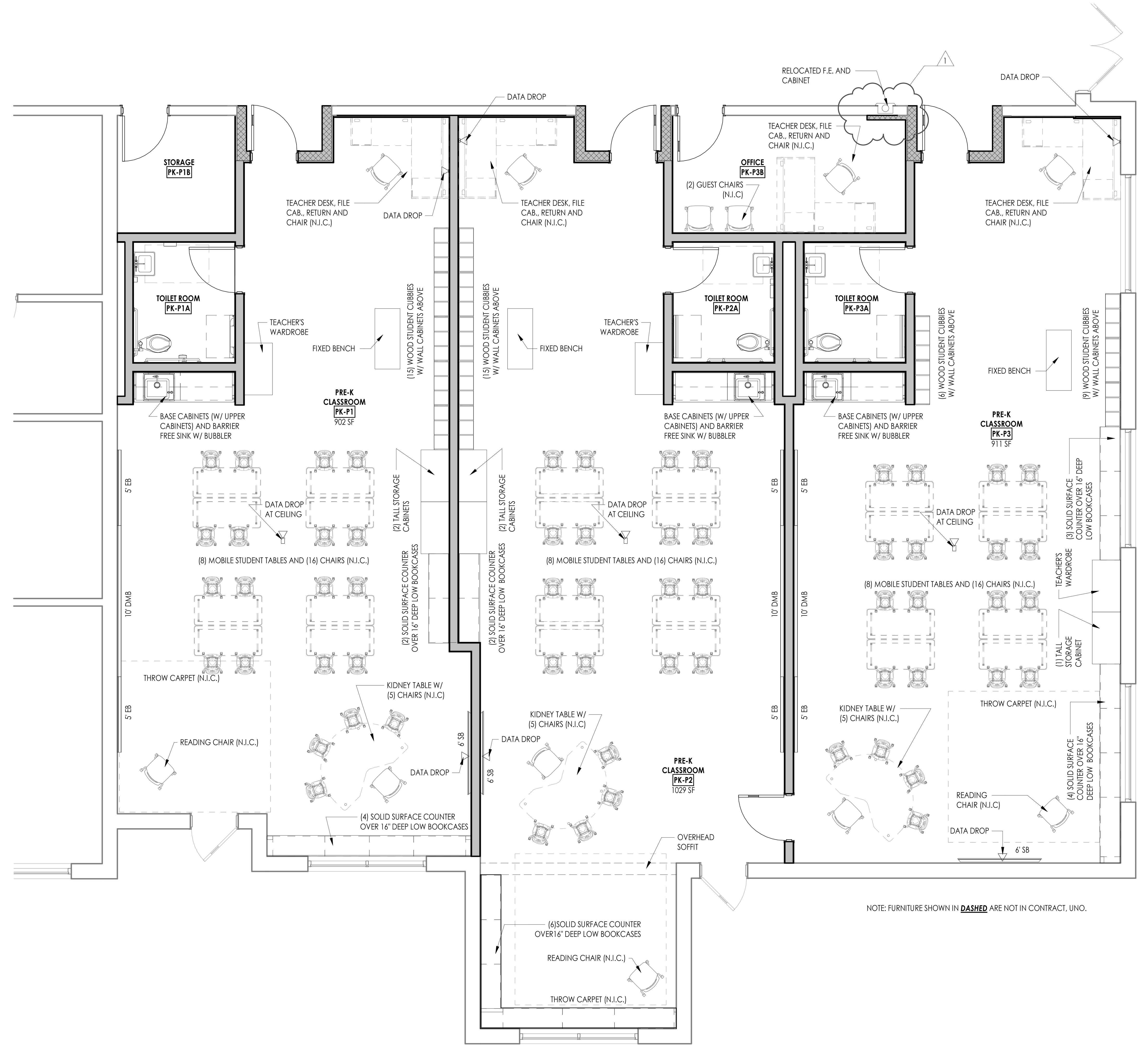


8 TYP. BASE FLASHING DETAIL
1" = 1'-0"

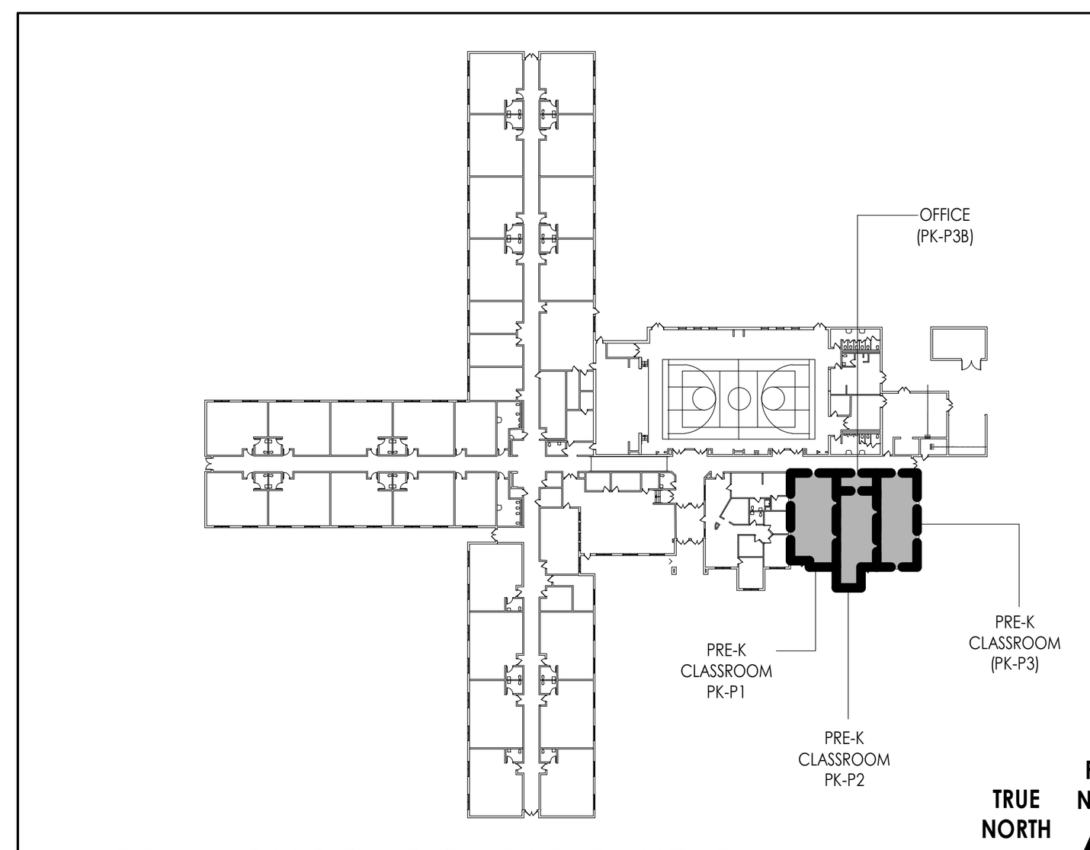


NOTE:
SUPPORTING LOAD AT CONDENSERS, MECHANICAL UNITS AND ALL CONCENTRATED LOADS GREATER THAN 300 LBS. OMIT IF LOAD IS WITHIN 3" OF A PANEL POINT.

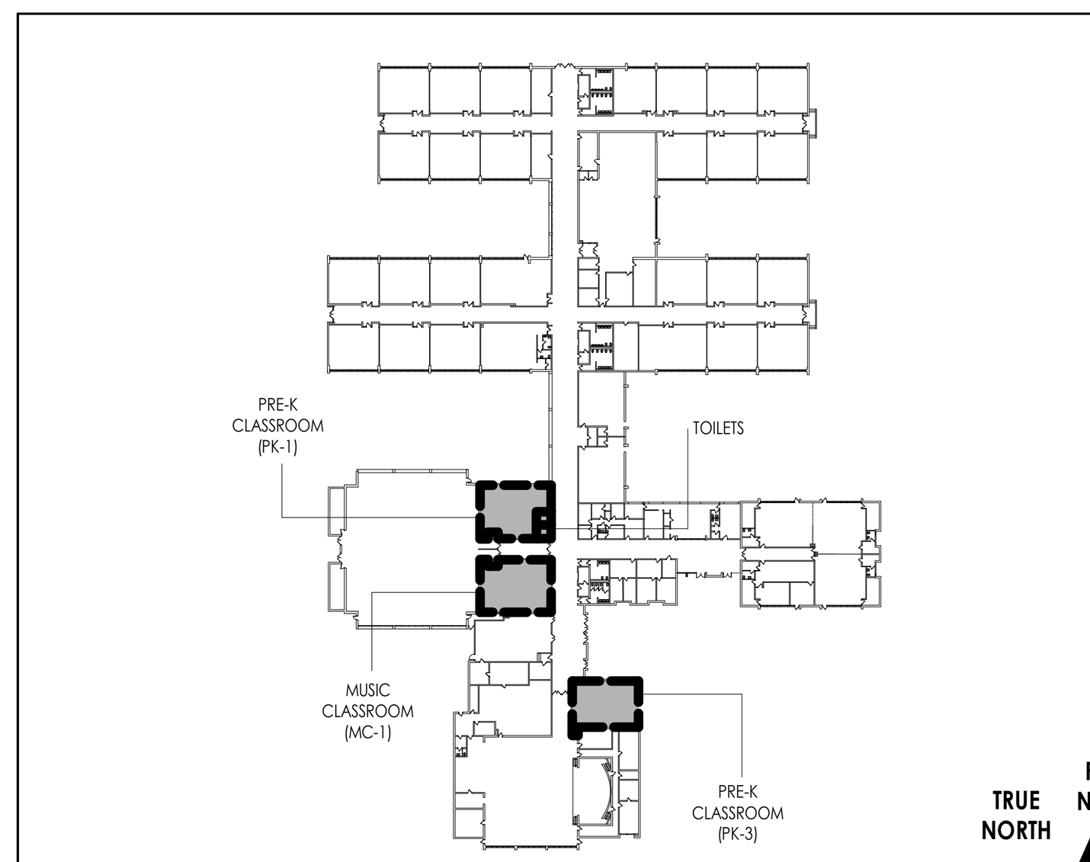
9 TYPICAL DETAIL OF REINFORCED JOIST
1" = 1'-0"



1 ENLARGED FLOOR PLANS- PRE-K CLASSROOMS
1/4" = 1'-0"



PRIMARY SCHOOL BLDG. KEYPLAN
N.T.S.



ELEMENTARY SCHOOL BLDG. KEYPLAN
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BID SET 11/01/2024 Date

Project Name
Renovations for Five (5) Pre-K Classrooms at
Clayton J. Davenport Elementary School

Project Owner Name
Egg Harbor Township School District

Project Location
2501 Spruce Avenue
Egg Harbor Township, NJ 08234

Project Number	5481
Project Date	11/01/2024
Checked By	WDH, SWS
Drawn By	IVA
Scale	AS NOTED

Drawing Name
ENLARGED PRE-K CLASSROOM LAYOUTS

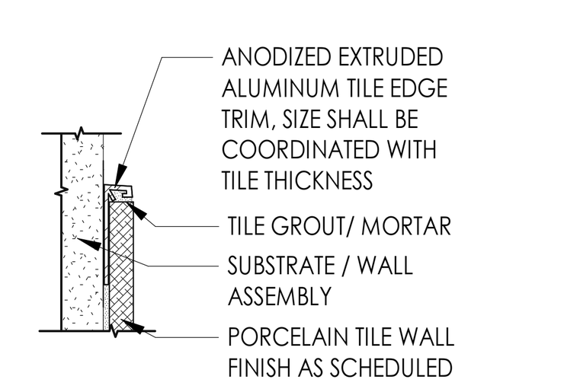
Revisions

No.	Date	Description
1	11/26/2024	Addendum 1

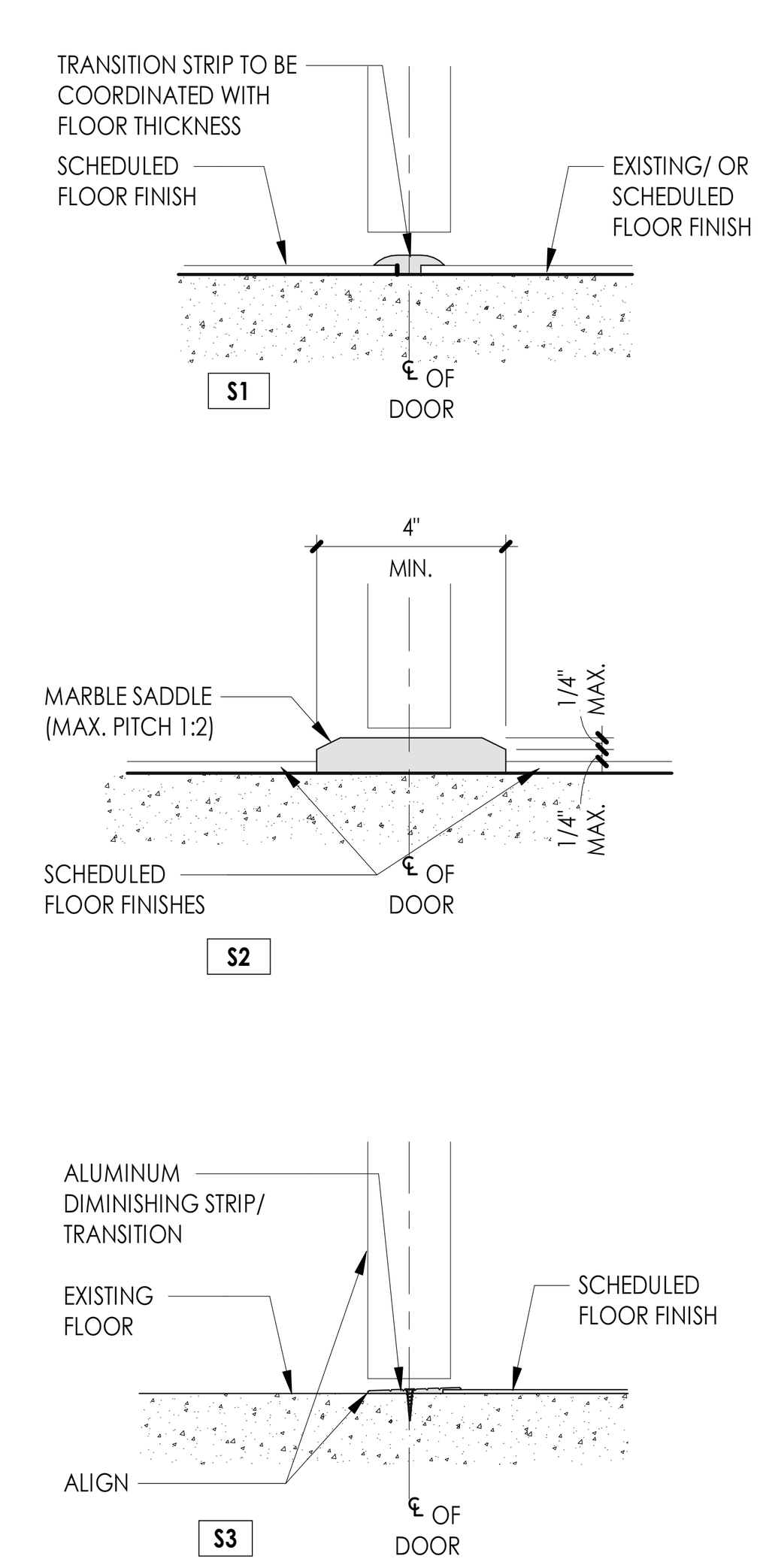
Drawing Number:
A108

INTERIOR FINISH LEGEND

PAINT			
P-1	DESCRIPTION: FIELD PAINT MANUF: SHERWIN WILLIAMS OR APPROVED EQUAL COLOR: TBD NUMBER: TBD FINISH: EGGSHELL	**P-2**	DESCRIPTION: ACCENT PAINT MANUF: SHERWIN WILLIAMS OR APPROVED EQUAL COLOR: TBD NUMBER: TBD FINISH: EGGSHELL
P-3	DESCRIPTION: ACCENT PAINT MANUF: SHERWIN WILLIAMS OR APPROVED EQUAL COLOR: TBD NUMBER: TBD FINISH: SEMI-GLOSS/ PER APPLICATION	**P-4**	DESCRIPTION: FIELD PAINT MANUF: SHERWIN WILLIAMS OR APPROVED EQUAL COLOR: TBD NUMBER: TBD FINISH: EGGSHELL/ OR PER APPLICATION
P-5	DESCRIPTION: ACCENT PAINT MANUF: SHERWIN WILLIAMS OR APPROVED EQUAL COLOR: TBD NUMBER: TBD FINISH: SEMI-GLOSS/ PER APPLICATION	**CP-1**	DESCRIPTION: CEILING PAINT MANUF: SHERWIN WILLIAMS OR APPROVED EQUAL COLOR: CEILING BRIGHT WHITE NUMBER: FINISH: FLAT
VINYL COMPOSITION TILES			
VCT-1	DESCRIPTION: FIELD PAINT MANUF: ARMSTRONG OR APPROVED EQUAL COLOR: TBD NUMBER: TBD COLLECTION: STANDARD EXCELON IMPERIAL TEXTURE DIMENSIONS: 12"X12" INSTALL: QUARTER TURN	**VCT-2**	DESCRIPTION: FIELD PAINT MANUF: ARMSTRONG OR APPROVED EQUAL COLOR: TBD NUMBER: TBD COLLECTION: STANDARD EXCELON IMPERIAL TEXTURE DIMENSIONS: 12"X12" INSTALL: QUARTER TURN
VINYL COMPOSITION TILES			
VCT-1	DESCRIPTION: FIELD PAINT MANUF: ARMSTRONG OR APPROVED EQUAL COLOR: TBD NUMBER: TBD COLLECTION: STANDARD EXCELON IMPERIAL TEXTURE DIMENSIONS: 12"x12"x1/8" INSTALL: QUARTER TURN	**VCT-2**	DESCRIPTION: FIELD PAINT MANUF: ARMSTRONG OR APPROVED EQUAL COLOR: TBD NUMBER: TBD COLLECTION: STANDARD EXCELON IMPERIAL TEXTURE DIMENSIONS: 12"x12"x1/8" INSTALL: QUARTER TURN
PORCELAIN TILES			
PT-1	DESCRIPTION: PORCELAIN WALL TILE MANUF: DALTILE OR APPROVED EQUAL COLOR: TBD NUMBER: TBD COLLECTION: VOLUME 1.0 CONC. LOOK DIMENSIONS: 8"X24" INSTALL: BRICK, SEE FINISH ELEVATIONS GROUT: TBD	**PT-2**	DESCRIPTION: PORCELAIN WALL TILE MANUF: DALTILE OR APPROVED EQUAL COLOR: TBD NUMBER: TBD COLLECTION: LINEAR COLOR WHEEL DIMENSIONS: 8"X24" INSTALL: BRICK, SEE FINISH ELEVATIONS GROUT: TBD
PT-3	DESCRIPTION: PORCELAIN WALL TILE MANUF: DALTILE OR APPROVED EQUAL COLOR: TBD NUMBER: TBD COLLECTION: LINEAR COLOR WHEEL DIMENSIONS: 8"X24" INSTALL: BRICK, SEE FINISH ELEVATIONS GROUT: TBD	**PT-4**	DESCRIPTION: PORCELAIN TILE FLOOR MANUF: DALTILE OR APPROVED EQUAL COLOR: TBD NUMBER: TBD COLLECTION: LINEAR COLOR WHEEL DIMENSIONS: 12"X24" INSTALL: STACKED/ MONOLITHIC GROUT: TBD
WALL BASE			
RB-1	DESCRIPTION: RUBBER WALL BASE COVED TOE MANUF: JOHNSONITE OR APPROVED EQUAL STYLE: TRADITIONAL WALL BASE COLOR: TBD DIMENSIONS: 4" x 1/8" (ROLLED) NOTE:	**PT-4A**	DESCRIPTION: PORCELAIN WALL TILE BASE MANUF: DALTILE OR APPROVED EQUAL COLOR: COORDINATE WITH PT-4 NUMBER: TBD COLLECTION: TBD DIMENSIONS: 4"X24" INSTALL: BRICK, SEE FINISH ELEVATIONS GROUT: TBD
SOLID SURFACE		**WOOD VENEER**	
SS-1	DESCRIPTION: COUNTERTOPS AND TRIMS MANUF: CORIAN OR APPROVED EQUAL COLOR: TBD PRODUCT NUMBER: TBD THICKNESS: 1/2" OR BUILT-UP, REFER TO PLAN EDGE PROFILE: EASED EDGE	**WD-1** (1)	DESCRIPTION: WOOD VENEER FINISH MANUF: CAMPBELL RHEA OR APPROVED EQUAL WOOD: TBD STAIN FINISH: TBD COLLECTION: TBD INSTALL: VERTICAL GRAIN, UNO IN PLANS NOTE: REFER TO CASEWORK PLAN AND ELEV.
FLOORING TRANSITIONS			
S-1	DESCRIPTION: VINYL FLOORING TRANSITION MANUF: JOHNSONITE OR APPROVED EQUAL PROFILE: SEE S-1 DETAIL, COORDINATE WITH FLOOR FINISH COLOR: TBD INSTALL: PER PLANS NOTE: ADA COMPLIANT	**S-2**	DESCRIPTION: MARBLE THRESHOLD MANUF: DALTILE OR APPROVED EQUAL PROFILE: SEE S-2 DETAIL, COORDINATE WITH FLOOR FINISH COLOR: TBD INSTALL: PER PLANS NOTE: ADA COMPLIANT
CABINET PULLS			
PULL-1	DESCRIPTION: CABINET PULL MANUF: CAMPBELL RHEA OR APPROVED EQUAL PROFILE: TBD FINISH: TBD NOTE: COORDINATE WITH CASEWORK INSTALL	**PULL-2**	DESCRIPTION: CABINET PULL MANUF: CAMPBELL RHEA OR APPROVED EQUAL PROFILE: TBD FINISH: TBD NOTE: COORDINATE WITH CASEWORK INSTALL

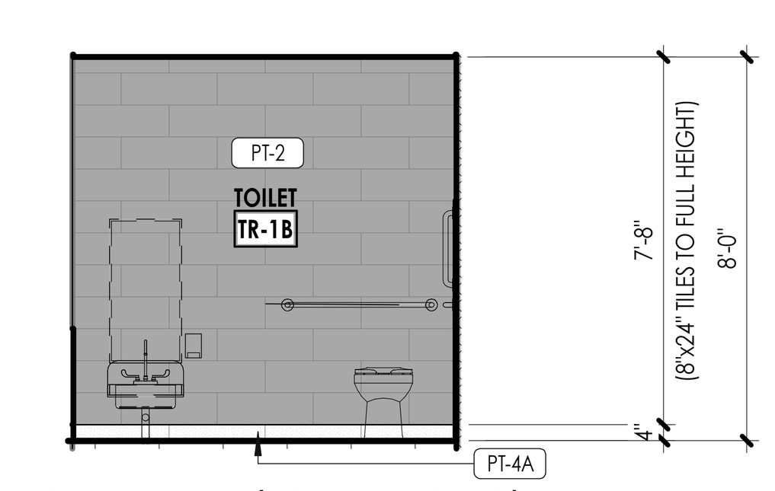


13 TYPICAL TILE EDGE TRIM DETAIL
6" = 1'-0"

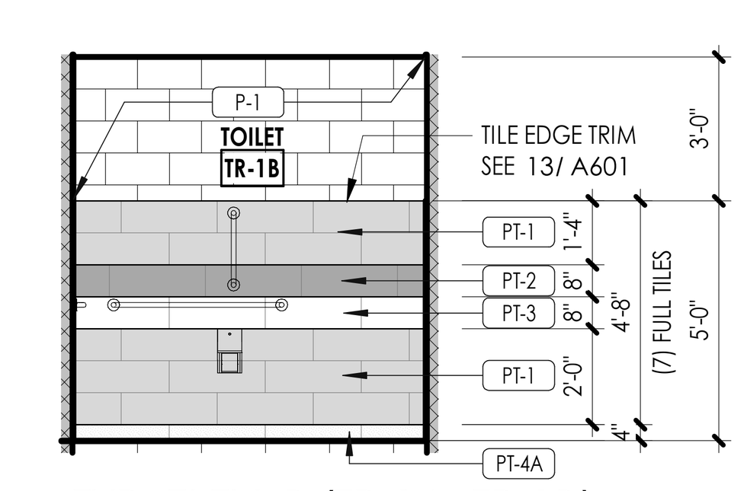


12 TYP FLOORING TRANSITION DETAILS
3" = 1'-0"

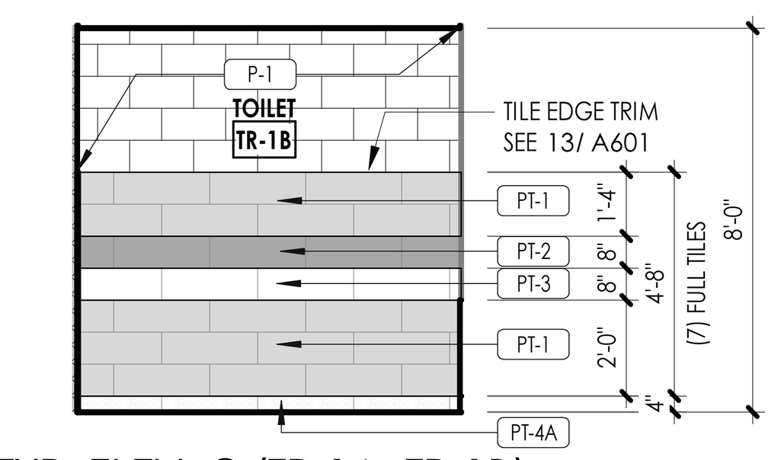
TYPICAL TOILET ROOM TR-1A,TR-1B FINISH ELEVATIONS



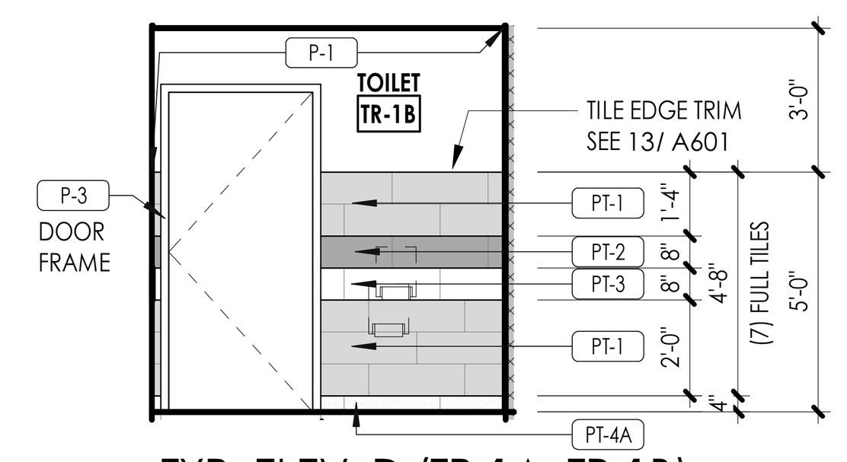
20 TYP. ELEV. A (TR-1A, TR-1B)
1/4" = 1'-0"



21 TYP. ELEV. B (TR-1A, TR-1B)
1/4" = 1'-0"

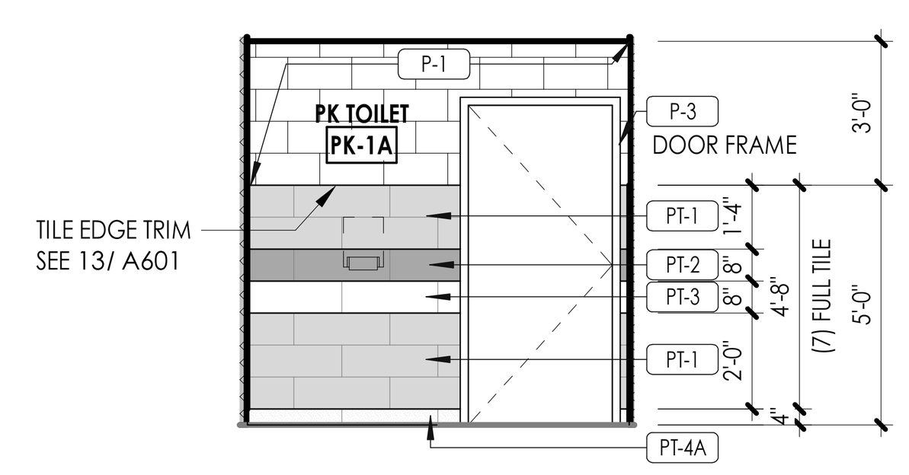


18 TYP. ELEV. C (TR-1A, TR-1B)
1/4" = 1'-0"

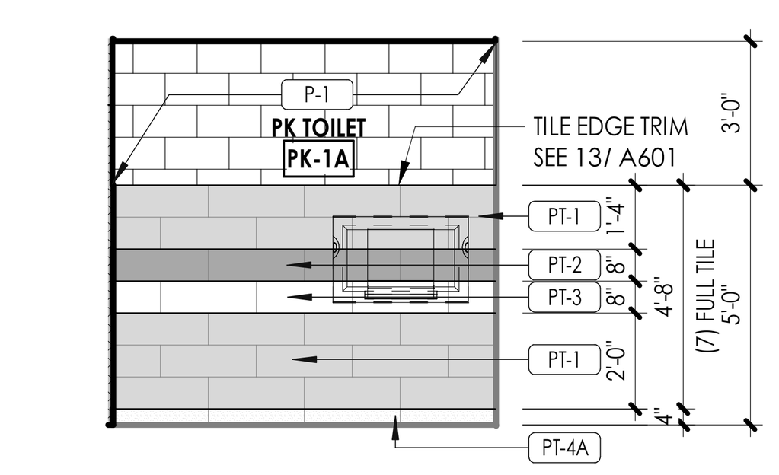


19 TYP. ELEV. D (TR-1A, TR-1B)
1/4" = 1'-0"

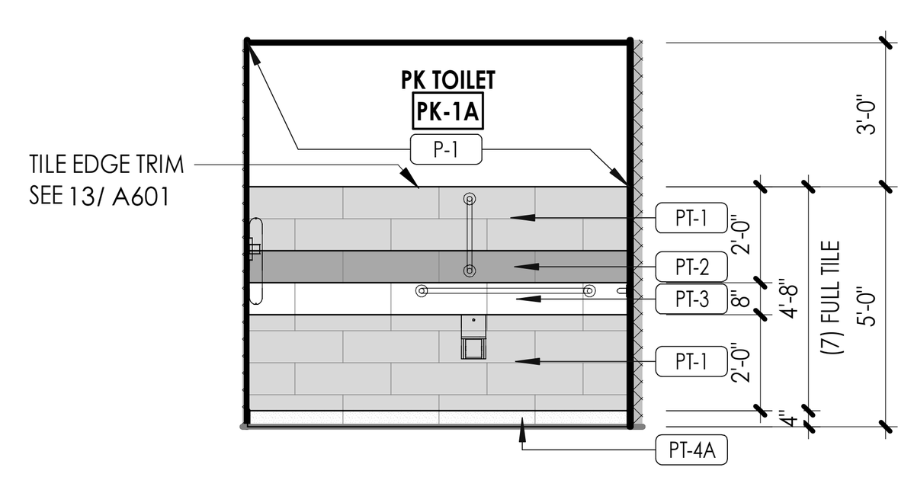
TOILET ROOM PK-1A FINISH ELEVATIONS



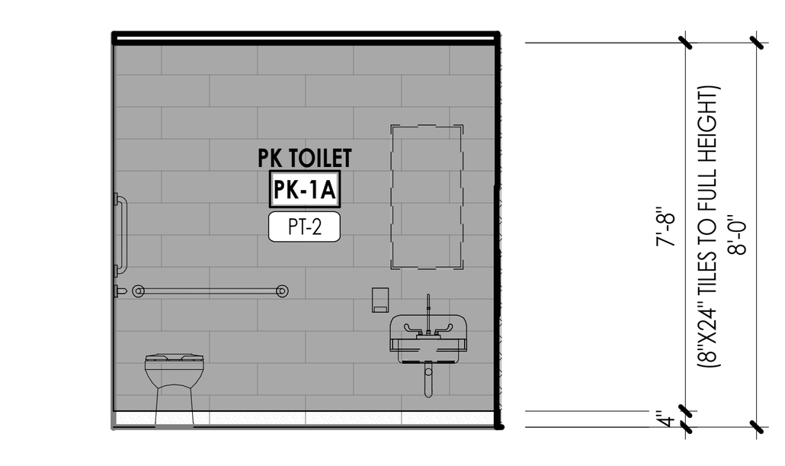
15 ELEVATION A (PK-1A)
1/4" = 1'-0"



16 ELEVATION B (PK-1A)
1/4" = 1'-0"

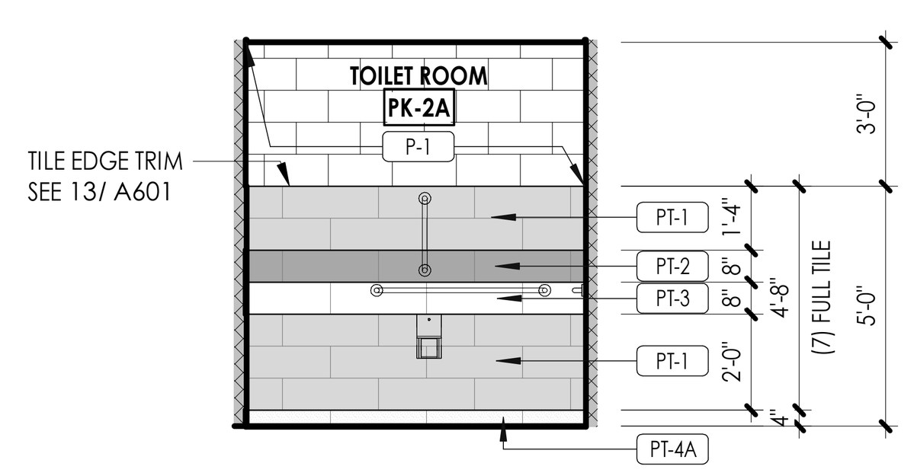


17 ELEVATION C (PK-1A)
1/4" = 1'-0"

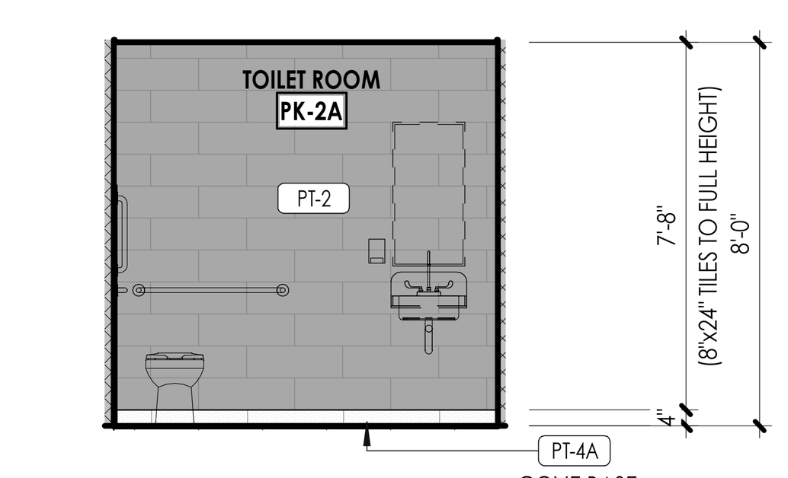


14 ELEVATION D (PK-1A)
1/4" = 1'-0"

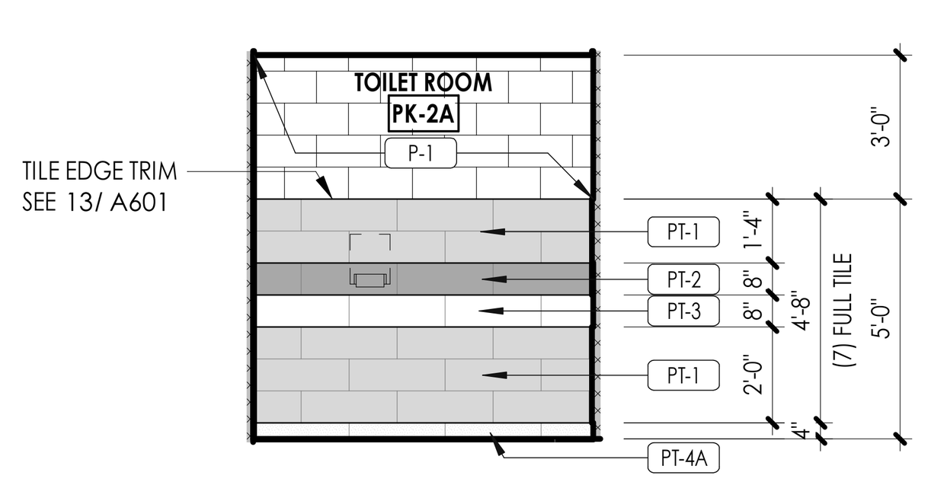
TOILET ROOM PK-2A FINISH ELEVATIONS



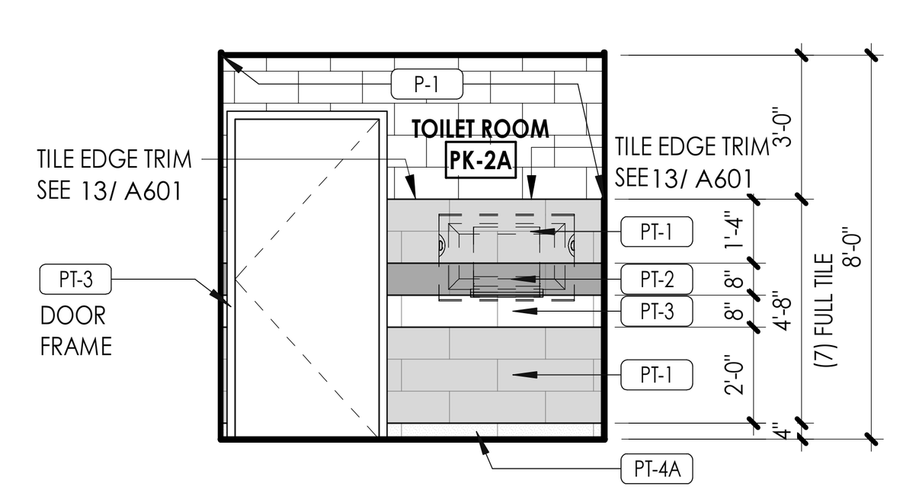
10 ELEVATION A (PK-2A)
1/4" = 1'-0"



9 ELEVATION B (PK-2A)
1/4" = 1'-0"

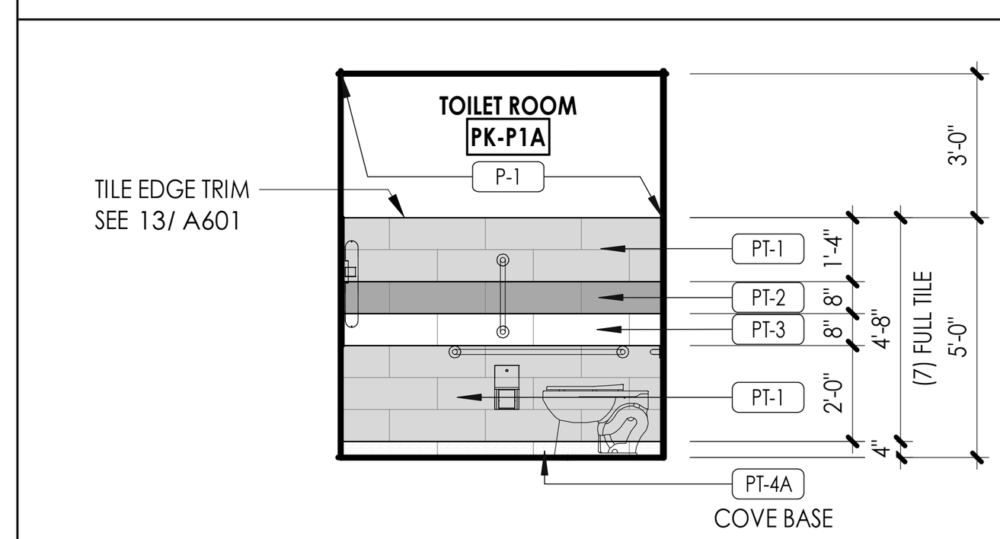


11 ELEVATION C (PK-2A)
1/4" = 1'-0"

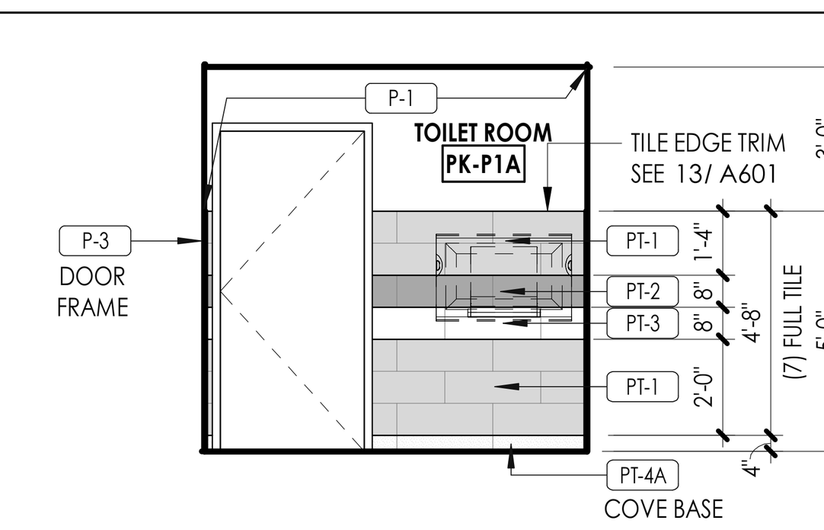


8 ELEVATION D (PK-2A)
1/4" = 1'-0"

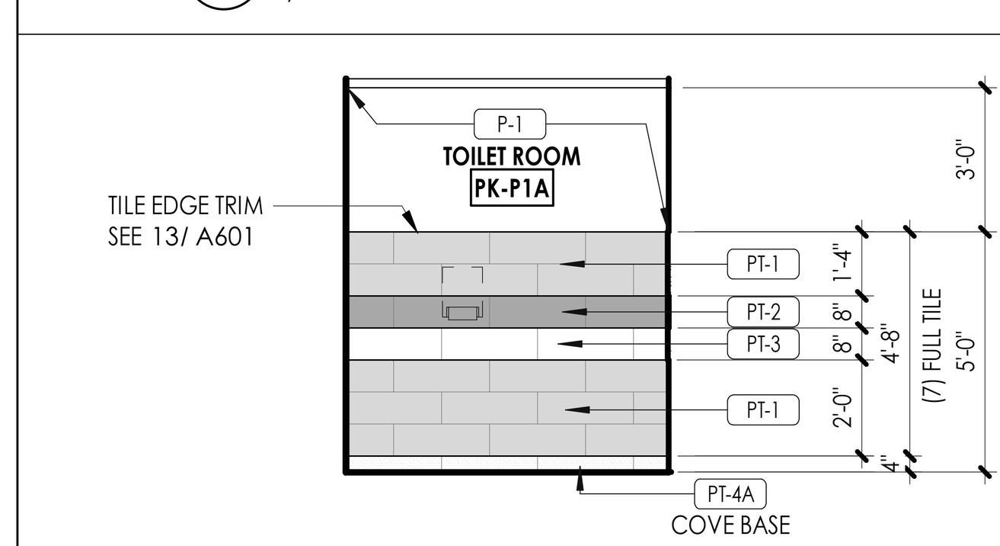
TYPICAL PRE-K TOILET ROOM FINISH ELEVATIONS



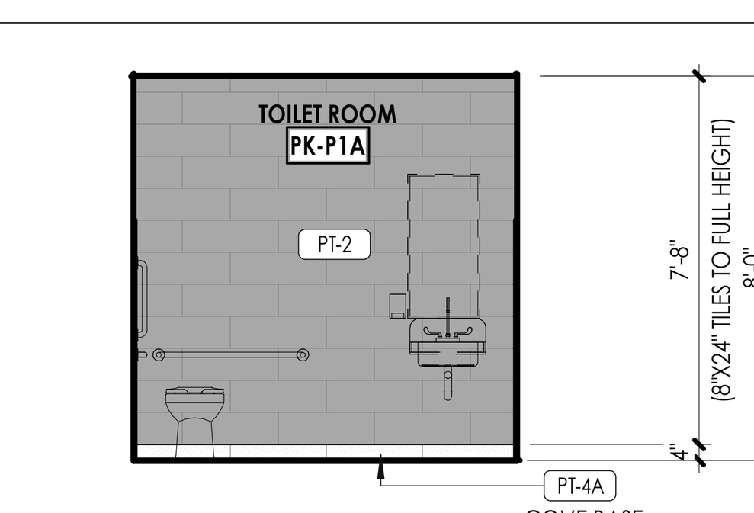
4 TYP. ELEV. A (PK-P1A, PK-P2A, PK-P3A)
1/4" = 1'-0"



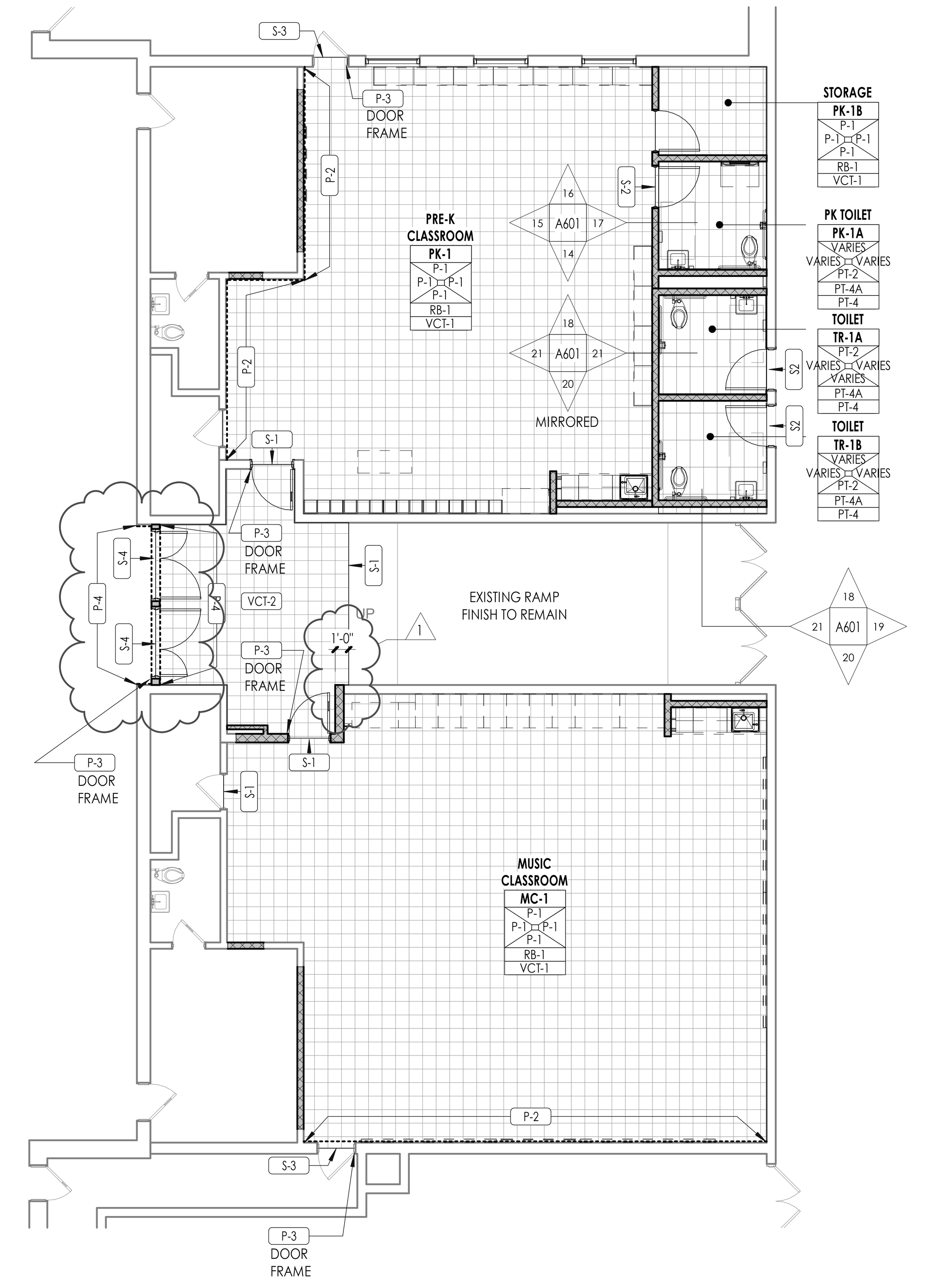
7 TYP. ELEV. B (PK-P1A, PK-P2A, PK-P3A)
1/4" = 1'-0"



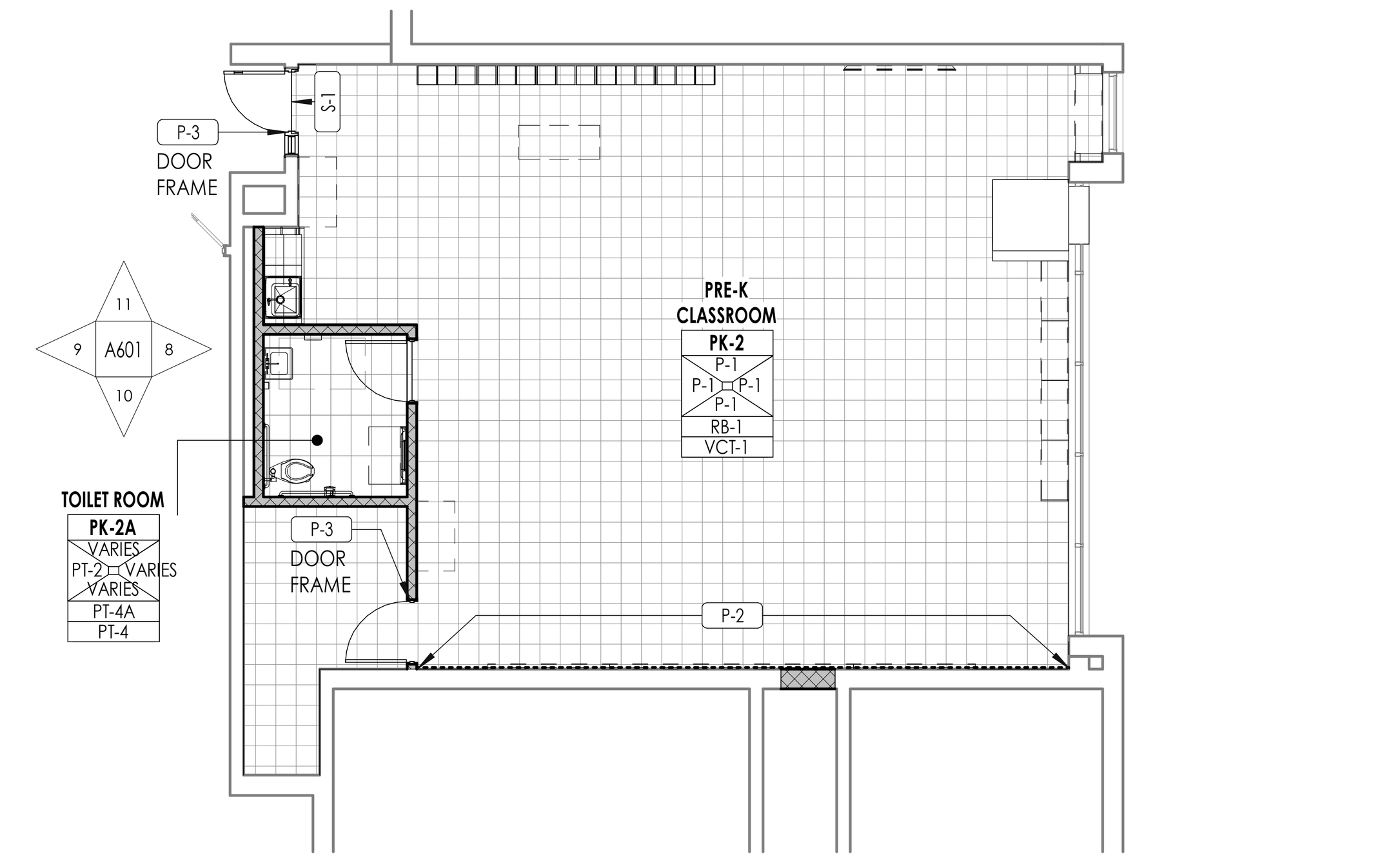
6 TYP. ELEV. C (PK-P1A, PK-P2A, PK-P3A)
1/4" = 1'-0"



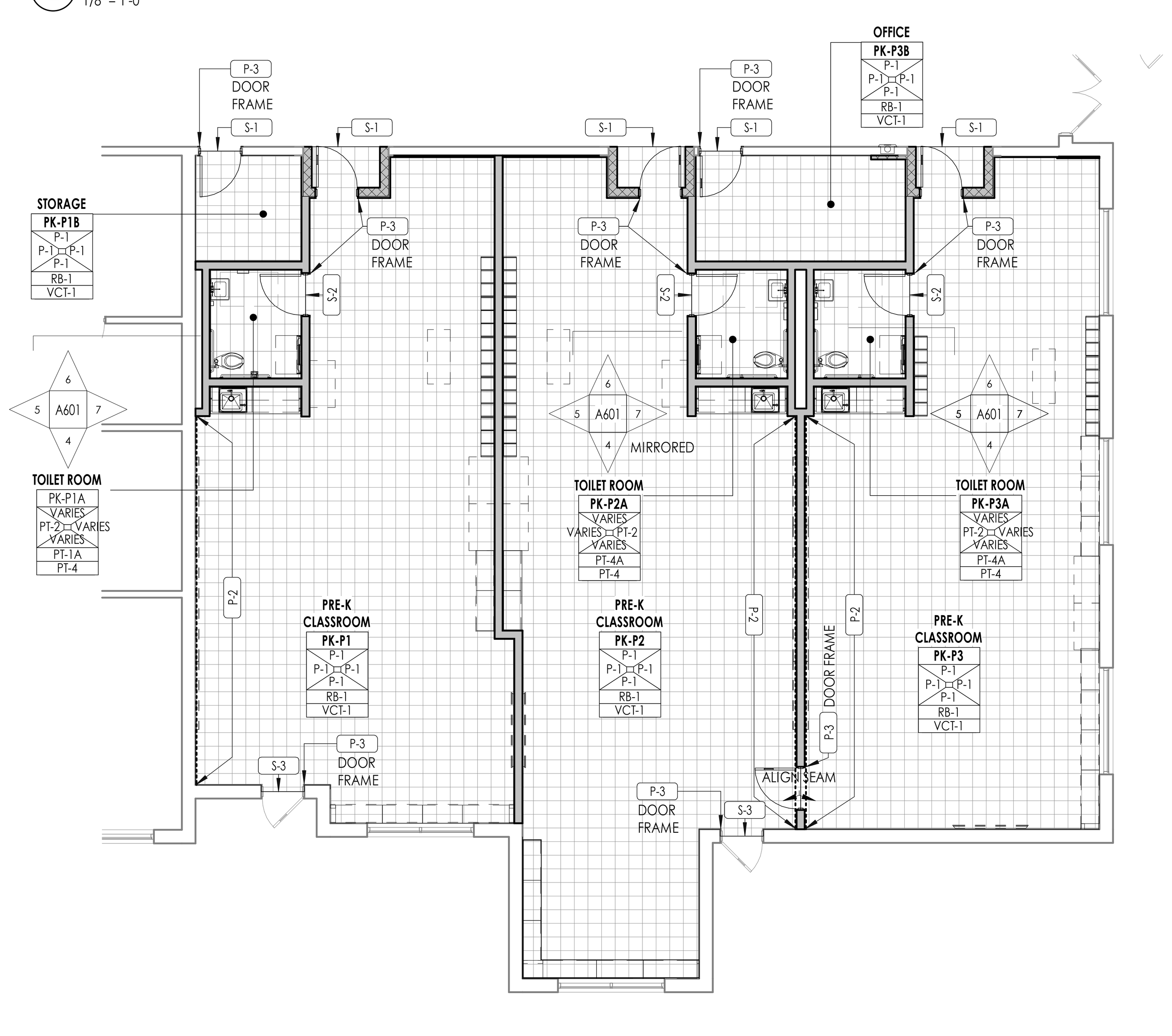
5 TYP. ELEV. D (PK-P1A), PK-P2A, PK-P3A)
1/4" = 1'-0"



1 PARTIAL FINISH PLAN (PRE-K CLASSROOM PK-1, MUSIC CLASSROOM MC-1)
1/8" = 1'-0"



2 PARTIAL FINISH PLAN (PRE-K CLASSROOM PK-3)
1/8" = 1'-0"



3 PARTIAL FINISH PLAN (PRE-K CLASSROOM PK-P1, PK-P2, PK-P3)
1/8" = 1'-0"

GENERAL FINISH NOTES:

CPT-1	FINISH TAG
P-1 / WT-2	FINISH SEPARATION TAG
P-12	TRIM FINISH TAG
(dashed arrow)	INDICATES EXTENT OF FINISH UNLESS NOTED OTHERWISE
(arrow)	SPAN DIRECTION OF SHEET OR BROAD LOOM PRODUCTS

ROOM FINISH TAG

ROOM NAME — ROOM NAME; ROOM NUMBER — A1000; PLAN WEST WALL FINISH — WW; PLAN NORTH WALL FINISH — NW; PLAN SOUTH WALL FINISH — SW; PLAN EAST WALL FINISH — EW; WALL BASE FINISH — BF; FLOOR FINISH — FF

NOTE: SEE FINISH PLANS AND ELEVATIONS FOR ACCENT FINISH.

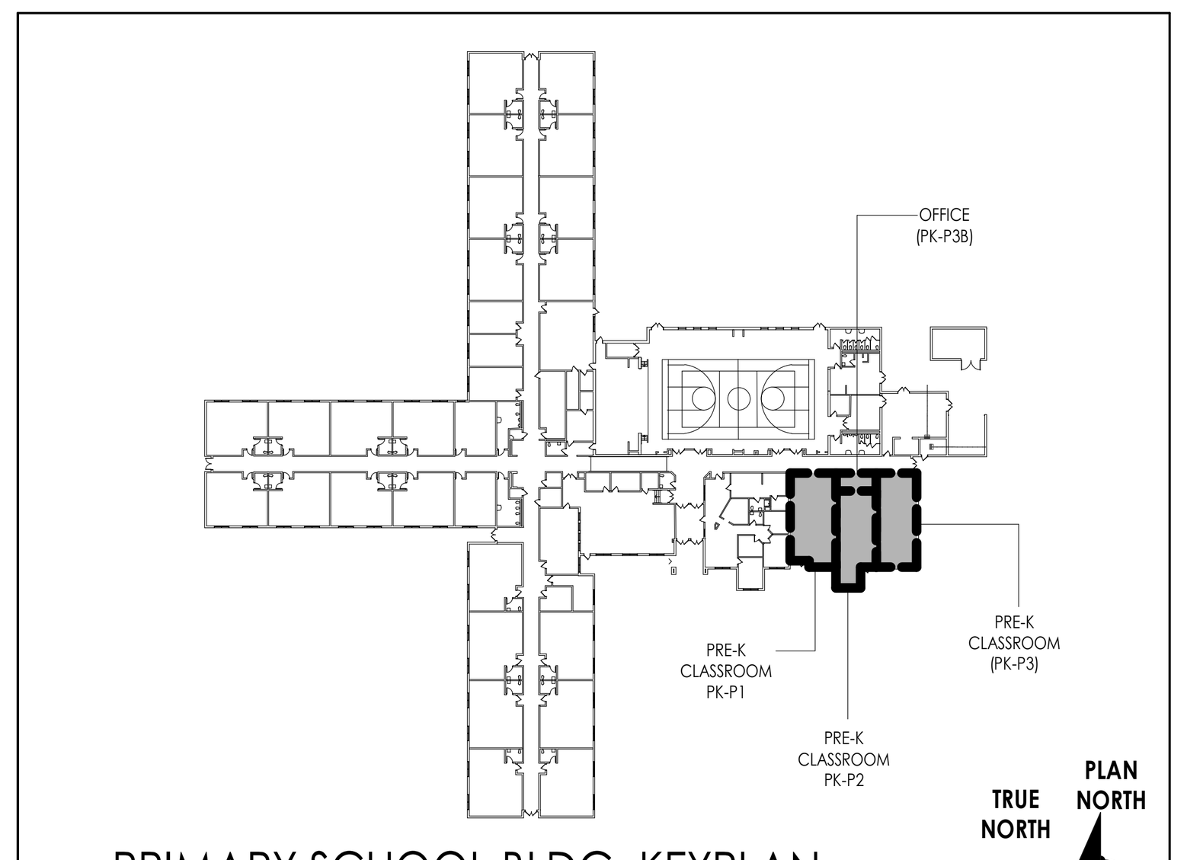
1. NOTES PERTAIN TO AREAS WITHIN THIS SCOPE OF WORK ONLY.
2. CONTACT INTERIOR DESIGNER/ARCHITECT FOR CLARIFICATION IN THE EVENT OF CONTRADICTORY INFORMATION BETWEEN DRAWINGS, LEGEND AND/ OR SPECIFICATIONS OR IF COLOR AND/OR FINISH IS NOT SPECIFIED.
3. REFER TO FINISH LEGEND AND PLAN FOR GENERAL FINISHES.
4. REFER TO ALL INTERIOR FINISH NOTES AND INTERIOR DRAWINGS (INCLUDING PLANS, ELEVATIONS AND DETAILS) FOR COMPLETE INTERIORS INFORMATION.
5. THE CONTRACTOR IS RESPONSIBLE FOR VERIFIYING PRODUCT LEAD TIMES TO ENSURE DELIVERY THAT MEETS THE PROJECT SCHEDULE.
6. THE CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ALL SITE CONDITIONS AND CONFIRM QUANTITIES PRIOR TO ORDERING PRODUCTS. IN THE EVENT OF CONTRADICTORY INFORMATION CONTACT THE INTERIOR DESIGNER/ARCHITECT FOR CLARIFICATION PRIOR TO ORDERING.
7. ALL MATERIALS SHALL BE INSTALLED USING MANUFACTURERS RECOMMENDED INSTALLATION METHODS, ACCESSORIES AND ADHESIVES.
8. WARRANTY INFORMATION AND INSTRUCTIONS OF MAINTENANCE ON ALL FINISH MATERIALS SHALL BE PROVIDED TO THE OWNER AND INCLUDED IN THE CLOSEOUT WARRANTY AND MAINTENANCE MANUAL.
9. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING SAMPLES OF ALL FINISHES SPECIFIED TO INTERIOR DESIGNER/ARCHITECT FOR APPROVAL PRIOR TO ORDERING MATERIAL.
10. ALL SUBSTRATE SURFACES ARE TO BE PROPERLY PREPARED TO RECEIVE FINISH MATERIALS. SUBCONSTRACTOR IS NOT TO APPLY FINISHES UNTIL SUBTRATE IS PREPARED PER MANUFACTUERS WRITTEN INSTRUCTIONS FOR ALL INSTALLATIONS OR APPLICATIONS.
11. PAINT GRILLS, WALL DIFFUSERS, ELECTRICAL PANELS, WALL MOUNTED BOXES, ACCESS PANELS, ETC., WHICH ARE EXPOSED IN FINISHED SPACES TO MATCH THE SURFACE ON WHICH THEY OCCUR IF THE ITEM IS ON A WALL-COVERED WALL. PROVIDE A CUSTOM PAINT COLOR USED TO MATCH. SUBMIT TO INTERIOR DESIGNER/ARCHITECT FOR APPROVAL.
12. ALL DIRECTIONAL LAMINATES SHOULD RUN WITH THE VERTICAL GRAIN PATTERN UON.
13. ALL WALL PAINT TO BE EGGSHELL FINISH UON.
14. ALL METAL AND PAINTED TRIM TO BE SEMI-GLOSS ENAMEL FINISH UON.
15. INSTALL DIRECTIONAL WALLCOVERING ORIENTED AS SPECIFIED IN ELEVATION.
16. ALL VINYL/RUBBER BASE TO BE ROLLED GOODS, NOT LINEAR 4' LENGTHS, UON.

FLOOR FINISH NOTES:

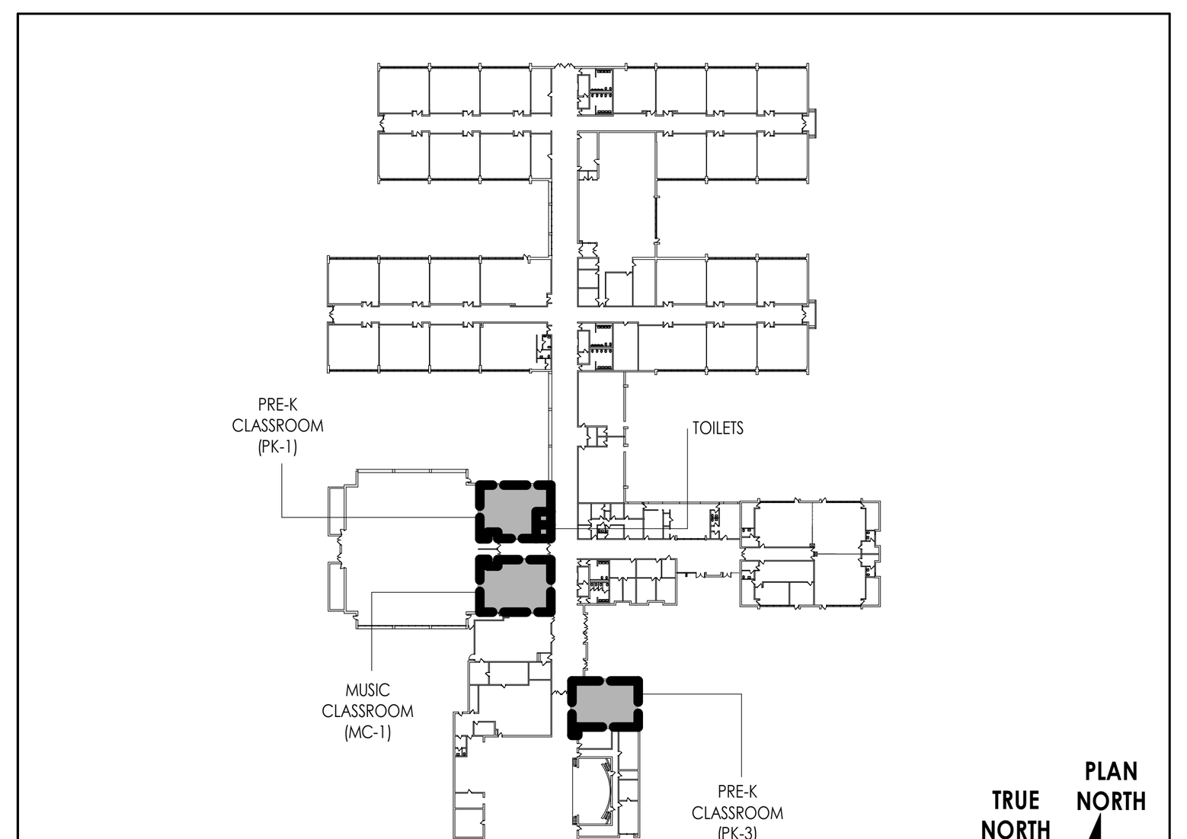
1. PROVIDE SHOP DRAWING LAYOUT SHOWING ALL FLOOR PATTERN LOCATIONS, GRAIN DIRECTION AND SEAMING DIAGRAMS.
2. INSTALL DIRECTIONAL FLOORING ORIENTED AS SPECIFIED IN THE FINISH PLAN.
3. REFERENCE MANUFACTURERS INSTALLATION SPECIFICATIONS FOR EACH FLOOR FINISH TYPE TO VERIFY REQUIREMENTS.
4. ALIGN TRANSITION OF FLOOR MATERIAL WITH CENTER OF HINGE IN DOORWAY UON.
5. IN A WALL OPENING WITHOUT HINGES REFER TO FINISH PLANS FOR TRANSITION LOCATION OF WRAPPED MATERIALS.
6. FLASH PATCH THE FLOOR AT TRANSITION OF ALL MATERIALS, PROVIDE TRANSITION STRIPS AS NECESSARY. SUBMIT TRANSITIONS TO INTERIOR DESIGNER/ARCHITECT FOR APPROVAL. ALL FLOORING TRANSITIONS MUST ADHERE TO THE AMERICANS WITH DISABILITIES ACT.

CEILING FINISH NOTES – FOR ALL PROJECTS:

1. ALL NEW GWB CEILINGS/SOFFITS TO BE PAINTED CP-1 UNLESS OTHERWISE NOTED.



PRIMARY SCHOOL BLDG. KEYPLAN
N.T.S.



ELEMENTARY SCHOOL BLDG. KEYPLAN
N.T.S.

WILLIAM D. HOPKINS III, AIA, LEED AP
NJ - 21AI01706000 / PA - RA012520X
GEORGE R. DUTHIE JR., AIA, PP
NJ - 21AI01299200
JASON DUBOWITCH, AIA
NJ - 21AI01979800 / PA - RA406009

BID SET
Architect — Date 11/01/2024

FVHD architects planners
Fraytak Veisz Hopkins Duthie P C
EST 1918
Corporate: 1515 Lower Ferry Road - Trenton - New Jersey 08618
Pennsylvania: 140 Whitaker Ave - Mont Clare - Pennsylvania 19453
FVHDPC.COM

Project Name
Renovations for Five (5) Pre-K Classrooms at
Clayton J. Davenport Elementary School

Project Owner Name
Egg Harbor Township School District

Project Location
2501 Spruce Avenue
Egg Harbor Township, NJ 08234

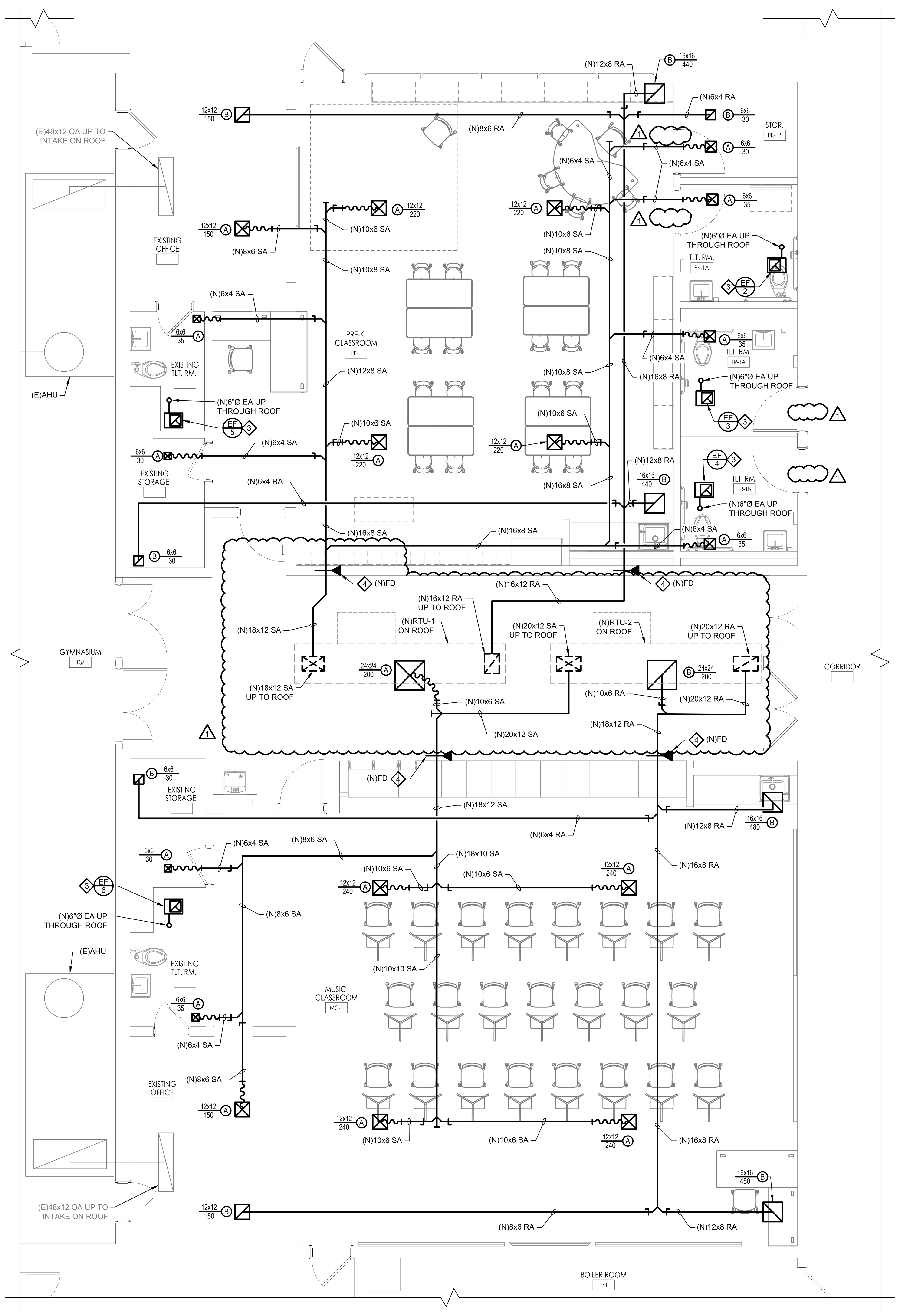
Project Number	5481
Project Date	11/01/2024
Checked By	SWS, WDH
Drawn By	IVA
Scale	AS NOTED

Drawing Name
FINISH PLANS, ELEVATIONS AND FINISH SCHEDULE

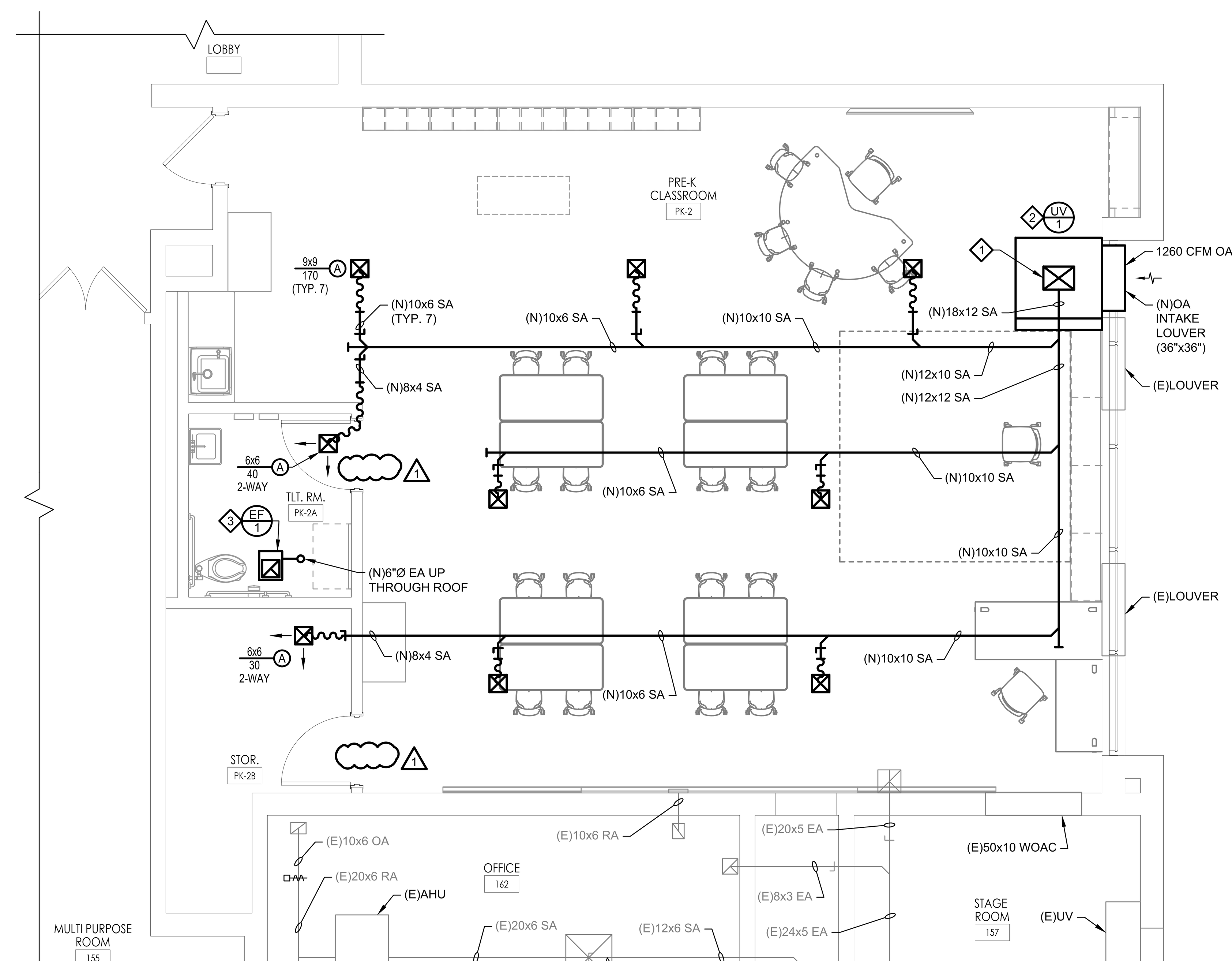
Revisions

No.	Date	Description
1	11/26/2024	Addendum 1

Drawing Number:
A601



1 H201 E
DAVENPORT ELEMENTARY SCHOOL
PARTIAL FLOOR PLAN - HVAC NEW WORK - DUCTWORK
SCALE: 1/4" = 1'-0"

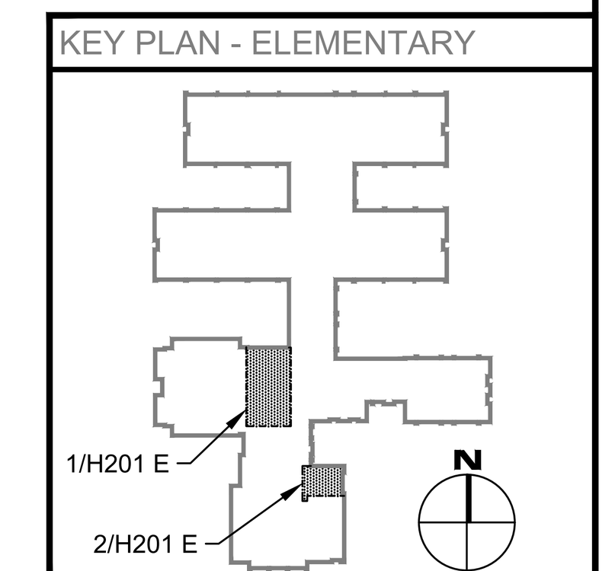


2 H201 E
DAVENPORT ELEMENTARY SCHOOL
PARTIAL FLOOR PLAN - HVAC NEW WORK - DUCTWORK
SCALE: 1/4" = 1'-0"

NEW WORK NOTES:

1. PROVIDE 18x12 SUPPLY AIR DUCTWORK FROM UV-1 AND ROUTE ABOVE CEILING WITH DUCT SHROUD. EXTEND DUCT SHROUD TO ALL ADJACENT WALL/UNIT SURFACES, DUCTWORK SHALL NOT BE EXPOSED.
2. PROVIDE NEW VERTICAL UNIT VENTILATOR (UV-1), DUCT SHROUD, FILLER PANELS, WALL SLEEVE, AND LOUVER. COMPLETED UNIT INSTALLATION SHALL NOT REVEAL ANY EXPOSED INSULATION, PIPING OR UNPAINTED SHEET METAL. REFER TO MECHANICAL DETAILS AND ARCHITECTURAL PLANS FOR ADDITIONAL REQUIREMENTS.
3. PROVIDE 6"Ø EXHAUST AIR FROM EXHAUST FAN (EF) WITH FLEXIBLE CONNECTION UP THROUGH ROOF WITH DUCT PENETRATION CURB AND FACTORY CURB DISCHARGE CAP. EXHAUST DISCHARGE LOCATION SHOWN IS APPROXIMATE. ADJUST AS REQUIRED TO AVOID CONFLICTS. COORDINATE FINAL PLACEMENT AND ALL CUTTING, PATCHING AND FLASHING. REFER TO MECHANICAL DETAILS AND ARCHITECTURAL PLANS FOR ADDITIONAL REQUIREMENTS.
4. PROVIDE 1-1/2 HOUR DYNAMIC FIRE DAMPER (FD), SIZE AS NOTED ON PLAN, IN ACCORDANCE WITH EXISTING FIRE RATED WALL/FLOOR.

KEY PLAN - ELEMENTARY



REFERENCE DIMENSION

0 — 1

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

11/01/2024
ISSUE FOR BID

Gillan & Hartmann, Inc.
MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS
610-935-0101 FAX: 610-935-7520
215-238-9510 609-347-1593 302-654-5959
gillan-hartmann.com ghmail@gillan-hartmann.com
G&H Project No. 2024-147
Cert. of Auth #24GA27932400

ENGINEER: MICHAEL S. GILLAN, PE
DATE: NO. 24GE04470000

WILLIAM D. HOPKINS III, AIA, LEED AP
NJ - 21AI01706000 | PA - RA012520X
GEORGE R. DUTHIE JR., AIA, PP
NJ - 21AI01299200
JASON J. DUBOWITCH, AIA
NJ - 21AI01979800 | PA - RA406009
Architect — Date 11/01/2024

FVHD EST 1918
Fraytak Veisz Hopkins Duthie PC
architects planners
Corporate: 1515 Lower Ferry Road - Trenton - New Jersey 08618
Pennsylvania: 140 Whitaker Ave - Mont Clare - Pennsylvania 19453
F V H D P C . C O M

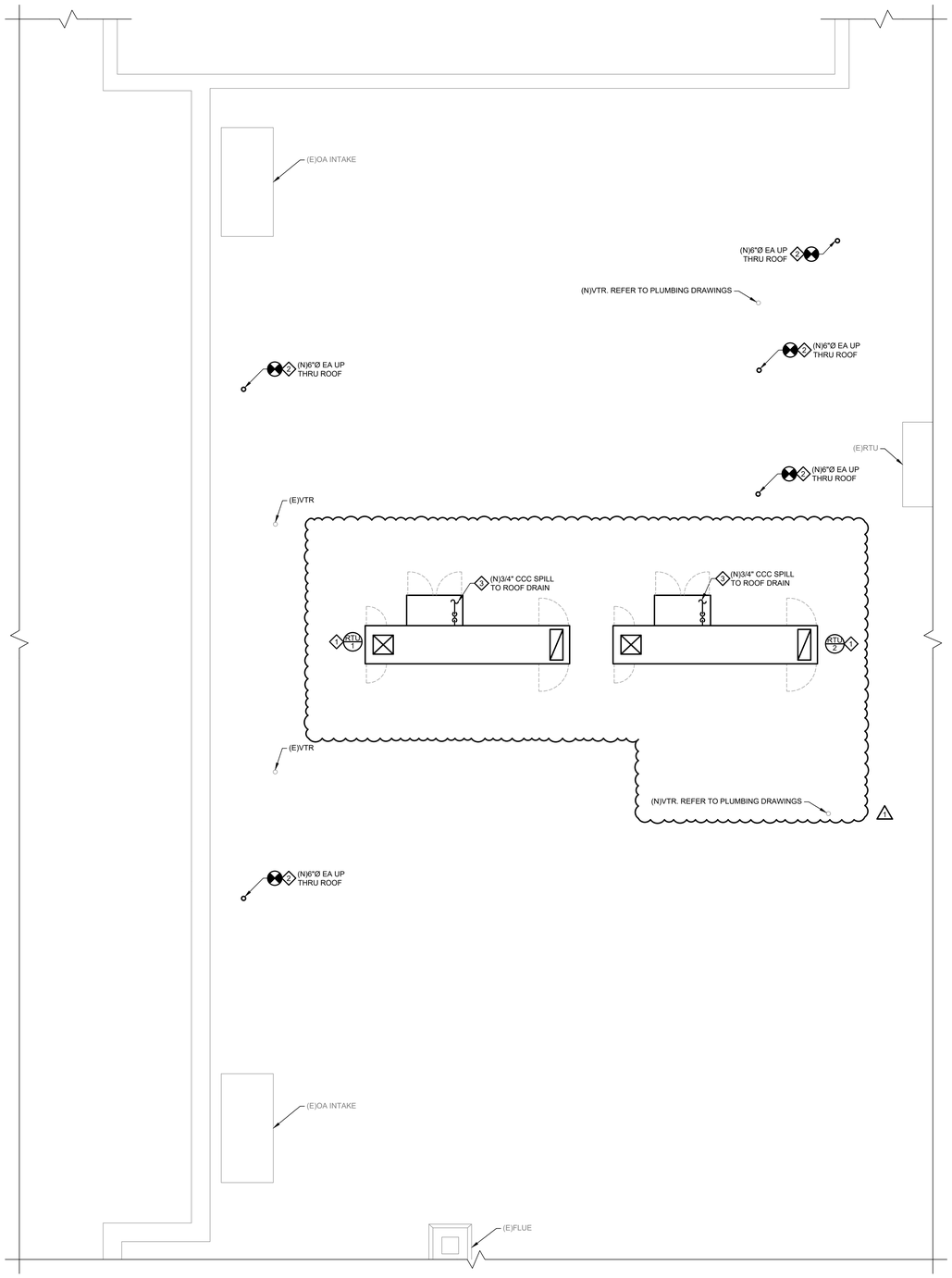
Project Name	Renovations for Five (5) Pre-K Classrooms at Clayton J. Davenport School
Project Owner Name	Egg Harbor Township School District
Project Location	2501 Spruce Ave, Egg Harbor Township, NJ 08234
Project Number	5481
Project Date	11.01.2024
Checked By	KLH
Drawn By	RPF
Scale	AS NOTED
Drawing Name	ELEMENTARY SCHOOL HVAC NEW WORK - DUCTWORK - FIRST FLOOR PARTIAL PLAN

Revisions

No.	Date	Description
1	11.26.24	Addendum 1

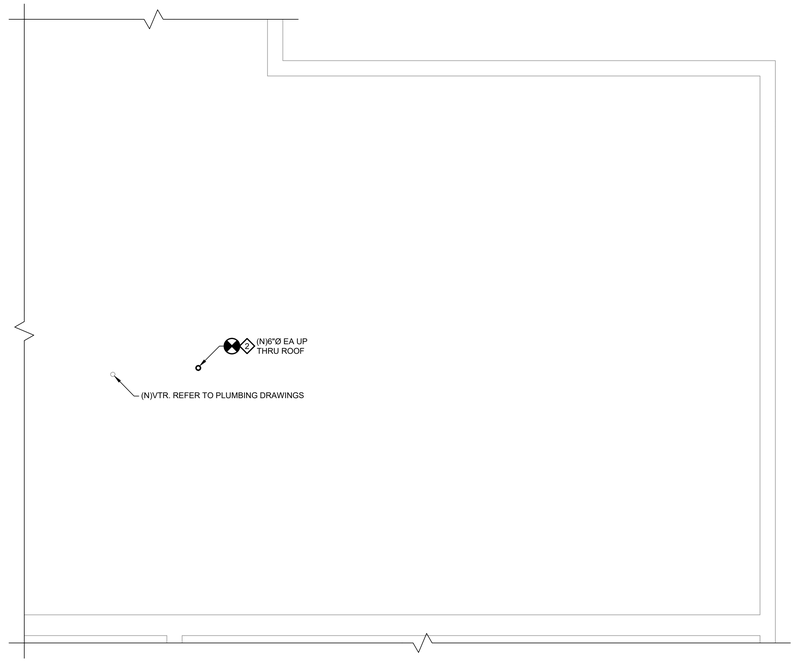
Drawing Number

H201 E



DAVENPORT ELEMENTARY SCHOOL
PARTIAL ROOF PLAN - HVAC NEW WORK

1 H211 E SCALE: 1/4" = 1'-0"



DAVENPORT ELEMENTARY SCHOOL
PARTIAL ROOF PLAN - HVAC NEW WORK

2 H211 E SCALE: 1/4" = 1'-0"

NEW WORK NOTES:

1. PROVIDE NEW ROOF TOP UNIT (RTU) AT LOCATION INDICATED WITH MANUFACTURERS ROOF CURB AND ALL REQUIRED MOUNTING/ANCHORING. COORDINATE LOCATION OF ROOFTOP UNIT AND ALL DUCTWORK DROPS WITH STRUCTURAL STEEL CROSS BRACING AND FRAMING. REFER TO HVAC PIPING AND DUCTWORK NEW WORK DRAWINGS FOR ADDITIONAL REQUIREMENTS. ALL ROOF WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE ROOF MANUFACTURER'S RECOMMENDATIONS AND MAINTAIN ROOF WARRANTY. REFER TO ARCHITECTURAL/ STRUCTURAL DRAWINGS FOR STRUCTURAL STEEL AND FRAMING DETAILS. ⚠1
2. PROVIDE MANUFACTURERS ROOF CURB AND ALL REQUIRED MOUNTING/ANCHORING. ALL ROOF WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE ROOF MANUFACTURER'S RECOMMENDATIONS AND MAINTAIN ROOF WARRANTY. EXHAUST DISCHARGE LOCATION SHOWN IS APPROXIMATE. DISCHARGE SHALL BE LOCATED NO CLOSER THAN 10' FROM ALL EXISTING OUTDOOR AIR INTAKES. ADJUST AS REQUIRED TO AVOID CONFLICTS. REFER TO HVAC DUCTWORK NEW WORK DRAWINGS AND ARCHITECTURAL PLANS FOR ADDITIONAL REQUIREMENTS.
3. PROVIDE COOLING COIL CONDENSATE DRAIN WITH P-TRAP AND SPILL TO ROOF DRAIN. ROUTE PIPING AND DISCHARGE TO NEAREST ROOF DRAIN.

11/01/2024
ISSUE FOR BID

WILLIAM D. HOPKINS III, AIA, LEED AP
NJ - 21A01706900 | PA - RA012026X
GEORGE R. DUTHIE, JR., AIA, PP
NJ - 21A01299200
JASON J. DUBOWITCH, AIA
NJ - 21A03179800 | PA - RA406209
William D. Hopkins III 11/01/2024
Architect Date

FVHD architects planners
Fraytak Veisz Hopkins Duthie PC
Corporate: 1515 Lower Ferry Road - Trenton - New Jersey 08618
Pennsylvania: 140 Whitaker Ave - Mont Clare - Pennsylvania 19453
FVHDPC.COM

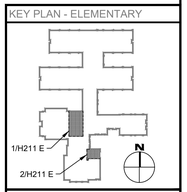
Project Name
Renovations for Five (5) Pre-K Classrooms at Clayton J. Davenport School

Project Owner Name
Egg Harbor Township School District

Project Location
2501 Spruce Ave, Egg Harbor Township, NJ 08234

Project Number	5481
Project Date	11.01.2024
Checked By	KLH
Drawn By	BEK
Scale	AS NOTED

KEY PLAN - ELEMENTARY



REFERENCE DIMENSION

0 1

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

Drawing Name
ELEMENTARY SCHOOL HVAC NEW WORK - PARTIAL ROOF PLAN

Revisions

No.	Date	Description
1	11.26.24	Addendum 1

Gillan & Hartmann, Inc.
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Cert. of Auth #24GA27932400

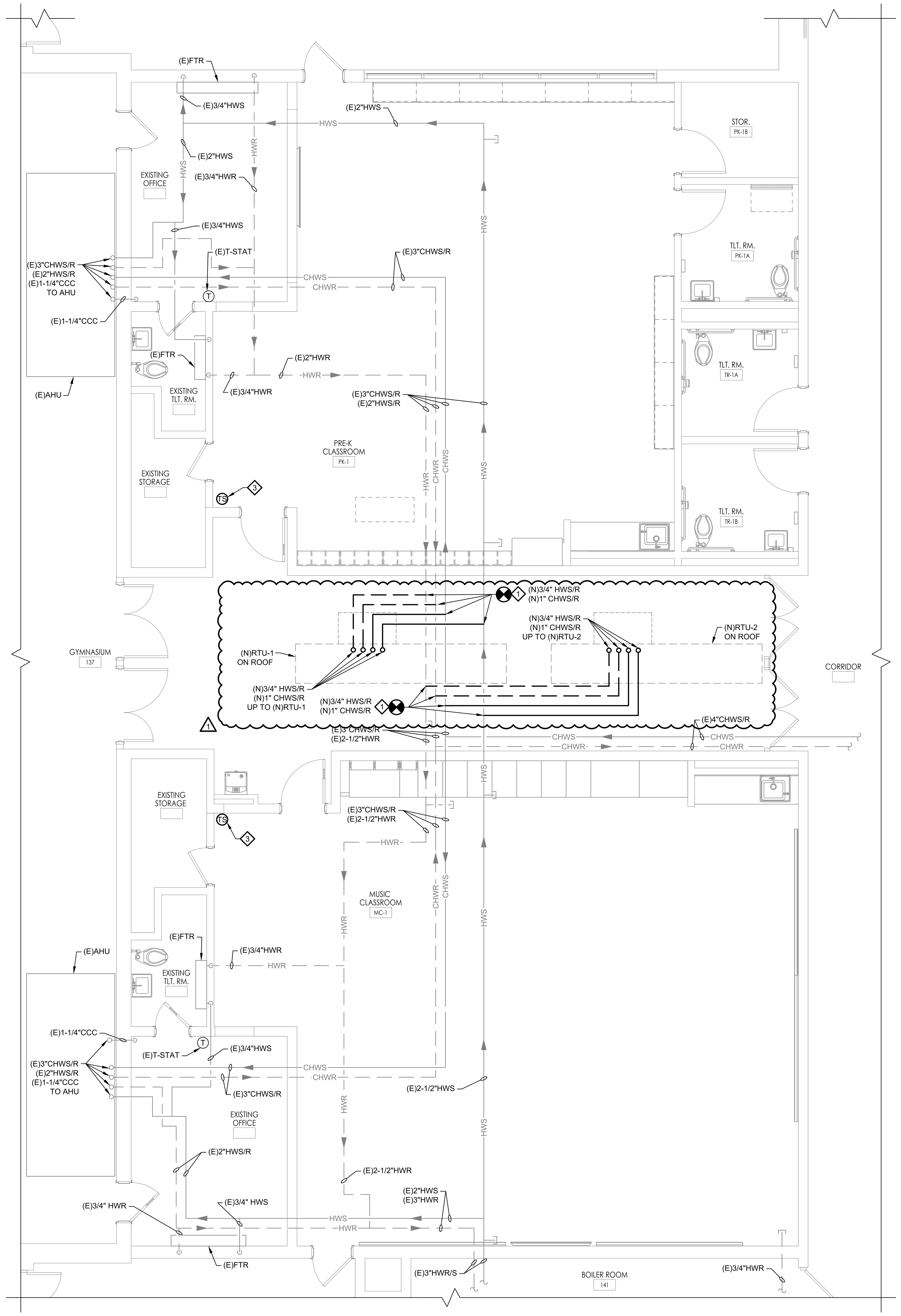
G&H Project No. 2024-147

ENGINEER: MICHAEL S. GILLAN, PE
DATE: NO. 24GE04470000

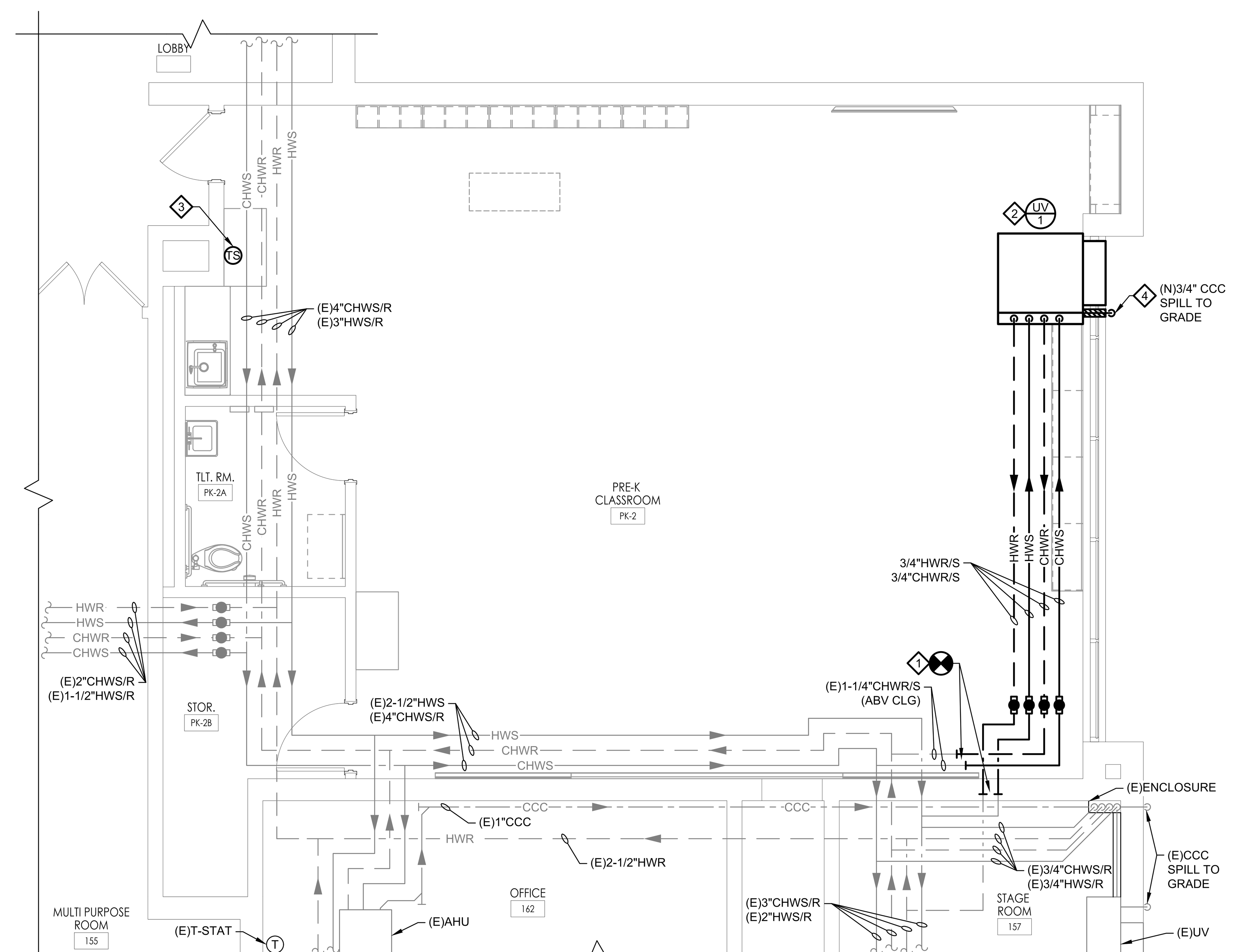
Drawing Number
H211 E

NEW WORK NOTES:

1. EXTEND AND CONNECT NEW PIPING, AS SIZED ON PLAN, WITH SHUT-OFF/ISOLATION VALVES TO EXISTING PIPE CONNECTION REMAINING FROM REMOVAL WORK CLOSE TO THE EXISTING PIPE MAINS.
2. PROVIDE NEW VERTICAL UNIT VENTILATOR (UV-1) AND ALL ASSOCIATED MOUNTING AND ANCHORS. VERIFY IN FIELD ALL EXISTING DIMENSIONS FOR NEW UV. WHERE UV REQUIRES REAR EXTENSION PANELS DUE TO EXISTING SILL HEIGHT, PROVIDE REAR EXTENSIONS, UPPER FILLER PANELS AND FACTORY UNIT COLOR MATCHED SIDE COVERS PANELS. COMPLETED UNIT INSTALLATION SHALL NOT REVEAL ANY EXPOSED INSULATION, PIPING OR UNPAINTED SHEET METAL. REFER TO MECHANICAL DETAILS AND ARCHITECTURAL PLANS FOR ADDITIONAL REQUIREMENTS.
3. PROVIDE NEW TEMPERATURE SENSOR MOUNTED AT ADA HEIGHT WITH SURFACE MOUNTED WIREMOLD/RACEWAY. (1)
4. PROVIDE WALL PENETRATION WITH PIPE SLEEVE (LINK SEAL) TO FACILITATE INSTALLATION OF 3/4" CCC PIPING SPILL TO GRADE. PIPE PENETRATION TO OCCUR AT BOTTOM OF WALL AS INDICATED. PROVIDE PIPE TURN DOWN AND CONCRETE SPLASH BLOCK.



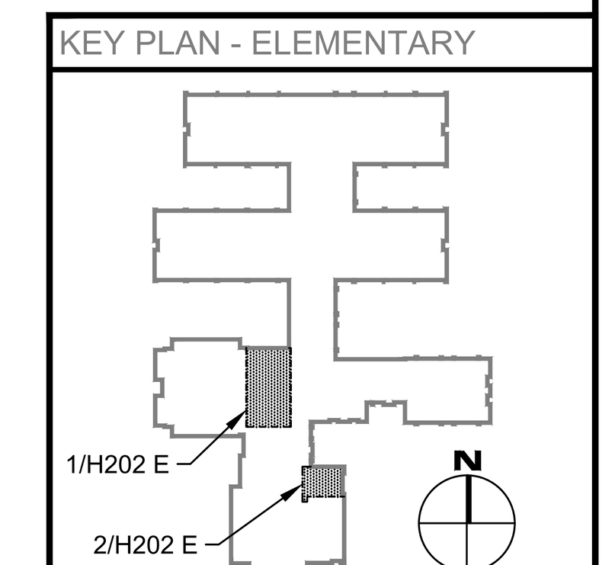
DAVENPORT ELEMENTARY SCHOOL
1 H202 E PARTIAL FLOOR PLAN - HVAC NEW WORK - PIPING
SCALE: 1/4" = 1'-0"



DAVENPORT ELEMENTARY SCHOOL
2 H202 E PARTIAL FLOOR PLAN - HVAC NEW WORK - PIPING
SCALE: 1/4" = 1'-0"

11/01/2024
ISSUE FOR BID

KEY PLAN - ELEMENTARY



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	Renovations for Five (5) Pre-K Classrooms at Clayton J. Davenport School
Project Owner Name	Egg Harbor Township School District
Project Location	2501 Spruce Ave, Egg Harbor Township, NJ 08234
Project Number	5481
Project Date	11.01.2024
Checked By	KLH
Drawn By	RPF
Scale	AS NOTED
Drawing Name	ELEMENTARY SCHOOL HVAC NEW WORK - PIPING - FIRST FLOOR PARTIAL PLAN

Revisions

No.	Date	Description
1	11.26.24	Addendum 1

Drawing Number

H202 E