Troy Schools District

RFP #2324-22
BP#3B Smith Middle School - ARCH & MEP & Civil - Addendum #4
July 24th, 2024

Content Included in this Addendum:

Cover Page (1 Page)
Barton Malow Write Up (6 Pages)
TMP Addendum Write Up Addendum #4 (67 Pages)
Revised Topography Site Plan (1 Page)
Temp Road and Laydown Plan (1 Page)
Post-Bid Schedule (1 Page)
01 3700 3D Coordination Section (14 Pages)

TOTAL PAGES: 91 Pages

July 24th, 2024

Troy Schools District – BP#3B Smith Middle School – ARCH & MEP & Civil – Addendum #4

Addendum #4 Bidder Clarifications

A. General Clarifications

- Revised updated schedule (attached)
- Revised topography of existing site (attached). Due to the initial sitework in Phase #1 that topography is different than what's shown on the drawings.
- Post-bid schedule
- New live opening link:
- Revised due date for the following categories:
    - Earthwork – August 6th, 2024 @ 2PM
    - Landscaping – August 6th, 2024 @ 2PM
    - Asphalt Paving – August 6th, 2024 @ 2PM

B. Clarifications and Additions to Work Scopes

- Earthwork Scope – Revised scope note on page #9 AA and BB and removed wash station from scope of work.
    - Added scope note: Remove existing Temp road per topography as-built and attached temporary road plan.
- Carpentry Scope – Added allowance for temporary protection, guard rail, and weather protection.
- Alternate #3 for BIM Coordination
    - Alternate for the following categories:
        - Plumbing
        - Fire Suppression
        - Mechanical
        - Electrical
    - Base Bid: Provide standard intertrade coordination on site and in coordination meetings per typical Barton Malow requirements.
      Alternate #3: In addition to standard coordination requirements provide 3D coordination per the 01 3700 section in the Barton Malow Project Manual.

C. RFI Responses

Q: PL4 selection - Formica #949C-58 includes a required white color core throughout. Can standard Formica 949-58 be acceptable?
A: Please specify as outlined in specs with the white color core.

Q: Can there be a detail called out for column line W on page A3.9 Detail 5?
A: See 3/A4.5 similar. Additional detail development not available at this time due to bidding time line.

Q: Can there be a detail called out for column line 21 on page A3.8 Detail 3?
A: See 3/A4.5 similar. Additional detail development not available at this time due to bidding time line.

Q: Can there be a detail called out for Column line G on page A3.9 Detail 5?
A: Additional detail development not available at this time due to bidding time line. See 1/A413 on opposite side of building section for similar above roof conditions.

Q: On E3.2E the only through wall sleeves shown are the (3) 3" going into the telco closet. Are these the only ones or are there supposed to be more?
A: Provide sleeves in similar locations as indicated on sheet E3.1E.

Q: The Roof Composite Plan (E0.6) calls out for ERU-3 mto be Fed from Panel PP-F, Circuits 57,59,61. Sheet 5.4 Panel Schedule PP-F -- Does not show ERU-3 in any breaker space. Please confirm.
A: Panel schedule revised in Addendum #2.

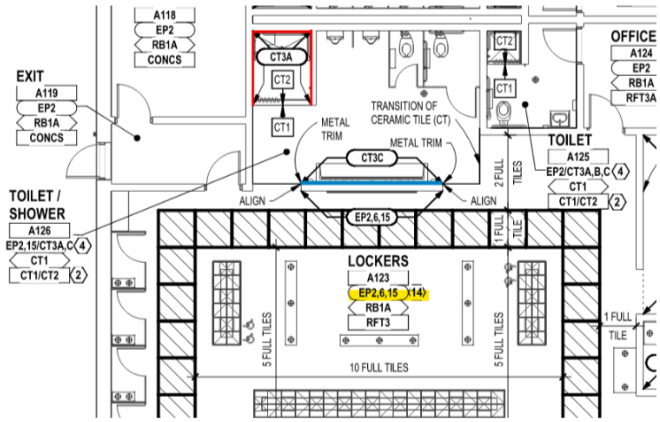
Q: Finish plan A10.1A shows RFT1 to be installed in Corridor Ramp A109. Is this RFT1A? RFT1B? Or RFT1C? Please advise.
A: Change to RFT3A to match adjacent corridor A108.

Q: Tile specification 093000 shows Corian Thresholds to be installed at ceramic floor tile on page 5. On page 6 under Metal Trim, It shows to install Schluter Jolly at ceramic floor tile to polished concrete. What is to be installed at the toilet rooms? The Schluter Jolly or the Corian Thresholds?
A: All thresholds to be metal. Refer to door schedule for threshold details.

Q: The Toilet Rooms that receive epoxy on the walls and ceramic wall tile. What is the ceramic wall tile height? Details 8, 9, 10 & 11/ A7.8 do not show the height of the ceramic for a majority of these toilet rooms. Please provide more information.
A: Ceramic wall tile to be installed to 6'-8".

Q: A4.8 Detail 3 shows using shaftwall to provide fire protection for a steel beam. Will this be typical for all exposed steel beams? Also, would we be able to use a different UL system with a 1 hour rating instead of Shaft to decrease material costs and increase production time?
A: This detail was particular to framing transition from second level deck to first level roof framing. Detail updated in Addendum #4 to revise closing off the transition with CMU rather than shaft wall.

Q: Finish Plan show Toilet / shower A126 to receive EP2 & 15 and CT3A & CT3C. Note 4 is shown which says to reference Details 8, 9, 10 & 11/ A7.8. The drawings do not show this toilet/ shower room. Drawing Detail 3/A7.2 shows one wall for Toilet/ Shower A126. Are we to assume that the rest of the walls in Toilet Room A126 are to receive epoxy paint? Or will all the other walls receive wall tile like the CT3A, CT3B & CT3C pattern shown in Detail 9/A7.8? Please provide more information.
A: Area outlined in red to be CT3A full height wall tile. Area outlined in blue to reference Elevation 3 on A7.2. The rest of the walls to be painted to match Locker A123, to follow specific note 14.



Q: Should contractors carry a soffit condition over the top of all storefronts in the interior of the building, even though there is no detail or section?
A: If storefront is within a wall YES. See also some storefront with wall above tagged if wall above is different than wall adjacent. Vestibule A107, A120, and C101 inner storefront do not require wall above.

Q: Note 5 on the RCP, is an Axium piece meant to be typical? Or is it backwards and the drywall should extend 4" below?

"Note 5. ALL GYPSUM BOARD FASCIAS @ SOFFITS, ADJACENT TO LAY-IN CEILINGS, SHALL EXTEND 4" MINIMUM ABOVE LAY-IN CEILINGS."
A: Extend gypsum board at bulkheads and soffits a minimum 4” above adjacent lay-in ceiling. For example a bulkhead adjacent to a 10’-4” min. Reference detail 3/A8.11.

Q: Page A8.5 the metal stud backwall on detail 14 doesn’t have an total height to it. Does it only go to 20’1”? Does it go to the structure?
A: The stud wall goes to underside of deck and should be braced.

Q: A8.5 detail 6 elevation says P-lam panels go to 20’1”, detail 14 says 20’9” Please confirm this is accurate.
A: P Lam goes to 20’-9” at sides and 20’-1” at rear of platform under gypsum board ceiling around ductwork.

Q: Page A1.1A Column Line B, intersecting at 12 and an unmarked column line are two details called out. Page A5.1 details 14 & 9. Both of these are drawn with metal stud and drywall hatching but the details don’t call them out. Are they supposed to include framing with metal studs or is the hatching wrong?
A: The hatching is for rigid insulation and metal panel, follow enlarged plan details 9/A5.1 and 14/A5.1.

Q: A2.1A calls out the soffits in the platform area as 22’2” but the section cut on A 3.8 shows them at 20’2”. Please clarify which one is correct.
A: Soffits at front of platform is 22’-2” from first level or 20’-2” from the platform level (102’-0”).

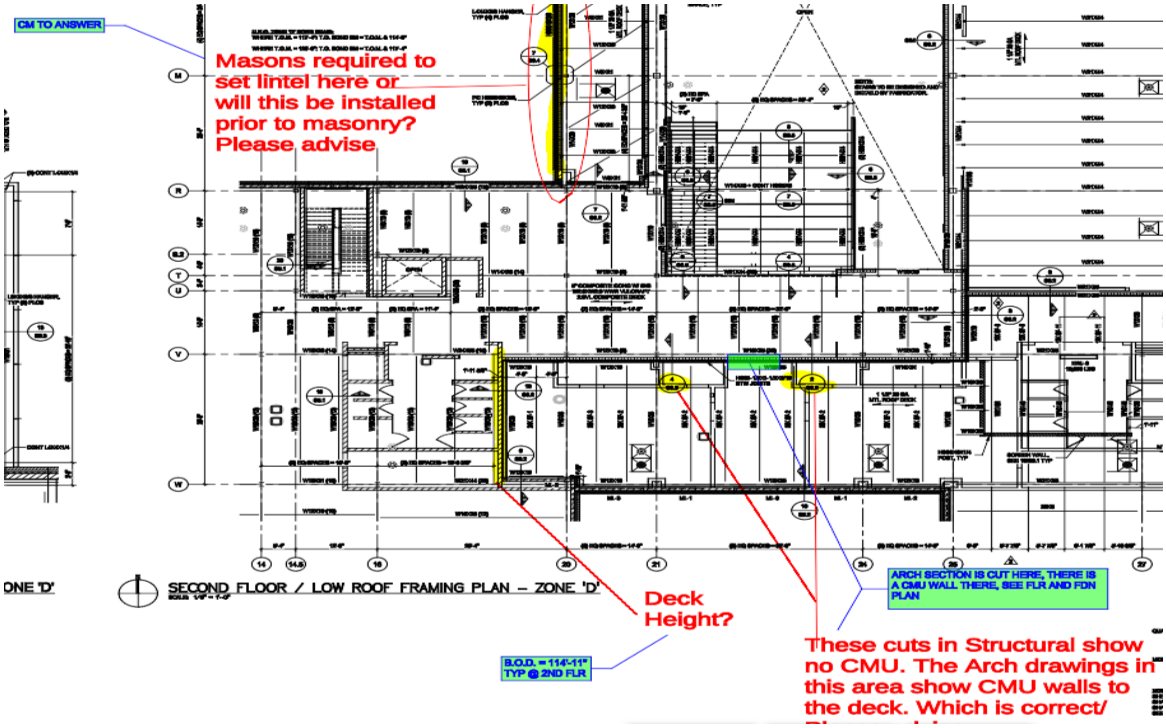
Q: Page A2.1A in CORRIDOR/RAMP A109 there are two soffits called out as 2A. These got to 4” above ceiling which is a potential problem for a soffit. Is there a different wall tag to use or will it just be continuous ACT?
A: The gypsum board at the soffit should be 4” above the ceiling of the ramp A109 (12’-4”).

Q: Page A2.1B CONFERENCE MEETING B104 has a drywall ceiling with no height listed and what appears to be a soffit that isn’t called out. Please provide section/detail/wall tag.
A: Conference is B119. Meeting is B104. These are two separate tags, B104 ACT ceiling is 10’-0” as shown in its tag. The soffit is also at 10’-0”.

Q: When identifying the primary and secondary feeders for T-RP-SB, which is fed from PP-SB and feeds RP-SB I am finding that the 75KVA is oversized for the loads identified.
Attachment 1 to RFI is the design shown on Sheet E5.1 where no conduit or wire is specified for the primary or secondary - Attachment 2 are the Panel Schedules for PP-SB and RP-SB. It indicated that a 20A primary feed for the primary but no main breaker or disconnect size indicated for Panel RP-SB. With a 20A Primary you are looking at 40A Secondary. 75KVA typically has a 100A Primary and 200A Secondary.
A: Refer to “Dry Type Distribution Transformer Circuit Sizing Schedule.” On sheet E0.2 circuit sizing. Panel schedules were updated in Addendum #2.

Q: There is no masonry lintel schedule for page S1.3C on the framing plan.
A: No lintels required, wall types will be updated in Addendum #4.

Q: See attached RFI Floor Plan on page S1.2D - ARCH and STR drawings do not correlate. Please advise.
A:



Q: What are the little crosses on Ad.3 for elevations B102C & B102D supposed to add to the glass. The slanted lines on B104 and others have notation of privacy film but cannot see what the crosses indicate. Please advise.
A: Refer to AD.1 B102C/D glass type listed SSGL1 (Monolithic Security Glazing).

Q: There are multiple areas on all framing plans that do not call out a lintel schedule for doors, frames and openings. Should masonry or steel be used in these locations? Please advise.
A: For non load bearing walls, use loose lintel schedule on S5.1. All load bearing walls and exterior walls should have a lintel size noted. If missing, notify EOR.

Q: See attached Spec page - Are burnished or split faced CMU on this project? Nothing is shown or referenced on the Interior/exterior elevations or finish schedule. Page 5 on the mason spec references Exposed Faces "Approved by Architect" but no other info available. Should this be ignored? Please advise.
A: There are no burnished or split faced CMU's.
Q: Finish Plan A10.1E shows Toilet Room E125 to install CT3A, CT3B, CT4A & CT4B; note 4 states to reference elevation drawing 9/A7.8. - Elevation drawing A9/A7.8 shows where CT3A & CT3B are to be installed. CT4 is indicated on 9/A7.8 drawing where the accent band. Is the intent to install bot CT4A & CT4B where the accent band is indicated?
A: For all tile in toilet rooms, follow the outline below:

- CT3A and CT3B are installed as outlined in Elevation 9 and 13 (Elevation 13 to be included in Addendum No. 4) on A7.8.
- The accent band color is called out on all A10 drawings. The additional tile color(s) (not CT3A or CT3B) listed on the wall finish tag is the tile accent band color. Where two tile colors are called out for the accent band, use 50 percent of each color in a random pattern. Where on tile color is called out, the accent band is all one color.

Q: Throughout the project there are several Toilet Rooms in Area A, Area B, Area D, Area F, Area D 2nd Level, and Area E 2nd Level. There are multiple patterns indicated on the floor finish plans using CT3A, CT3B, CT3C, CT3D, CT4A, CT4B, CT4C, CT4D, and CT8 throughout these toilet rooms in these areas. Note 4 states to see elevation drawings 8, 9, 10 & 11/ A7.8. The elevations do not give enough information to be able to reference for the toilet rooms throughout the project. The toilet rooms shown on

elevations drawings 8, 9, 10 & 11/ A7.8 do not show information needed to calculate wall tile heights, wall tile patterns, what walls receive wall tile, and what walls are to receive epoxy paint, which was receive a metal top trim piece and what walls are full height throughout the project. More information is needed to figure quantities. Please advise.
A: Additional elevation with clarification to be provided in Addendum #4.

Q: Specs ask for floor mounted brace 96" door/panel toilet compartments with valance. Elevation 12/A7.8 show toilet compartment doors to be 8'-0" height within a 2" valance. However, none of the manufacturers listed in the specs offer this nor match the spec/drawings. The manufactures standard max height for toilet compartments are 72". Please advise.
A: Bobrick is basis of design and offers 96” doors with custom height valances, contact the Eisen Group (Ann Bishop).

Q: Finish Plan A10.1E shows Wellness Room E106 & E105 Staff Lounge to receive CT5A ceramic backsplash at the counter. It shows to reference Note 11, Note 11 states CT5 install horizontal 1/3 offset and to install counter top to top of cabinets. There are no elevations to reference to see the extents of the cabinets. Please advise, what is the backsplash height?
A: Ceramic backsplash to be installed between base and upper cabinets, refer to sheet TG.1 for wall and base cabinets mounting details. Refer to note 11 for additional information if no upper cabinets are present.

Q: Under 2.03 Self-Supporting Truss System, which runs will require these trusses? Also 2.02- folding panel partitions-horizontal openings. As well as, C.1 Facing paired panels: markerboard. Is this supposed to be full height porcelain or width of panel by 48" tall markerboards? If yes, how many per classroom?
A: All operable folding panels partitions (FPP) have steel framing available above. Self supporting truss system not required unless dictated by manufacturer. Marker boards to be 4’-0” tall, match bottom of marker boards height that wall mounted marker boards in room to be mounted at. Finish for remainder of panel to be identified in Addendum #4.

Q: The finish drawings call for concrete at all steps (Other than the carpet on the treads of the learning steps? At Platform steps A101 Drawing A10.1A, it calls for RFT2 on the landing only
Is the only stairwell to receive carpet/resilient flooring at the learning steps?
A: That is correct. Stairs 3-5 are concrete with rubber base. Stair 2 is ceramic tile, and Stair 1 is carpet.

Q: What is meant in addenda 3, under gym equipment, "split category by piece of equipment"?
A: The District has requested the ability to award individual pieces of equipment. I.E. bleachers from one contractor, scoreboard from another, etc.
Q: See attached detail 11/AD.6. Is this intended to be blocking? If so, how would this be installed? The dimensions on this piece are 3/4"X3 1/2"
A: Yes, this is intended to be blocking to support the aluminum still. Anchor blocking to CMU sill.

Q: No locations found for GL-8 and GL-21, please advise.
A: GL8 and GL21 are not used.

Q: 1) Norament Sentica Ed 3mm Smooth Color: Road Trip 6523 24x24
a) This calls for sentica ED (electrostatic dissipative) and I want to make sure that is indeed the intent. Nora rubber is inherently anti-static. Taking it up a notch to ED flooring is typically done in high-tech spaces with elaborate high-tech equipment requiring extra protection – and involves a full-room approach including ED shoe covers, etc. Additionally, ED flooring is installed with a complementary ED adhesive with copper grounding strips. Is the intent to want the dissipative rubber tile?
b) Also, Sentica is actually a noraplan product and not norament as called out.
A: Nora plan Sentica smooth to be used. Do not need the electrostatic dissipative. Updated specs coming in Addendum #4.

Q: Please advise if the landscape contractor is to include the bike racks or trash receptacles.
A: These to be included in sitework scope of work.

Q: For the 5 point shade structures, what is the mounting? The manufacturer offers Base Plate, Recessed Base Plate, or Embed mounting.
A: Provide recessed base plate.

Q: Confirm subgrades will be set by others 3" in lawn areas and 12" in plant beds.
A: Correct, subgrade excavation and fill by Earthwork contractor.

Q: On the technology spec sheet it lists OM4 multimode fiber (violet) for use indoors, but on the technology drawings it says to install 12 strand singlemode fibers indoors. I just want to confirm which type of fiber will be used to link the IDFs to the MDF.
A: The Troy School District has updated its standards to now require running 6 strands of both OM4 multimode and single-mode fiber from the MDF to the IDF. The specifications and drawings will be revised accordingly.

Addendum

Date	July 23, 2024
Project Name	Troy School District – New Smith Middle School
TMP Project No(s).	22102
Bid Package No.	03B
Addendum No.	Four (4)

ADDENDUM NO. 1 WAS PREVIOUSLY ISSUED ON JULY 10, 2024.
ADDENDUM NO. 2 WAS PREVIOUSLY ISSUED ON JULY 12, 2024.
ADDENDUM NO. 3 WAS PREVIOUSLY ISSUED ON JULY 16, 2024.

The Bidding Documents are modified, supplemented, or augmented as follows and the Addendum is hereby made a part of the proposed Contract Documents.

The following Drawing(s) and Attachment(s) are issued with this Addendum:

Drawing No(s).:	TS.2-03B, LS.1, LS.2, AD.4, A1.1C, A1.1E, A1.2D, A2.1B, A4.8, A7.4, A7.5, A7.8, A9.1B, A9.2D, A10.1A. A10.1B, A10.1D, A10.1E, A10.1F, A10.2E, M7.4, M7.5, M8.5, M8.12, M8.13
Attachment(s):	Specification Section(s): 00 0110, 09 3000, 09 5100, 09 6500, 10 2239

Item No.	Specification Changes
SC-1	Refer to Section No. 00 0110 – TABLE OF CONTENTS (reissued): A. Indicated sections re-issued with Addendum No. 4 as indicated.
SC-2	Refer to Section No. 09 3000 – HARD TILING (reissued): A. Removed Solid Surfacing threshold from 2.04 Thresholds as indicated. Reference Pre-Bid RFI#73.
SC-3	Refer to Section No. 09 5100 – ACOUSTICAL CEILINGS (reissued): A. Revised paragraphs 3.05.G and 3.05.H as indicated. Reference Pre-Bid RFI #114. B. Added paragraphs 2.02.H and 2.02.I and associated sub-paragraphs as indicated. Reference Pre-Bid RFI #108.
SC-4	Refer to Section No. 09 6500 – RESILIENT FLOORING (reissued): A. Changed product type for RFT2 as indicated. Reference Pre-Bid RFI #127.

SC-5	Refer to Section No. 10 2239 – FOLDING PANEL PARTITIONS (reissued): A. Added a second color for Vinyl-Coated Fabric as indicated. Reference Pre-Bid RFI#122

Item No.	**Architectural Drawing Changes**
AD-1	Refer to Drawing No. TS.2-03B (reissued): A. Added sheets M8.12 and M8.13 to the MECHANICAL list of drawings as indicated.
AD-2	Refer to Drawing No. LS.1 (reissued): A. Added maximum travel distances as indicated. B. Revised intervening space hatching at toilet rooms as indicated.
AD-3	Refer to Drawing No. LS.2 (reissued): A. Added maximum travel distances as indicated. B. Revised intervening space hatching at toilet room as indicated. C. Adjusted views to show entry vestibule roofs as indicated.
AD-4	Refer to Drawing No. AD.4 (reissued): A. Frame Elevation D204A: Revised elevation as indicated.
AD-5	Refer to Drawing No. A1.1C (reissued): A. Revised wall types as indicated. Reference Pre-Bid RFI #106.
AD-6	Refer to Drawing No. A1.1E (reissued): A. Added elevation bubble to Toilet Room E114 as indicated. Reference Pre-Bid RFI#119.
AD-7	Refer to Drawing No. A1.2D (reissued): A. Revised Door D204A location as indicated. B. Shifted dimension for clarity as indicated.
AD-8	Refer to Drawing No. A2.1B (reissued): A. Added soffit tag at B104 as indicated. Reference Pre-Bid RFI #94. B. Added soffit height note as indicated.

AD-9 Refer to Drawing No. A4.8 (reissued):

A. Detail 3: Deleted shaft wall & added CMU at base of second level wall as indicated. Refer to Pre-Bid RFI #77.

AD-10 Refer to Drawing No. A7.4 (reissued):

A. Elevation 2: Revised wall type as indicated. Reference Pre-Bid RFI #106.
B. Elevation 2: Added note for music casework filler panel as indicated.

AD-11 Refer to Drawing No. A7.5 (reissued):

A. Elevation 5: Revised wall type as indicated. Reference Pre-Bid RFI #106.
B. Elevation 5: Added note for music casework filler panel as indicated.

AD-12 Refer to Drawing No. A7.8 (reissued):

A. Elevation 9: Added clarification note for CT3 and CT4 accent wall tile and adjusted arrow to point to CT3B as indicated. Reference Pre-Bid RFI #119.
B. Elevation 13: Added elevation as indicated. Reference Pre-Bid RFI #119.

AD-13 Refer to Drawing No. A9.1B (reissued):

A. Added partial height wall caps as indicated.

AD-14 Refer to Drawing No. A9.2D (reissued):

A. Added countertop notes at D204 as indicated. Reference Pre-Bid RFI #83.

AD-15 Refer to Drawing No. A10.1A (reissued):

A. Changed specific note in Toilet Room A115, A116, A125, A126, and A132 as indicated. Reference Pre-Bid RFI #119.
B. Added specific note 15 in finish legend as indicated. Reference Pre-Bid RFI #119.
C. Changed Corridor/Ramp A109 RFT flooring as indicated. Reference Pre-Bid RFI #72.

AD-16 Refer to Drawing No. A10.1B (reissued):

A. Changed specific note in Toilet Room B117, B121, B132, B141, B142, and B143 as indicated. Reference Pre-Bid RFI #119.
B. Added specific note 15 in finish legend as indicated. Reference Pre-Bid RFI #119.

AD-17	Refer to Drawing No. A10.1D (reissued): A. Changed specific note in Toilet Room D118 and D123 as indicated. Reference Pre-Bid RFI #119. B. Added specific note 15 in finish legend as indicated. Reference Pre-Bid RFI #119.
AD-18	Refer to Drawing No. A10.1E (reissued): A. Changed specific note in Toilet Room E114 and E133 as indicated. Reference Pre-Bid RFI #119. B. Added specific note 15 in finish legend as indicated. Reference Pre-Bid RFI #119.
AD-19	Refer to Drawing No. A10.1F (reissued): A. Changed specific note in Toilet Room F114 and F133 as indicated. Reference Pre-Bid RFI #119. B. Added specific note 15 in finish legend as indicated. Reference Pre-Bid RFI #119.
AD-20	Refer to Drawing No. A10.2E (reissued): A. Changed specific note in Toilet Room E214 and E233 as indicated. Reference Pre-Bid RFI #119. B. Added specific note 15 in finish legend as indicated. Reference Pre-Bid RFI #119. C. Moved room finish tag in Passage E201 for clarity as indicated.
Item No.	**Mechanical Drawing Changes**
MD-1	Refer to Drawing No. M7.4 (reissued): A. Revised energy recovery unit with integral heat pump schedule as indicated.
MD-2	Refer to Drawing No. M7.5 (reissued): A. Revised direct fired make-up air unit schedule as indicated.
MD-3	Refer to Drawing No. M8.5 (reissued): A. Revised lighting control types as indicated.

MD-4 Refer to Drawing No. M8.12 (new):

A. Added sheet for clarification as indicated.

MD-5 Refer to Drawing No. M8.13 (new):

A. Added sheet for clarification as indicated.

END OF ADDENDUM NO. 4 - BID PACKAGE NO. 03B

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26 0553	Electrical Identification	**CD**
26 0573	Overcurrent Protective Device Coordination And Arc Flash Hazard Study	**CD**
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26 5020	Theatrical Lighting Distribution and Control	**CD**
26 5119	LED Interior Lighting	**CD**
26 5600	Exterior Lighting	**CD**

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27 5123.60	Area of Rescue Assistance Two-Way Intercommunication System	**CD**

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

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28 3100	Fire Alarm	**CD**

SITE AND INFRASTRUCTURE SUBGROUP

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Not Used

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Not Used

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Not Used

APPENDIXES

APPENDIX 1

Geotechnical Investigation – Dated March 12, 2024 **CD**

END OF SECTION

SECTION 09 3000 - HARD TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hard tile.
B. Hard tile trim units.
C. Solid surfacing thresholds.
D. Tile setting materials, grout, sealants, and accessories.
E. Metal trim.
F. Waterproofing and crack isolation membranes.

1.02 REFERENCE STANDARDS

A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2017 (Reaffirmed 2022).
B. ANSI A108.1b - Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.
C. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.
D. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive; 2023.
E. ANSI A108.5 - Setting of Ceramic Tile with Dry-Set Cement Mortar, Modified Dry-Set Cement Mortar, EGP (Exterior Glue Plywood) Modified Dry-Set Cement Mortar, or Improved Modified Dry-Set Cement Mortar; 2023.
F. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy; 2023.
G. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (Reaffirmed 2019).
H. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 2023.
I. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 2017 (Reaffirmed 2022).
J. ANSI A108.12 - Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Modified Dry-Set Mortar; 2023.
K. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2005 (Reaffirmed 2021).
L. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive; 2021.
M. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar; 2019.
N. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2014 (Reaffirmed 2019).
O. ANSI A118.11 - American National Standard Specifications for EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar; 2017.

P. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation; 2014 (Reaffirmed 2019).
Q. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2019.
R. ISFA 2-01 - Classification and Standards for Solid Surfacing Material; 2013.
S. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
T. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2024.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by affected installers.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.
C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.
D. Samples:
    1. Full-size units of each type of tile and each color and finish.
    2. Full-size units of each type of trim, threshold and accessory for each color and finish.
        a. Trim and Threshold Samples: 4 inches long, minimum.
E. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.
F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
    1. See Section 01 6000 - Product Requirements, for additional provisions.
    2. Extra Tile: 2 percent of each size, color, and surface finish combination, but not less than one box of each type.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.
B. Installer Qualifications: Company specializing in performing tile installation, with minimum of five years of documented experience.
C. Provide setting materials, grouts, and waterproofing and crack isolation membrane materials from one manufacturer.

1.06 MOCK-UP

A. See Section 01 4000 - Quality Requirements, for general requirements for mock-up.
B. Construct mockups to demonstrate aesthetics and quality of materials and execution.
    1. Build mock-up of each type of floor tile and installation method.
    2. Build mock-up of each type of wall tile and installation method.
    3. Build mock-up of any other specific locations as requested by the Architect.
    4. Mockup sizes shall be sized as appropriate to demonstrate complete tile pattern layout; 16 square feet, minimum.
    5. Approved mock-ups may remain as part of the Work.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to project site in manufacturer's original, unopened containers with labels intact. Inspect materials and notify manufacturer of any discrepancies.
B. Storage: Store materials as directed by manufacturer's written instructions.

1.08 FIELD CONDITIONS

A. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Floor Tile: Floor tile shall comply with the following:
   1. Dynamic Coefficient of Friction (DCOF): 0.42 or greater when tested in accordance with DCOF AcuTest per ANSI A137.1.

2.02 HARD TILE

A. CT1 Porcelain Tile: ANSI A137.1 standard grade.
   1. Size: 24 by 48 inch, rectified.
   2. Thickness: 9 mm, nominal.
   3. Surface Finish: Matte glazed.
   4. Color(s): Chain
   5. Trim Units: Matching cove shapes in sizes coordinated with field tile.
   6. Joint Size: _____.
   7. Base: 6 by 12 inch Cove Base.
   8. Products:
      a. Caesar Ceramics; Link: www.caesarceramicsusa.com/us/.
      b. Substitutions: Not permitted.
      c. Distributor: Virginia Tile, Kathleen Black, (248) 467-4362.
      d. Lead Time: 2-3 weeks

B. CT2 Floor Tile: ANSI A137.1 standard grade.
   1. Size: 2 by 2 inch, nominal.
   2. Thickness: 9mm, nominal.
   3. Surface Finish: Unglazed.
   4. Color(s): Chain
   5. Trim Units: Matching cove and base shapes in sizes coordinated with field tile.
   6. Joint Size: 1/8 inch.
   7. Products:
      a. Caesar Ceramics; Link: www.caesarceramicsusa.com/us/.
      b. Substitutions: Not permitted.
      c. Distributor: Virginia Tile, Kathleen Black, (248) 467-4362.
      d. Lead Time: 2-3 weeks

C. CT3 Wall Tile: ANSI A137.1 standard grade. [Base at Concrete Floors]
   1. Size: 4 by 12 inch
   2. Thickness: 5/16 inch, nominal.
   3. Surface Finish: Gloss and Matte.
   4. Color(s): .
      a. CT3A Arctic White Gloss, 0190.
      b. CT3B Chalkboard Gloss, 0180.
      c. CT3C Matte Mustard, 7012.
      d. CT3D Matte Ocean Blue, 7049
   5. Joint Size: 1/8 inch.
   6. Products:
      a. Daltile; Color Wheel Linear: www.daltile.com.
      b. Substitutions: Not permitted.
      c. Distributor: Daltile, Alyssa DeShane, (616) 877-6116
      d. Lead Time: 8-10 weeks

D. CT4 Wall Tile: ANSI A137.1 standard grade.
   1. Size: 4 by 12 inch, nominal.
   2. Thickness: 5/16 inch, nominal.
   3. Surface Finish: Matte.
   4. Color(s): .
      a. CT4A Matte Tuscany, CU74.
      b. CT4B Matte Mango, CU71.

c. CT4C Matte Fern, CU80.
d. CT4D Matte Starlight, CU68
5. Joint Size: 1/16 inch.
6. Products:
a. Daltile; Colormatch: www.daltile.com.
b. Substitutions: Not permitted.
c. Distributor: Daltile, Alyssa DeShane, (616) 877-6116
d. Lead Time: 8-10 weeks

E. [CT5] Porcelain Tile: ANSI A137.1 standard grade.
1. Size: 2 by 6 inch, nominal.
2. Thickness: 8.5 mm, nominal.
3. Surface Finish: Gloss
4. Color(s):
a. CT5A: Popcorn, Gloss
b. CT5B: Mustard, Gloss
5. Joint Size: 1/8 inch.
6. Products:
a. WOW Tile: Rebels, www.wowdesigneu.com/
b. Substitutions: Not permitted.
c. Distributor: Virginia Tile, Kathleen Black, (248) 467-4362
d. Lead Time: 3-4 weeks

F. [CT6] Porcelain Tile: ANSI A137.1 standard grade.
1. Size:
a. CT6A: 7 7/8 by 47 2/8 inch (20 by 120 cm)
b. CT6B: 11 13/16 by 47 2/8 inch (30 by 120 cm)
2. Thickness: 9 mm, nominal.
3. Surface Finish: Matte.
4. Color: Nordic
5. Joint Size: 1/8 inch.
6. Products:
a. Ceaser Ceramics; Life: www.caesarceramicsusa.com/us/
b. Substitutions: Not permitted.
c. Distributor: Virginia Tile, Kathleen Black, (248) 467-4362
d. Lead Time: 8-10 weeks

G. [CT7] Porcelain Tile: ANSI A137.1 standard grade.
1. Size: 12 by 48 inch, nominal.
2. Thickness: 10 mm, nominal.
3. Surface Finish: Unglazed.
4. Color(s): Crema
5. Joint Size: 1/8 inch.
6. Products:
a. Isla Tiles; Shibusa: https://www.islatiles.it/
b. Substitutions: Not permitted.
c. Distributor: Virginia Tile, Kathleen Black, (248) 467-4362
d. Lead Time: 8-10 weeks

H. CT8 Wall Tile: ANSI A137.1 standard grade.
1. Size: 15 3/4 by 31 1/2 inch, nominal.
2. Thickness: 10mm, nominal.
3. Surface Finish: Matte glazed
4. Color(s): White
5. Joint Size: 1/8 inch
6. Products:
a. Atlas Concorde; 3D Diamond White Matte 80: www.atlasconcorde.com/en

b. Subsitutions: Not permitted.
c. Distributor: Virginia Tile, Kathleen Black, (248) 467-4362
d. Lead Time: 8-10 weeks.

2.03 TILE TRIM UNITS

A. Trim Units: For tile with coordinating trim units, provide bullnoses, cove bases, and other shapes as required for a complete installation.
1. Shapes: As selected by Architect from manufacturer's standard shapes; coordinate with adjacent flat tile sizes and jointing.
2. Sizes: As selected by Architect from manufacturer's standard sizes; coordinate with adjacent flat tile sizes and jointing.
3. Manufacturers: Same as adjacent flat tile, unless otherwsie indicated.

2.04 THRESHOLDS **ADD4**

A. ~~**Thresholds - General:**~~
1. ~~**Beveled Edges:**~~
a. ~~**Maximum Height: 1/2 inch.**~~
b. ~~**Bevel Slope: 1:2 slope.**~~
c. ~~**Align lower bevel edge with adjacent floor finish.**~~
d. ~~**Finish bevels to match threshold face.**~~

B. ~~**Solid Surfacing Thresholds: Plastic resin casting complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler or unfilled, and pigments; homogenous, non-porous; no surface coating; color and pattern consistent throughout thickness.**~~
1. ~~**Size: 4 inches wide by full width of opening; 1/2 inch thick; beveled long edge, both sides.**~~
2. ~~**Finish on Exposed Surfaces: Matte, gloss rating of 5 to 20.**~~
3. ~~**Products:**~~
a. ~~**E. I. DuPont De Nemours and Co.; Corian Solid Surface: www.corian.com.**~~
b. ~~**Substitutions: Not permitted**~~
4. ~~**Color: Architect shall select three (3) colors from Manufacturer's full line.**~~

C. **Applications:**
1. **At doorways where tile terminates.**

2.05 SETTING MATERIALS

A. Latex-Portland Cement Thin-Set Mortar Bond Coat: ANSI A118.4 and ANSI A118.11
1. Products:
a. Bostik, Inc; Bostik PM: www.bostik.com.
b. Custom Building Products; VersaBond Flex Professional Thin-Set Mortar : www.custombuildingproducts.com.
c. LATICRETE International, Inc; 253 Gold: www.laticrete.com.
d. MAPEI Corp.; Porcelain Tile Mortar: www.mapei.com.
e. Substitutions: See Section 01 6000 - Product Requirements.

B. Large Format Tile Latex-Portland Cement Medium-Bed Mortar Bond Coat: ANSI A118.4 and ANSI A118.11.
1. Products:
a. Bostik, Inc; Big Tile & Stone: www.bostik.com.
b. Custom Building Products; Natural Stone & Large Tile Premium Mortar: www.custombuildingproducts.com.
c. LATICRETE International, Inc; 4-XLT: www.laticrete.com.
d. MAPEI Corp.; Large Tile & Stone Mortar: www.mapei.com.
e. TEC, H.B. Fuller Construction Products Inc; Ultimate Large Tile Mortar or Ultraflex LFT: www.tecspecialty.com.
f. Substitutions: See Section 01 6000 - Product Requirements.

2.06 GROUTS

A. Epoxy Grout: ANSI A118.3 chemical resistant and water-cleanable epoxy grout.

1. Color(s):
   a. CT1: Mapei; Silver, 27
   b. CT2: Mapei; Silver, 27
   c. CT3A: Mapei; Avalanche, 38
   d. CT3B: Mapei; Charcoal, 47
   e. CT3C: Mapei; Avalanche, 38
   f. CT3D: Mapei; Avalanche, 38
   g. CT4A: Mapei; Avalanche, 38
   h. CT4B: Mapei; Avalanche, 38
   i. CT4C: Mapei; Avalanche, 38
   j. CT4D: Mapei; Avalanche, 38
   k. CT5: Mapei; Avalanche, 38
   l. CT6: Mapei; Pale Umber, 44
   m. CT7: Mapei; Pale Umber, 44
   n. CT8: Mapei; Avalanche, 38
2. Products:
   a. Bostik, Inc; EzPoxy EzClean: www.bostik.com.
   b. Custom Building Products; CEG-Lite 100% Solids Commercial Epoxy Grout : www.custombuildingproducts.com.
   c. LATICRETE International, Inc; SPECTRALOCK Pro Premium or SPECTRALOCK Premium: www.laticrete.com.
   d. MAPEI Corp.; Kerapoxy or Kerapoxy CQ: www.mapei.com
   e. Substitutions: See Section 01 6000 - Product Requirements.
      1) Substitutions will only be accepted for manufacturers for epoxy grout. Product substitutions for other than epoxy grouts will not be accepted.

2.07 METAL TRIM

A. Metal Trim: Provide metal profiles in heights to match tile and setting-bed thicknesses, designed specifically for hard tile applications.
   1. Profiles:
      a. Tile Trim Type A: TREP-G-B
         1) Brushed Stainless Steel support with non-slip tread
         2) Replacement Tread Color: Black, GS
         3) Application: Stair Nosing
      b. Tile Trim Type B: QUADEC
         1) Application: Outside corners of wall tile.
      c. Tile Trim Type C: RENO-TK
         1) Application: Tile (CT) to Carpet Tile (CPT)
      d. Tile Trim Type D: DILEX-AHKA
         1) Application: Cove Base for Wall Tile (CT) to Polished Concrete (CONCD)
      e. Tile Trim Type E: DECO
         1) Application: Transition from Tile (CT) to Polished Concrete (CONCD)
      f. Tile Trim Type F: Jolly
         1) Application: Tile Top Cap
      g. Other shapes as indicated on Drawings.
   2. Material: Brushed stainless steel, unless otherwise noted.
   3. Applications and Locations:
      a. Open edges of wall tile.
      b. Open edges of floor tile.
      c. Outside wall corners.
      d. Transitions between hard tile and other floor finishes.
      e. Tile perimeters not against a wall or other solid vertical surface.
      f. Other areas as indicated on Drawings.
   4. Manufacturers:
      a. Schluter-Systems: www.schluter.com.

b. Substitutions: See Section 01 6000 - Product Requirements.

2.08 WATERPROOFING AND CRACK ISOLATION MEMBRANE

A. Waterproofing and Crack Isolation Membrane: Elastomeric liquid applied membrane complying with ANSI A118.10 and ANSI A118.12.
   1. Applications: Use at the following locations:
      a. All floor and traffic areas.
      b. Shower walls and floors.
      c. Shower pans and walls.
      d. Other areas as indicated.
   2. Thickness: As recommended by membrane manufacturer.
   3. Crack Resistance: No failure at 1/8 inch gap, minimum.
   4. Membrane system may or may not include fabric reinforcing.
   5. Products:
      a. Without Fabric Reinforcing:
         1) Custom Building Products; RedGard: www.custombuildingproducts.com.
         2) LATICRETE International, Inc; Hydro Ban: www.laticrete.com.
         3) MAPEI Corp.; Mapelastic AquaDefense: www.mapei.com.
         4) Substitutions: See Section 01 6000 - Product Requirements.
      b. With Fabric Reinforcing:
         1) Bostik, Inc; GoldPlus: www.bostik.com.
         2) Custom Building Products; 9240 Waterproofing and Anti-Fracture Membrane: www.custombuildingproducts.com.
         3) LATICRETE International, Inc; Hydro Barrier: www.laticrete.com.
         4) MAPEI Corp.; Mapelastic AquaDefense: www.mapei.com.
         5) TEC, H.B. Fuller Construction Products Inc; HydraFlex: www.tecspecialty.com.
         6) Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.
   1. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of setting materials to sub-floor surfaces.
   2. Verify that substrates comply with tolerances of TCNA (HB).

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.
   1. Verify that substrates comply with tolerances of TCNA (HB).

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

3.03 INSTALLATION - GENERAL

A. Install tile and thresholds and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.13, manufacturer's instructions, and TCNA (HB) recommendations.

B. Install waterproofing and crack isolation membrane according to manufacturer's instructions and TCNA (HB) recommendations.
   1. Applications: Use at the following locations:
      a. All floor and traffic areas.
      b. Shower walls and floors.
      c. Other areas as indicated.

C. Bond Coats:
   1. Use latex-portland cement thin-set mortar, unless otherwise indicated.

a. Exceptions:
1) For tiles that have at least one side greater than 15 inches long, use large format tile latex-portland cement medium-bed mortar.
2) For large areas of glass tile, other than accents and bands, use glass tile latex-portland cement thin-set mortar.
b. Bond Coat Color: White or gray.
1) Exception: White at glass tiles.

D. Grout:
1. Use epoxy grout.

E. Install tile prior to installation of equipment, cabinets, and other recessed and surface mounted items.

F. Completely cover substrates with tile, including those which will be under and behind surface mounted items in finished construction.

G. Lay tile from center lines outward unless otherwise indicated.

H. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

I. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly.

J. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

K. Form internal angles square and external angles square, with metal trim, or bullnose trim pieces as indicated.

L. Install accessories rigidly in place in accordance with manufacturer's instructions..

M. Install metal trim in accordance with manufacturer's instructions.

N. Install thresholds where indicated.

O. Sound tile after setting. Replace hollow sounding units.

P. Keep control and expansion joints free of mortar, grout, and adhesive.

Q. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

R. Grout tile joints unless otherwise indicated.

S. Joint Sealant:
1. Use joint sealant at the following locations instead of grout.
a. Tile changes in plane.
b. Tile-to-tile control joints .
c. Junctions of tile and dissimilar materials
d. And elsewhere as required by TCNA (HB), EJ171 movement joint guidelines.
2. Install joint sealant with bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

T. Grout Sealers:
1. Seal the following:
a. High performance grout joints only as recommended by grout manufacturer.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over concrete substrates, install in accordance with TCNA (HB) Method F122 or F122A, as appropriate to substrate conditions.
1. Provide waterproofing and crack isolation membrane.

3.05 INSTALLATION - SHOWERS AND BATHTUBS - WALLS AND FLOORS

A. Tile on masonry or concrete walls and sloped mortar bed floors, install in accordance with TCNA (HB) Method B421 or B421C as appropriate to substrate conditions.
1. Provide waterproofing and crack isolation membrane.

3.06 INSTALLATION - WALL TILE

A. Over cementitious backer units on studs, install in accordance with TCNA (HB) Method W244C .

1. Provide waterproofing and crack isolation membrane in wet areas and elsewhere as indicated.

B. Over coated glass mat backer board on studs, install in accordance with TCNA (HB) Method W245.
   1. Provide waterproofing and crack isolation membrane where indicated.

C. Over concrete and masonry install in accordance with TCNA (HB) Method W202I.
   1. Provide waterproofing and crack isolation membrane in wet areas and elsewhere as indicated.

3.07 CLEANING

A. Clean tile and grout surfaces.

3.08 PROTECTION

A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

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SECTION 09 5100 - ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended acoustical ceilings including:
   1. Metal grid suspension systems.
   2. Open Cell Metal Ceiling
   3. Acoustical insulation above ceiling.

1.02 REFERENCE STANDARDS

A. ASTM B164 - Standard Specification for Nickel-Copper Alloy Rod, Bar, and Wire; 2014.
B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
C. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.
D. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019.
E. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.
F. ASTM C834 - Standard Specification for Latex Sealants; 2017 (Reapproved 2023).
G. ASTM D610 - Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces; 2008 (Reapproved 2019).
H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
I. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2022.
J. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2023.
K. ASTM E1477 - Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers; 1998a (Reapproved 2022).
L. CISCA (CSH) - Ceiling Systems Handbook.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.
B. Shop Drawings: Indicate grid layout and related dimensioning, junctions with other ceiling finishes, and mechanical and electrical items installed in the ceiling.
C. Product Data: Provide data on suspension system components and acoustical panels. suspension system components and acoustical panels.
D. Samples:
   1. Acoustical Panels: Submit 3 samples, 6 by 6 inch in size, for each type and finish of acoustical panel.
   2. Metal Grid Suspension Systems: Submit 3 samples each, 12 inches long, for each type and finish of suspension system main runner, cross runner, perimeter molding, and fascia trim.
E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.

2. Extra Acoustical Panels: Quantity equal to 2 percent of total installed, but not less than one box for each type and finish.

1.05 QUALITY ASSURANCE

A. Metal Grid Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 5 years documented experience.

B. Acoustical Panel Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum 5 years documented experience.

C. Installer Qualifications: Company experienced in performing acoustical ceiling installations, with minimum of 5 years of documented experience.

1.06 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

B. Warranties: Provide the following manufacturer warranties:

1. Acoustic Panel Warranty: Against defects in materials and workmanship.
   a. Warranty Length:
      1) 30 years.
2. Metal Grid Suspension Systems: Against defects in materials and workmanship.
   a. Warranty Length:
      1) 30 years.
3. Sag Warranty: Acoustic panels shall not show visible sag.
   a. Warranty Length: 30 years.
4. Mold and Mildew Warranty: Acoustic panels shall be free from mold and mildew growth.
   a. Warranty Length: 30 years.
5. Rust Warranty: Metal grid suspension systems shall be free from the occurrence of 50 percent red rust per ASTM D610.
   a. Warranty Length: 30 years.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acoustic Panels: Provide either the specified product or a comparable product by one of the following:

1. Armstrong World Industries, Inc: www.armstrongceilings.com.
2. CertainTeed Corporation: www.certainteed.com.
3. USG Corporation: www.usg.com.
4. Substitutions: See Section 01 6000 - Product Requirements.

B. Suspension Systems and Fascia Trim: Provide either the specified product or a comparable product by one of the following:

1. Armstrong World Industries, Inc: www.armstrong.com.
2. CertainTeed Corporation: www.certainteed.com.
3. Rockfon North America/Chicago Metallic: www.rockfon.com.
4. USG Corporation: www.usg.com.
5. Substitutions: See Section 01 6000 - Product Requirements.

C. Source Limitations: Obtain acoustic panels, suspension systems, and fascia trims from one manufacturer unless otherwise indicated or approved in writing by Architect.

2.02 ACOUSTICAL PANELS

A. Acoustical Panels - General: ASTM E1264, Class A.

B. ACT-1 Acoustical Panels: Painted mineral fiber, ASTM E1264 Type III, with the following characteristics:

1. Size: 24 by 24 inches.
   a. Use 24 by 48 inches cut to fit at locations hatched on Reflected Ceiling Plans. Product No. 1714.
2. Thickness: 3/4 inch.
3. Composition: Wet felted.
4. Light Reflectance: 0.82, determined in accordance with ASTM E1264.
5. NRC: 0.70, determined in accordance with ASTM E1264.
6. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
7. Edge: Square.
8. Surface Color: White.
9. Suspension System: Exposed grid Type SG-1.
10. Products:
    a. Armstrong World Industries, Inc; School Zone Fine Fissured, No. 1713 : www.armstrongceilings.com.

C. ACT-2 Acoustical Panels: Painted faced mineral fiber, ASTM E1264 Type IV, with the following characteristics:
1. Size: 24 by 24 inches.
2. Thickness: 1.75 inches.
3. Composition: Wet felted.
4. Light Reflectance: 0.85 percent, determined in accordance with ASTM E1264.
5. NRC Range: 0.90, determined in accordance with ASTM E1264.
6. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
7. Edge: Square.
8. Surface Color: White.
9. Suspension System: Exposed grid Type SG-1.
10. Products:
    a. Armstrong World Industries, Inc; CALLA High NRC, No. 2844: www.armstrongceilings.com.

D. ACT-3 Acoustical Panels: Paint faced mineral fiber, ASTM E1264 Type IX, with the following characteristics:
1. Size: 24 by 24 inches.
2. Thickness: 5/8 inch.
3. Light Reflectance: 0.89 percent, determined in accordance with ASTM E1264.
4. Ceiling Attenuation Class (CAC): 33, determined in accordance with ASTM E1264.
5. Edge: Square.
6. Surface Color: White.
7. Suspension System: Exposed grid Type SG-1.
8. Products:
    a. Armstrong World Industries, Inc; Kitchen Zone, No. 673: www.armstrongceilings.com.

E. ACT-4 Acoustical Panels: Soil-Resistant Polyester Film faced mineral fiber, ASTM E1264 Type IV, with the following characteristics:
1. Thickness: 3/4 inch.
2. Composition: Wet felted.
3. Light Reflectance: 0.79 percent, determined in accordance with ASTM E1264.
4. NRC Range: 0.55, determined in accordance with ASTM E1264.
5. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
6. Edge: Square.
7. Surface Color: White.
8. Suspension System: Exposed grid Type SG-1.
9. Products:
    a. Armstrong World Industries, Inc; Clean Room FL, No. 1715 : www.armstrongceilings.com.

F. ACT-5 Acoustical Panels: Painted mineral fiber, ASTM E1264 Type III, ASTM E1264 Type IV with the following characteristics:
   1. Sizes:
      a. 24 by 72 inches Calla No. 2864.
         1) Surface Color: White.
      b. 24 by 72 inches Calla No. 2864.
         1) Surface Color: Light Grey.
      c. 24 by 72 inches Calla No. 2864.
         1) Surface Color: Dark Grey
      d. 24 by 72 inches Calla No. 2864.
         1) Surface Color: Custom Color to match Sherwin Williams SW 6381 Anjou Pear.
      e. 24 by 24 inches Calla No. 2820.
         1) Surface Color: White.
      f. 24 by 48 inches Calla No. 2821.
         1) Surface Color: White.
      g. 48 by 48 inches Calla Custom Size.
         1) Surface Color: White.
   2. Thickness: 1 inch.
   3. Composition: Wet felted.
   4. Light Reflectance: 0.85 percent, determined in accordance with ASTM E1264.
   5. NRC Range: 0.85, determined in accordance with ASTM E1264.
   6. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
   7. Edge: Square.
   8. Surface Color: White.
   9. Suspension System: Exposed grid Type SG-1.
   10. Products:
      a. Armstrong World Industries, Inc; CALLA Square Lay-In Smooth Surface Design Flex: www.armstrongceilings.com.

G. ACT-6 Acoustical Panels: FilaSorb 100% Polyester Panel with the following characteristics:
   1. Size: 24 by 72 inches.
   2. Thickness: 12 mm
   3. Composition: 100% Polyester
   4. NRC Range: 0.45, determined in accordance with ASTM E1264.
   5. Edge: Square.
   6. Surface Color: Baltic Birch.
   7. Surface Print: QuietPrint
   8. Material: FilaSorb
   9. Suspension System: Exposed grid Type SG-1.
   10. Products:
      a. Acoufelt, Printed Ceiling Tile - Filasorb 12: www.acoufelt.com

H. **ACT-7: Not Used. **ADD4****

I. **ACT-8: Acoustical Panes: Paint faced mineral fibers, ASTM E1264 Type XII with the following characteristics: **ADD4****
   1. **Size: 24 by 96 inches.**
   2. **Thickness: 0.75 inch.**
   3. **Composition: Fiberglass**
   4. **NCR: 0.90**
   5. **Edge: Square**
   6. **Surface Color: White.**
   7. **Suspension System: Exposed grid Type SG-1.**
   8. **Products:**
      a. **Armstrong World Industries, Inc.; Optima Square Lay-In, No. 3162: www.armstrongceilings.com**

2.03 OPEN CELL METAL CEILING

A. OCMC Acoustical Panels
   1. Surface Texture: Open Cell.
   2. Composition: Metal.
   3. Color: White.
   4. Size: 24 inches X 24 inches.
   5. Edge Profile: Square Lay-in 9/16" for interface with SUPRAFINE XL 9/16" Exposed Tee Grid.
   6. Perforation Option: Open Cell.
   7. Flame Spread: ASTM E1264 ; Class A.
   8. Light Reflectance (LR) White Panel: ASTM E1477.
   9. Dimensional Stability: Standard.
   10. Recycle Content:
      a. Post-Consumer: 20 percent.
      b. Pre-Consumer: 0 percent.
   11. Products:
      a. Armstrong World Industries; METALWORKS Open Cell, 6194M1, www.armstrongceilings.com.
      b. Substitutions: See Section 01 6000 - Product Requirements.

2.04 SUSPENSION SYSTEMS

A. Metal Grid Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with stabilizer bars, clips, splices, and perimeter moldings as required.

B. SG-1 Exposed Steel Suspension System: Formed galvanized steel, commercial quality cold rolled; intermediate-duty.
   1. Profile: Tee; 15/16 inch wide face.
   2. Construction: Double web.
   3. Finish: White painted.
   4. Products:
      a. Armstrong World Industries, Inc; Prelude: www.armstrongceilings.com.
      b. USG Interiors, LLC; USG Donn Brand DX: www.usg.com.

C. SG-2 Exposed Steel Suspension System: Formed galvanized steel, commercial quality cold rolled; intermediate-duty.
   1. Profile: Tee; 9/16 inch wide face.
   2. Construction: Double web.
   3. Finish: White painted.
   4. Products:
      a. Armstrong World Industries, Inc; Suprafine: www.armstrongceilings.com.
      b. USG Interiors, LLC; USG Donn Brand Centricitee DXT: www.usg.com.

2.05 FASCIA TRIM

A. Fascia Trim: Metal fascia trim for free form ceiling drops and open edges of metal grid suspension systems.
   1. Material: Extruded aluminum; ASTM B221, in alloy and temper as recommended by trim manufacturer.
   2. Finishes:
      a. FT1A: White
      b. FT1B: Custom color to match Sherwin Williams SW 6108 Latte
      c. FT1C: Custom color to match Sherwin Williams SW 6381 Anjou Pear
   3. Trim Height: As indicated.
   4. Products:
      a. Armstrong World Industries, Inc; Axiom Classic: www.armstrongceilings.com.
      b. USG Interiors, LLC; Compasso Elite: www.usg.com.

2.06 ACCESSORIES

A. Provide all required accessories including perimeter moldings, splice plates, clips, and associated hardware, hangers, rivets, and fasteners.

B. Hanger Wire, Anchors, and Related Support Materials:
   1. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
   2. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.
   3. Size attachment devices for five times the design load indicated in ASTM C635/C635M, Table 1, Direct Hung, unless otherwise indicated.
   4. Size hanger wire for three times hanger design load indicated in ASTM C635/C635M, Table 1, Direct Hung, but not less than 0.106-inch diameter wire; three times the design load shall be less than yield stress of wire.

C. Perimeter Moldings: Same metal and finish as grid.
   1. At Wall Perimeters: Provide L-shaped molding for mounting at same elevation as face of grid.
   2. Provide inside and outside prefabrcated corner mouldings.
   3. At Bullnose Corners: Provide radius corner moldings to match bullnose radius of adjacent walls.
   4. **Teg Tabs are not acceptable.**

D. Transition Molding for transition between Acoustical Ceiling and Gypsum Board Ceiling with no elevation change.
   1. One-piece acoustical wall modling with an integrated gypsum board taping flange.
   2. Height: 1.25 inch, minimum.
   3. Exposed Width: Match width of suspension system grid.
   4. Color: White
   5. Products:
      a. Armstrong World Industries, Inc; AXIOM Transitions Exposed Tee : www.armstrongceilings.com.
      b. USG Interiors, LLC; Donn Brand Transition Molding: www.usg.com.

E. Touch-up Paint: Type and color to match acoustical and grid units.

2.07 ACOUSTICAL ACCESSORIES

A. Acoustic Insulation: Provide one of the following types:
   1. Mineral Fiber/Rock Wool Batts: ASTM C665; preformed mineral fiber, friction fit type, unfaced.
      a. Thickness: 3 inches, unless otherwise indicated.
      b. Density: 2.5 pcf.
      c. Flame Spread/Smoke Developed: 0/0 per ASTM E84.
      d. Products:
         1) JohnsManville; Mineral Wool Sound Attenuation Fire Batts (SAFB): www.jm.com.
         2) Owens Corning; Thermafiber SAFB (Sound Attenuation Fire Batts): www.owenscorning.com.
         3) Rockwool; Safe'n'Sound: www.rockwool.com.
         4) Substitutions: See Section 01 6000 - Product Requirements.
   2. Fiberglass Batts: ASTM C665; preformed glass fiber, friction fit type, unfaced.
      a. Thickness: 3-1/2 inches, unless otherwise indicated.
      b. Products:
         1) CertainTeed Corporation/Saint-Gobain; NoiseReducer Sound Attenuation Batts: www.certainteed.com.
         2) Johns Manville; Formaldehyde-Free Fiberglass Insulation: www.jm.com.
         3) Knauf Insulation; EcoBatt Insulation with ECOSE Technology: www.knaufinsulation.com.

4) Owens Corning Corporation; EcoTouch Sound Attenuation Batts: www.owenscorning.com.
5) Substitutions: See Section 01 6000 - Product Requirements.

B. Acoustical Sealant: Nonsag, paintable, nonstaining latex sealant complying with ASTM C834; for use in conjunction with perimeter moldings of suspended ceiling systems.
1. Products:
a. Franklin International Inc; Titebond GreenChoice Professional Acoustical Smoke & Sound Sealant: www.titebond.com.
b. PPG Architectural Coatings; Liquid Nails AS-825 Acoustical Sound Sealant: www.liquidnails.com.
c. Pecora Corporation; AIS-919: www.pecora.com.
d. United States Gypsum Co.; USG Sheetrock Brand Acoustical Sealant: www.usg.com.
e. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.
B. Verify that layout of hangers will not interfere with other work.

3.02 PREPARATION

A. Install after major above-ceiling work is complete.
B. Coordinate the location of hangers with other work.

3.03 REMOVAL, SALVAGING, AND REINSTALLATION OF EXISTING SUSPENDED ACOUSTICAL CEILINGS

A. Remove, salvage and reinstall existing acoustical panels and suspension system as required to facilitate new construction.
1. Take care not to scratch, chip, gouge, dent or otherwise damage acoustical panel faces or edges.
2. Take care not to scratch, bend, dent, twist, rack or otherwise damage suspension grid members.
3. Safely store removed materials and protect from damage.
B. Modify existing grid system and acoustic panels to accommodate new work.
C. Reinstall according to requirements of this Section for new work.
D. Replace any damaged or missing grid with new.
1. Match existing grid system in size, color, texture, and material.
E. Replace any damaged or missing acoustical panels with new.
1. Match existing acoustical panels in size, color, texture, and material.

3.04 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, CISCA (CSH), and manufacturer's instructions and as supplemented in this section.
B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
C. Locate system on room axis according to reflected plan.
D. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
1. Install moldings in bed of acoustical sealant.
2. Install moldings and grid in the same plane.
3. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends.
4. Use longest practical lengths.
5. Corners:

a. At Bullnose Corners: Provide prefabricated radius corner moldings to match bullnose radius of walls.
b. At Square Corners: Provide prefabricated corner moldings.
1) At Other Angles Corners: Overlap perimeter moldings.

6. Do not use exposed fasteners, including pop rivets.

E. Fascia Trim: Install fascia trim of type indicated at perimeter and transition locations indicated according to manufacturer's written instructions.

F. Hang metal grid suspension systems independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

G. Connect hangers directly to structure, inserts, eye screws, or other connections that are secure and appropriate for substrate. Connections shall not deteriorate or corrode.

H. Fasten hangers to structural members, cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
1. Do not attach hangers to metal forms, steel deck tabs, or metal decking.

I. Support metal grid suspension systems with hangers not more than 48 inches o.c. along main grid members.
1. Support grid members directly from hangers unless otherwise indicated.
2. Provide hangers not more than 8 inches from ends of each member.

J. Install hangers plumb except where required to miss obstructions; brace splayed hangers as required to offset horizontal forces.

K. Install supplemental hanger supports to bridge large ducts and other wide obstacles that interfere with required hanger spacings or when steel framing is not located appropriately for required hanger spacings.

L. Size hangers and supplemental supports to support ceiling loads within performance limits established by referenced standards and this specification section.

M. Secure wire hangers to metal grid suspension systems and above supports with four tight turns, minimum.

N. Hangers shall not contact adjacent materials within the ceiling plenum.

O. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

P. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

Q. Do not eccentrically load system or induce rotation of runners.

R. Do not install dented, bent, or kinked metal grid suspension members.

3.05 INSTALLATION - ACOUSTICAL PANELS

A. Install acoustical panels in accordance with manufacturer's instructions and as supplemented in this section.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install units after above-ceiling work is complete.

E. Install acoustical panels level, in uniform plane, and free from twist, warp, and dents.

F. Cutting Acoustical Units:
1. Make field cut edges of same profile as factory edges.
2. Field paint exposed cut edges.
3. No shadow trims to be used.

G. **Where called for on drawings: **ADD4**** Lay acoustical insulation for a distance of 48 inches either side of acoustical partitions, unless otherwise indicated.

H. **Where called for on drawings: **ADD4**** Lay acoustical insulation continuously across top of acoustical panel ceiling system without gaps where indicated.

3.06 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

SECTION 09 6500 - RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient sheet flooring.
B. Resilient tile flooring.

1.02 REFERENCE STANDARDS

A. ASTM F1344 - Standard Specification for Rubber Floor Tile; 2021a.
B. ASTM F1516 - Standard Practice or Sealing Seams of Resilient Flooring Products by Heat Weld Method (when Recommended); 2018.
C. ASTM F1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing; 2019.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements for submittal procedures.
B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
C. Shop Drawings: Indicate seaming plans and floor patterns.
D. Verification Samples:
   1. Resilient Sheet Flooring: Submit 3 samples, 6 by 9 inch in size for each color and pattern specified.
   2. Resilient Tile Flooring: Submit 3 samples, full size, for each color and pattern specified.
E. Sustainable Design Submittal: Submit VOC content documentation for flooring and adhesives.
F. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Flooring Materials: Quantity equal to 2 percent of total installed, but not less than one box or roll for each type and color.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum 5 years documented experience.
B. Installer Qualifications: Company specializing in installing specified flooring with minimum 5 years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
B. Store all materials off of the floor in an acclimatized, weather-tight space.
C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
D. Protect roll materials from damage by storing on end.
E. Do not double stack pallets.

1.06 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 SHEET FLOORING

A. RSF1Vinyl Sheet Flooring: Homogeneous without backing, with color and pattern throughout full thickness.
   1. Products:
      a. Protect-All; Kitchen Flooring: www.protect-allflooring.com.

b. Substitutions: Not permitted.
2. Minimum Requirements: Comply with ASTM F1913.
3. Thickness: 0.25 inch nominal.
4. Sheet Width: 60 inch minimum.
5. Seams: Heat welded.
6. Color: Designer Series, Graphite Ultra, Matte.
7. Base: Flash Coved Base (6") with Stainless Steel Cove Cap
8. Trim: Provide all necessary trim to complete installation.

B. Welding Rod: Solid bead in material compatible with flooring, produced by flooring manufacturer for heat welding seams, and in color matching field color unless otherwise indicated.

2.02 TILE FLOORING

A. RFT1Rubber Tile: Homogeneous, color and pattern throughout thickness.
1. Products:
a. Nora; Norament Pado: www.nora.com.
b. Substitutions: Not permitted.
2. Minimum Requirements: Comply with ASTM F1344, of Class corresponding to type specified.
3. Size: 39.53 by 39.53 inch nominal.
4. Total Thickness: 3 mm.
5. Installation Pattern: As indicated on Drawings.
6. Colors: .
a. RTF1A Moon Mist, 5511.
b. RTF1B Concrete, 5505.
c. RTF1C Spearmint, 5512.

B. RFT2Rubber Tile: Homogeneous, color and pattern throughout thickness.
1. Products:
a. Nora~~; Norament Sentica Ed:~~ **Noraplan Sentica **ADD4**** www.nora.com.
b. Substitutions: Not permitted.
2. Minimum Requirements: Comply with ASTM F1344, of Class corresponding to type specified.
3. Size: 24.015 by 24.015 inch nominal.
4. Total Thickness: 3 mm.
5. Texture: Smooth.
6. Installation Pattern: As indicated on Drawings.
7. Colors: .
a. RTF2 Road Trip, 6523.

C. RFT3 Rubber Tile: Homogeneous, color and pattern throughout thickness.
1. Products:
a. Nora; Norament Satura: www.nora.com.
b. Substitutions: Not permitted.
2. Minimum Requirements: Comply with ASTM F1344, of Class corresponding to type specified.
3. Size: 39.53 by 39.53 inch nominal.
4. Total Thickness: 3 mm.
5. Texture: Hammered.
6. Installation Pattern: As indicated on Drawings.
7. Colors: .
a. RTF3A Castor, 5111.
b. RTF3B Titan, 5112.
c. RTF3C Venus, 5123.

D. The following information pertains to all egress stairs:
1. RFT3B, Nora Satura, Titan 5112

a. Cold Weld at seams
1) Color: Match Titan 5112
2. Refer to Section 09 6513 Resilient Wall Base and Accessories for Mechanically Fastened Nosing

2.03 ACCESSORIES

A. Subfloor Filler: Cement based rapid drying smoothing and finishing compound; type recommended by adhesive manufacturer. Moisture resistant, Low VOC.
B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
C. Filler for Coved Base: Plastic.
D. Sealer and Wax: Types recommended by flooring manufacturer.
1. Coordinate selection of products with Owner's maintenance service.
E. Floor Moldings, Stair Coverings, and Resilient Base: Refer to Section 09 6513 - Resilient Bases and Accessories.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
B. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
1. Test in accordance with Section 09 0561 - Common Work Results for Flooring Preparation.

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
B. Prohibit traffic until filler is fully cured.
C. Clean substrate.
D. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of subfloor conditions.
B. Install in accordance with manufacturer's written instructions.
C. Adhesive-Applied Installation:
1. Fully adhere resilient floor finishes to substrates using a full spread of adhesive completely covering substrate.
2. Spread only enough adhesive to permit installation of materials before initial set.
3. Fit joints and butt seams tightly.
4. Set flooring in place, press with heavy roller to attain full adhesion.
D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
E. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
F. Install flooring in recessed floor access covers, maintaining floor pattern.
G. At movable partitions, install flooring under partitions without interrupting floor pattern.
H. Coordinate with Section 09 6513 - Resilient Bases and Accessories for installation of floor moldings, stair coverings, and resilient base.

3.04 INSTALLATION - SHEET FLOORING

A. Installed sheet flooring shall be without open cracks, raising and puckering at joints, bubbling, telegraphing of adhesive spreader marks, and other imperfections.

B. Unless otherwise indicated lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns at seams.
C. Install resilient sheet flooring in floor patterns indicated on Drawings.
D. Cut sheet at seams in accordance with manufacturer's instructions.
E. Seal seams by heat welding per ASTM F1516.
   1. Permanently fuse joint together using welding rod.
   2. Finish seams flush with adjacent flooring material.
F. Coved Base: Install as detailed on drawings, using coved base filler as backing at floor to wall junction. Extend sheet flooring vertically to height indicated, and cover top edge with metal cap strip.

3.05 INSTALLATION - TILE FLOORING

A. Mix tile from containers to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.
B. Installed floor tile shall be without open cracks, bubbling, telegraphing of adhesive spreader marks, and other imperfections.
C. Install resilient tile in floor patterns indicated.
D. Where no patterns are indicated, lay flooring with joints and seams parallel to building lines to produce symmetrical pattern.

3.06 CLEANING

A. Remove excess adhesive from floor surfaces without damage.
B. Clean, seal, and wax in accordance with manufacturer's written instructions.
   1. Seal resilient floor finishes only when recommended by resilient floor finish manufacturer.
   2. Wax resilient floor finishes only when recommended by resilient floor finish manufacturer.
      a. Apply not less than two coats as recommended by manufacturer.
   3. Do not seal or wax luxury vinyl tile.
C. Clean resilient flooring not more than 5 days prior to Substantial Completion in accordance with resilient flooring manufacturer's instructions

3.07 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.
B. After cleaning, place protective coverings over finish floors; do not remove coverings until Date of Substantial Completion.

END OF SECTION

SECTION 10 2239 - FOLDING PANEL PARTITIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Top-supported folding panel partitions, horizontal opening.
   1. Manual paired panels.
   2. Manual single panels.
B. Self-supporting truss system.

1.02 REFERENCE STANDARDS

A. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2020.
B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
C. ASTM A424/A424M - Standard Specification for Steel, Sheet, for Porcelain Enameling; 2018.
D. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2021a.
E. ASTM A513/A513M - Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing; 2020a.
F. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
G. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
I. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
J. ASTM E413 - Classification for Rating Sound Insulation; 2022.
K. ASTM E557 - Standard Guide for Architectural Design and Installation Practices for Sound Isolation Between Spaces Separated by Operable Partitions; 2012 (Reapproved 2020).

1.03 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene at project site seven calendar days prior to scheduled beginning of construction activities of this section to review section requirements.
   1. Require attendance by representatives of installer.
   2. Notify Architect 5 business days in advance of scheduled meeting date.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide data on partition materials, operation, hardware and accessories, electric operating components, and track switching components.
C. Design Data: Design calculations, bearing seal and signature of structural engineer licensed to practice in the State in which the Project is located, showing loads at points of attachment to the building structure.
D. Shop Drawings: Indicate opening sizes, track layout, details of track and required supports, static and dynamic loads, adjacent construction and finish trim, and stacking depth.
   1. Include wiring diagrams of power and control wiring.
E. Samples:
   1. Fabric Finishes: Submit 3 samples of each fabric, 8 by 10 inch in size illustrating color, finish, and texture.
F. Selection Samples: Where colors and finishes are not specified, submit 3 sets of color and finish selection charts or chips.

G. Manufacturer's Qualification Statement.
H. Installer's Qualification Statement.
I. Operation and Maintenance Data: Operating procedures, troubleshooting and repair methods, wiring diagrams, parts lists, and identification of authorized maintenance firms located in vicinity of project.
J. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods. Describe cleaning materials detrimental to finish surfaces and hardware finish.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified this section with minimum 5 years of documented experience.
B. Installer Qualifications: Company specializing in performing work of the type specified and with at least 5 years of documented experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until installation.

1.07 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
B. Provide two year manufacturer warranty against defects in material and workmanship, excluding abuse.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Manual Individual Omni-Directional Panels.
1. Kwik-Wall Company; Hufcor Series 641: www.kwik-wall.com.
2. Modernfold, a DORMA Group Company; Acousti-Seal Premier: www.modernfold.com.
3. Moderco, Inc.; Signature 841 Series: www.moderco.com.
4. Substitutions: See Section 01 6000 - Product Requirements.
B. Manual Paired Panels.
1. Kwik-Wall Company; Hufcor Series 642: www.kwik-wall.com.
2. Modernfold, a DORMA Group Company; Acousti-Seal Premier: www.modernfold.com.
3. Moderco, Inc.; Signature 842 Series: www.moderco.com.
4. Substitutions: See Section 01 6000 - Product Requirements.
C. Self-supporting Truss System.
1. Kwik-Wall Company; Hufcor Unispan Self Support System: www.kwik-wall.com.
2. Modernfold, a DORMA Group Company; Truss System: www.modernfold.com.
3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 FOLDING PANEL PARTITIONS - HORIZONTAL OPENING

A. Folding Panel Partitions:
1. Manually Operated: Side-opening; paired panels or indivdiual panels; side stacking; manually operated.
B. Panel Construction:
1. Frame: 16 gauge, 0.0598 inch thick formed sheet steel frame top, bottom, jambs, and intermediates; welded construction, with acoustical insulation fill.
2. Panel Substrate Facing: Steel sheet, manufacturer's standard thickness.
3. Hinges: Panel manufacturer's standard butt type; minimum of 3 hinges per panel joint.
4. Panel Properties:
a. Thickness Without Finish: 4 inches.
b. Width: Up to 48 inches (1219 mm).
c. Weight: 8 lb/sq ft.
C. Panel Finishes:
1. Facing Paired Panels: Markerboard, **Type 2 Vinyl Coated Fabric **ADD4****

2. Facing Omni Directional Panels: Black Hardware, Black Type 2 Vinyl Coated Fabric
3. Exposed Metal Trim: Custom powder coated paint finish.

D. Panel Seals:
1. Panel to Panel Seals: Grooved and gasketed astragals, with continuous flexible ribbed vinyl seal fitted to panel edge construction; color to match panel finish.
2. Acoustic Seals: Flexible acoustic seals at jambs and ceilings, retractable floor seals.

E. Suspension System:
1. Track: Formed steel or extruded aluminum; thickness and profile designed to support loads.
   a. Track shall provide support for adjacent ceiling materials.
   b. Connect track to structural support with adjustable steel hanger brackets and 3/8 inch diameter threaded rods.
      1) Hanger bracket thickness and profile designed to support track and associated loads.
   c. Include all associated hardware and accessories.
2. Carriers: Nylon wheels on trolley carrier at top of every panel, sized to carry imposed loads, with threaded pendant bolt for vertical adjustment.

F. Performance Requirements:
1. Acoustic Performance:
   a. Sound Transmission Class (STC): 43 to 47 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90, on panel size of 100 sq ft.
2. Surface Burning Characteristics of Panel Finish: Flame spread/smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84.
3. Installed partition system track capable of supporting imposed loads, with maximum deflection of 1/360 of span.

G. Accessories:
1. Work Surfaces:
   a. Markerboard: Bonded to panel face.
      1) Material: Porcelain enameled steel sheet.
      2) Size: Width of panel by 48 inches high.
      3) Trim: Manufacturer's standard horizontal trim without exposed fasteners; for uninterrupted work surface, panel-to-panel, no vertical trim permitted.
      4) Locations: As indicated.
   b. Tackable Surface: Bonded to panel face.
      1) Material: Vinyl-Coated fabric over 1/4 inch natural cork sheet.
      2) Size: Full width and height of panel.
      3) Trim: Manufacturer's standard horizontal trim without exposed fasteners; for uninterrupted work surface, panel-to-panel, no vertical trim permitted.
      4) Locations: As indicated.
2. Pocket Door/Enclosures: Manufacturer's standard pocket door, frame, and trim.
   a. Omni-Directional Doors only. No pocket door enclosure at paired doors.
   b. Same construction as panels.
   c. Frame: Adjustable metal frame; flush design.
   d. Hardware: Manufacturer's standard hardware including:
      1) Hinges: 3, minimum.
      2) Recessed operating hardware.
      3) Keyed lock.
         (a) Cylinder and core as specified in Section 08 7100 - Door Hardware.
   e. Safety Features:
      1) Pocket Door Interlock: Mechanism to prevent operation of panels unless storage pocket doors are fully open.
   f. Factory finished to match partition panels.

2.03 SELF-SUPPORTING TRUSS SYSTEM

A. Self-Supporting Truss System: Manufacturer's standard, engineered, steel or aluminum, floor supported, sectional truss system designed to support folding panel partitions and track independent of building structure except for lateral bracing.
   1. Configuration: Horizontal truss supported by vertical post at each end.
   2. Fabrication:
      a. Component Sizes: As engineered by truss system manufacturer.
      b. Fabricate truss in sections for field assembly.
      c. Design posts to be securely anchored to floor.
   3. Provide lateral bracing to building's overhead structure at intervals recommended by truss system manufacturer; bracing size and configuration engineered by truss system manufacturer.

2.04 MATERIALS

A. Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.
B. Steel Plates, Shapes, and Bars: ASTM A36/A36M.
C. Steel Tubes: ASTM A500/A500M or ASTM A513/A513M, Type 5
D. Steel Sheet: Cold rolled commercial steel or structural steel; ASTM A1008/A1008M.
E. Vinyl-Coated Fabric:
   1. Products:
      a. Fabric: As selected from manufacturer's full line.
      b. Color: Architect to select **up to two colors** from manufacturer's full line. ****ADD4****
F. Markerboard - Porcelain Enameled Steel Sheet: ASTM A424/A424M, Type I, Commercial Steel, with fired-on vitreous finish.
   1. Color: As selected from manufacturer's full range.
G. Tackboard - Natural Cork Sheet: Seamless, compressed, fine-grain cork sheet; bulletin board quality; sanded face for natural finish
H. Acoustic Insulation:
   1. Type: Manufacturers standard.
   2. Thickness: As required for acoustic performance indicated.

2.05 FINISHES

A. Steel and Aluminum Finishes: Manufacturer's standard powder coated paint.
   1. Color: Standard color as selected by Architect.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.
B. Verify that required utilities are available, of the correct characteristics, in proper location, and ready for use.
C. Verify floor flatness of 1/8 inch in 10 feet, non-cumulative.
D. Verify wall plumbness of 1/8 inch in 10 feet, non-cumulative.

3.02 INSTALLATION

A. Install partition in accordance with manufacturer's instructions and ASTM E557.
B. Install self-supporting truss system including lateral bracing in accordance with manufacturer's instructions.
C. Install components level and plumb.
D. Install electric operator, wiring, and controls. Locate control station(s) as indicated.
E. Fit and align partition assembly and pocket doors level and plumb.

3.03 ADJUSTING

A. Adjust partition assembly to provide smooth operation from stacked to full open position. Do not over-compress acoustic seals.

B. Visually inspect partition in full extended position for light leaks to identify a potential acoustical leak.
C. Adjust partition assembly to achieve lightproof seal.

3.04 CLEANING

A. Clean finish surfaces and partition accessories.
B. Condition markerboard surfaces in accordance with manufacturer's instructions.

3.05 CLOSEOUT ACTIVITIES

A. Demonstrate operation of partition and identify potential operational problems.

END OF SECTION

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ARCHITECTURE

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NEW SMITH MIDDLE SCHOOL

Troy School District - Troy, Michigan 48098

2022 BOND PROGRAM - BID BACKAGE 03B

Project Number 22102

CONSTRUCTION DOCUMENTS

CONSULTANTS:

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ANN ARBOR, MI 48105
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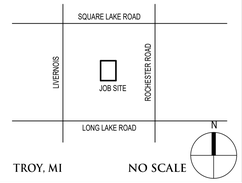
LIST OF DRAWINGS

PROJECT DATA:

LOCATION MAP:



TROY, MI NO SCALE

ADDRESS: NEW SMITH MIDDLE SCHOOL
5850 Livernois Road
Troy, Michigan 48098

BUILDING:

BUILDING AREA(S) = 103,803 SF (FIRST LEVEL)
610 SF (MEZZANINE)
21,312 SF (SECOND LEVEL)
125,725 SF (TOTAL)

CODE:

GOVERNING CODES:

- **2016 SCHOOL FIRE SAFETY RULES** (2012 Life Safety Code, plus amendments)
- **2015 MICHIGAN BUILDING CODE**
- **2021 MICHIGAN PLUMBING CODE**
- **2021 MICHIGAN MECHANICAL CODE**
- **2015 MICHIGAN ENERGY CODE** (ANSI/ASHRAE/IESNA Standard 90.1-2013)
- **2023 MICHIGAN ELECTRICAL CODE** (2023 NEC, plus Part 8 Rules)
- **2010 MICHIGAN ELEVATOR RULES** (ASME A17.1-2010, ASME A18.1-2011)
- **MICHIGAN BARRIER FREE CODE** (Michigan Building Code 2015 and ICC A117.1-2009)
- **2013 MICHIGAN BOILER CODE RULES** (ASME Boiler and Pressure Vessel Code, 2019 edition) (National Board Inspection Code [NBIC], 2019 edition)

USE GROUP CLASSIFICATION: **"E" EDUCATION**

CONSTRUCTION TYPE: **TYPE II (000) LSC**
TYPE II-B (MBC)

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2024	ADDENDUM NO. 4
06-18-2024	CONSTRUCTION DOCUMENTS

LICENSEE'S STATEMENT:

This Document has been prepared under the supervision of the Architect, as the person in Responsible Charge with the firm of TMP ARCHITECTURE, INC. An original embossed or rubber stamp seal and original signature of the Architect is required and shall be affixed to any copy of this Document submitted to a governmental agency for approval or record. This is in conformance with the State of Michigan's PA 299, Article 20 and the General Rules of the Board of Architects.

The Architect's seal provided hereon does not take responsibility for certain portions of the Documentation or project requiring the services of a licensed Professional Engineer or other design professional. An original embossed or rubber stamp seal and original signature of the Professional Engineer is required and shall be affixed to any copy of this or other Document submitted to a governmental agency for approval or record. The engineering firms associated with this document are listed above as Consultants.

REGISTRATION SEALS

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PROJECT TITLE
NEW SMITH MIDDLE SCHOOL

PROJECT NO.
22102

DRAWING NO.
TS.2-03B

BUILDING DATA

1. SUPERVISED AUTOMATIC SPRINKLER SYSTEM (THROUGHOUT)
   - FIRE SUPRESSION TO BE INSTALLED IN NEW CONSTRUCTION
   - FIRE SUPRESSION TO BE ADDED TO EXISTING TO REMAIN
2. CONSTRUCTION CLASSIFICATION TYPE II(000) (NFPA 220) & II-B (MBC 2015) / 2-STORIES
3. USE CLASSIFICATION "E"

LIFE SAFETY PLAN LEGEND CONTINUED

C — ROOM USE KEY
120 — OCCUPANT LOAD

75 / 100 — CALCULATED OCCUPANT LOAD OF ROOM OR CUMULATIVE OCCUPANT LOAD AT EGRESS COMPONENT (LSC 7.3.1.2, MBC TABLE 1004.1.2)

CAPACITY OF EGRESS COMPONENT
- PER NFPA 101 (2012), TABLE 7.3.3.1
- PER MBC (2015), SECTIONS 1005.3.1 AND 1005.3.2

LINE OF TRAVEL
- TRAVEL DISTANCE TO EXITS = 250' MAX. SPRINKLED (TBL 1017.2 MBC)
- COMMON PATH OF TRAVEL = 75' MAX. SPRINKLED (TBL 1006.2.1 MBC)
- DEAD ENDS = 50' MAX. (LSC 14.2.5.2 / MBC 1020.4, EXCEPTION NO 2).

FE — FIRE EXTINGUISHER, SURFACE MOUNT

FES — FIRE EXTINGUISHER, CABINET (SEMI-RECESSED)

FEC — FIRE EXTINGUISHER, CABINET (RECESSED)

LIFE SAFETY PLAN LEGEND CONTINUED

NON-RATED SMOKE BARRIER FLOOR CONSTRUCTION (LSC 8.6.1[1] / MBC 712)
- FIRE DAMPERS ARE NOT REQUIRED AT DUCTS THAT PENETRATE ONLY ONE FLOOR (MBC 712.1.6, 717.6, 717.6.3)
- SMOKE DAMPERS ARE NOT REQUIRED AT DUCT PENETRATIONS (LSC 8.5.5.3(5))
- FIRE DAMPERS ARE REQUIRED AT TRANSFER OPENINGS (MBC 717.6)

INTERVENING SPACE (NFPA 14.2.5.5)
- TRAVEL NOT TO EXCEED 75' MAX. (NFPA 14.2.5.5)
- SPRINKLER IN ACCORDANCE WITH NFPA SECTION 9.7.
- APPROVED FIRE DETECTION ACTIVATES BUILDING ALARM

COMMUNICATING SPACE (NFPA 8.6.6)
- SMOKE BARRIER SEPARATED WITH SPRINKLER SYSTEM
- SPRINKLER IN ACCORDANCE WITH NFPA SECTION 9.7.

ENCLOSURES BELOW STAIRS (MBC 1011.7.3, NFPA 7.2.2.5.3.2)
- SEPARATED FROM STAIR BY 1- HOUR FIRE RESISTANCE RATED CONSTRUCTION
- NOT DIRECTLY ACCESSED FROM STAIR ENCLOSURE

2-HOUR FIRE BARRIER CAP
- PENETRATIONS BY DUCTS ARE PROHIBITED.

LIFE SAFETY PLAN LEGEND CONTINUED

SMOKE PARTITION FOR EGRESS CORRIDORS (LSC 14.3.6(2))
- DAMPERS ARE NOT REQUIRED AT DUCT PENETRATIONS THAT DO NOT COMMUNICATE WITH CORRIDORS (LSC 8.4.6.2 & NFPA 90A 5.3.1.1)
- SMOKE DAMPERS ARE REQUIRED AT TRANSFER OPENINGS (LSC 8.4.6.2)

2-HOUR FIRE BARRIER FOR WIRING, EMERGENCY SYSTEMS (NEC 700.10)

1-HOUR FIRE BARRIER FOR SCIENCE LABS (LSC 14.3.2.5, 8.7.4 & NFPA 45 5.1.3)
- DAMPERS ARE NOT REQUIRED AT DUCT PENETRATIONS (LSC 8.3.5.7, 9.2.1 & NFPA 90A 5.3.1.1.1 / MBC 717.5.2, EXCEPTION NO 3)
- SMOKE DAMPERS ARE REQUIRED AT TRANSFER OPENINGS (MBC 509.4.2)

1-HOUR FIRE BARRIER FOR PROTECTION FROM HAZARDS / INCIDENTAL USES (LSC 14.3.2.1.[2], 8.7.1.2 / MBC 509.4.2)
- DAMPERS ARE NOT REQUIRED AT DUCT PENETRATIONS (LSC 8.4.6.2 & NFPA 90A 5.3.1.1.1)
- SMOKE DAMPERS ARE REQUIRED AT TRANSFER OPENINGS (LSC 8.4.6.2 / MBC 509.4.2)

LIFE SAFETY PLAN LEGEND

2-HOUR FIRE WALL FOR ALLOWABLE AREA COMPLIANCE (LSC 14.1.6.1 / MBC 503.1, 706)
- FIRE DAMPERS ARE REQUIRED AT DUCT PENETRATIONS (MBC 706.11)
- CONTINUITY/TERMINATIONS (MBC 706.5, 706.6)
- NO ROOF PENETRATIONS WITHIN 4'-0" OF FIRE WALL (MBC 706.6[2])

SMOKE BARRIER (NON-RATED) FOR VERTICALLY COMMUNICATING SPACES (LSC 8.6.6)
- SMOKE DAMPERS ARE REQUIRED AT TRANSFER OPENINGS (LSC 8.5.5.2 & NFPA 90A 5.3.5.1)
- SMOKE DAMPERS ARE NOT REQUIRED AT DUCT PENETRATIONS (LSC 8.5.5.3(6))

1-HOUR FIRE BARRIER FOR EXIT ENCLOSURES (LSC 7.1.3.2(1) / MBC 1023.1, 1023.2, 707.3.2, 713.4, 713.5, 707.5)
- OPENINGS ARE LIMITED (LSC 7.1.3.2.1[9] / MBC 1023.4, 716)
- PENETRATIONS ARE LIMITED (LSC 7.1.3.2.1[10] & MBC 1023.5 & 1023.6, 717.5.2)
- EXPOSURES (LSC 7.2.2.5.2 & MBC 1023.7)
- SUPPORTING CONSTRUCTION (LSC 8.2.3.3 / MBC 707.5.1)

1-HOUR FIRE BARRIER FOR ELEVATOR HOISTWAYS (LSC 8.6.2, 8.6.5, 9.4.2.1/ MBC 3002.1, 713.4, 713.5, 707.5)
- OPENINGS ARE LIMITED (MBC 3002.6)
- PENETRATIONS ARE LIMITED (MBC 713.8.1)
- SUPPORTING CONSTRUCTION (LSC 8.2.3.3 / MBC 707.5.1)

1-HOUR FIRE BARRIER HVAC SHAFTS (LSC 8.6.2, 8.6.5 / MBC 712.1.1, 713.4, 713.5, 707.5)
- COMBINATION FIRE/SMOKE DAMPERS ARE REQUIRED AT DUCT PENETRATIONS AND TRANSFER OPENINGS (LSC 8.3.5.7, 9.2.1 & NFPA 90A 5.3.4.6 / MBC 713.10, 717.5.3)
- SUPPORTING CONSTRUCTION (LSC 8.2.3.3 / MBC 707.5.1)

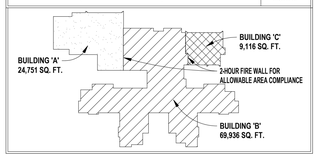
CAPACITY LIMITED BY ACCESS WIDTH (65\0.2×325)

ROOM USE LEGEND

AL	ACTIVE LAB	ME	MECHANICAL
BR	BAND ROOM	MR	MEDICAL
C	CLOSET	MZ	MUSIC MEZZANINE
CC	CUSTODIAL CLOSET	O	OFFICE
CD	CORRIDOR	OR	ORCHESTRA ROOM
CI	SPECIAL EDUCATION	P	PASSAGE
CL	CLINIC	PL	PLATFORM
CM	COMMONS	PR	PRACTICE ROOM
CO	CONFERENCE	QR	QUIET ROOM
CR	CHORAL ROOM	RA	RAMP
DC	DINING COMMONS	RE	RECEIVING
E	ELECTRICAL	RR	CLASSROOM
EC	CLASSROOM	RS	RECORD STORAGE
EE	ELEVATOR CONTROL	S	STAIR
EI	SPECIAL EDUCATION	SD	KITCHEN STORAGE
EL	ELEVATOR	SE	SPECIAL EDUCATION
EN	ENSEMBLE PRACTICE	SG	SMALL GROUP
ESL	CLASSROOM	SL	STEM
EX	EXIT PASSAGE	SS	STUDENT STUDY
G	GALLERY	ST	STORAGE
GM	GYMNASIUM	SW	STEM WORKSHOP
IT	TECH CLOSET	SY	SERVERY
K	KITCHEN	T	TOILET
KR	KILN ROOM	TC	TEACHER COLLABORATION
L	LOUNGE	TL	STAFF LOUNGE
LA	ANNOUNCEMENTS	TS	LOCKER ROOM TOILET
LC	LEARNING COMMONS	V	VESTIBULE
LF	LIFE SKILS CLASSROOM	VA	VISUAL ARTS
LR	LOCKER ROOM	WC	WELCOME CENTER
LS	LEARNING STUDIO	WI	KITCHEN COOL STORAGE
LY	LOBBY	WL	WELLNESS
MC	MEDIA CENTER	WR	STORAGE
		ZD	ZEN DEN

AREA CALCULATIONS

AREA (NEW CONSTRUCTION) ALLOWABLE AREA PER FLOOR (MBC TBL 506.2 MBC) - TYPE II(000) (NFPA 220 - 2012 EDITION) -TYPE II-B (MBC 2015) FRONTAGE INCREASE (MBC 506.2) = 64% If = [(p-0.25)W/30 ... If = (1772.8/1987.5 - 0.25) 30/30 ... If = 64% ... 0.64x43500 = 27,840	43,500 sf 27,840 sf
ADJUSTED ALLOWABLE AREA PER FLOOR	71,340 sf
ACTUAL FLOOR AREA (LARGEST LEVEL - AREA 'B')	69,936 sf



OCCUPANT LOAD FACTORS (LSC TABLE 7.3.1.2 / MBC TABLE 1004.1.2)

EDUCATIONAL	
CLASSROOMS (LEARNING STUDIO)	1/20sf (net)
ACTIVE CLASSROOM	1/50sf (net)
ART STUDIOS	1/50sf (net)
ASSEMBLY	
BAND, VOCAL, ORCHESTRA, PRACTICE ROOMS	1/15sf (net)
DINING COMMONS TABLES & CHAIRS	1/15sf (net)
COMMONS (TABLES & CHAIRS)	1/15sf (net)
CONFERENCE ROOMS	1/15sf (net)
SMALL GROUP	1/15sf (net)
KITCHEN	1/100sf (gross)
SERVERY	1/15sf (net)
PLATFORMS	1/15sf (net)
TEACHERS LOUNGE	1/15sf (net)
GYMNASIUM	
FLOOR (MAIN COURT/SIDELINES)	1/15sf (net)
BLEACHER SEATING	1/18 lineal in.
LOCKER ROOMS	1/15sf (gross)
MEDIA CENTERS (LIBRARIES)	
STACK AREAS	1/100sf (gross)
READING AREAS	1/50 sf (net)
COMMON AREAS	1/15sf (net)
BUSINESS OFFICES, STAFF	
PLANNING,WORKROOMS	1/100sf (gross)
RECEPTION AREAS	1/100sf (gross)
TEACHER COLLABORATION	1/100sf (gross)
STORAGE	
GENERAL STORAGE	1/300sf (gross)
RECEIVING	1/300sf (gross)
MECHANICAL & ELECTRICAL	1/300sf (gross)

FIRST LEVEL LIFE SAFETY PLAN

SCALE: 1/16" = 1'-0"

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

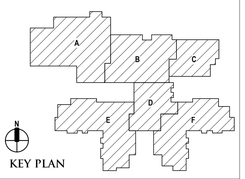
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

First Level Life Safety Plan



KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2024	ADDENDUM NO. 4
06-18-2024	CONSTRUCTION DOCUMENTS

DRAWN do
CHECKED jw
APPROVED dl

PROJECT NO.

22102

DRAWING NO.

LS.1

BUILDING DATA

1. SUPERVISED AUTOMATIC SPRINKLER SYSTEM (THROUGHOUT)
   - FIRE SUPRESSION TO BE INSTALLED IN NEW CONSTRUCTION
   - FIRE SUPRESSION TO BE ADDED TO EXISTING TO REMAIN
2. CONSTRUCTION CLASSIFICATION TYPE II(000) (NFPA 220) & II-B (MBC 2015) / 2-STORIES
3. USE CLASSIFICATION "E"

LIFE SAFETY PLAN LEGEND CONTINUED

C — 120 — ROOM USE KEY / OCCUPANT LOAD

75 / 100 — CALCULATED OCCUPANT LOAD OF ROOM OR CUMULATIVE OCCUPANT LOAD AT EGRESS COMPONENT (LSC 7.3.1.2, MBC TABLE 1004.1.2) / CAPACITY OF EGRESS COMPONENT
- PER NFPA 101 (2012), TABLE 7.3.3.1
- PER MBC (2015), SECTIONS 1005.3.1 AND 1005.3.2

LINE OF TRAVEL
- TRAVEL DISTANCE TO EXITS = 250' MAX. SPRINKLED (TBL 1017.2 MBC)
- COMMON PATH OF TRAVEL = 75' MAX. SPRINKLED (TBL 1006.2.1 MBC)
- DEAD ENDS = 50' MAX. (LSC 14.2.5.2 / MBC 1020.4, EXCEPTION NO 2).

FE — FIRE EXTINGUISHER, SURFACE MOUNT

FES — FIRE EXTINGUISHER, CABINET (SEMI-RECESSED)

FEC — FIRE EXTINGUISHER, CABINET (RECESSED)

LIFE SAFETY PLAN LEGEND CONTINUED

- NON-RATED SMOKE BARRIER FLOOR CONSTRUCTION (LSC 8.6.1[1] / MBC 712)
  - FIRE DAMPERS ARE NOT REQUIRED AT DUCTS THAT PENETRATE ONLY ONE FLOOR (MBC 712.1.6, 717.6, 717.6.3)
  - SMOKE DAMPERS ARE NOT REQUIRED AT DUCT PENETRATIONS (LSC 8.5.5.3[5])
  - FIRE DAMPERS ARE REQUIRED AT TRANSFER OPENINGS (MBC 717.6)
- INTERVENING SPACE (NFPA 14.2.5.5)
  - TRAVEL NOT TO EXCEED 75' MAX. (NFPA 14.2.5.5)
  - SPRINKLER IN ACCORDANCE WITH NFPA SECTION 9.7.
  - APPROVED FIRE DETECTION ACTIVATES BUILDING ALARM
- COMMUNICATING SPACE (NFPA 8.6.6)
  - SMOKE BARRIER SEPARATED WITH SPRINKLER SYSTEM
  - SPRINKLER IN ACCORDANCE WITH NFPA SECTION 9.7.
- ENCLOSURES BELOW STAIRS (MBC 1011.7.3, NFPA 7.2.2.5.3.2)
  - SEPARATED FROM STAIR BY 1- HOUR FIRE RESISTANCE RATED CONSTRUCTION
  - NOT DIRECTLY ACCESSED FROM STAIR ENCLOSURE
- 2-HOUR FIRE BARRIER CAP
  - PENETRATIONS BY DUCTS ARE PROHIBITED.

LIFE SAFETY PLAN LEGEND CONTINUED

- SMOKE PARTITION FOR EGRESS CORRIDORS (LSC 14.3.6[2])
  - DAMPERS ARE NOT REQUIRED AT DUCT PENETRATIONS THAT DO NOT COMMUNICATE WITH CORRIDORS (LSC 8.4.6.2 & NFPA 90A 5.3.1.1)
  - SMOKE DAMPERS ARE REQUIRED AT TRANSFER OPENINGS (LSC 8.4.6.2)
- 2-HOUR FIRE BARRIER FOR WIRING, EMERGENCY SYSTEMS (NEC 700.10)
- 1-HOUR FIRE BARRIER FOR SCIENCE LABS (LSC 14.3.2.5, 8.7.4 & NFPA 45 5.1.3)
  - DAMPERS ARE NOT REQUIRED AT DUCT PENETRATIONS (LSC 8.3.5.7, 9.2.1 & NFPA 90A 5.3.1.1.1 / MBC 717.5.2, EXCEPTION NO 3)
  - SMOKE DAMPERS ARE REQUIRED AT TRANSFER OPENINGS (MBC 509.4.2)
- 1-HOUR FIRE BARRIER FOR PROTECTION FROM HAZARDS / INCIDENTAL USES (LSC 14.3.2.1.[2], 8.7.1.2 / MBC 509.4.2)
  - DAMPERS ARE NOT REQUIRED AT DUCT PENETRATIONS (LSC 8.4.6.2 & NFPA 90A 5.3.1.1.1)
  - SMOKE DAMPERS ARE REQUIRED AT TRANSFER OPENINGS (LSC 8.4.6.2 / MBC 509.4.2)

LIFE SAFETY PLAN LEGEND

- 2-HOUR FIRE WALL FOR ALLOWABLE AREA COMPLIANCE (LSC 14.1.6.1 / MBC 503.1, 706)
  - FIRE DAMPERS ARE REQUIRED AT DUCT PENETRATIONS (MBC 706.11)
  - CONTINUITY/TERMINATIONS (MBC 706.5, 706.6)
  - NO ROOF PENETRATIONS WITHIN 4'-0" OF FIRE WALL (MBC 706.6[2])
- SMOKE BARRIER (NON-RATED) FOR VERTICALLY COMMUNICATING SPACES (LSC 8.6.6)
  - SMOKE DAMPERS ARE REQUIRED AT TRANSFER OPENINGS (LSC 8.5.5.2 & NFPA 90A 5.3.5.1)
  - SMOKE DAMPERS ARE NOT REQUIRED AT DUCT PENETRATIONS (LSC 8.5.5.3[6])
- 1-HOUR FIRE BARRIER FOR EXIT ENCLOSURES (LSC 7.1.3.2[1] / MBC 1023.1, 1023.2, 707.3.2, 713.4, 713.5, 707.5)
  - OPENINGS ARE LIMITED (LSC 7.1.3.2.1[9] / MBC 1023.4, 716)
  - PENETRATIONS ARE LIMITED (LSC 7.1.3.2.1[10] & MBC 1023.5 & 1023.6, 717.5.2)
  - EXPOSURES (LSC 7.2.2.5.2 & MBC 1023.7)
  - SUPPORTING CONSTRUCTION (LSC 8.2.3.3 / MBC 707.5.1)
- 1-HOUR FIRE BARRIER FOR ELEVATOR HOISTWAYS (LSC 8.6.2, 8.6.5, 9.4.2.1/ MBC 3002.1, 713.4, 713.5, 707.5)
  - OPENINGS ARE LIMITED (MBC 3002.6)
  - PENETRATIONS ARE LIMITED (MBC 713.8.1)
  - SUPPORTING CONSTRUCTION (LSC 8.2.3.3 / MBC 707.5.1)
- 1-HOUR FIRE BARRIER HVAC SHAFTS (LSC 8.6.2, 8.6.5 / MBC 712.1.1, 713.4, 713.5, 707.5)
  - COMBINATION FIRE/SMOKE DAMPERS ARE REQUIRED AT DUCT PENETRATIONS AND TRANSFER OPENINGS (LSC 8.3.5.7, 9.2.1 & NFPA 90A 5.3.4.6 / MBC 713.10, 717.5.3)
  - SUPPORTING CONSTRUCTION (LSC 8.2.3.3 / MBC 707.5.1)

MEZZANINE ALLOWED TO NOT BE FULLY OPEN TO ASSOCIATED ROOMS PER MBC 505.2.3 EXCEPTIONS 1 & 3.

CIRCULATION STAIR, NOT AN EXIT STAIR
STEPPED SEATING AREA

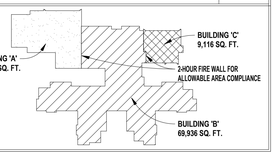
MAX COMMON PATH OF TRAVEL = 75'-0"
TRAVEL DISTANCE = 61' - 2 1/2"
CAPACITY LIMITED BY STAIR WIDTH (48/0.3=160)
MAX COMMON PATH OF TRAVEL = 75'-0"
TRAVEL DISTANCE = 63' -3 1/2"
NON-SIMULTANEOUS OCCUPANCY
MAX COMMON PATH OF TRAVEL = 75'-0"
TRAVEL DISTANCE = 69' - 0"
MAX COMMON PATH OF TRAVEL = 75'-0"
TRAVEL DISTANCE = 74' - 11"
MAX COMMON PATH OF TRAVEL = 75'-0"
TRAVEL DISTANCE = 45' - 2"
MAX COMMON PATH OF TRAVEL = 75'-0"
TRAVEL DISTANCE = 65' - 10"
MAX COMMON PATH OF TRAVEL = 75'-0"
TRAVEL DISTANCE = 64' - 5"
CAPACITY LIMITED BY STAIR WIDTH (48/0.3=160)

ROOM USE LEGEND

AL	ACTIVE LAB	ME	MECHANICAL
BR	BAND ROOM	MR	OFFICE
C	CLOSET	MZ	MUSIC MEZZANINE
CC	CUSTODIAL CLOSET	O	OFFICE
CD	CORRIDOR	OR	ORCHESTRA ROOM
CI	SPECIAL EDUCATION	P	PASSAGE
CL	CLINIC	PL	PLATFORM
CM	COMMONS	PR	PRACTICE ROOM
CO	CONFERENCE	QR	QUIET ROOM
CR	CHORAL ROOM	RA	RAMP
DC	DINING COMMONS	RE	RECEIVING
E	ELECTRICAL	RR	CLASSROOM
EC	CLASSROOM	RS	RECORD STORAGE
EE	ELEVATOR CONTROL	S	STAIR
EI	SPECIAL EDUCATION	SD	KITCHEN STORAGE
EL	ELEVATOR	SE	SPECIAL EDUCATION
EN	ENSEMBLE PRACTICE	SG	SMALL GROUP
ESL	CLASSROOM	SL	STEM
EX	EXIT PASSAGE	SS	STUDENT STUDY
G	GALLERY	ST	STORAGE
GM	GYMNASIUM	SW	STEM WORKSHOP
IT	TECH CLOSET	SY	SERVERY
K	KITCHEN	T	TOILET
KR	KILN ROOM	TC	TEACHER COLLABORATION
L	LOUNGE	TL	STAFF LOUNGE
LA	ANNOUNCEMENTS	TS	LOCKER ROOM TOILET
LC	LEARNING COMMONS	V	VESTIBULE
LF	LIFE SKILLS CLASSROOM	VA	VISUAL ARTS
LR	LOCKER ROOM	WC	WELCOME CENTER
LS	LEARNING STUDIO	WI	KITCHEN COOL STORAGE
LY	LOBBY	WL	WELLNESS
MC	MEDIA CENTER	WR	STORAGE
		ZD	ZEN DEN

AREA CALCULATIONS

AREA (NEW CONSTRUCTION) ALLOWABLE AREA PER FLOOR (MBC TBL 506.2 MBC) - TYPE II(000) (NFPA 220 - 2012 EDITION) -TYPE II-B (MBC 2015) FRONTAGE INCREASE (MBC 506.2) = 64% If = [(p-0.25)W/30 ... If = (1772.8/1987.5 - 0.25) 30/30 ... If = 64% ... 0.64x43500 = 27,840	43,500 sf 27,840 sf
ADJUSTED ALLOWABLE AREA PER FLOOR	71,340 sf
ACTUAL FLOOR AREA (LARGEST LEVEL - AREA 'B')	69,936 sf



OCCUPANT LOAD FACTORS (LSC TABLE 7.3.1.2 / MBC TABLE 1004.1.2)

EDUCATIONAL	
CLASSROOMS (LEARNING STUDIO)	1/20sf (net)
ACTIVE CLASSROOM	1/50sf (net)
ART STUDIOS	1/50sf (net)
ASSEMBLY	
BAND, VOCAL, ORCHESTRA, PRACTICE ROOMS	1/15sf (net)
DINING COMMOMS TABLES & CHAIRS	1/15sf (net)
COMMONS (TABLES & CHAIRS)	1/15sf (net)
CONFERENCE ROOMS	1/15sf (net)
SMALL GROUP	1/15sf (net)
KITCHEN	1/100sf (gross)
SERVERY	1/15sf (net)
PLATFORMS	1/15sf (net)
TEACHER'S LOUNGE	1/15sf (net)
GYMNASIUM	
FLOOR (MAIN COURT/SIDELINES)	1/15sf (net)
BLEACHER SEATING	1/18 lineal in.
LOCKER ROOMS	1/15sf (gross)
MEDIA CENTERS (LIBRARIES)	
STACK AREAS	1/100sf (gross)
READING AREAS	1/50 sf (net)
COMMON AREAS	1/15sf (net)
BUSINESS OFFICES, STAFF	
PLANNING,WORKROOMS	1/100sf (gross)
RECEPTION AREAS	1/100sf (gross)
TEACHER COLLABORATION	1/100sf (gross)
STORAGE	
GENERAL STORAGE	1/300sf (gross)
RECEIVING	1/300sf (gross)
MECHANICAL & ELECTRICAL	1/300sf (gross)

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SECOND LEVEL LIFE SAFETY PLAN

SCALE: 1/16" = 1'-0"

TMP ARCHITECTURE

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

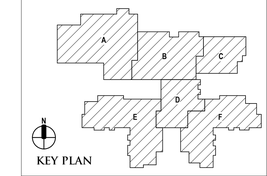
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Second Level Life Safety Plan



KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2024	ADDENDUM NO. 4
06-18-2024	CONSTRUCTION DOCUMENTS

DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

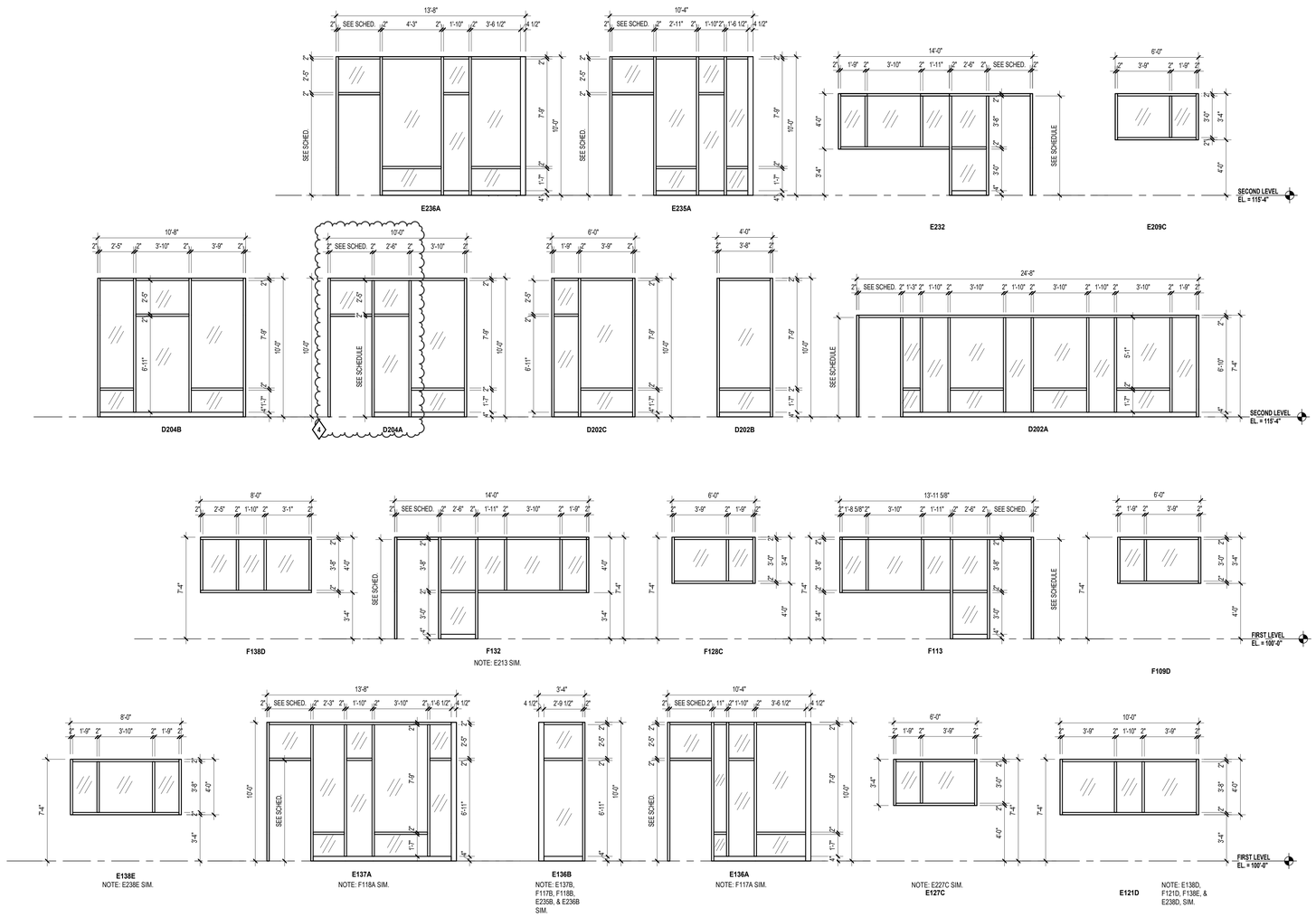
22102

DRAWING NO.

LS.2

GLAZING TYPES

GL-2	1/4" (6mm) CLEAR TEMPERED MONOLITHIC GLASS
GL-6	1/4" (6mm) CLEAR HEAT-STRENGTHENED LAMINATED GLASS
GL-8	1/4" (6mm) CLEAR HEAT-STRENGTHENED LAMINATED GLASS w/ TINTED INTERLAYER
GL-13	1" (25mm) CLEAR TEMPERED INSULATING GLASS (LOW-E)
GL-18	1" (25mm) CLEAR TEMPERED INSULATING SPANDREL GLASS
GL-19	1" (25mm) CLEAR TEMPERED INSULATION GLASS (LOW-E) w/ APPLIED FRIT
GL-21	1" (25mm) CLEAR HEAT-STRENGTHENED LAMINATED INSULATING GLASS
GL-23	1" (25mm) CLEAR TEMPERED w/ TINTED INTERLAYER LAMINATED INSULATING GLASS (LOW-E)
FPGL-2	3/4" (19mm) FIRE PROTECTIVE GLAZING (45 MIN)
FRGL-4	1 1/8" (29mm) FIRE RESISTIVE GLAZING (60 MIN, ASTM E119)
SSGL1	MONOLITHIC SECURITY GLAZING
SSGL2	INSULATED SECURITY GLAZING



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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Frame Elevations

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2024	ADDENDUM NO. 4
06-18-2024	CONSTRUCTION DOCUMENTS

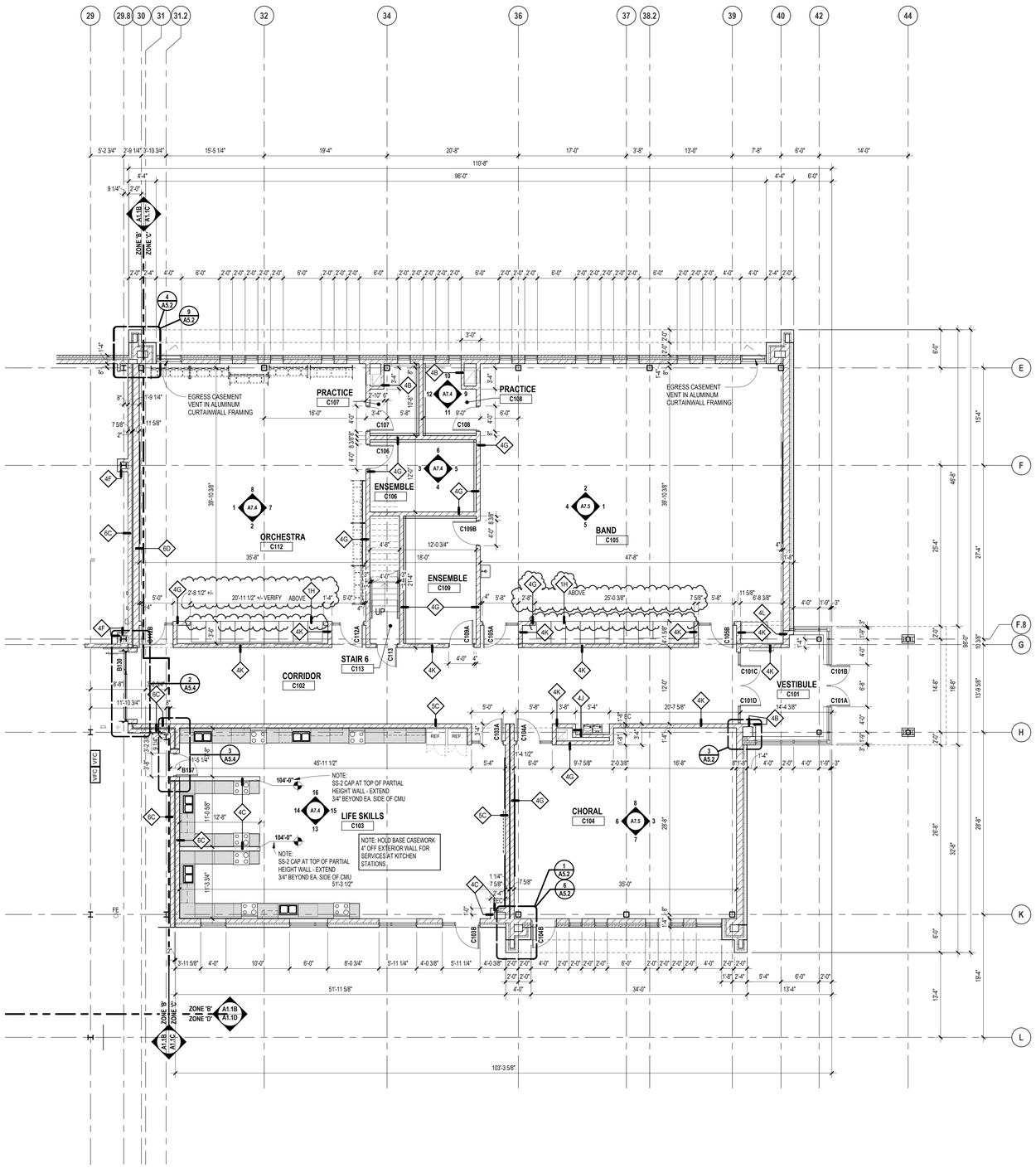
DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

AD.4



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FIRST LEVEL FLOOR PLAN - ZONE 'C'

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

WALL / PARTITION KEY

- EXISTING WALL CONSTRUCTION
- METAL STUD PARTITION
- CONCRETE MASONRY UNIT WALL w/ HORIZONTAL REINFORCEMENT AT 16" OC
- CAST-IN-PLACE CONCRETE WALL (REFER TO STRUCTURAL FOR REINFORCING REQUIREMENTS)

WALL / PARTITION LEGEND

- 1A 1-5/8" METAL FURRING @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING
- 1B 2 1/2" METAL STUDS AT 16" O.C. (MAX.) WITH 5/8" GYPSUM BOARD ONE SIDE. HEIGHT: FROM FLOOR TO 4" ABOVE CEILING. BRACE TO ADJACENT WALL AS REQUIRED. TYPICAL AT COLUMN ENCLOSURES
- 1C 3 5/8" METAL STUDS AT 16" O.C. (MAX.) WITH 5/8" GYPSUM BOARD ONE SIDE. HEIGHT: FROM FLOOR TO 4" ABOVE CEILING. BRACE TO ADJACENT WALL AS REQUIRED
- 1D 6" METAL STUDS AT 16" O.C. (MAX.) WITH 5/8" GYPSUM BOARD ONE SIDE. HEIGHT: FROM FLOOR TO 4" ABOVE CEILING. BRACE TO ADJACENT WALL AS REQUIRED
- 1G 3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
- 1H 6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
- 2A 3 5/8" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO 4" ABOVE CEILING. BRACE TO ADJACENT WALLS AS REQUIRED.
- 2B 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO 6" ABOVE CEILING. BRACE TO ADJACENT WALLS AS REQUIRED.
- 2C 3 5/8" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS.
- 2D 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 6" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS.
- 2F 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS, 1 HOUR RATED UL DESIGN NO. U465
- 2G 3 5/8" METAL STUDS AT 16" O.C. (MAX.) WITH 2 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS. 2 HOUR RATED UL DESIGN NO. U411.
- 2H 6" METAL STUDS AT 16" O.C. (MAX.) WITH 2 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS , 2 HOUR RATED UL DESIGN NO. U411
- 2J 3 5/8" METAL STUDS @ 16" OC (MAX) W/ 1 LAYER 5/8" GYP BOARD EACH SIDE TO STRUCTURE ABOVE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. SMOKE TIGHT
- 2K 6" METAL STUDS @ 16" OC (MAX) W/ 1 LAYERS 5/8" GYP BOARD EACH SIDE TO STRUCTURE ABOVE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. SMOKE TIGHT
- 2N 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 6" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS.
- 2P 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD ON ONE SIDE, & 1 LAYER 3/4" FINISH GRADE PLYWOOD ON OTHER SIDE. 6" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS.
- 3A 4" CH METAL STUDS @ 24" OC W/ 5/8" GYP BOARD ONE SIDE AND 1" GYP BOARD LINER TO STRUCTURE ABOVE, 1 HOUR RATED UL DESIGN NO. U415
- 3B 6" CH METAL STUDS @ 24" OC W/ 5/8" GYP BOARD ONE SIDE AND 1" GYP BOARD LINER TO STRUCTURE ABOVE, 1 HOUR RATED UL DESIGN NO. U415
- 4A 4" CMU TO ONE FULL COURSE ABOVE CEILING
- 4B 6" CMU TO ONE FULL COURSE ABOVE CEILING
- 4C 8" CMU TO ONE FULL COURSE ABOVE CEILING
- 4F 6" CMU TO STRUCTURE ABOVE
- 4G 8" CMU TO STRUCTURE ABOVE
- 4H 12" CMU TO STRUCTURE ABOVE
- 4J 6" CMU TO STRUCTURE ABOVE, SMOKE TIGHT
- 4K 8" CMU TO STRUCTURE ABOVE, SMOKE TIGHT
- 4L 12" CMU TO STRUCTURE ABOVE, SMOKE TIGHT
- 5C 8" CMU TO STRUCTURE ABOVE, 1 HOUR RATED, UL DESIGN NO. U905
- 6C 8" CMU TO STRUCTURE ABOVE, 2 HOUR RATED, UL DESIGN NO. U905
- 6D 12" CMU TO STRUCTURE ABOVE, 2 HOUR RATED, UL DESIGN NO. U905
- 6E 12" CMU TO STRUCTURE ABOVE, 2 HOUR RATED, UL DESIGN NO. U905

NOTES:

1. COORDINATE WITH THE REFLECTED CEILING PLANS FOR RATED WALLS. WALLS WHICH EXTEND UP TO THE STRUCTURE ABOVE AND WALLS WHICH EXTEND ONLY A MINIMUM OF 4" ABOVE THE ADJACENT HIGHEST CEILING. DIMENSIONS OF WALLS ARE SHOWN ACTUAL U.N.O. IN PLAN FOR DETERMINING THE CMU THICKNESS. REFER TO BUILDING SECTIONS, WALL SECTIONS AND INTERIOR ELEVATIONS FOR BANDING OF SPECIAL CMU TYPES OR ANY OTHER SPECIAL CONDITIONS. PARTIAL HEIGHT CMU WALLS WILL BE NOTED AS SUCH ON THE FLOOR PLANS.
2. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.
3. AT FIRE-RATED AND SMOKE-RESISTING WALLS (MASONRY OR GYPSUM BOARD), PROVIDE U.L. APPROVED, FIRE-RATED, HEAD-OF-WALL TERMINATIONS AS INDICATED. IF NOT INDICATED, PROVIDE "BASIS OF DESIGN", HEAD-OF-WALL FIRESTOP JOINT SYSTEM AS INDICATED IN SPECIFICATION SECTION 07 8446 (1 OR 2 HOUR AS APPROPRIATE). PROVIDE MINIMUM 1 HOUR TERMINATION AT SMOKE-RESISTING WALLS.
4. PROVIDE BULLNOSE CMU UNITS AT ALL OUTSIDE COURNERS WHEN CORNERS ARE EXPOSED IN FINAL CONSTRUCTION. DO NOT BULLNOSE CORNERS WHEN ABUTTING CONSTRUCTION (i.e. GYPSUM BOARD) IS INTENDED TO BE FLUSH WITH CMU.
5. ALL GYPSUM WALLS TO RECEIVE ABUSE RESISTANT GYPSUM BOARD BELOW 4'-0" AFF, TYPICAL.
6. WHERE FINISH PLANS (A10 SERIES DRAWINGS) CALL FOR WALL TILE, PROVIDE CEMENT BOARD SUBSTRATE IN LIEU OF GYPSUM BOARD.
7. ALL DOORS LOCATED 4" FROM JAMB TO ADJACENT WALL UNLESS OTHERWISE INDICATED.

GENERAL NOTES

1. COORDINATE SIZE AND LOCATION OF ALL CONCRETE HOUSEKEEPING PADS AND / OR EQUIPMENT SUPPORTS WITH APPROPRIATE EQUIPMENT MANUFACTURER.
2. COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH TRADE REQUIRING THE SAME. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE REQUIRED TO BE PROVIDED BY EACH TRADE. ALL LOCATIONS MUST BE COORDINATED AND APPROVED BY THE ARCHITECT'S FIELD REPRESENTATIVE.
3. CONTRACTORS SHALL VERIFY ALL EXISTING BUILDING DIMENSIONS, PARTITION AND WALL LOCATIONS, AND FLOOR ELEVATIONS IN THE FIELD AND NOTIFY THE ARCHITECTS REPRESENTATIVE OF ANY DISCREPANCIES BEFORE START OF WORK.
4. FLOOR PLANS ARE DIMENSIONED TO ACTUAL WALL THICKNESS - TYPICAL.
5. DIMENSIONS FOLLOWED BY ± SHOULD BE REVIEWED AND ALL NECESSARY ADJUSTMENTS MADE PRIOR TO FABRICATION AND / OR INSTALLATION OF AFFECTED WORK. NOTIFY ARCHITECTS REPRESENTATIVE IF DISCREPANCIES ARISE BEFORE PROCEEDING WITH THE WORK.
6. INSTALL CONTROL JOINTS IN GYPSUM BOARD AND METAL STUD-FRAMED PARTITIONS, WALLS, CEILINGS, BULKHEADS, FASCIAE AND SOFFITS IN COMPLIANCE WITH SPECIFICATIONS, AND WITH GENERAL REQUIREMENTS OF ASTM C840. PRIOR TO COMMENCEMENT OF FRAMING INSTALLATION SUBMIT COORDINATION DRAWINGS INDICATING PROPOSED LOCATIONS OF ALL CONTROL JOINTS, AS SPECIFIED.
7. PROVIDE CONTROL JOINTS WHERE INTERIOR CMU (ON SLAB) ABUTS EXTERIOR / INTERIOR MASONRY (ON FOUNDATIONS OR FOOTINGS).
8. VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK. PROVIDE ALL LINTELS REQUIRED FOR THESE OPENINGS PER SPECIFICATIONS.
9. REFER TO LIFE SAFETY PLANS FOR LOCATIONS OF REQUIRED FIRE RESISTANCE RATINGS. BECAUSE OF THE DRAWING SCALE OF THE LIFE SAFETY PLANS, COORDINATE THE REQUIRED FIRE RESISTANCE RATINGS WITH THOSE SHOWN ON THE REFLECTED CEILING PLANS.
10. REFER TO REFLECTED CEILING PLANS FOR EXTENSION OF PARTITION WALLS TO FLOOR OR ROOF CONSTRUCTION ABOVE AND WALL FIRE RESISTANCE RATING REQUIREMENTS.
11. REFER TO STRUCTURAL DRAWINGS FOR ALL WIND FRAME LOCATIONS AT INTERIOR AND EXTERIOR WALLS.
12. REFER TO A10_ SERIES DRAWINGS FOR FLOOR FINISH PATTERNS AND ROOM FINISHES.
13. REFER TO STRUCTURAL DRAWINGS FOR ORIENTATION AND SIZES OF ALL STRUCTURAL COLUMNS.
14. REFER TO DRAWING A8_ FOR TYPICAL DETAILS PERTAINING TO WALL TERMINATIONS AT STRUCTURE ABOVE AND MASONRY CONTROL JOINT DETAILS.
15. VERIFY ALL DIMENSIONS IN FIELD.
16. PROVIDE WOOD BLOCKING WITHIN STUD WALLS FOR WALL MOUNTED ITEMS i.e. GRAB BARS, TOWEL DISPENSERS, PENCIL SHARPENERS, WALL STOPS, FOLDING PARTITION JAMBS, ETC. REFER ALSO TO A9_ SERIES AND A6_ SERIES DRAWINGS.
17. REFER TO EXTERIOR ELEVATIONS AND PLAN DETAILS FOR LOCATIONS OF CONTROL JOINTS IN EXTERIOR WALLS.
18. WHERE SLAB DEPRESSIONS ARE INDICATED FOR WOOD FLOOR SYSTEMS, CONFIRM DEPRESSION WITH WOOD FLOORING CONTRACTOR. ADJUST DEPRESSION, AS REQUIRED, TO MEET FLUSH WITH ADJACENT FLOOR MATERIALS (i.e. CERAMIC TILE, QUARRY TILE, ETC.).

TMP ARCHITECTURE

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

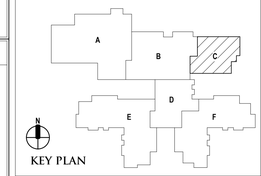
Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

First Level Floor Plan - Zone 'C'

KEY PLAN



ISSUE DATES

DATE:	ISSUED FOR:
07-23-2024	ADDENDUM NO. 4
07-16-2024	ADDENDUM NO. 3 (N.R.)
06-18-2024	CONSTRUCTION DOCUMENTS

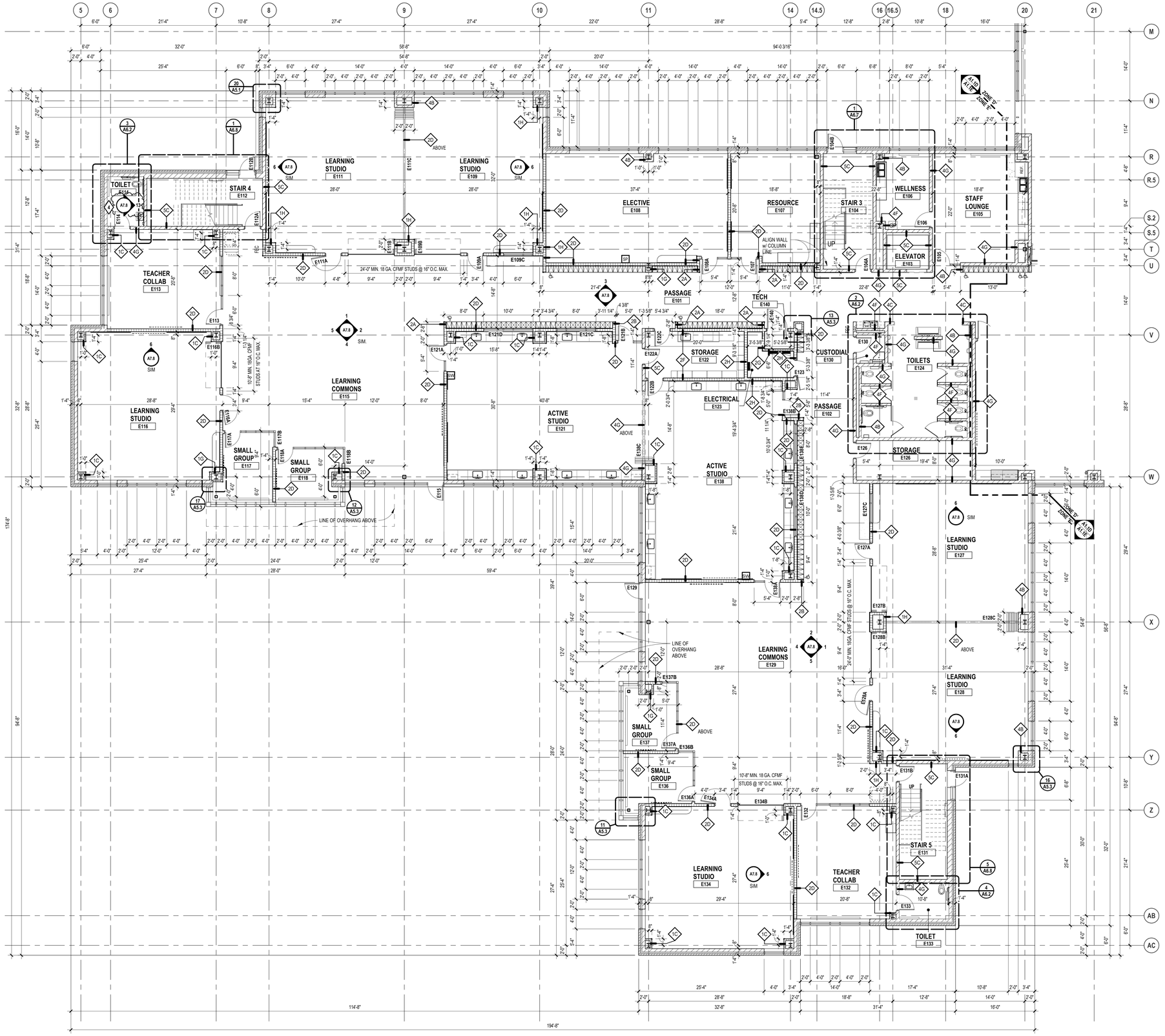
DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A1.1C



FIRST LEVEL FLOOR PLAN - ZONE 'E'

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

WALL / PARTITION KEY

- EXISTING WALL CONSTRUCTION
- METAL STUD PARTITION
- CONCRETE MASONRY UNIT WALL w/ HORIZONTAL REINFORCEMENT AT 16" OC
- CAST-IN-PLACE CONCRETE WALL (REFER TO STRUCTURAL FOR REINFORCING REQUIREMENTS)

WALL / PARTITION LEGEND

- 1A 1-5/8" METAL FURRING @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 8" ABOVE CEILING
- 1B 2 1/2" METAL STUDS AT 16" O.C. (MAX.) WITH 5/8" GYPSUM BOARD ONE SIDE. HEIGHT: FROM FLOOR TO 4" ABOVE CEILING. BRACE TO ADJACENT WALL AS REQUIRED. TYPICAL AT COLUMN ENCLOSURES
- 1C 3 5/8" METAL STUDS AT 16" O.C. (MAX.) WITH 5/8" GYPSUM BOARD ONE SIDE. HEIGHT: FROM FLOOR TO 4" ABOVE CEILING. BRACE TO ADJACENT WALL AS REQUIRED
- 1D 6" METAL STUDS AT 16" O.C. (MAX.) WITH 5/8" GYPSUM BOARD ONE SIDE. HEIGHT: FROM FLOOR TO 4" ABOVE CEILING. BRACE TO ADJACENT WALL AS REQUIRED
- 1G 3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
- 1H 6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
- 2A 3 5/8" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO 4" ABOVE CEILING. BRACE TO ADJACENT WALLS AS REQUIRED.
- 2B 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO 6" ABOVE CEILING. BRACE TO ADJACENT WALLS AS REQUIRED.
- 2C 3 5/8" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS.
- 2D 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 6" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS.
- 2F 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS, 1 HOUR RATED UL DESIGN NO. U465
- 2G 3 5/8" METAL STUDS AT 16" O.C. (MAX.) WITH 2 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS. 2 HOUR RATED UL DESIGN NO. U411.
- 2H 6" METAL STUDS AT 16" O.C. (MAX.) WITH 2 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS , 2 HOUR RATED UL DESIGN NO. U411
- 2J 3 5/8" METAL STUDS @ 16" OC (MAX) W/ 1 LAYER 5/8" GYP BOARD EACH SIDE TO STRUCTURE ABOVE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. SMOKE TIGHT
- 2K 6" METAL STUDS @ 16" OC (MAX) W/ 1 LAYERS 5/8" GYP BOARD EACH SIDE TO STRUCTURE ABOVE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. SMOKE TIGHT
- 2P 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 6" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS
- 2P 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD ON ONE SIDE, & 1 LAYER 3/4" FINISH GRADE PLYWOOD ON OTHER SIDE. 6" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS.
- 3A 4" CH METAL STUDS @ 24" OC W/ 5/8" GYP BOARD ONE SIDE AND 1" GYP BOARD LINER TO STRUCTURE ABOVE, 1 HOUR RATED UL DESIGN NO. U415
- 3B 6" CH METAL STUDS @ 24" OC W/ 5/8" GYP BOARD ONE SIDE AND 1" GYP BOARD LINER TO STRUCTURE ABOVE, 1 HOUR RATED UL DESIGN NO. U415
- 4A 4" CMU TO ONE FULL COURSE ABOVE CEILING
- 4B 6" CMU TO ONE FULL COURSE ABOVE CEILING
- 4C 8" CMU TO ONE FULL COURSE ABOVE CEILING
- 4F 6" CMU TO STRUCTURE ABOVE
- 4G 8" CMU TO STRUCTURE ABOVE
- 4H 12" CMU TO STRUCTURE ABOVE
- 4J 6" CMU TO STRUCTURE ABOVE, SMOKE TIGHT
- 4K 8" CMU TO STRUCTURE ABOVE, SMOKE TIGHT
- 4L 12" CMU TO STRUCTURE ABOVE, SMOKE TIGHT
- 5C 8" CMU TO STRUCTURE ABOVE, 1 HOUR RATED, UL DESIGN NO. U905
- 6C 8" CMU TO STRUCTURE ABOVE, 2 HOUR RATED, UL DESIGN NO. U905
- 6D 12" CMU TO STRUCTURE ABOVE, 2 HOUR RATED, UL DESIGN NO. U905
- 6E 12" CMU TO STRUCTURE ABOVE, 2 HOUR RATED, UL DESIGN NO. U905

NOTES:

1. COORDINATE WITH THE REFLECTED CEILING PLANS FOR RATED WALLS. WALLS WHICH EXTEND UP TO THE STRUCTURE ABOVE AND WALLS WHICH EXTEND ONLY A MINIMUM OF 4" ABOVE THE ADJACENT HIGHEST CEILING. DIMENSIONS OF WALLS ARE SHOWN ACTUAL U.N.O. IN PLAN FOR DETERMINING THE CMU THICKNESS. REFER TO BUILDING SECTIONS, WALL SECTIONS AND INTERIOR ELEVATIONS FOR BANDING OF SPECIAL CMU TYPES OR ANY OTHER SPECIAL CONDITIONS. PARTIAL HEIGHT CMU WALLS WILL BE NOTED AS SUCH ON THE FLOOR PLANS.
2. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.
3. AT FIRE-RATED AND SMOKE-RESISTING WALLS (MASONRY OR GYPSUM BOARD), PROVIDE U.L. APPROVED, FIRE-RATED, HEAD-OF-WALL TERMINATIONS AS INDICATED. IF NOT INDICATED, PROVIDE "BASIS OF DESIGN", HEAD-OF-WALL FIRESTOP JOINT SYSTEM AS INDICATED IN SPECIFICATION SECTION 07 8446 (1 OR 2 HOUR AS APPROPRIATE). PROVIDE MINIMUM 1 HOUR TERMINATION AT SMOKE-RESISTING WALLS.
4. PROVIDE BULLNOSE CMU UNITS AT ALL OUTSIDE COURNERS WHEN CORNERS ARE EXPOSED IN FINAL CONSTRUCTION. DO NOT BULLNOSE CORNERS WHEN ABUTTING CONSTRUCTION (i.e. GYPSUM BOARD) IS INTENDED TO BE FLUSH WITH CMU.
5. ALL GYPSUM WALLS TO RECEIVE ABUSE RESISTANT GYPSUM BOARD BELOW 4'-0" AFF, TYPICAL.
6. WHERE FINISH PLANS (A10 SERIES DRAWINGS) CALL FOR WALL TILE, PROVIDE CEMENT BOARD SUBSTRATE IN LIEU OF GYPSUM BOARD.
7. ALL DOORS LOCATED 4" FROM JAMB TO ADJACENT WALL UNLESS OTHERWISE INDICATED.

GENERAL NOTES

1. COORDINATE SIZE AND LOCATION OF ALL CONCRETE HOUSEKEEPING PADS AND / OR EQUIPMENT SUPPORTS WITH APPROPRIATE EQUIPMENT MANUFACTURER.
2. COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH TRADE REQUIRING THE SAME. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE REQUIRED TO BE PROVIDED BY EACH TRADE. ALL LOCATIONS MUST BE COORDINATED AND APPROVED BY THE ARCHITECT'S FIELD REPRESENTATIVE.
3. CONTRACTORS SHALL VERIFY ALL EXISTING BUILDING DIMENSIONS, PARTITION AND WALL LOCATIONS, AND FLOOR ELEVATIONS IN THE FIELD AND NOTIFY THE ARCHITECTS REPRESENTATIVE OF ANY DISCREPANCIES BEFORE START OF WORK.
4. FLOOR PLANS ARE DIMENSIONED TO ACTUAL WALL THICKNESS - TYPICAL.
5. DIMENSIONS FOLLOWED BY ± SHOULD BE REVIEWED AND ALL NECESSARY ADJUSTMENTS MADE PRIOR TO FABRICATION AND / OR INSTALLATION OF AFFECTED WORK. NOTIFY ARCHITECTS REPRESENTATIVE IF DISCREPANCIES ARISE BEFORE PROCEEDING WITH THE WORK.
6. INSTALL CONTROL JOINTS IN GYPSUM BOARD AND METAL STUD-FRAMED PARTITIONS, WALLS, CEILINGS, BULKHEADS, FASCIAE AND SOFFITS IN COMPLIANCE WITH SPECIFICATIONS, AND WITH GENERAL REQUIREMENTS OF ASTM C840. PRIOR TO COMMENCEMENT OF FRAMING INSTALLATION SUBMIT COORDINATION DRAWINGS INDICATING PROPOSED LOCATIONS OF ALL CONTROL JOINTS, AS SPECIFIED.
7. PROVIDE CONTROL JOINTS WHERE INTERIOR CMU (ON SLAB) ABUTS EXTERIOR / INTERIOR MASONRY (ON FOUNDATIONS OR FOOTINGS).
8. VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK. PROVIDE ALL LINTELS REQUIRED FOR THESE OPENINGS PER SPECIFICATIONS.
9. REFER TO LIFE SAFETY PLANS FOR LOCATIONS OF REQUIRED FIRE RESISTANCE RATINGS. BECAUSE OF THE DRAWING SCALE OF THE LIFE SAFETY PLANS, COORDINATE THE REQUIRED FIRE RESISTANCE RATINGS WITH THOSE SHOWN ON THE REFLECTED CEILING PLANS.
10. REFER TO REFLECTED CEILING PLANS FOR EXTENSION OF PARTITION WALLS TO FLOOR OR ROOF CONSTRUCTION ABOVE AND WALL FIRE RESISTANCE RATING REQUIREMENTS.
11. REFER TO STRUCTURAL DRAWINGS FOR ALL WIND FRAME LOCATIONS AT INTERIOR AND EXTERIOR WALLS.
12. REFER TO A10_ SERIES DRAWINGS FOR FLOOR FINISH PATTERNS AND ROOM FINISHES.
13. REFER TO STRUCTURAL DRAWINGS FOR ORIENTATION AND SIZES OF ALL STRUCTURAL COLUMNS.
14. REFER TO DRAWING A8_ FOR TYPICAL DETAILS PERTAINING TO WALL TERMINATIONS AT STRUCTURE ABOVE AND MASONRY CONTROL JOINT DETAILS.
15. VERIFY ALL DIMENSIONS IN FIELD.
16. PROVIDE WOOD BLOCKING WITHIN STUD WALLS FOR WALL MOUNTED ITEMS i.e. GRAB BARS, TOWEL DISPENSERS, PENCIL SHARPENERS, WALL STOPS, FOLDING PARTITION JAMBS, ETC. REFER ALSO TO A9_ SERIES AND A6_ SERIES DRAWINGS.
17. REFER TO EXTERIOR ELEVATIONS AND PLAN DETAILS FOR LOCATIONS OF CONTROL JOINTS IN EXTERIOR WALLS.
18. WHERE SLAB DEPRESSIONS ARE INDICATED FOR WOOD FLOOR SYSTEMS, CONFIRM DEPRESSION WITH WOOD FLOORING CONTRACTOR. ADJUST DEPRESSION, AS REQUIRED, TO MEET FLUSH WITH ADJACENT FLOOR MATERIALS (i.e. CERAMIC TILE, QUARRY TILE, ETC.).

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

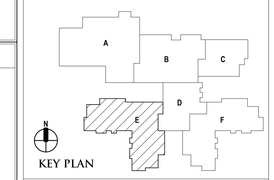
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

First Level Floor Plan - Zone 'E'



KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2024	ADDENDUM NO. 4
07-16-2024	ADDENDUM NO. 3 (N.R.)
06-18-2024	CONSTRUCTION DOCUMENTS

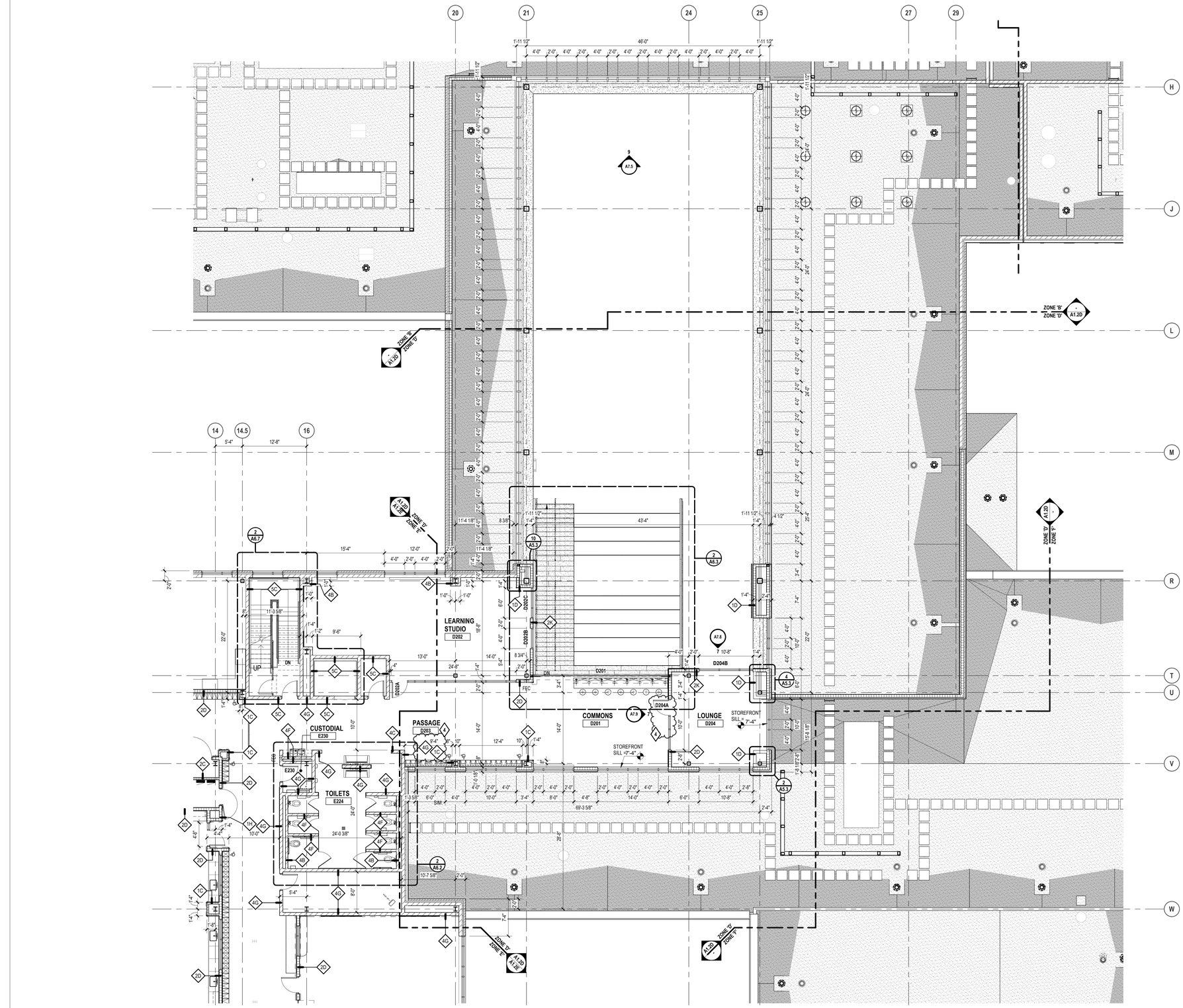
DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A1.1E



N

SECOND LEVEL PLAN - ZONE 'D'

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

WALL / PARTITION KEY

- EXISTING WALL CONSTRUCTION
- METAL STUD PARTITION
- CONCRETE MASONRY UNIT WALL w/ HORIZONTAL REINFORCEMENT AT 16" OC
- CAST-IN-PLACE CONCRETE WALL (REFER TO STRUCTURAL FOR REINFORCING REQUIREMENTS)

WALL / PARTITION LEGEND

3

- 1A 1-5/8" METAL FURRING @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO 6" ABOVE CEILING
- 1B 2 1/2" METAL STUDS AT 16" O.C. (MAX.) WITH 5/8" GYPSUM BOARD ONE SIDE. HEIGHT: FROM FLOOR TO 4" ABOVE CEILING. BRACE TO ADJACENT WALL AS REQUIRED. TYPICAL AT COLUMN ENCLOSURES
- 1C 3 5/8" METAL STUDS AT 16" O.C. (MAX.) WITH 5/8" GYPSUM BOARD ONE SIDE. HEIGHT: FROM FLOOR TO 4" ABOVE CEILING. BRACE TO ADJACENT WALL AS REQUIRED
- 1D 6" METAL STUDS AT 16" O.C. (MAX.) WITH 5/8" GYPSUM BOARD ONE SIDE. HEIGHT: FROM FLOOR TO 4" ABOVE CEILING. BRACE TO ADJACENT WALL AS REQUIRED
- 1G 3 5/8" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
- 1H 6" METAL STUDS @ 16" OC (MAX) W/ 5/8" GYP BOARD ONE SIDE TO STRUCTURE ABOVE
- 2A 3 5/8" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO 4" ABOVE CEILING. BRACE TO ADJACENT WALLS AS REQUIRED.
- 2B 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO 6" ABOVE CEILING. BRACE TO ADJACENT WALLS AS REQUIRED.
- 2C 3 5/8" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS.
- 2D 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 6" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS.
- 2F 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS, 1 HOUR RATED UL DESIGN NO. U465
- 2G 3 5/8" METAL STUDS AT 16" O.C. (MAX.) WITH 2 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS. 2 HOUR RATED UL DESIGN NO. U411.
- 2H 6" METAL STUDS AT 16" O.C. (MAX.) WITH 2 LAYER 5/8" GYPSUM BOARD EACH SIDE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS. , 2 HOUR RATED UL DESIGN NO. U411

3

- 2J 3 5/8" METAL STUDS @ 16" OC (MAX) W/ 1 LAYER 5/8" GYP BOARD EACH SIDE TO STRUCTURE ABOVE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. SMOKE TIGHT
- 2K 6" METAL STUDS @ 16" OC (MAX) W/ 1 LAYERS 5/8" GYP BOARD EACH SIDE TO STRUCTURE ABOVE. 3" ACOUSTICAL BATT INSULATION FULL HEIGHT. SMOKE TIGHT
- 2N 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD EACH SIDE. 6" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS.
- 2P 6" METAL STUDS AT 16" O.C. (MAX.) WITH 1 LAYER 5/8" GYPSUM BOARD ON ONE SIDE, & 1 LAYER 3/4" FINISH GRADE PLYWOOD ON OTHER SIDE. 6" ACOUSTICAL BATT INSULATION FULL HEIGHT. HEIGHT: FROM FLOOR TO DECK ABOVE. COPE AROUND STRUCTURE, SEAL ALL GAPS AND PENETRATIONS.
- 3A 4" CH METAL STUDS @ 24" OC W/ 5/8" GYP BOARD ONE SIDE AND 1" GYP BOARD LINER TO STRUCTURE ABOVE, 1 HOUR RATED UL DESIGN NO. U415
- 3B 6" CH METAL STUDS @ 24" OC W/ 5/8" GYP BOARD ONE SIDE AND 1" GYP BOARD LINER TO STRUCTURE ABOVE, 1 HOUR RATED UL DESIGN NO. U415

3

- 4A 4" CMU TO ONE FULL COURSE ABOVE CEILING
- 4B 6" CMU TO ONE FULL COURSE ABOVE CEILING
- 4C 8" CMU TO ONE FULL COURSE ABOVE CEILING
- 4F 6" CMU TO STRUCTURE ABOVE
- 4G 8" CMU TO STRUCTURE ABOVE
- 4H 12" CMU TO STRUCTURE ABOVE
- 4J 6" CMU TO STRUCTURE ABOVE, SMOKE TIGHT
- 4K 8" CMU TO STRUCTURE ABOVE, SMOKE TIGHT
- 4L 12" CMU TO STRUCTURE ABOVE, SMOKE TIGHT
- 5C 8" CMU TO STRUCTURE ABOVE, 1 HOUR RATED, UL DESIGN NO. U905
- 6C 8" CMU TO STRUCTURE ABOVE, 2 HOUR RATED, UL DESIGN NO. U905
- 6D 12" CMU TO STRUCTURE ABOVE, 2 HOUR RATED, UL DESIGN NO. U905
- 6E 12" CMU TO STRUCTURE ABOVE, 2 HOUR RATED, UL DESIGN NO. U905

NOTES:

1. COORDINATE WITH THE REFLECTED CEILING PLANS FOR RATED WALLS. WALLS WHICH EXTEND UP TO THE STRUCTURE ABOVE AND WALLS WHICH EXTEND ONLY A MINIMUM OF 4" ABOVE THE ADJACENT HIGHEST CEILING. DIMENSIONS OF WALLS ARE SHOWN ACTUAL U.N.O. IN PLAN FOR DETERMINING THE CMU THICKNESS. REFER TO BUILDING SECTIONS, WALL SECTIONS AND INTERIOR ELEVATIONS FOR BANDING OF SPECIAL CMU TYPES OR ANY OTHER SPECIAL CONDITIONS. PARTIAL HEIGHT CMU WALLS WILL BE NOTED AS SUCH ON THE FLOOR PLANS.
2. REFER TO MASONRY SPECIFICATION FOR VERTICAL REINFORCEMENT AND WALL BRACING NOT INDICATED ON DRAWINGS.
3. AT FIRE-RATED AND SMOKE-RESISTING WALLS (MASONRY OR GYPSUM BOARD), PROVIDE U.L. APPROVED, FIRE-RATED, HEAD-OF-WALL TERMINATIONS AS INDICATED. IF NOT INDICATED, PROVIDE "BASIS OF DESIGN", HEAD-OF-WALL FIRESTOP JOINT SYSTEM AS INDICATED IN SPECIFICATION SECTION 07 8446 (1 OR 2 HOUR AS APPROPRIATE). PROVIDE MINIMUM 1 HOUR TERMINATION AT SMOKE-RESISTING WALLS.
4. PROVIDE BULLNOSE CMU UNITS AT ALL OUTSIDE COURNERS WHEN CORNERS ARE EXPOSED IN FINAL CONSTRUCTION. DO NOT BULLNOSE CORNERS WHEN ABUTTING CONSTRUCTION (i.e. GYPSUM BOARD) IS INTENDED TO BE FLUSH WITH CMU.
5. ALL GYPSUM WALLS TO RECEIVE ABUSE RESISTANT GYPSUM BOARD BELOW 4'-0" AFF, TYPICAL.
6. WHERE FINISH PLANS (A10 SERIES DRAWINGS) CALL FOR WALL TILE, PROVIDE CEMENT BOARD SUBSTRATE IN LIEU OF GYPSUM BOARD.
7. ALL DOORS LOCATED 4" FROM JAMB TO ADJACENT WALL UNLESS OTHERWISE INDICATED.

GENERAL NOTES

1. COORDINATE SIZE AND LOCATION OF ALL CONCRETE HOUSEKEEPING PADS AND / OR EQUIPMENT SUPPORTS WITH APPROPRIATE EQUIPMENT MANUFACTURER.
2. COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH TRADE REQUIRING THE SAME. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE REQUIRED TO BE PROVIDED BY EACH TRADE. ALL LOCATIONS MUST BE COORDINATED AND APPROVED BY THE ARCHITECT'S FIELD REPRESENTATIVE.
3. CONTRACTORS SHALL VERIFY ALL EXISTING BUILDING DIMENSIONS, PARTITION AND WALL LOCATIONS, AND FLOOR ELEVATIONS IN THE FIELD AND NOTIFY THE ARCHITECTS REPRESENTATIVE OF ANY DISCREPANCIES BEFORE START OF WORK.
4. FLOOR PLANS ARE DIMENSIONED TO ACTUAL WALL THICKNESS - TYPICAL.
5. DIMENSIONS FOLLOWED BY ± SHOULD BE REVIEWED AND ALL NECESSARY ADJUSTMENTS MADE PRIOR TO FABRICATION AND / OR INSTALLATION OF AFFECTED WORK. NOTIFY ARCHITECTS REPRESENTATIVE IF DISCREPANCIES ARISE BEFORE PROCEEDING WITH THE WORK.
6. INSTALL CONTROL JOINTS IN GYPSUM BOARD AND METAL STUD-FRAMED PARTITIONS, WALLS, CEILINGS, BULKHEADS, FASCIAE AND SOFFITS IN COMPLIANCE WITH SPECIFICATIONS, AND WITH GENERAL REQUIREMENTS OF ASTM C840. PRIOR TO COMMENCEMENT OF FRAMING INSTALLATION SUBMIT COORDINATION DRAWINGS INDICATING PROPOSED LOCATIONS OF ALL CONTROL JOINTS, AS SPECIFIED.
7. PROVIDE CONTROL JOINTS WHERE INTERIOR CMU (ON SLAB) ABUTS EXTERIOR / INTERIOR MASONRY (ON FOUNDATIONS OR FOOTINGS).
8. VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK. PROVIDE ALL LINTELS REQUIRED FOR THESE OPENINGS PER SPECIFICATIONS.
9. REFER TO LIFE SAFETY PLANS FOR LOCATIONS OF REQUIRED FIRE RESISTANCE RATINGS. BECAUSE OF THE DRAWING SCALE OF THE LIFE SAFETY PLANS, COORDINATE THE REQUIRED FIRE RESISTANCE RATINGS WITH THOSE SHOWN ON THE REFLECTED CEILING PLANS.
10. REFER TO REFLECTED CEILING PLANS FOR EXTENSION OF PARTITION WALLS TO FLOOR OR ROOF CONSTRUCTION ABOVE AND WALL FIRE RESISTANCE RATING REQUIREMENTS.
11. REFER TO STRUCTURAL DRAWINGS FOR ALL WIND FRAME LOCATIONS AT INTERIOR AND EXTERIOR WALLS.
12. REFER TO A10._ SERIES DRAWINGS FOR FLOOR FINISH PATTERNS AND ROOM FINISHES.
13. REFER TO STRUCTURAL DRAWINGS FOR ORIENTATION AND SIZES OF ALL STRUCTURAL COLUMNS.
14. REFER TO DRAWING A8._ FOR TYPICAL DETAILS PERTAINING TO WALL TERMINATIONS AT STRUCTURE ABOVE AND MASONRY CONTROL JOINT DETAILS.
15. VERIFY ALL DIMENSIONS IN FIELD.
16. PROVIDE WOOD BLOCKING WITHIN STUD WALLS FOR WALL MOUNTED ITEMS i.e. GRAB BARS, TOWEL DISPENSERS, PENCIL SHARPENERS, WALL STOPS, FOLDING PARTITION JAMBS, ETC. REFER ALSO TO A9._ SERIES AND A6._ SERIES DRAWINGS.
17. REFER TO EXTERIOR ELEVATIONS AND PLAN DETAILS FOR LOCATIONS OF CONTROL JOINTS IN EXTERIOR WALLS.
18. WHERE SLAB DEPRESSIONS ARE INDICATED FOR WOOD FLOOR SYSTEMS, CONFIRM DEPRESSION WITH WOOD FLOORING CONTRACTOR. ADJUST DEPRESSION, AS REQUIRED, TO MEET FLUSH WITH ADJACENT FLOOR MATERIALS (i.e. CERAMIC TILE, QUARRY TILE, ETC.).

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

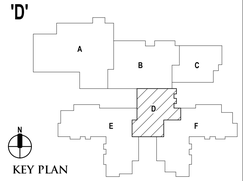
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Second Level Floor Plan - Zone 'D'



KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2024	ADDENDUM NO. 4
07-16-2024	ADDENDUM NO. 3 (N.R.)
06-18-2024	CONSTRUCTION DOCUMENTS

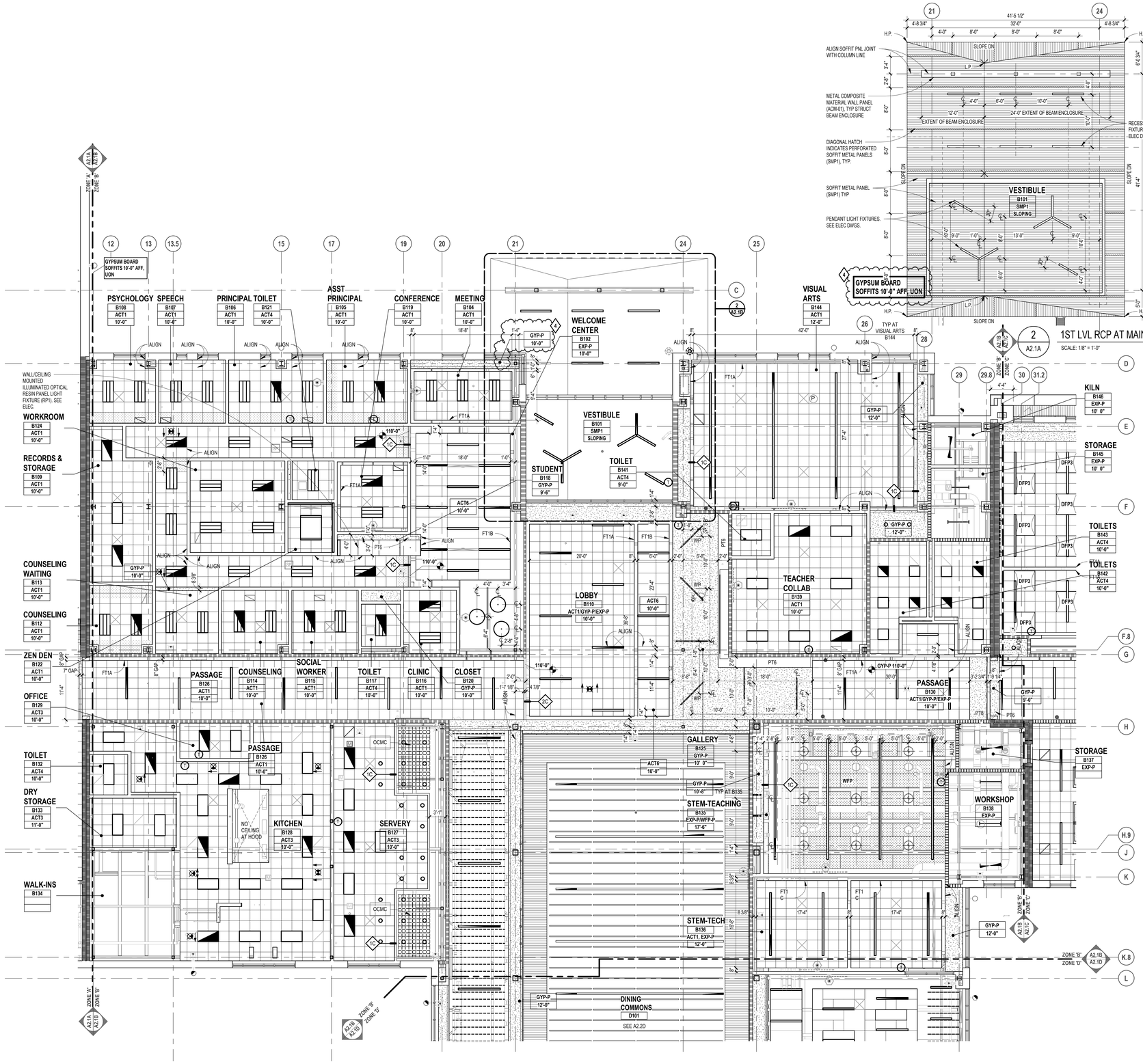
DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A1.2D



FIXTURE LEGEND

- RECESSED L.E.D. TROFFER (2'x4' / 1'x4')
- L.E.D. INDUSTRIAL FIXTURE
- SURFACE MOUNTED LINEAR L.E.D. FIXTURE
- PENDANT MOUNTED LINEAR L.E.D. FIXTURE
- RECESSED DOWNLIGHT
- EXIT SIGN
- SPEAKER

FIRE / LIFE SAFETY FIXTURES: SEE ELECTRICAL, FIRE PROTECTION, PLUMBING, AND TECHNOLOGY DRAWINGS & SPECIFICATIONS

MECHANICAL EQUIPMENT / FIXTURES - SEE MECHANICAL DRAWINGS & SPECIFICATIONS

- SUPPLY DIFFUSER
- RETURN-AIR / EXHAUST GRILLE

CEILING KEY

- GYPSUM BOARD (PAINTED) OR INTERIOR / EXTERIOR FINISH SYSTEM CEILING / SOFFIT
- SUSPENDED LAY-IN ACOUSTICAL CEILING - SEE SPECIFICATIONS FOR SIZES
- EXPOSED CONSTRUCTION (PAINTED U.O.N.)
- 2x4 SUSPENDED LAY-IN ACOUSTICAL CEILING MATCHING ADJACENT CEILING TILE. CUT TILE TO FIT LARGER GRID SIZE AT SPACE PERIMETER.

CEILING LEGEND

ROOM/CEILING TAGS
ROOM NAME AND NUMBER PLUS GENERAL CEILING FINISH AND HEIGHT UNLESS OTHERWISE NOTED CEILING FINISH TAGS.

CEILING FINISH TAG
SPECIFIC FINISH / HEIGHT WHERE VARYING FROM GENERAL ROOM / CEILING TAGS.

ROOM NAME ← ROOM NAME
101 ← ROOM NUMBER
ACT ← CEILING FINISH ABBREVIATION (SEE BELOW) → ACT
8'-0" ← CEILING HEIGHT (AFF) → 8'-0"

CEILING FINISH ABBREVIATIONS

AB	ACOUSTICAL BAFFLE PANEL - SUSPENDED
ACT	ACOUSTICAL LAY-IN CEILING TILE
ALUM	ALUMINUM PANEL
AWFP	ACOUSTICAL WOOD FIBER PANELS - SURFACE MOUNTED
AWP	ACOUSTICAL WALL PANEL
DAFS	DIRECT APPLIED EXTERIOR FINISH SYSTEM (SYNTHETIC VENEER PLASTER)
DFP	MOLDED DIFFUSER PANEL
EXP-P	EXPOSED CONSTRUCTION - PAINTED
EXP-UF	EXPOSED CONSTRUCTION - UNFINISHED
FT1	FASCIA TRIM AT CEILING PERIMETER
GSW-P	GYPSUM BOARD SHAFT WALL - PAINTED - SEE LS SHEETS FOR RATING
GYP-P	GYPSUM BOARD - PAINTED
GYP-EP	GYPSUM BOARD - EPOXY PAINTED
OCMC	OPEN CELL METAL CEILING
PTD	PAINTED
RCP	RADIANT CEILING PANELS
UF	UNFINISHED
SMP1	SOFFIT METAL PANEL
WFP-P	CEMENTITIOUS WOOD FIBER PANEL - PAINTED

NOTES

1. REFER TO FINISH PLANS FOR INFORMATION ON ROOM FINISHES.
2. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION ON MATERIALS AND CONSTRUCTION.
3. WHERE EXPOSED CONSTRUCTION IS INDICATED TO BE PAINTED, THIS SHALL INCLUDE ALL STRUCTURAL MEMBERS, ROOF / FLOOR DECK, DUCTWORK, DIFFUSERS, GRILLES, PIPING, SUSPENDED EQUIPMENT, CONDUITS, ETC. (U.O.N.).

WALL FIRE RATING LEGEND

- 2-HOUR FIRE WALL FOR AREA COMPLIANCE
- 2-HOUR FIRE BARRIER FOR ELECTRICAL
- 1-HOUR FIRE BARRIER FOR EXIT ENCLOSURES & ELEVATORS
- 1-HOUR FIRE BARRIER AT HVAC SHAFTS
- 1-HOUR FIRE BARRIER FOR SCIENCE LABS
- 1-HOUR FIRE BARRIER HAZARDS / INCIDENTAL USES
- SMOKE BARRIER FOR VERTICALLY COMMUNICATING SPACES
- SMOKE PARTITION FOR EGRESS CORRIDORS
- NON RATED WALLS TO STRUCTURE ABOVE

GENERAL NOTES

1. REFER TO ELECTRICAL DRAWINGS FOR FIXTURE TYPES. REFER ELECTRICAL AND MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION PERTAINING TO ELECTRICAL AND MECHANICAL WORK.
2. COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH TRADE REQUIRING THE SAME. ACCESS PANELS ARE SPECIFIED ARCHITECTURALLY BUT ARE REQUIRED TO BE PROVIDED BY TRADE. SPOT ALL LOCATIONS WITHIN FIXED GYPSUM BOARD CEILINGS AND RECEIVE APPROVAL FROM THE ARCHITECT'S FIELD REPRESENTATIVE BEFORE PLACEMENT.
3. COORDINATE CEILING SUSPENSION SYSTEMS WITH OTHER CEILING SPACE EQUIPMENT SUPPORTS.
4. ALL FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS AND SMOKE PARTIONS (ABOVE ACCESSIBLE CEILINGS) SHALL BE MARKED EVERY 30'-0" HORIZONTALLY AND WITHIN 15'-0" OF ENDS OF WALLS: "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS". REFER TO CURRENT BUILDING CODE FOR LETTERING HEIGHT, STROKE AND CONTRAST.
5. ALL GYPSUM BOARD FASCIAS @ SOFFITS, ADJACENT TO LAY-IN CEILINGS, SHALL EXTEND 4" MINIMUM ABOVE LAY-IN CEILINGS.
6. INSTALL CONTROL JOINTS IN GYPSUM BOARD AND METAL STUD-FRAMED PARTITIONS, WALLS, CEILINGS, BULKHEADS, FASCIAE AND SOFFITS IN COMPLIANCE WITH SPECIFICATIONS, AND WITH GENERAL REQUIREMENTS OF ASTM C840. PRIOR TO COMMENCEMENT OF FRAMING INSTALLATION SUBMIT COORDINATION DRAWINGS INDICATING PROPOSED LOCATIONS OF ALL CONTROL JOINTS, AS SPECIFIED.
7. PROVIDE WOOD BLOCKING, ABOVE GYPSUM BOARD CEILINGS, AS REQUIRED FOR MISCELLANEOUS SUSPENDED ITEMS (e.g. CURTAIN TRACKS, WINDOW SHADES, ACOUSTICAL BAFFLES, ETC.).
8. REFER TO DRAWINGS A___ FOR TYPICAL DETAILS PERTAINING TO WALL TERMINATIONS AT STRUCTURE ABOVE.
9. SEE LIFE SAFETY PLANS FOR DAMPERING REQUIREMENTS.
10. CENTER SPRINKLER HEADS AT THE CENTER OF CEILING PANEL UNLESS SHOWN OTHERWISE.

TMP ARCHITECTURE

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

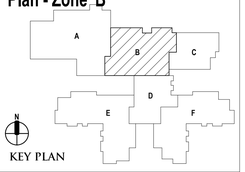
Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

First Level Reflected Ceiling Plan - Zone 'B'

KEY PLAN



ISSUE DATES

07-23-2024	ADDENDUM NO. 4
06-18-2024	CONSTRUCTION DOCUMENTS

DATE:	ISSUED FOR:
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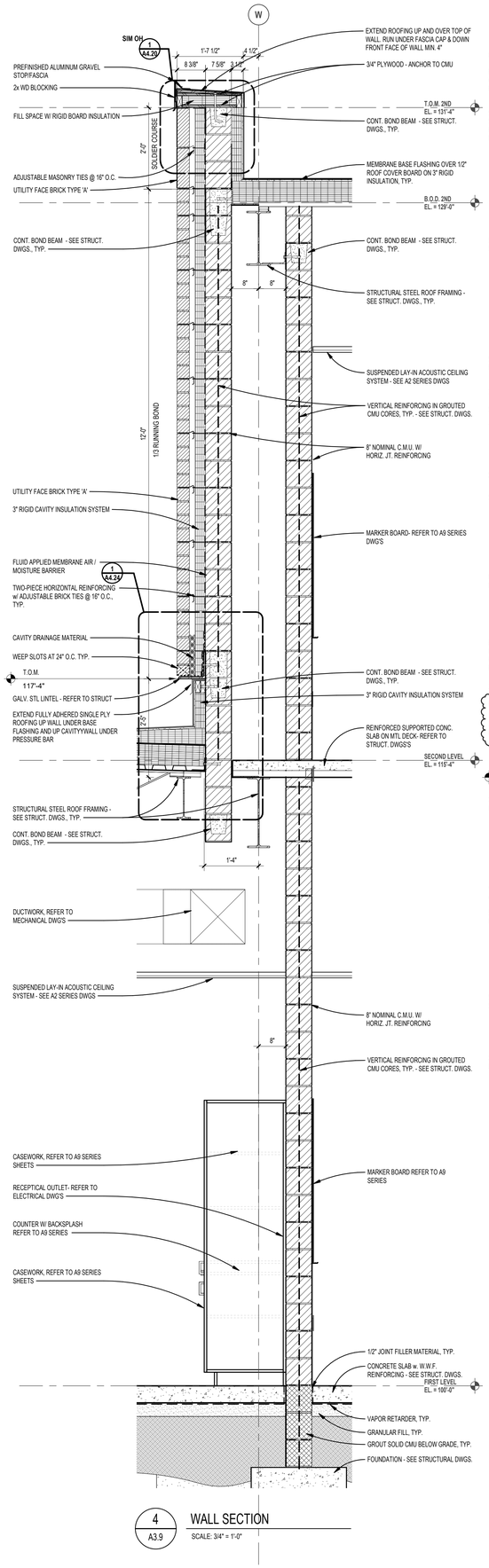
CHECKED	jw
APPROVED	dl

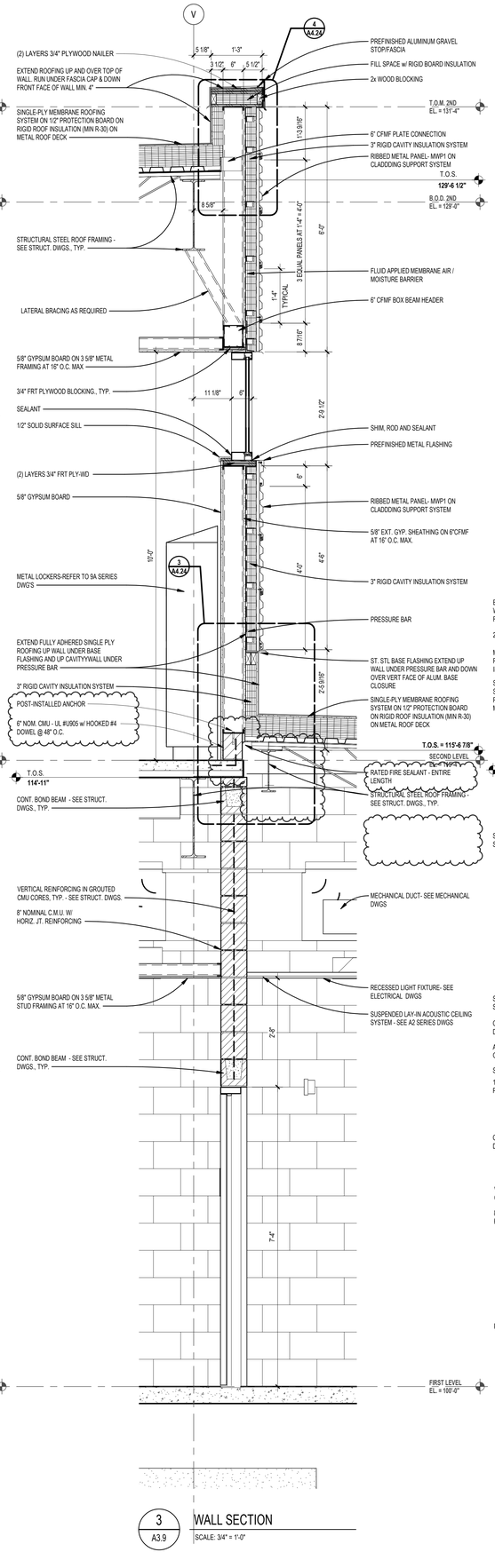
PROJECT NO.
22102

DRAWING NO.
A2.1B



4 A3.9 WALL SECTION

SCALE: 3/4" = 1'-0"



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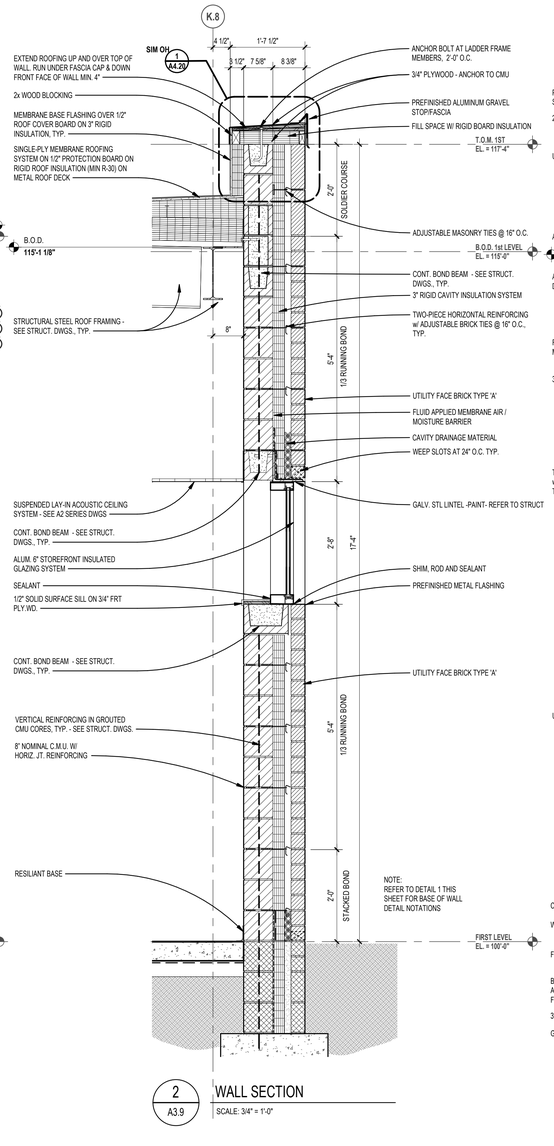

2 A3.9 WALL SECTION

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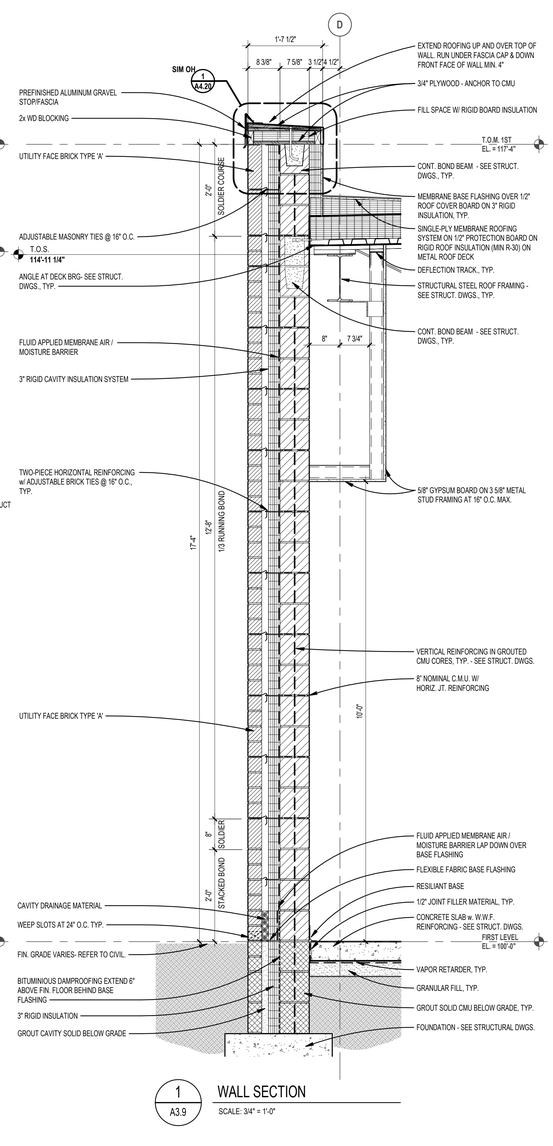

NOTE:
ALTERNATE TO PLYWOOD "LADDER" AT TOP OF PARAPET WALL: PROVIDE PREBUCK PARAPET CAP FRAMING OVER 3" CONTINUOUS INSULATION

1 A3.9 WALL SECTION

SCALE: 3/4" = 1'-0"

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Wall Sections

ISSUE DATES

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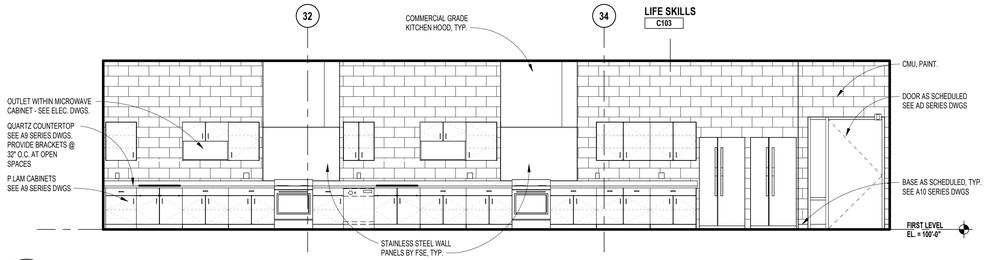
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A4.8



16 A1.1B INTERIOR ELEVATION - LIFE SKILLS

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

GLAZING TYPES

GL-2	1/4" (6mm) CLEAR TEMPERED MONOLITHIC GLASS
GL-6	1/4" (6mm) CLEAR HEAT-STRENGTHENED LAMINATED GLASS
GL-8	1/4" (6mm) CLEAR HEAT-STRENGTHENED LAMINATED GLASS w/ TINTED INTERLAYER
GL-13	1" (25mm) CLEAR TEMPERED INSULATING GLASS (LOW-E)
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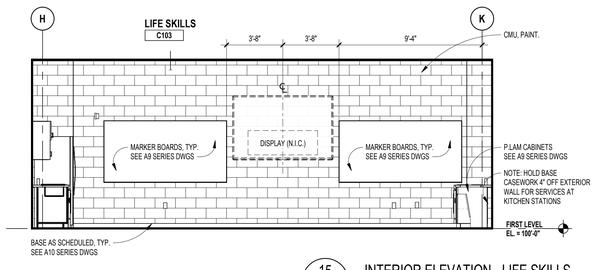
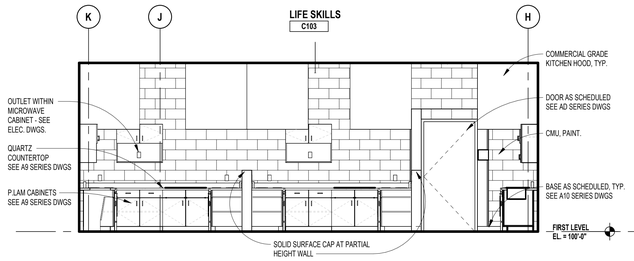
FPGL-2	3/4" (19mm) FIRE PROTECTIVE GLAZING (45 MIN)
FRGL-4	1 1/8" (29mm) FIRE RESISTIVE GLAZING (60 MIN, ASTM E119)
SSGL1	MONOLITHIC SECURITY GLAZING
SSGL2	INSULATED SECURITY GLAZING



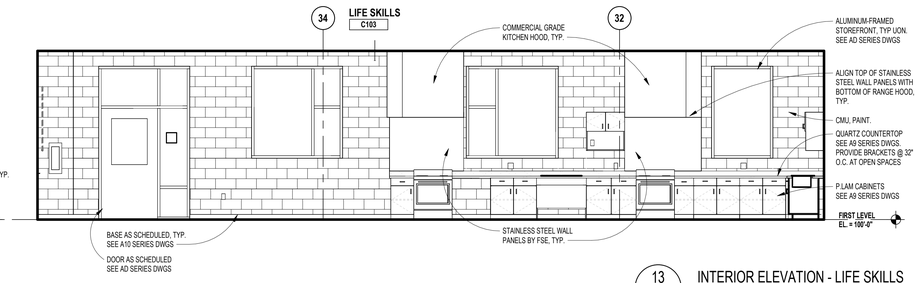
15 A1.1C INTERIOR ELEVATION - LIFE SKILLS

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



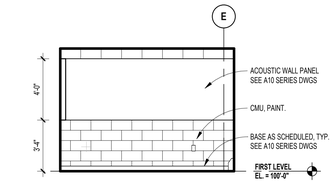
14 A1.1C INTERIOR ELEVATION - LIFE SKILLS

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



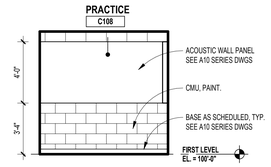
13 A1.1B INTERIOR ELEVATION - LIFE SKILLS

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



12 A1.1C INTERIOR ELEVATION - PRACTICE

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



11 A1.1C INTERIOR ELEVATION - PRACTICE

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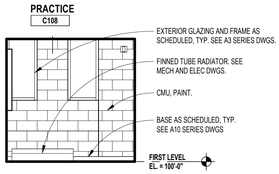

10 A1.1C INTERIOR ELEVATION - PRACTICE

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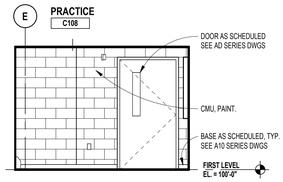
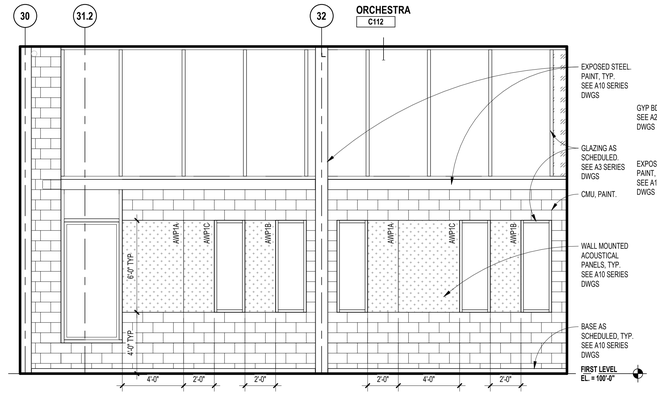


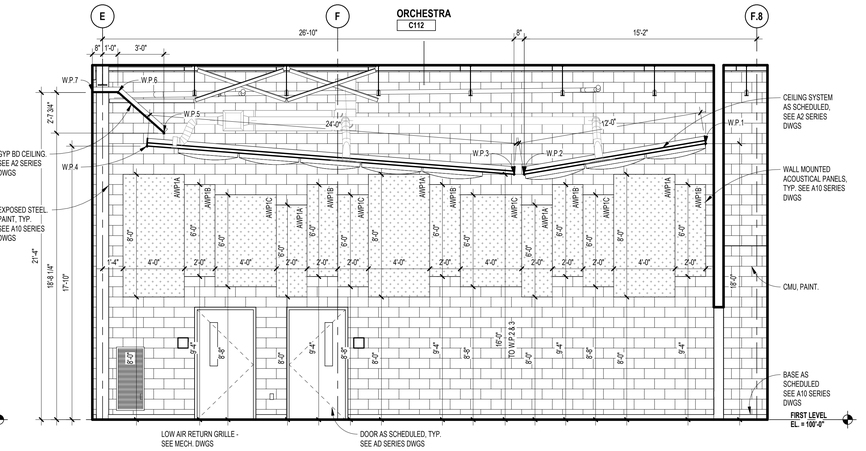
9 A1.1C INTERIOR ELEVATION - PRACTICE

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



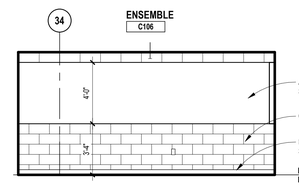
8 A1.1C INTERIOR ELEVATION - ORCHESTRA

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



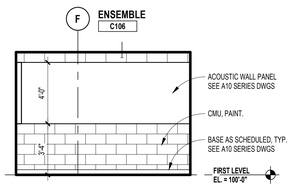
7 A1.1C INTERIOR ELEVATION - ORCHESTRA

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



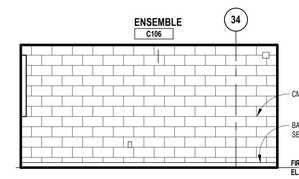
6 A1.1C ENSEMBLE

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



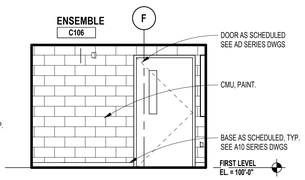
5 A1.1C ENSEMBLE

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



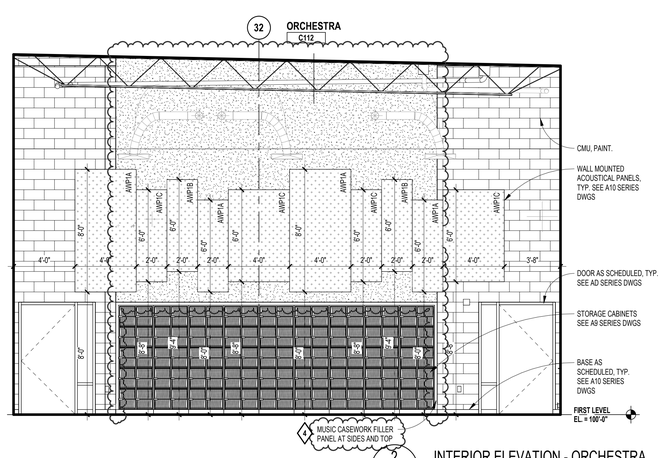
4 A1.1C ENSEMBLE

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



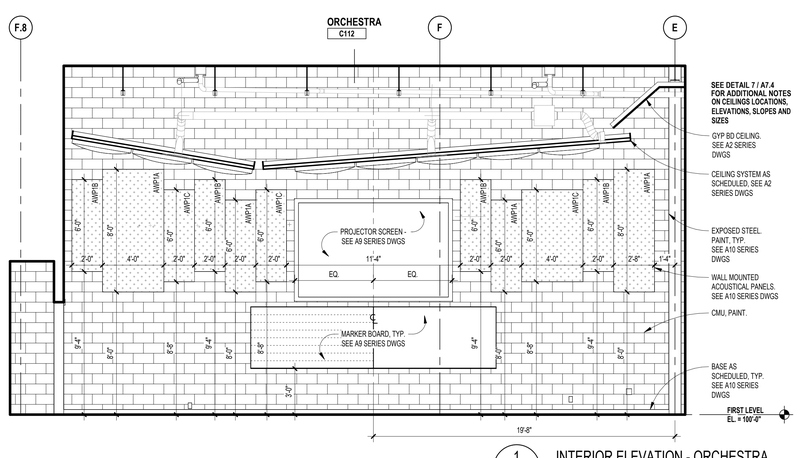
3 A1.1C ENSEMBLE

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



2 A1.1C INTERIOR ELEVATION - ORCHESTRA

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



1 A1.1C INTERIOR ELEVATION - ORCHESTRA

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

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

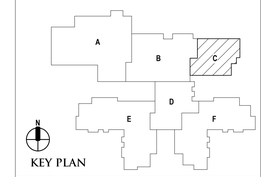
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Interior Elevations



KEY PLAN

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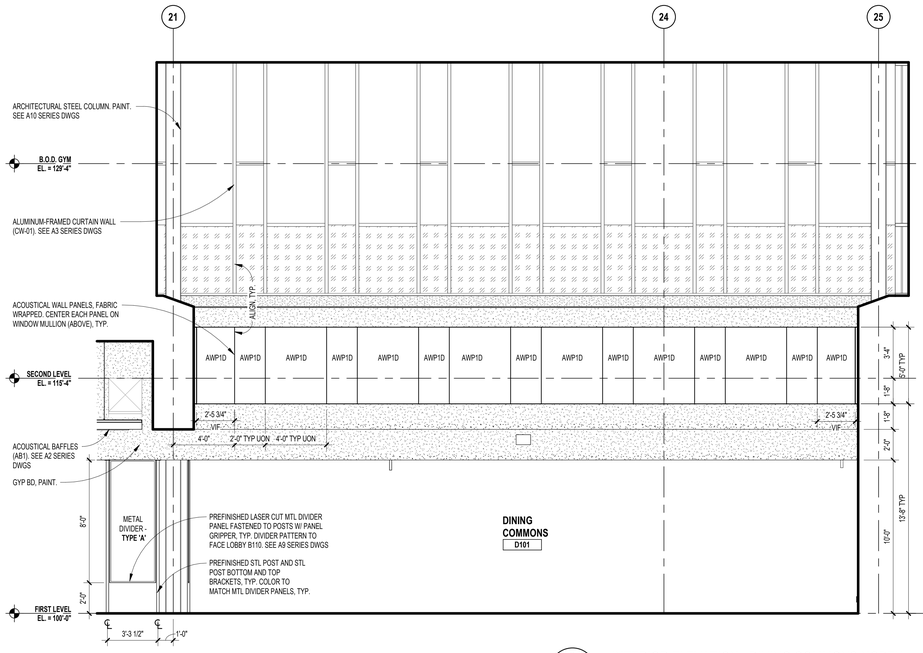
APPROVED	dl

PROJECT NO.

22102

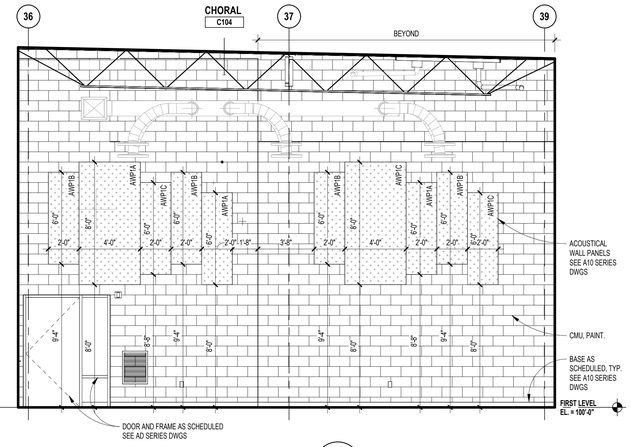
DRAWING NO.

A7.4



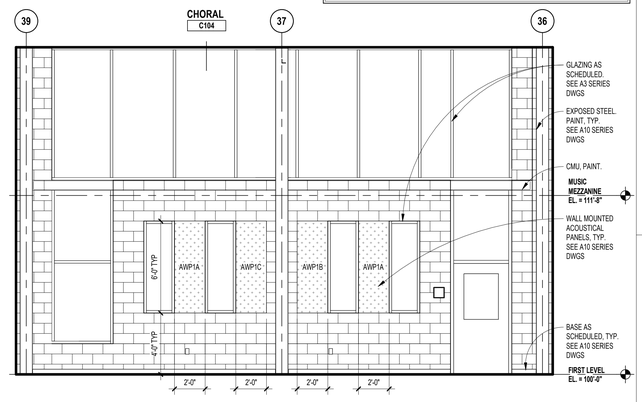
9 A1.1B — INTERIOR ELEVATION - DINING COMMONS NORTH

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



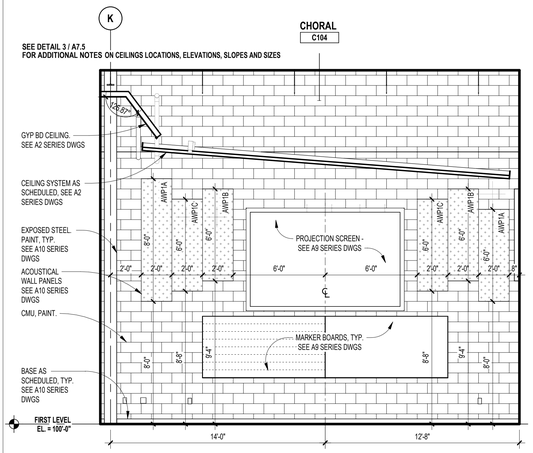
8 A1.1C — INTERIOR ELEVATION - CHORAL

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



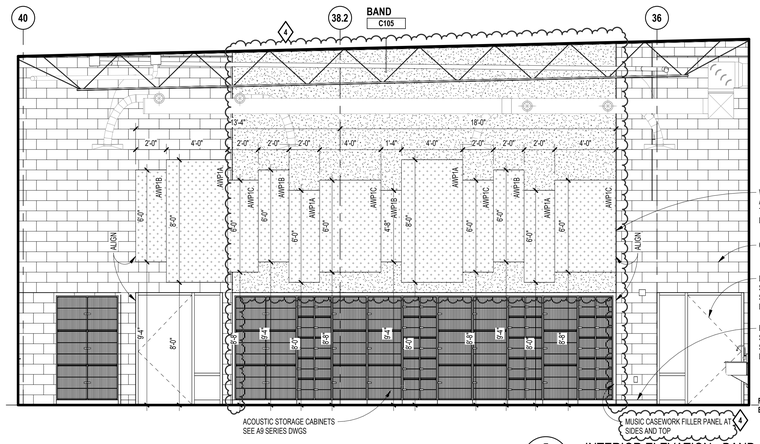
7 A1.1C — INTERIOR ELEVATION - CHORAL

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



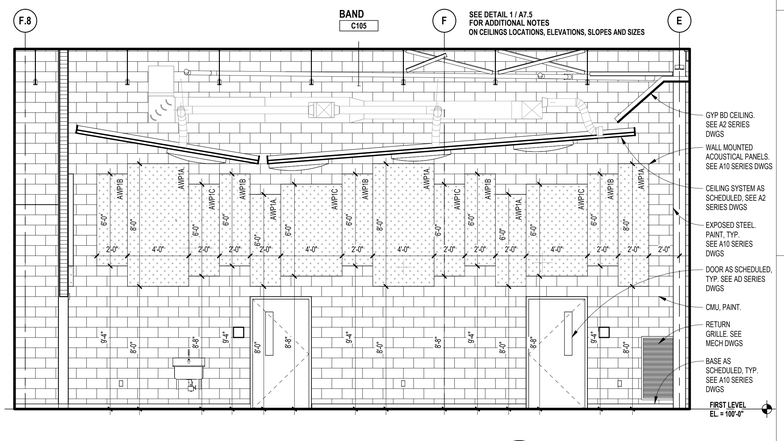
6 A1.1C — INTERIOR ELEVATION - CHORAL

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



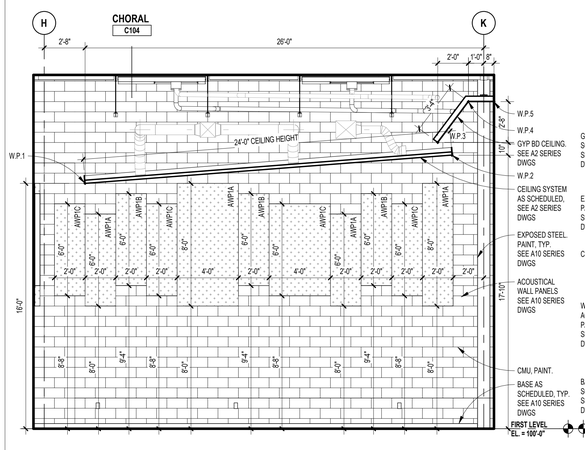
5 A1.1C — INTERIOR ELEVATION - BAND

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



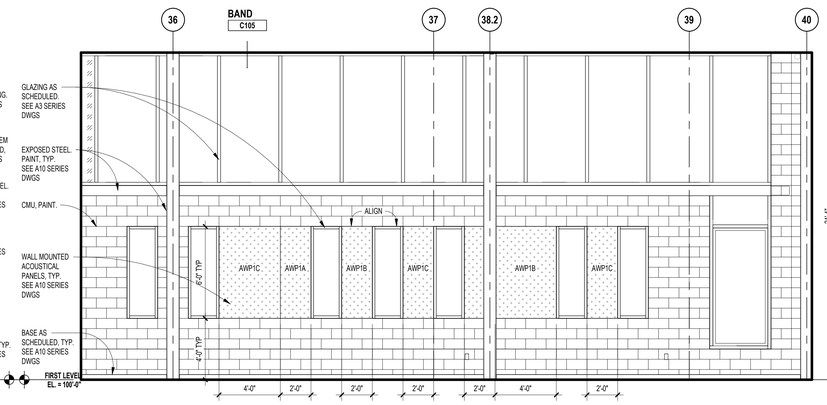
4 A1.1C — INTERIOR ELEVATION - BAND

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



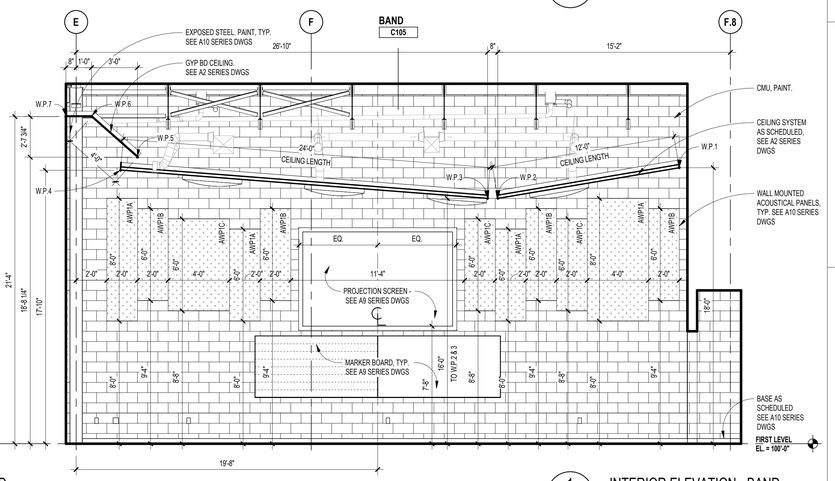
3 A1.1C — INTERIOR ELEVATION - CHORAL

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



2 A1.1C — INTERIOR ELEVATION - BAND

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



1 A1.1C — INTERIOR ELEVATION - BAND

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

GLAZING TYPES

GL-2	1/4" (6mm) CLEAR TEMPERED MONOLITHIC GLASS
GL-6	1/4" (6mm) CLEAR HEAT-STRENGTHENED LAMINATED GLASS
GL-8	1/4" (6mm) CLEAR HEAT-STRENGTHENED LAMINATED GLASS w/ TINTED INTERLAYER
GL-13	1" (25mm) CLEAR TEMPERED INSULATING GLASS (LOW-E)
GL-18	1" (25mm) CLEAR TEMPERED INSULATING SPANDREL GLASS
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FPGL-2	3/4" (19mm) FIRE PROTECTIVE GLAZING (45 MIN)
FRGL-4	1 1/8" (29mm) FIRE RESISTIVE GLAZING (60 MIN, ASTM E119)
SSGL1	MONOLITHIC SECURITY GLAZING
SSGL2	INSULATED SECURITY GLAZING

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REGISTRATION SEAL

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PROJECT TITLE

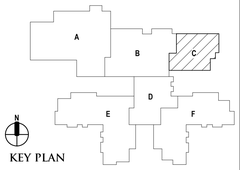
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Interior Elevations



KEY PLAN

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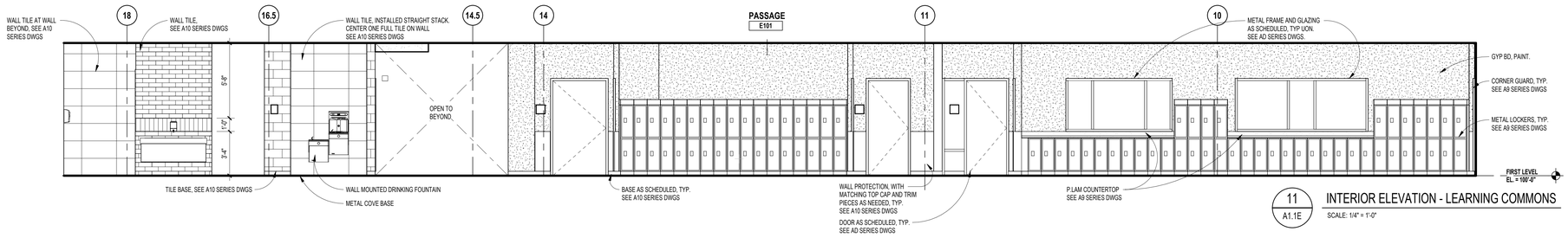
22102

DRAWING NO.

A7.5

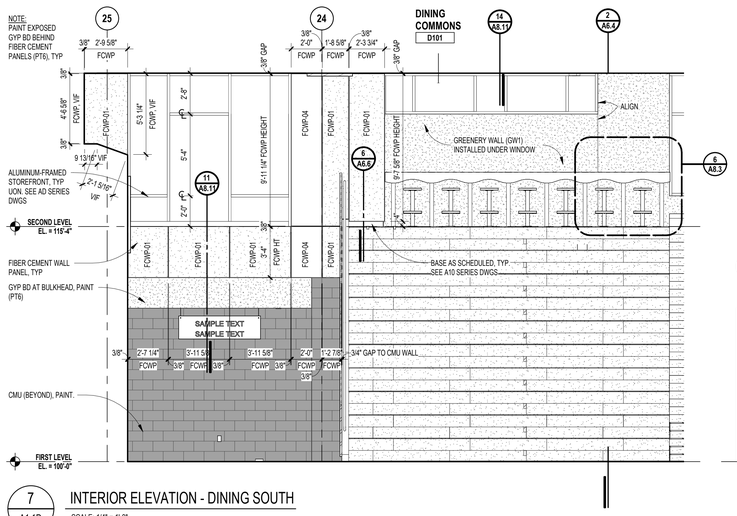


11 A1.1E — INTERIOR ELEVATION - LEARNING COMMONS

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

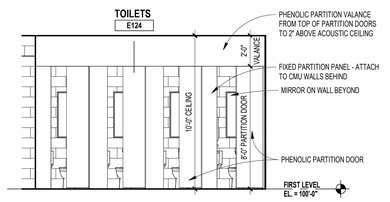
GLAZING TYPES

GL-2	1/4" (6mm) CLEAR TEMPERED MONOLITHIC GLASS
GL-6	1/4" (6mm) CLEAR HEAT-STRENGTHENED LAMINATED GLASS
GL-8	1/4" (6mm) CLEAR HEAT-STRENGTHENED LAMINATED GLASS w/ TINTED INTERLAYER
GL-13	1" (25mm) CLEAR TEMPERED INSULATING GLASS (LOW-E)
GL-18	1" (25mm) CLEAR TEMPERED INSULATING SPANDREL GLASS
GL-19	1" (25mm) CLEAR TEMPERED INSULATION GLASS (LOW-E) w/ APPLIED FRIT
GL-21	1" (25mm) CLEAR HEAT-STRENGTHENED LAMINATED INSULATING GLASS
GL-23	1" (25mm) CLEAR TEMPERED w/ TINTED INTERLAYER LAMINATED INSULATING GLASS (LOW-E)
FPGL-2	3/4" (19mm) FIRE PROTECTIVE GLAZING (45 MIN)
FRGL-4	1 1/8" (29mm) FIRE RESISTIVE GLAZING (60 MIN, ASTM E119)
SSGL1	MONOLITHIC SECURITY GLAZING
SSGL2	INSULATED SECURITY GLAZING



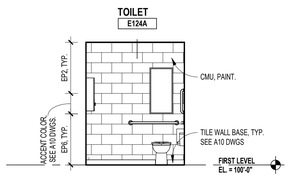
7 A1.1D — INTERIOR ELEVATION - DINING SOUTH

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



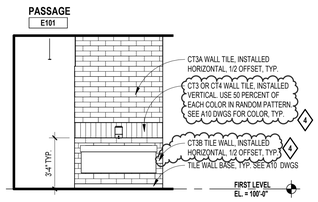
12 A6.2 — INTERIOR ELEVATION - TOILET

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



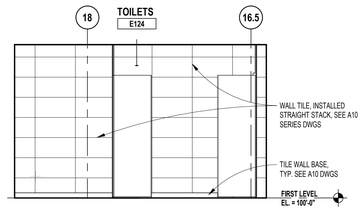
10 A6.2 — INTERIOR ELEVATION - TOILET

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



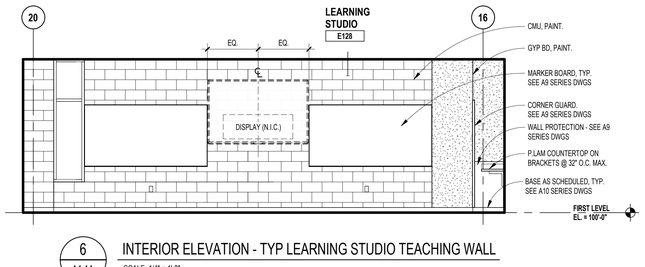
9 A6.2 — INTERIOR ELEVATION - TOILET

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



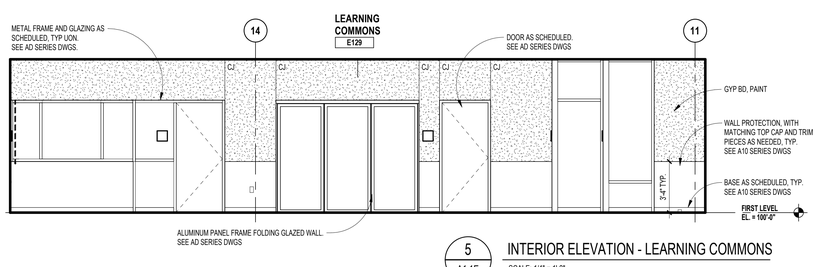
8 A6.2 — INTERIOR ELEVATION - TOILET

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



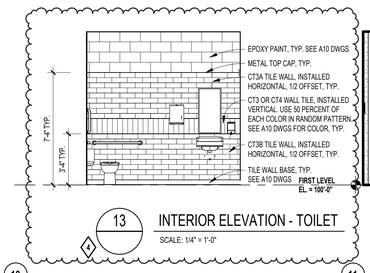
6 A1.1A — INTERIOR ELEVATION - TYP LEARNING STUDIO TEACHING WALL

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



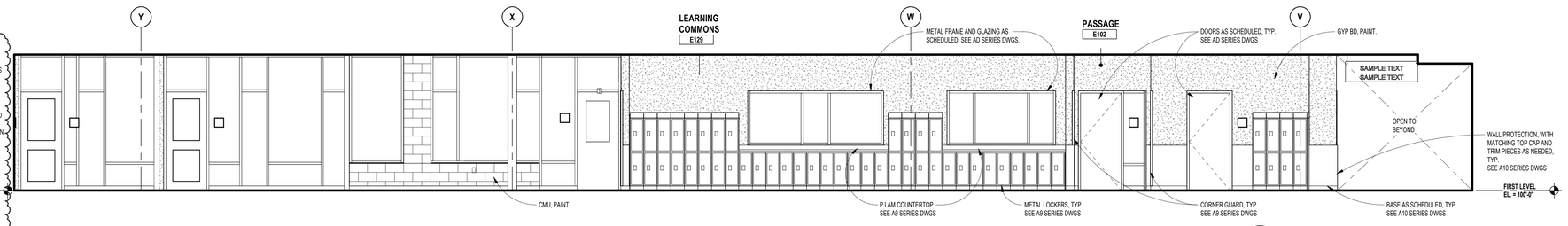
5 A1.1E — INTERIOR ELEVATION - LEARNING COMMONS

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



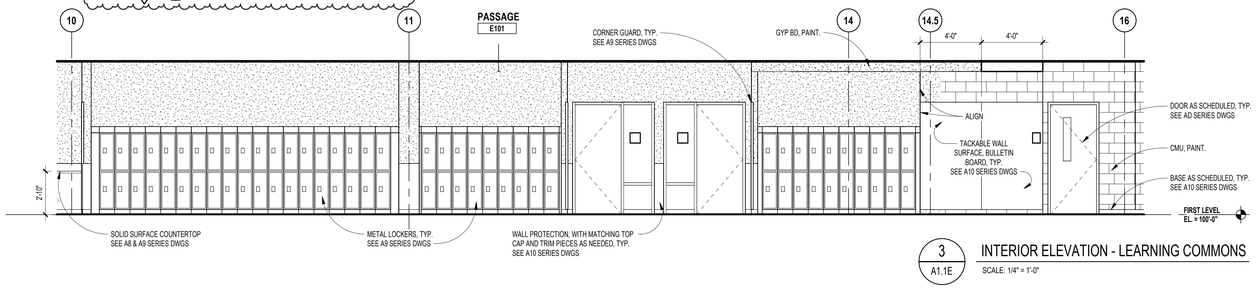
13 — INTERIOR ELEVATION - TOILET

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



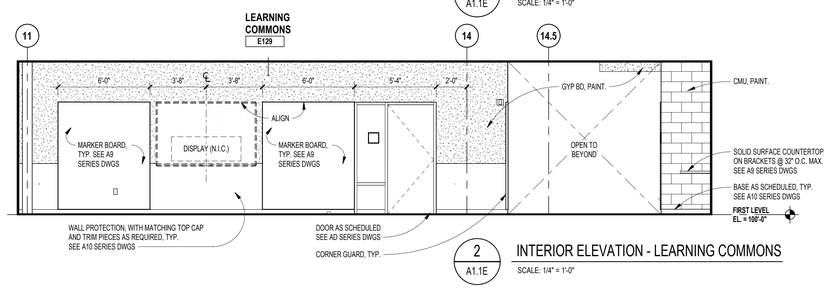
4 A1.1E — INTERIOR ELEVATION - LEARNING COMMONS

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



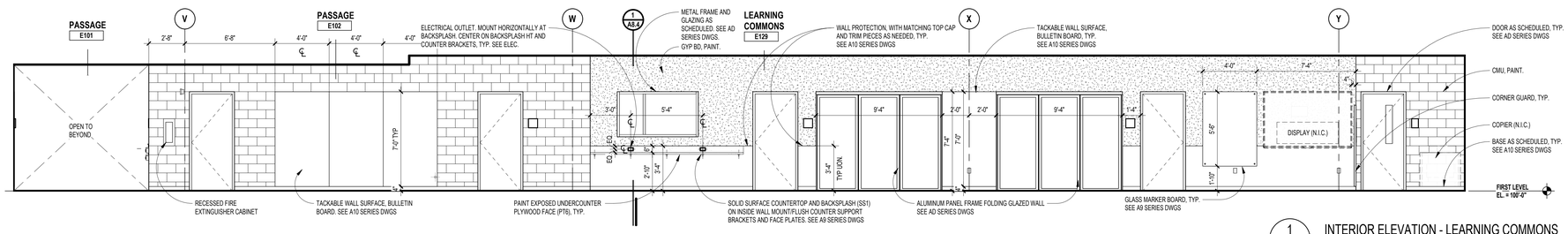
3 A1.1E — INTERIOR ELEVATION - LEARNING COMMONS

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



2 A1.1E — INTERIOR ELEVATION - LEARNING COMMONS

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



1 A1.1E — INTERIOR ELEVATION - LEARNING COMMONS

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

TMP ARCHITECTURE

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

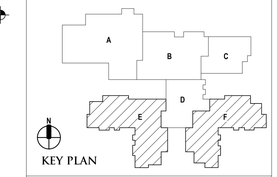
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Interior Elevations



ISSUE DATES

07-23-2024	ADDENDUM NO. 4
06-18-2024	CONSTRUCTION DOCUMENTS

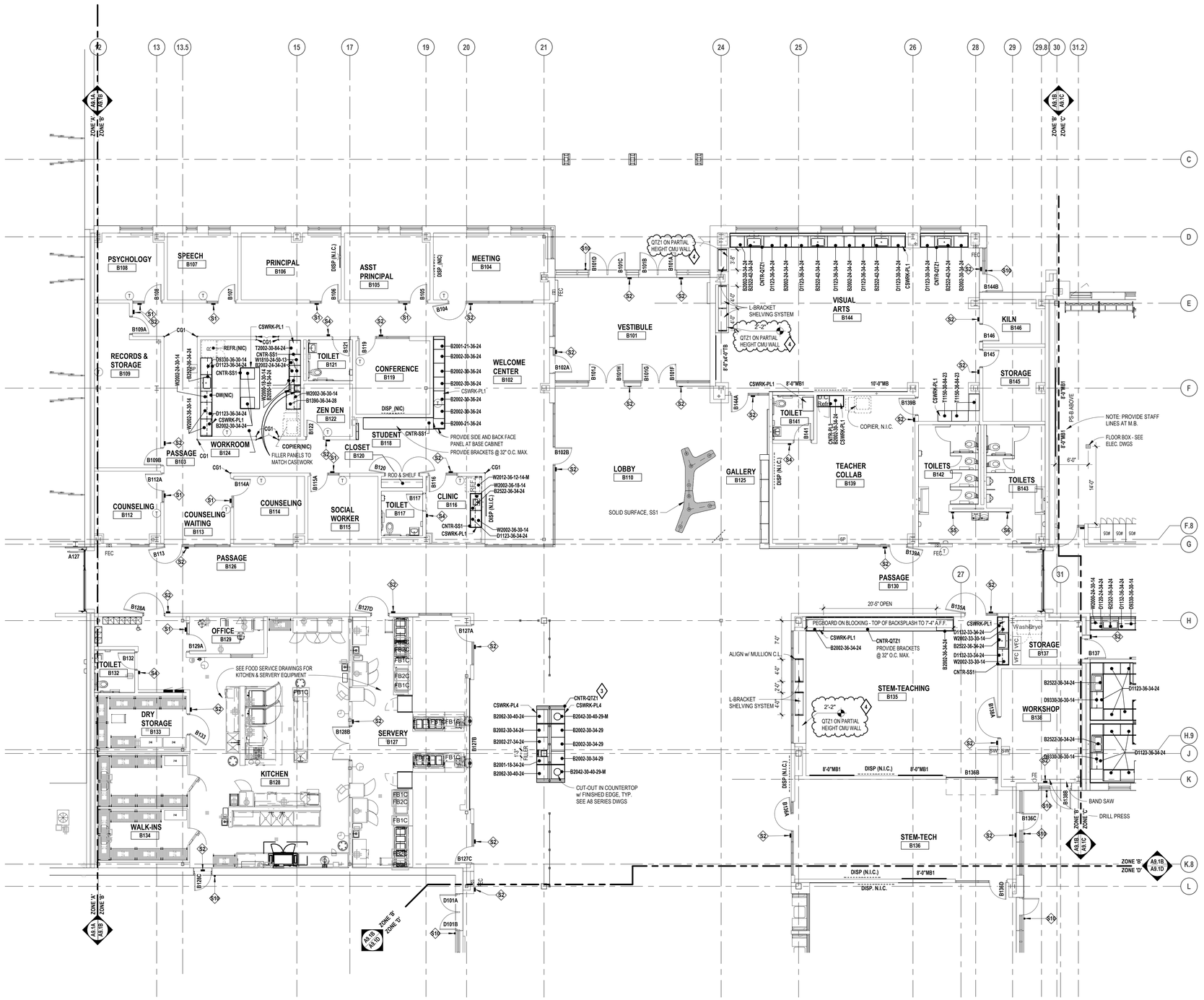
DATE:	ISSUED FOR:
DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A7.8



N

FIRST LEVEL CASEWORK AND EQUIPMENT PLAN - ZONE 'B'

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

LEGEND

- DISPLAY (BY OTHERS) - WALL OR SUSPSENDED MOUNT (BY OTHERS)
- FES / FEC — FIRE EXTINGUISHER IN CABINET (FEC)
- FE — FIRE EXTINGUISHER ON WALL BRACKET (FE)
- CG1 — 7'-0" HIGH (UON) SURFACE MOUNT CORNER GUARD

VISUAL DISPLAY BOARD NOTES

TYPE OF BOARD — 6'-0" MB1 — WIDTH OF BOARD/STRIP

HEIGHT OF ALL BOARDS ARE 4'-0" (UON)

NOTES:

1. MB = MARKERBOARD
   TB = TACKBOARD
   TS = TACK STRIP
   DISP = DISPLAY (BY OTHERS)
2. MOUNTING HEIGHTS (UON):
   MB/TB = 3'-0" AFF TO BOTTOM
3. MAP RAILS SHALL BE CONTINUOUS OVER MARKERBOARDS.
4. ALL MARKERBOARDS SHALL BE PROVIDED WITH TRAYS & MAP RAILS.
5. LEGEND:
   MB1 = PORCELAIN ENAMEL STEEL HORIZONTAL ORIENTATION
   MB2 = PORCELAIN ENAMEL STEEL VERTICAL ORIENTATION
   MB3 = MAGNETIC GLASS

CASEWORK NOTES

1. ALL PREFABRICATED CABINETS INDICATED ARE BASED ON TMI STORAGE SYSTEMS CORPORATION PRODUCTS. REFER TO TMI CATALOG FOR TYPICAL NUMBERING FORMAT.
2. ALL TMI CABINETS ARE DESIGNATED USING THE TYPICAL TMI ELEVEN (11) DIGIT NOTATION SYSTEM. THE FIRST FIVE DIGITS ARE THE MODEL NUMBER FOLLOWED BY THREE SETS OF TWO DIGIT NUMBERS FOR THE WIDTH, HEIGHT AND DEPTH.
3. WIDTH, HEIGHT AND DEPTH OF PREFABRICATED CABINETS IS INDICATED IN INCHES UNLESS NOTED OTHERWISE. MODEL DIMENSIONS ARE NOMINAL UNLESS SPECIFICALLY NOTED. "00000-00-00-00-M" INDICATES MODIFIED CASEWORK.
4. PROVIDE PLASTIC LAMINATE COUNTERTOPS (WITH BACK/END SPLASHES) AT ALL BASE CABINETS. RADIUS ALL OUTSIDE CORNERS (U.O.N.)
5. ALL EXPOSED SURFACES OF CASEWORK TO BE FINISHED, TYPICAL.
6. WALL CABINETS (OVER COUNTERS) ARE TYPICALLY MOUNTED AT 7'-4" AFF TO TOP (UON).
7. PROVIDE FINISHED END PANELS ON ALL EXPOSED CASEWORK ENDS.
8. PROVIDE RESTRAINING CHAINS ON ALL END BASE AND WALL CABINET DOORS WHICH OPEN AGAINST PERPENDICULAR WALLS.
9. WHERE CASEWORK IS HELD AWAY FROM WALLS, TO FLUSH-OUT WITH ADJACENT CABINETS, SCRIBE END/FILLER PANELS TO WALLS.
10. PROVIDE FILLER PANELS WHERE SHOWN AND/OR OTHERWISE REQUIRED FOR A COMPLETE INSTALLATION.
11. PROVIDE LOCKS AT ALL CABINET DOORS AND DRAWERS (U.O.N.)
12. MODIFY SINK BASE CABINETS AS REQUIRED TO ACCOMMODATE OVERSIZED SINKS (SEE MECHANICAL FOR OVERSIZED SINK LOCATIONS.
13. WHERE BF 34" HIGH BASE CABINETS ARE INDICATED, MODIFY CABINET CONSTRUCTION BY REDUCING THE HEIGHT OF ALL COMPARTMENTS EQUALLY (INDICATE ON SHOP DWGS.)
14. PROVIDE INTERMEDIATE PLASTIC LAMINATE CLAD SUPPORT PANELS @ 4'-0" OC MAXIMUM AT ALL UNSUPPORTED COUNTER TOPS (UON).
15. PROVIDE GROMMETS AT ALL COUNTERS WITH KNEESPACES, WHERE POWER/DATA OUTLETS ARE LOCATED BELOW (REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS), UON. PROVIDE (1) ONE GROMMET PER KNEESPACE (UON). FINAL LOCATION(S) WILL BE MARKED-UP ON THE SHOP DRAWING SUBMITTAL.
16. PROVIDE MOISTURE RESISTANT PARTICLE BOARD AT SINK BASE, COUNTERTOP, AND SPLASH WITHIN 18" OF SINK.
17. SEE MECHANICAL DRAWINGS FOR POINT OF USE ACID NEUTRALIZATION TANKS.
18. ALL TYPICAL MUSIC WING CABINETS INDICATED ARE BASED ON WENGER CORPORATION PRODUCTS. REFER TO WENGER CATALOG FOR TYPICAL NUMBERING FORMAT.
19. ALL WENGER CABINETRY IS DESIGNATED USING THE PREFIX "W-" AND THEN THE WENGER NUMBER SYSTEM.
20. NOT USED.

LOCKER LEGEND

- TYPE L-1 — SINGLE-TIER STANDARD LOCKERS (15" X 15" X 72" HIGH) VENTILATED, ON METAL 'Z' BASE
  SINGLE-TIER ADA ACCESSIBLE LOCKERS (12" X 15" X 72" HIGH) VENTILATED, ON METAL 'Z' BASE
- TYPE L-2 — DOUBLE-TIER CORRIDOR LOCKERS (12" X 15" X 60" HIGH) VENTILATED, ON METAL 'Z' BASE
  DOUBLE-TIER ADA ACCESSIBLE CORRIDOR LOCKERS (12" X 15" X 60" HIGH) VENTILATED, ON METAL 'Z' BASE
- TYPE L-3 — SINGLE-TIER STANDARD LOCKERS (12" X 15" X 30" HIGH) VENTILATED, ON METAL 'Z' BASE
  SINGLE-TIER ADA ACCESSIBLE STANDARD LOCKERS (12" X 15" X 30" HIGH) VENTILATED, ON METAL 'Z' BASE
- TYPE L-4 — SINGLE-TIER ATHLETIC LOCKERS (15" X 15" X 72" HIGH), VENTILATED, ON 4" TALL CMU BASE
  SINGLE-TIER ADA ACCESSIBLE ATHLETIC LOCKERS (15" X 15" X 72" HIGH) VENTILATED, ON 4" TALL CMU/CONCRETE BASE (-/--)
- TYPE L-5 — FIVE-TIER ATHLETIC LOCKERS (15" X 15" X 60" HIGH), VENTILATED, ON 4" TALL CMU/CONCRETE BASE
  FIVE-TIER ADA ACCESSIBLE ATHLETIC LOCKERS (15" X 15" X 60" HIGH) VENTILATED, ON 4" TALL CMU BASE
- TYPE L-6 — DOUBLE-TIER ATHLETIC LOCKERS (15" X 15" X 60" HIGH), VENTILATED, ON 18" TALL CMU BASE
  DOUBLE-TIER ADA ACCESSIBLE ATHLETIC LOCKERS (15" X 15" X 60" HIGH) VENTILATED, ON 18" TALL CMU BASE
- TYPE L-7 — DOUBLE-TIER ATHLETIC LOCKERS (24" X 15" X 72" HIGH), VENTILATED, ON 18" TALL CMU BASE
  DOUBLE-TIER ADA ACCESSIBLE ATHLETIC LOCKERS (24" X 15" X 72" HIGH) VENTILATED, ON 18" TALL CMU BASE

LOCKER NOTES:

1. PROVIDE CONTINUOUS SLOPED TOPS AT ALL LOCKERS (UON)
2. PROVIDE FILLER PIECES AT ENDS & CORNERS AS REQUIRED
3. SIZES INDICATED ABOVE REFER TO WIDTH x DEPTH x HEIGHT
4. LOCKERS TAGGED WITH "A" ARE ACCENT COLOR LOCKERS. SEE SPECIFICATIONS.

PROJECTION SCREEN SCHEDULE

PS-A	23'-8"w X 14'-9"h	ELECTRICALLY OPERATED, WALL MOUNTED
PS-B	9'-8"w X 6'-0-1/2"h	FIXED, WALL MOUNTED
PC-C	16'-6"w X 10'-4"h	ELECTRICALLY OPERATED, RECESSED MOUNTED

NOTES:

1. REFER TO ELECTRICAL PLANS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

INTERIOR SIGNAGE

S1 — THIS IS AN INTERIOR SIGNAGE IDENTIFICATION. REFER TO SPECIFICATIONS FOR INTERIOR SIGNAGE TYPE AND SCHEDULED INFORMATION

TMP ARCHITECTURE INC
1191 WEST SQUARE LAKE ROAD
BLOOMFIELD HILLS - MICHIGAN - 48302
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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

First Level Casework & Equipment Plan - Zone 'B'

KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2024	ADDENDUM NO. 4
07-16-2024	ADDENDUM NO. 3
06-18-2024	CONSTRUCTION DOCUMENTS

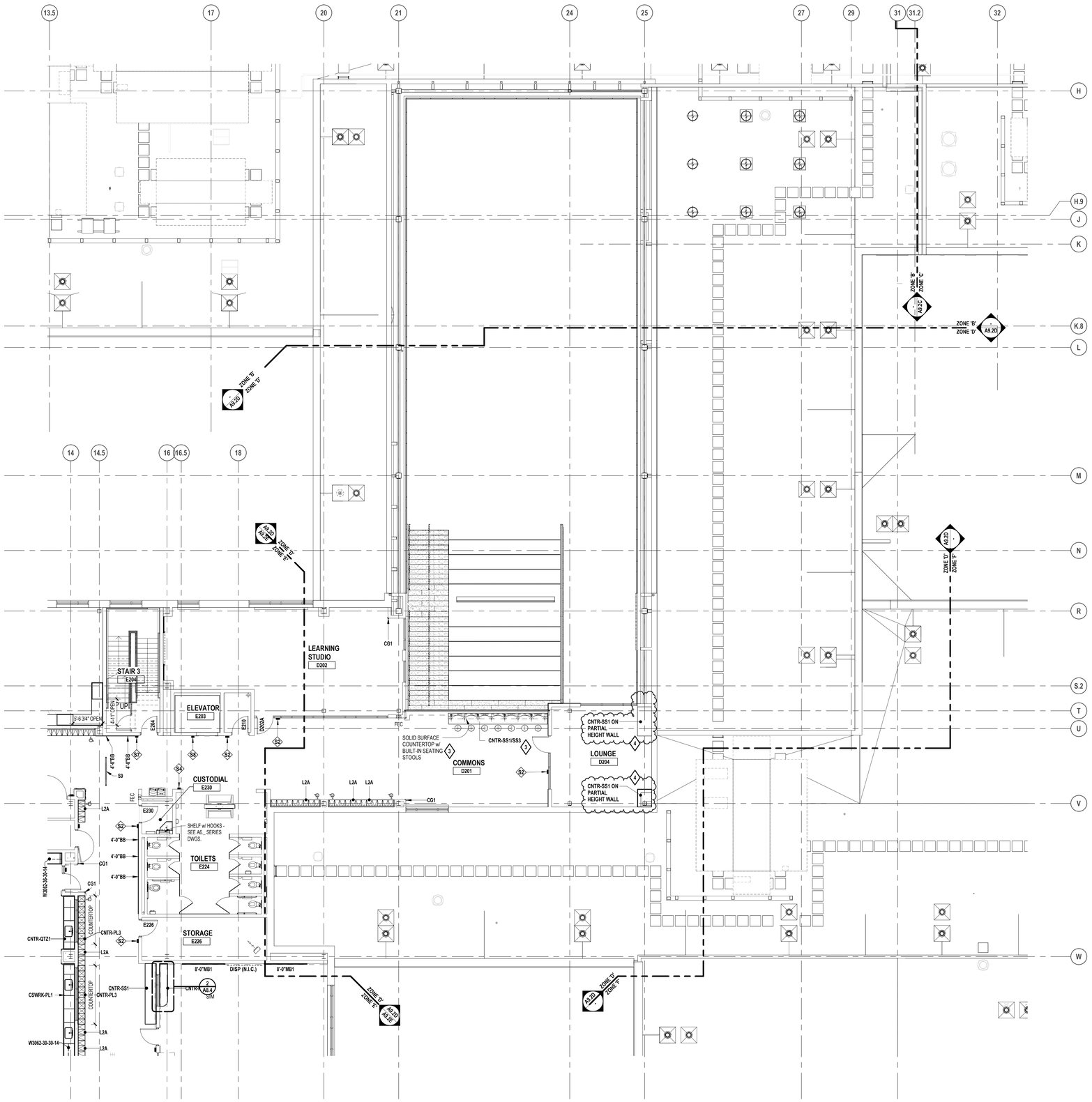
DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A9.1B



SECOND FLOOR CASEWORK PLAN - ZONE 'D'

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

LEGEND

- DISPLAY (BY OTHERS) - WALL OR SUSPSENDED MOUNT (BY OTHERS)
- FES / FEC — FIRE EXTINGUISHER IN CABINET (FEC)
- FE — FIRE EXTINGUISHER ON WALL BRACKET (FE)
- CG1 — 7'-0" HIGH (UON) SURFACE MOUNT CORNER GUARD

VISUAL DISPLAY BOARD NOTES

TYPE OF BOARD — 6'-0" MB1 — WIDTH OF BOARD/STRIP

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2. MOUNTING HEIGHTS (UON):
   MB/TB = 3'-0" AFF TO BOTTOM
3. MAP RAILS SHALL BE CONTINUOUS OVER MARKERBOARDS.
4. ALL MARKERBOARDS SHALL BE PROVIDED WITH TRAYS & MAP RAILS.
5. LEGEND:
   MB1 = PORCELAIN ENAMEL STEEL HORIZONTAL ORIENTATION
   MB2 = PORCELAIN ENAMEL STEEL VERTICAL ORIENTATION
   MB3 = MAGNETIC GLASS

CASEWORK NOTES

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2. ALL TMI CABINETS ARE DESIGNATED USING THE TYPICAL TMI ELEVEN (11) DIGIT NOTATION SYSTEM. THE FIRST FIVE DIGITS ARE THE MODEL NUMBER FOLLOWED BY THREE SETS OF TWO DIGIT NUMBERS FOR THE WIDTH, HEIGHT AND DEPTH.
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4. PROVIDE PLASTIC LAMINATE COUNTERTOPS (WITH BACK/END SPLASHES) AT ALL BASE CABINETS. RADIUS ALL OUTSIDE CORNERS (U.O.N.)
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- TYPE L-5 — FIVE-TIER ATHLETIC LOCKERS (15" X 15" X 60" HIGH), VENTILATED, ON 4" TALL CMU/CONCRETE BASE
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LOCKER NOTES:

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3. SIZES INDICATED ABOVE REFER TO WIDTH x DEPTH x HEIGHT
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PROJECTION SCREEN SCHEDULE

PS-A	23'-8"w X 14'-9"h	ELECTRICALLY OPERATED, WALL MOUNTED
PS-B	9'-8"w X 6'-0-1/2"h	FIXED, WALL MOUNTED
PC-C	16'-6"w X 10'-4"h	ELECTRICALLY OPERATED, RECESSED MOUNTED

NOTES:

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

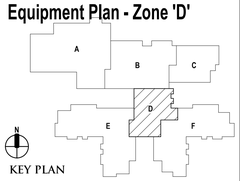
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Second Level Casework & Equipment Plan - Zone 'D'



KEY PLAN

ISSUE DATES

07-23-2024	ADDENDUM NO. 4
07-16-2024	ADDENDUM NO. 3
06-18-2024	CONSTRUCTION DOCUMENTS

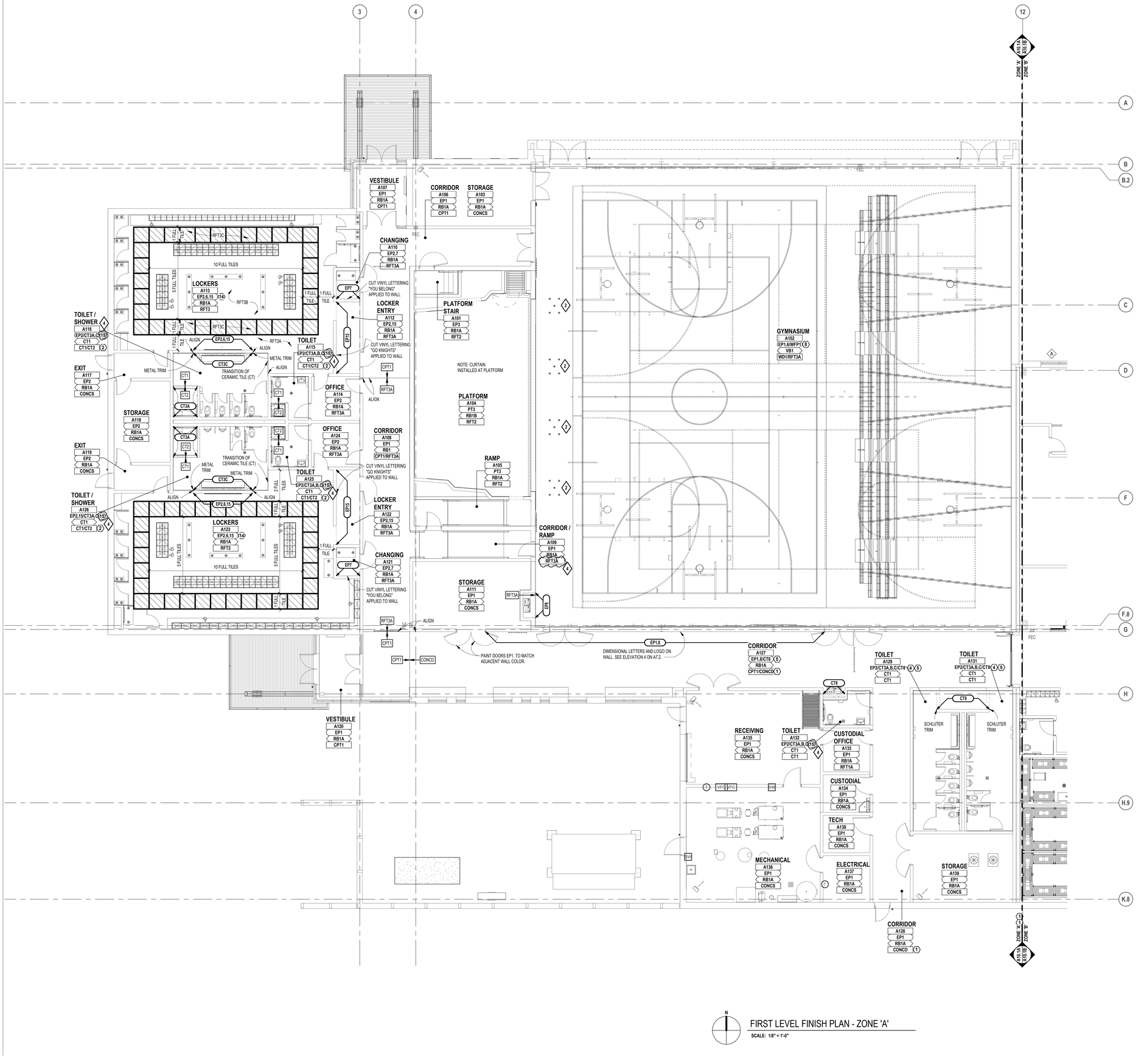
DATE:	ISSUED FOR:
DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A9.2D



FIRST LEVEL FINISH PLAN - ZONE 'A'

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

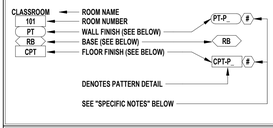
FINISH LEGEND

ROOM FINISH TAGS

ROOM NAME AND NUMBER PLUS GENERAL ROOM FINISH INFORMATION. FINISH TAGS SHALL APPLY TO ALL LIKE MATERIALS WITHIN A ROOM (UON)

FINISH LEGEND

FINISH LEGEND IS GENERAL SEE SPECIFICATIONS FOR SPECIFIC FINISH INFORMATION. MULTIPLE FINISH TYPES ARE DENOTED BY NUMBER FOLLOWING ABBREVIATION.



WALL FINISH ABBREVIATIONS

AWP	ACOUSTICAL WALL PANEL
BB	BULLETIN BOARD
CT	CERAMIC TILE
DWF	DECORATIVE WINDOW FILM
EP	EPOXY PAINT
GW	GREENERY WALL
PT	PAINT
WP	PROTECTIVE WALL PANELS
WFP	WOOD FIBER PANEL
VWC	VINYL WALL COVERING

BASE FINISH ABBREVIATIONS

CPT	CARPET
CT	CERAMIC TILE
RB	RESILIENT BASE
RSF	RESILIENT SHEET FLOOR
SS	SOLID SURFACE BASE
VB	VENTED BASE

FLOOR FINISH ABBREVIATIONS

CONCD	CONCRETE - DECORATIVE/APPLIED FINISH
CONCS	CONCRETE - WITH APPLIED SURFACE SEALER
CPT	CARPET
CT	CERAMIC TILE
RFT	RESILIENT RUBBER FLOOR TILE
RSF	RESILIENT SHEET FLOOR
WD	WOOD FLOORING SYSTEM

GENERAL NOTES

1. REFER TO REFLECTED CEILING PLANS FOR CEILING TYPES, HEIGHTS AND FINISH INFORMATION.
2. AT CERAMIC TILE LOCATIONS, INSTALLER TO USE APPROPRIATE TROWEL TO ACCOMMODATE DIFFERENT TILE THICKNESSES.
3. REFER TO STRUCTURAL DRAWINGS FOR DEPRESSED SLAB LOCATIONS, INDICATIVE OF MUDSET BEDS AT CERAMIC TILE. SLOPE MUDSET TO DRAINS. REFER TO ARCHITECTURAL DRAWINGS FOR DRAIN ELEVATIONS AND LOCATIONS.
4. PROVIDE ANTI-FRACTURE MEMBRANE AT ALL THINSET CERAMIC TILE LOCATIONS, UNLESS OTHERWISE NOTED.
5. PROVIDE RESILIENT BASE AT TOE KICK OF ALL CASEWORK AND BEHIND ALL MOVABLE EQUIPMENT/APPLIANCES, WHEN SCHEDULED WITHIN A ROOM.
6. ALL WALL MOUNTED MECHANICAL EQUIPMENT (DIFFUSERS, GRILLES, ETC) AND ELECTRICAL EQUIPMENT (PANELS, ETC) SHALL BE PAINTED TO MATCH THE ADJACENT WALL COLOR. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR QUANTITIES AND LOCATIONS.
7. REFER TO SPEC, SECTION 012300 FOR COMPLETE LIST AND DESCRIPTION OF ALTERNATIVES.
8. WHERE REMOVAL OR MODIFICATION TO A FINISH MATERIAL IS SHOWN, BUT NEW FINISHES ARE NOT SCHEDULED, PATCH AND REPAIR TO MATCH EXISTING FINISH CONDITION AS REQUIRED
9. PROVIDE APPROPRIATE TRANSITION STRIPS BETWEEN DISSIMILAR FLOORING MATERIALS AT VERTICAL AND/OR HORIZONTAL APPLICATIONS.
10. CARPET EDGES SHALL BE CAPTURED BY NOSING, NOSING SHALL BE MITERED AT ALL OUTSIDE AND INSIDE CORNER CONDITIONS. ALL EDGES OF CARPET SHALL BE SEALED WITH A SEAM-SEALER.
11. WHEN CARPET IS SPECIFIED WITHIN A ROOM, ALL EXPOSED VERTICAL SIDES OF STAIR SHALL BE CARPETED.
12. FLOORING CONTRACTOR SHALL INSTALL INSERTS TO MATCH ADJACENT FLOORING MATERIAL AT ALL ELECTRICAL FLOOR BOX COVERS AS REQUIRED.
13. FOR MORE INFORMATION REGARDING THRESHOLDS AT TILE INSTALLATIONS, SEE DOOR SCHEDULE SHEET.

SPECIFIC NOTES

1. FOR CONCD PATTERN LAYOUT AND CONTROL JOINTS, SEE A11 SHEETS, TYP.
2. CT2 AT SHOWER ONLY, TYP.
3. WALL PROTECTION HEIGHT TO BE 34 INCHES A.F.F. PROVIDE ALL NECESSARY TRIM APPLICATIONS AND CAULK. TRIM AND CAULK COLOR TO MATCH ADJACENT WALL PROTECTION. INSTALLED ON GYP. WALLS ONLY, U.O.N.
4. SEE ELEVATIONS 8, 9 AND 10 ON SHEET A7.8 FOR TYPICAL WALL TILE LAYOUT. SEE ELEVATION 11 ON SHEET A7.8 FOR TYPICAL TOILET ROOM PAINT PATTERN.
5. CT8 INSTALLED FROM FLOOR TO CEILING. METAL COVE BASE INSTALLED AT TRANSITION FROM WALL TILE AND FLOOR MATERIAL.
6. SEE MILLWORK DETAILS FOR SOLID SURFACE BASE LOCATION
7. PAINT ALL SIDES OF EXPOSED COLUMN. SEE 10 SERIES SHEETS FOR DESIGNATION.
8. PAINT EP6 FROM FLOOR TO TOP OF DOOR FRAMES, TYP. EP1 FROM DOOR FRAMES TO CEILING, TYP.
9. ACOUSTICAL WALL PANEL (AWP1D) INSTALLED ON PERIMETER VERTICAL FACE OF SOFFIT. REFER TO INTERIOR ELEVATIONS FOR DETAILS.
10. PAINT ALL COLUMNS FROM FLOOR TO UNDERSIDE OF SOFFIT PT4. PAINT ALL COLUMNS ABOVE SOFFIT TO CEILING PT5.
11. CT5 INSTALLED HORIZONTAL, 1/3 OFFSET FROM EXTENTS SPECIFIED ON A10 SERIES. INSTALL FROM COUNTERTOP TO TOP OF CABINETS. WHERE CABINETS ARE NOT PRESENT, INSTALL TO ALIGN WITH TOP OF CABINETS ADJACENT AND FINISH WITH METAL TRIM ON ALL EXPOSED SIDES.
12. PAINT HOLLOW METAL WINDOW FRAME ON ACTIVE STUDIO AND PASSAGE SIDE FOR INDICATED WINDOWS ONLY. REFER TO A10 SERIES SHEETS FOR WINDOW DESIGNATIONS AND PAINT COLOR.
13. ACOUSTICAL WALL PANEL (AWP1D) INSTALLED ABOVE LOCKERS. 3'-0" HEIGHT, WIDTH TO EXTEND FULL WIDTH OF WALL.
14. PAINT FROM FLOOR TO 8 COURSES ABOVE FLOOR: EP2. PAINT COURSES 9 AND 10: EP15. TO FINISHED CEILING EP2. SEE ELEVATION 4 ON A7.1 SHEET FOR DETAILS.
15. SEE ELEVATION 13 ON SHEET A7.8 FOR TYPICAL WALL TILE LAYOUT. SHOWER WALL TILE TO BE INSTALLED FLOOR TO CEILING IN EXTENTS ONLY.

WINDOW TREATMENT LEGEND

A TYPE 'A' - MANUAL, 3% OPEN SHADE.

B TYPE 'B' - MOTORIZED, 3% OPEN SHADE.

C TYPE 'C' - MANUAL, 0% OPEN SHADE.

PATTERN DETAILS (FLOORS/WALLS)

PLANK FLOORING INSTALLATION DIRECTION. TYPICAL U.O.N.

WALL PROTECTION LOCATIONS. TYPICAL U.O.N.

TMP ARCHITECTURE

TMP ARCHITECTURE INC

1191 WEST SQUARE LAKE ROAD
BLOOMFIELD HILLS - MICHIGAN - 48302
PH - 248.338.4561 FX - 248.338.0223
EM - INFO@TMP-ARCHITECTURE.COM

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

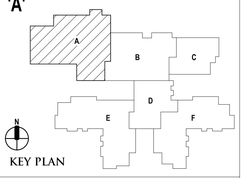
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

First Level Finish Plan - Zone 'A'



KEY PLAN

ISSUE DATES

07-23-2024	ADDENDUM NO. 4
07-12-2024	ADDENDUM NO. 2 (N.R.)
06-18-2024	CONSTRUCTION DOCUMENTS

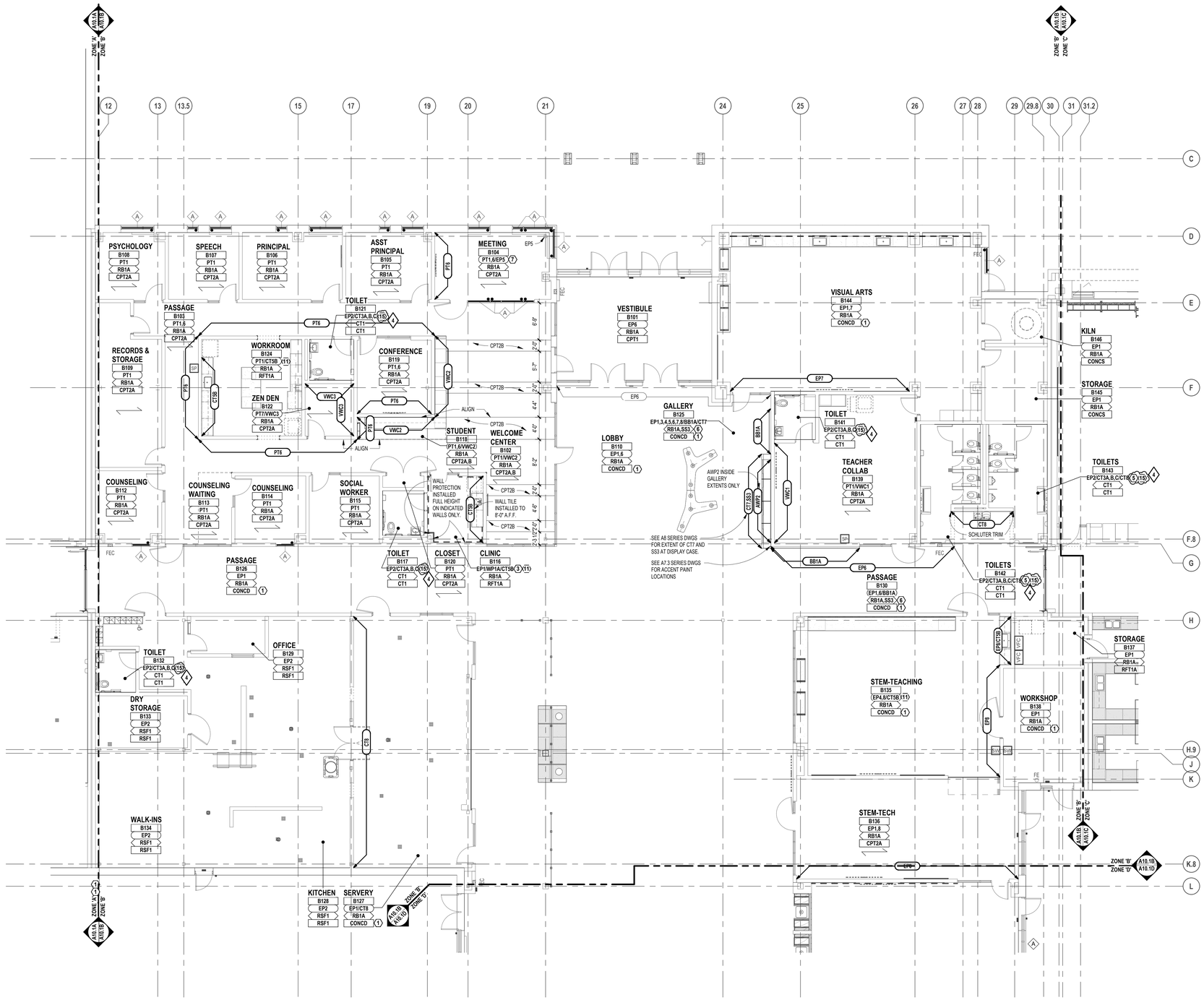
DATE:	ISSUED FOR:
DRAWN	lb
CHECKED	lc
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A10.1A



FIRST LEVEL FINISH PLAN - ZONE 'B'

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

FINISH LEGEND

ROOM FINISH TAGS

ROOM NAME AND NUMBER PLUS GENERAL ROOM FINISH INFORMATION. FINISH TAGS SHALL APPLY TO ALL LIKE MATERIALS WITHIN A ROOM (UON)

FINISH LEGEND

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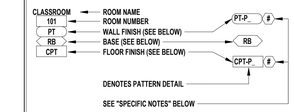

WALL FINISH ABBREVIATIONS

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BB	BULLETIN BOARD
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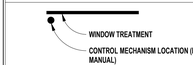
WINDOW TREATMENT LEGEND



A TYPE 'A' - MANUAL, 3% OPEN SHADE.

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PATTERN DETAILS (FLOORS/WALLS)

PLANK FLOORING INSTALLATION DIRECTION. TYPICAL U.O.N.

WALL PROTECTION LOCATIONS. TYPICAL U.O.N.

TMP ARCHITECTURE

TMP ARCHITECTURE INC

1191 WEST SQUARE LAKE ROAD
BLOOMFIELD HILLS - MICHIGAN - 48302
PH - 248.338.4561 FX - 248.338.0223
EM - INFO@TMP-ARCHITECTURE.COM

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

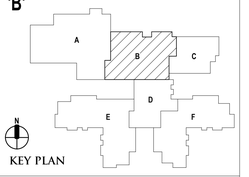
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

First Level Finish Plan - Zone 'B'



KEY PLAN

ISSUE DATES

07-23-2024	ADDENDUM NO. 4
06-18-2024	CONSTRUCTION DOCUMENTS

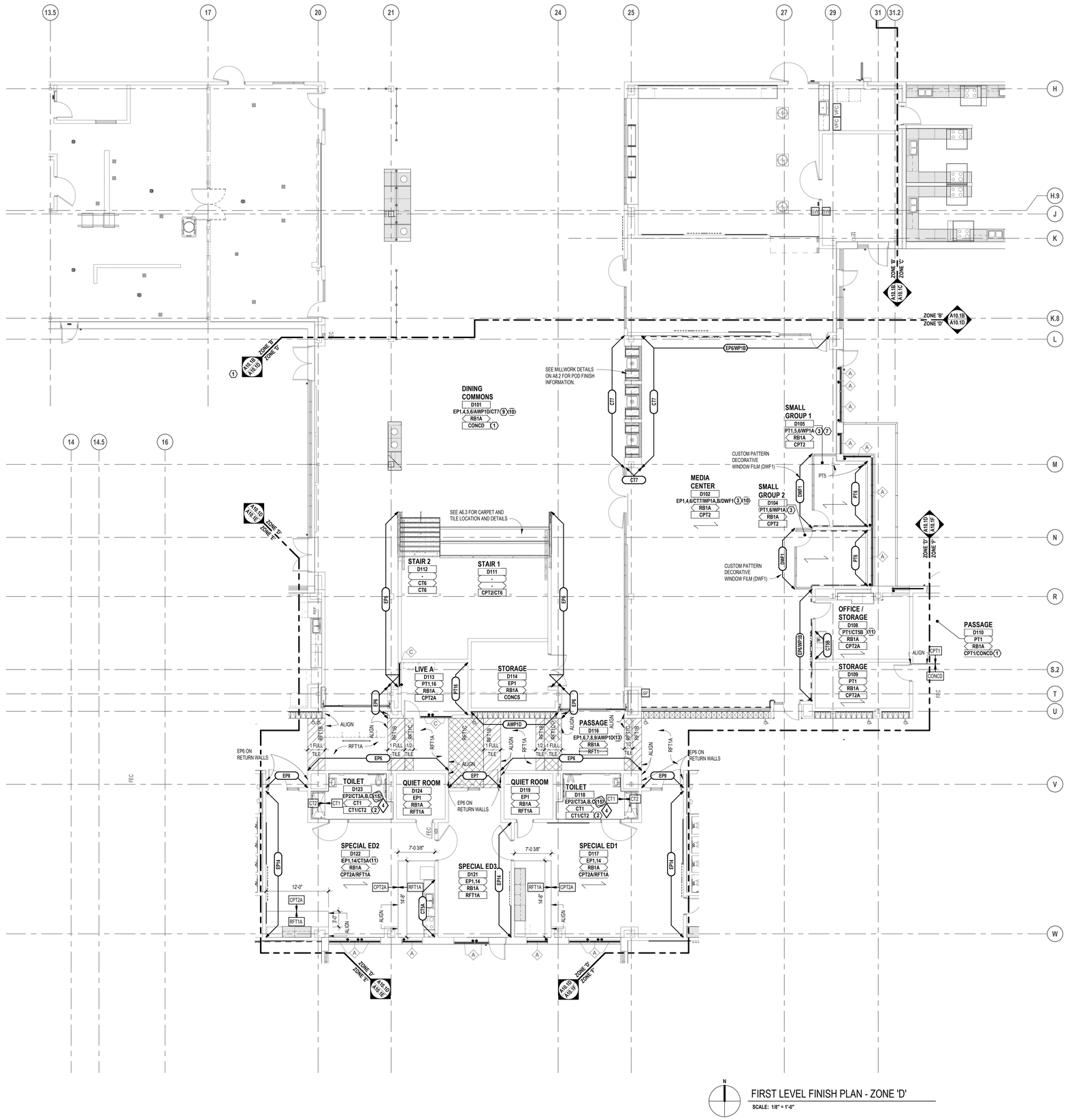
DATE:	ISSUED FOR:
DRAWN	lb
CHECKED	lc
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A10.1B



N

FIRST LEVEL FINISH PLAN - ZONE 'D'

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

FINISH LEGEND

ROOM FINISH TAGS

ROOM NAME AND NUMBER PLUS GENERAL ROOM FINISH INFORMATION. FINISH TAGS SHALL APPLY TO ALL LIKE MATERIALS WITHIN A ROOM (UON)

FINISH LEGEND

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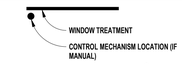
WINDOW TREATMENT LEGEND



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PATTERN DETAILS (FLOORS/WALLS)

PLANK FLOORING INSTALLATION DIRECTION. TYPICAL U.O.N.

WALL PROTECTION LOCATIONS. TYPICAL U.O.N.

TMP ARCHITECTURE

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

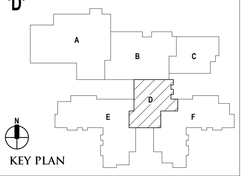
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

First Level Finish Plan - Zone 'D'



KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2024	ADDENDUM NO. 4
06-18-2024	CONSTRUCTION DOCUMENTS

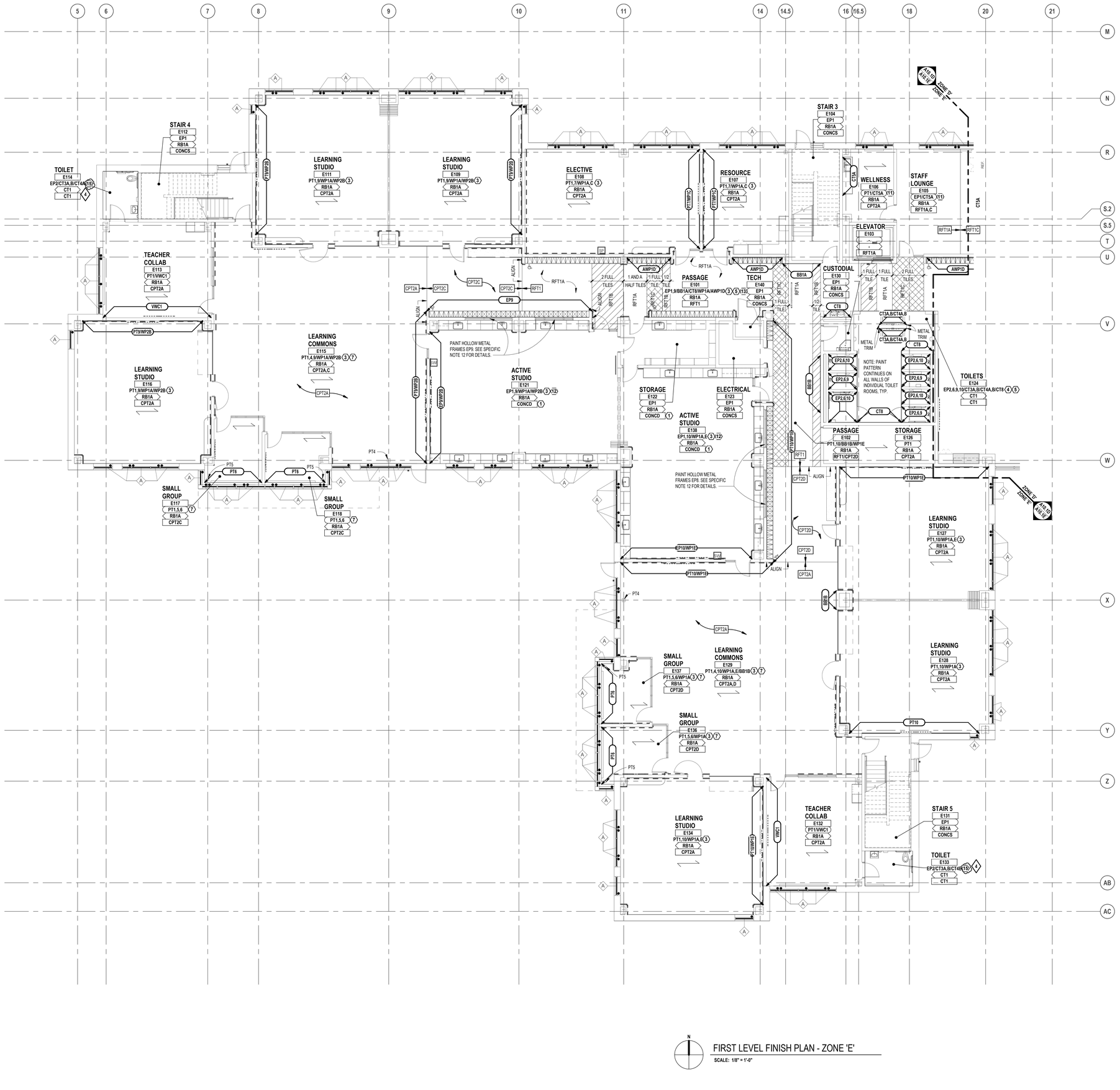
DRAWN	lb
CHECKED	lc
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A10.1D



FIRST LEVEL FINISH PLAN - ZONE 'E'

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

FINISH LEGEND

ROOM FINISH TAGS

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CLASSROOM 101 — ROOM NAME / ROOM NUMBER
PT — WALL FINISH (SEE BELOW)
RB — BASE (SEE BELOW)
CPT — FLOOR FINISH (SEE BELOW)
PT-P — (#)
RB
CPT-P — (#)
DENOTES PATTERN DETAIL
SEE "SPECIFIC NOTES" BELOW

WALL FINISH ABBREVIATIONS

AWP	ACOUSTICAL WALL PANEL
BB	BULLETIN BOARD
CT	CERAMIC TILE
DWF	DECORATIVE WINDOW FILM
EP	EPOXY PAINT
GW	GREENERY WALL
PT	PAINT
WP	PROTECTIVE WALL PANELS
WFP	WOOD FIBER PANEL
VWC	VINYL WALL COVERING

BASE FINISH ABBREVIATIONS

CPT	CARPET
CT	CERAMIC TILE
RB	RESILIENT BASE
RSF	RESILIENT SHEET FLOOR
SS	SOLID SURFACE BASE
VB	VENTED BASE

FLOOR FINISH ABBREVIATIONS

CONCD	CONCRETE - DECORATIVE/APPLIED FINISH
CONCS	CONCRETE - WITH APPLIED SURFACE SEALER
CPT	CARPET
CT	CERAMIC TILE
RFT	RESILIENT RUBBER FLOOR TILE
RSF	RESILIENT SHEET FLOOR
WD	WOOD FLOORING SYSTEM

GENERAL NOTES

1. REFER TO REFLECTED CEILING PLANS FOR CEILING TYPES, HEIGHTS AND FINISH INFORMATION.
2. AT CERAMIC TILE LOCATIONS, INSTALLER TO USE APPROPRIATE TROWEL TO ACCOMMODATE DIFFERENT TILE THICKNESSES.
3. REFER TO STRUCTURAL DRAWINGS FOR DEPRESSED SLAB LOCATIONS, INDICATIVE OF MUDSET BEDS AT CERAMIC TILE. SLOPE MUDSET TO DRAINS. REFER TO ARCHITECTURAL DRAWINGS FOR DRAIN ELEVATIONS AND LOCATIONS.
4. PROVIDE ANTI-FRACTURE MEMBRANE AT ALL THINSET CERAMIC TILE LOCATIONS, UNLESS OTHERWISE NOTED.
5. PROVIDE RESILIENT BASE AT TOE KICK OF ALL CASEWORK AND BEHIND ALL MOVABLE EQUIPMENT/APPLIANCES, WHEN SCHEDULED WITHIN A ROOM.
6. ALL WALL MOUNTED MECHANICAL EQUIPMENT (DIFFUSERS, GRILLES, ETC) AND ELECTRICAL EQUIPMENT (PANELS, ETC) SHALL BE PAINTED TO MATCH THE ADJACENT WALL COLOR. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR QUANTITIES AND LOCATIONS.
7. REFER TO SPEC, SECTION 012300 FOR COMPLETE LIST AND DESCRIPTION OF ALTERNATIVES.
8. WHERE REMOVAL OR MODIFICATION TO A FINISH MATERIAL IS SHOWN, BUT NEW FINISHES ARE NOT SCHEDULED, PATCH AND REPAIR TO MATCH EXISTING FINISH CONDITION AS REQUIRED
9. PROVIDE APPROPRIATE TRANSITION STRIPS BETWEEN DISSIMILAR FLOORING MATERIALS AT VERTICAL AND/OR HORIZONTAL APPLICATIONS.
10. CARPET EDGES SHALL BE CAPTURED BY NOSING, NOSING SHALL BE MITERED AT ALL OUTSIDE AND INSIDE CORNER CONDITIONS. ALL EDGES OF CARPET SHALL BE SEALED WITH A SEAM-SEALER.
11. WHEN CARPET IS SPECIFIED WITHIN A ROOM, ALL EXPOSED VERTICAL SIDES OF STAIR SHALL BE CARPETED.
12. FLOORING CONTRACTOR SHALL INSTALL INSERTS TO MATCH ADJACENT FLOORING MATERIAL AT ALL ELECTRICAL FLOOR BOX COVERS AS REQUIRED.
13. FOR MORE INFORMATION REGARDING THRESHOLDS AT TILE INSTALLATIONS, SEE DOOR SCHEDULE SHEET.

SPECIFIC NOTES

1. FOR CONCD PATTERN LAYOUT AND CONTROL JOINTS, SEE A11 SHEETS, TYP.
2. CT2 AT SHOWER ONLY, TYP.
3. WALL PROTECTION HEIGHT TO BE 34 INCHES A.F.F. PROVIDE ALL NECESSARY TRIM APPLICATIONS AND CAULK, TRIM AND CAULK COLOR TO MATCH ADJACENT WALL PROTECTION. INSTALLED ON GYP. WALLS ONLY, U.O.N.
4. SEE ELEVATIONS 8, 9 AND 10 ON SHEET A7.8 FOR TYPICAL WALL TILE LAYOUT. SEE ELEVATION 11 ON SHEET A7.8 FOR TYPICAL TOILET ROOM PAINT PATTERN.
5. CT8 INSTALLED FROM FLOOR TO CEILING. METAL COVE BASE INSTALLED AT TRANSITION FROM WALL TILE AND FLOOR MATERIAL.
6. SEE MILLWORK DETAILS FOR SOLID SURFACE BASE LOCATION
7. PAINT ALL SIDES OF EXPOSED COLUMN. SEE 10 SERIES SHEETS FOR DESIGNATION.
8. PAINT EP6 FROM FLOOR TO TOP OF DOOR FRAMES, TYP. EP1 FROM DOOR FRAMES TO CEILING, TYP.
9. ACOUSTICAL WALL PANEL (AWP1D) INSTALLED ON PERIMETER VERTICAL FACE OF SOFFIT. REFER TO INTERIOR ELEVATIONS FOR DETAILS.
10. PAINT ALL COLUMNS FROM FLOOR TO UNDERSIDE OF SOFFIT PT4. PAINT ALL COLUMNS ABOVE SOFFIT TO CEILING PT5.
11. CT5 INSTALLED HORIZONTAL, 1/3 OFFSET FROM EXTENTS SPECIFIED ON A10 SERIES. INSTALL FROM COUNTERTOP TO TOP OF CABINETS. WHERE CABINETS ARE NOT PRESENT, INSTALL TO ALIGN WITH TOP OF CABINETS ADJACENT AND FINISH WITH METAL TRIM ON ALL EXPOSED SIDES.
12. PAINT HOLLOW METAL WINDOW FRAME ON ACTIVE STUDIO AND PASSAGE SIDE FOR INDICATED WINDOWS ONLY. REFER TO A10 SERIES SHEETS FOR WINDOW DESIGNATIONS AND PAINT COLOR.
13. ACOUSTICAL WALL PANEL (AWP1D) INSTALLED ABOVE LOCKERS. 3'-0" HEIGHT, WIDTH TO EXTEND FULL WIDTH OF WALL.
14. PAINT FROM FLOOR TO 8 COURSES ABOVE FLOOR: EP2. PAINT COURSES 9 AND 10: EP13. TO FINISHED CEILING EP2. SEE ELEVATION 4 ON A7.1 SHEET FOR DETAILS.
15. SEE ELEVATION 13 ON SHEET A7.8 FOR TYPICAL WALL TILE LAYOUT. SHOWER WALL TILE TO BE INSTALLED FLOOR TO CEILING IN EXTENTS ONLY.

WINDOW TREATMENT LEGEND

WINDOW TREATMENT
CONTROL MECHANISM LOCATION (IF MANUAL)

A — TYPE 'A' - MANUAL, 3% OPEN SHADE.
B — TYPE 'B' - MOTORIZED, 3% OPEN SHADE.
C — TYPE 'C' - MANUAL, 0% OPEN SHADE.

PATTERN DETAILS (FLOORS/WALLS)

PLANK FLOORING INSTALLATION DIRECTION. TYPICAL U.O.N.

WALL PROTECTION LOCATIONS. TYPICAL U.O.N.

TMP ARCHITECTURE

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

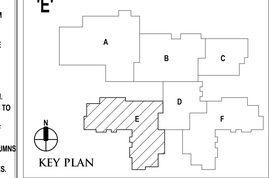
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

First Level Finish Plan - Zone 'E'



KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2024	ADDENDUM NO. 4
06-18-2024	CONSTRUCTION DOCUMENTS

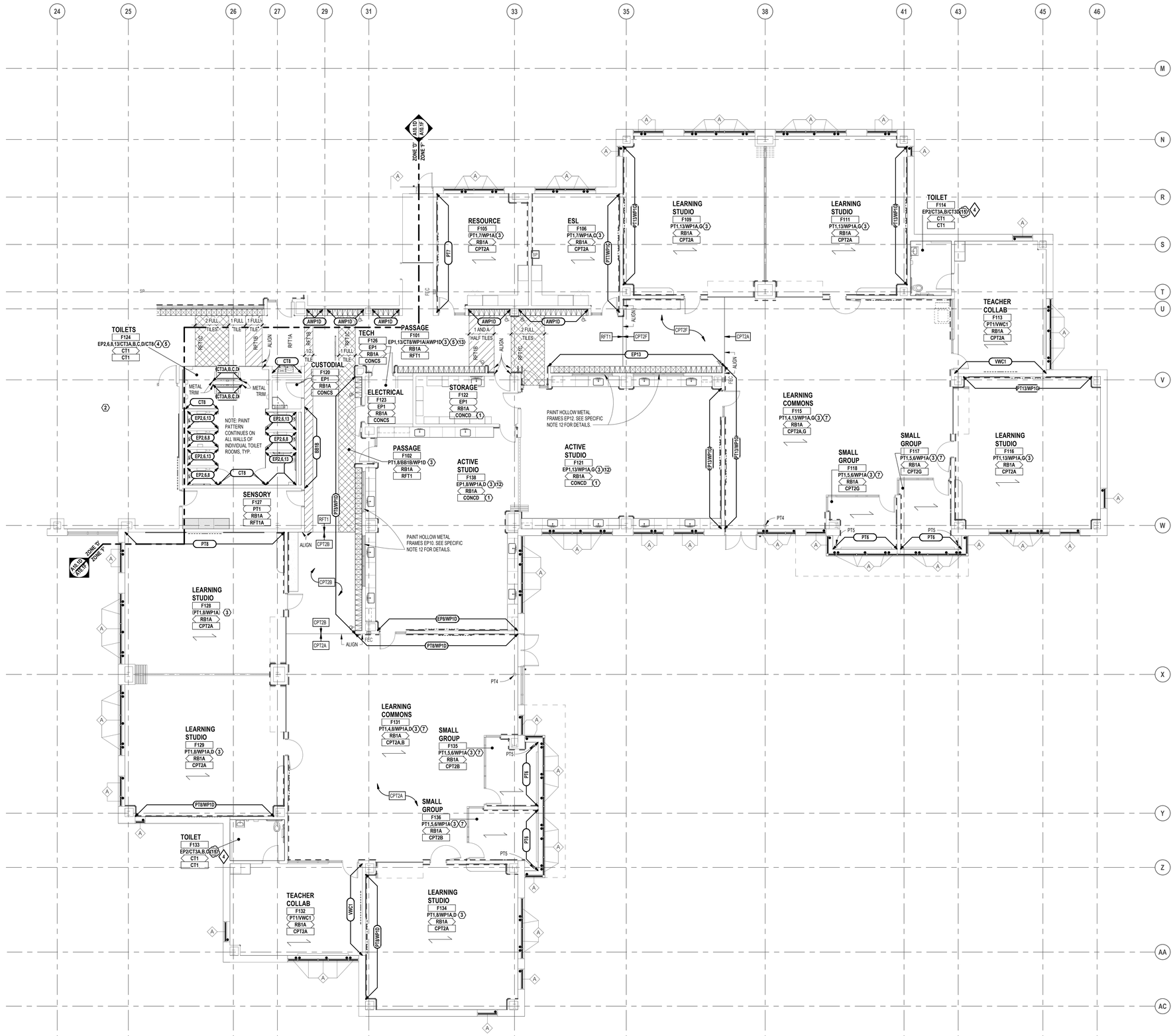
DRAWN	lb
CHECKED	lc
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A10.1E



FINISH LEGEND

ROOM FINISH TAGS

ROOM NAME AND NUMBER PLUS GENERAL ROOM FINISH INFORMATION. FINISH TAGS SHALL APPLY TO ALL LIKE MATERIALS WITHIN A ROOM (UON)

FINISH LEGEND

FINISH LEGEND IS GENERAL SEE SPECIFICATIONS FOR SPECIFIC FINISH INFORMATION. MULTIPLE FINISH TYPES ARE DENOTED BY NUMBER FOLLOWING ABBREVIATION.

CLASSROOM — ROOM NAME
101 — ROOM NUMBER
PT — WALL FINISH (SEE BELOW)
RB — BASE (SEE BELOW)
CPT — FLOOR FINISH (SEE BELOW)
PT-P / # — DENOTES PATTERN DETAIL
SEE "SPECIFIC NOTES" BELOW

WALL FINISH ABBREVIATIONS

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DWF	DECORATIVE WINDOW FILM
EP	EPOXY PAINT
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BASE FINISH ABBREVIATIONS

CPT	CARPET
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GENERAL NOTES

1. REFER TO REFLECTED CEILING PLANS FOR CEILING TYPES, HEIGHTS AND FINISH INFORMATION.
2. AT CERAMIC TILE LOCATIONS, INSTALLER TO USE APPROPRIATE TROWEL TO ACCOMMODATE DIFFERENT TILE THICKNESSES.
3. REFER TO STRUCTURAL DRAWINGS FOR DEPRESSED SLAB LOCATIONS, INDICATIVE OF MUDSET BEDS AT CERAMIC TILE. SLOPE MUDSET TO DRAINS. REFER TO ARCHITECTURAL DRAWINGS FOR DRAIN ELEVATIONS AND LOCATIONS.
4. PROVIDE ANTI-FRACTURE MEMBRANE AT ALL THINSET CERAMIC TILE LOCATIONS, UNLESS OTHERWISE NOTED.
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SPECIFIC NOTES

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11. CT5 INSTALLED HORIZONTAL 1/3 OFFSET FROM EXTENTS SPECIFIED ON A10 SERIES. INSTALL FROM COUNTERTOP TO TOP OF CABINETS. WHERE CABINETS ARE NOT PRESENT, INSTALL TO ALIGN WITH TOP OF CABINETS ADJACENT AND FINISH WITH METAL TRIM ON ALL EXPOSED SIDES.
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WINDOW TREATMENT LEGEND

WINDOW TREATMENT
CONTROL MECHANISM LOCATION (IF MANUAL)
A — TYPE 'A' - MANUAL, 3% OPEN SHADE.
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PATTERN DETAILS (FLOORS/WALLS)

PLANK FLOORING INSTALLATION DIRECTION. TYPICAL U.O.N.

WALL PROTECTION LOCATIONS. TYPICAL U.O.N.

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

First Level Finish Plan - Zone 'F'

KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2024	ADDENDUM NO. 4
06-18-2024	CONSTRUCTION DOCUMENTS

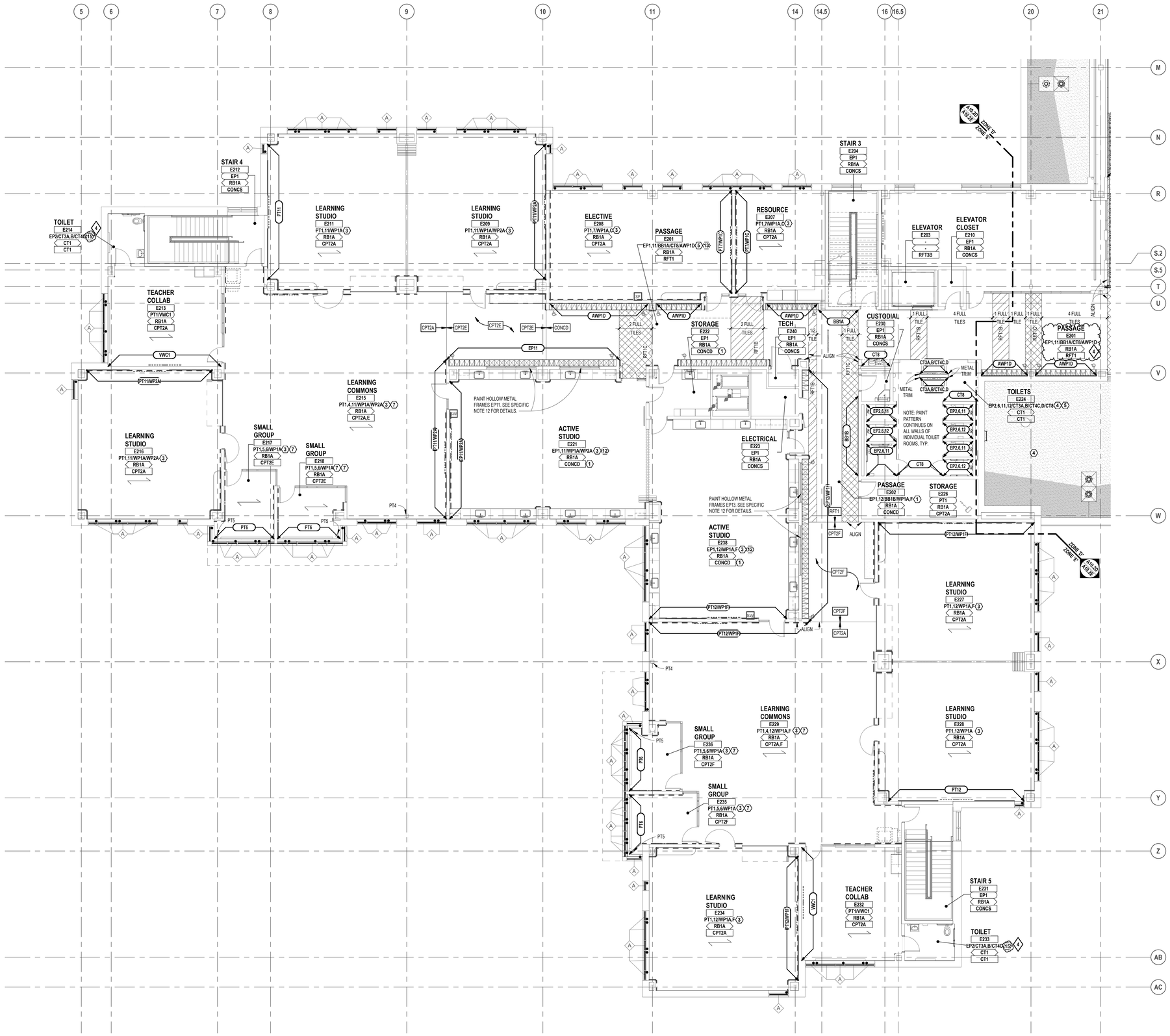
DRAWN	lb
CHECKED	lc
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A10.1F



N

SECOND LEVEL FINISH PLAN - ZONE 'E'

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

FINISH LEGEND

ROOM FINISH TAGS

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PT — WALL FINISH (SEE BELOW) — PT-P — #
RB — BASE (SEE BELOW) — RB
CPT — FLOOR FINISH (SEE BELOW) — CPT-P — #
DENOTES PATTERN DETAIL
SEE "SPECIFIC NOTES" BELOW

WALL FINISH ABBREVIATIONS

AWP	ACOUSTICAL WALL PANEL
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WINDOW TREATMENT LEGEND

WINDOW TREATMENT
CONTROL MECHANISM LOCATION (IF MANUAL)

A — TYPE 'A' - MANUAL, 3% OPEN SHADE.
B — TYPE 'B' - MOTORIZED, 3% OPEN SHADE.
C — TYPE 'C' - MANUAL, 0% OPEN SHADE.

PATTERN DETAILS (FLOORS/WALLS)

PLANK FLOORING INSTALLATION DIRECTION. TYPICAL U.O.N.

WALL PROTECTION LOCATIONS. TYPICAL U.O.N.

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REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Second Level Finish Plan - Zone 'E'

KEY PLAN

ISSUE DATES

07-23-2024	ADDENDUM NO. 4
06-18-2024	CONSTRUCTION DOCUMENTS

DATE:	ISSUED FOR:
DRAWN	lb
CHECKED	lc
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A10.2E

ENERGY RECOVERY UNIT WITH INTEGRAL HEAT PUMP SCHEDULE (A)

UNIT IDENTIFICATION			SUPPLY FAN					MOTOR			EXHAUST FAN			MOTOR			HEAT EXCHANGER (SUMMER)										HEAT EXCHANGER (WINTER)									
																	SUPPLY SIDE					EXHAUST SIDE						SUPPLY SIDE					EXHAUST SIDE				
DES.	NO.	AREA/SYSTEM SERVED	CFM	MIN. OA CFM	ESP"	TSP"	CONROL TYPE	QUANTITY	BHP	HP	CFM	ESP"	TSP"	QUANTITY	BHP	HP	E.A.T. D.B. °F	E.A.T. W.B. °F	L.A.T. D.B. °F	L.A.T. W.B. °F	A.P.D. IN. WG.	E.A.T. D.B. °F	E.A.T. W.B. °F	L.A.T. D.B. °F	L.A.T. W.B. °F	A.P.D. IN. WG.	EFFIC. (%)	E.A.T. D.B. °F	E.A.T. W.B. °F	L.A.T. D.B. °F	L.A.T. W.B. °F	A.P.D. IN. WG.	E.A.T. D.B. °F	E.A.T. W.B. °F	L.A.T. D.B. °F	L.A.T. W.B. °F	A.P.D. IN. WG.	EFFIC. (%)
ERU	1	GYMNASIUM	12300	7600	2.75	4.29	SZVAV	2	11.80	15.00	12300	1.25	2.78	2	8.40	10.00	91.0	74.0	76.4	63.7	0.53	72.0	86.6	71.0	0.53	77	-10.0	-10.9	52.9	43.8	0.53	72.0	9.1	8.9	0.53	77
ERU	2	CLASSROOMS	11300	6400	3.25	5.03	DAT-DSP VAV	2	13.00	15.00	11300	1.25	2.66	2	6.80	10.00	91.0	74.0	82.6	69.0	0.41	72.0	86.3	70.0	0.41	65	-10.0	-10.9	26.1	23.9	0.41	72.0	10.4	10.3	0.41	71
ERU	3	MEDIA CENTER	2550	1450	2.25	3.78	DAT-DSP VAV	1	2.20	3.00	2550	1.25	2.60	1	1.50	2.00	91.0	74.0	78.3	65.6	0.35	72.0	84.7	69.3	0.35	64	-10.0	-10.9	44.8	38.4	0.35	72.0	17.2	16.7	0.35	67
ERU	4	DINING COMMONS	11000	3900	3.25	4.99	SZVAV	2	12.60	15.00	11000	1.25	2.67	2	7.40	10.00	91.0	74.0	78.8	66.0	0.42	72.0	84.2	69.0	0.42	61	-10.0	-10.9	42.7	37.0	0.42	72.0	19.3	18.6	0.42	64
ERU	5	OFFICES	2100	800	2.25	3.76	DAT-DSP VAV	1	1.90	3.00	2100	1.25	2.53	1	1.20	1.50	91.0	74.0	78.6	65.7	0.28	72.0	86.0	70.0	0.28	71	-10.0	-10.9	43.3	37.3	0.28	72.0	11.7	11.6	0.28	73
ERU	6	KITCHEN	1850	1250	2.25	4.18	SZVAV	1	2.00	3.00	1850	1.25	2.69	1	1.10	2.00	91.0	74.0	79.6	67.0	0.44	72.0	84.3	68.8	0.44	58	-10.0	-10.9	39.0	33.8	0.44	72.0	18.8	18.7	0.44	64
ERU	7	LOCKER ROOMS	6400	6400	1.00	3.32	CAV-DAT	1	4.60	7.50	7040	1.25	2.88	1	4.60	7.50	91.0	74.0	76.9	64.3	0.63	72.0	86.1	63.6	0.63	73	-10.0	-10.9	51.0	42.4	0.63	72.0	11.0	10.9	0.63	74
ERU	8	CLASSROOMS	15000	8900	3.25	5.03	DAT-DSP VAV	2	16.80	20.00	15000	1.25	2.83	2	9.80	15.00	91.0	74.0	80.2	67.1	0.58	72.0	88.4	71.7	0.58	80	-10.0	-10.9	36.4	31.9	0.58	72.0	1.3	1.1	0.58	84
ERU	9	CLASSROOMS	15000	8900	3.25	5.03	DAT-DSP VAV	2	16.80	20.00	15000	1.25	2.58	2	9.80	15.00	91.0	74.0	79.3	66.1	0.33	72.0	89.4	72.9	0.33	80	-10.0	-10.9	40.5	35.4	0.33	72.0	-3.2	-4.0	0.33	84
ERU	10	CLASSROOMS	15000	8900	3.25	5.03	DAT-DSP VAV	2	16.80	20.00	15000	1.25	2.83	2	8.30	15.00	91.0	74.0	80.2	67.1	0.58	72.0	88.4	71.7	0.58	92	-10.0	-10.9	36.4	31.9	0.58	72.0	1.3	1.3	0.58	93

ENERGY RECOVERY UNIT WITH INTEGRAL HEAT PUMP SCHEDULE (B)

UNIT IDENTIFICATION		COOLING MODE											COOLING MODE			HEATING MODE								
		AIR				TOTAL CAPACITY	SENS. CAPACITY		E.W.T.	L.W.T.		HOT GAS REHEAT												
DES.	NO.	E.A.T. D.B. °F	E.A.T. W.B. °F	L.A.T. D.B.°F	L.A.T. W.B.°F	MBH	MBH	THR MBH	°F	°F	FLOW GPM	Y/N	MBH	MINIMUM E.E.R.	MAX W.P.D. FT. HEAD	CONTROL VALVE W.P.D. FT. HEAD	E.A.T. °F	L.A.T. °F	TOTAL CAPACITY MBH	THA MBH	E.W.T. °F	L.W.T. °F	FLOW GPM	MINIMUM C.O.P.	MAX W.P.D. FT. HEAD	CONTROL VALVE W.P.D. FT HEAD
ERU	1	74.7	62.4	54.8	53.5	318	268.3	418.6	90	100	87.4	Y	176.9	14.8	4.2	11.5	63.8	96.4	434.2	372.6	70	61	87.4	5.9	4.2	11.5
ERU	2	78.0	65.4	55.3	54.4	377.2	280.9	457	90	100	95.4	N	-	15.7	7.1	11.5	52.5	89.6	454.2	411.3	70	61	95.4	6.5	7.1	11.5
ERU	3	75.6	63.3	52.8	51.6	86.4	63.7	92.9	90	100	19.4	N	-	15.3	2.1	11.5	58.7	92.7	94	83.6	70	61	19.4	6.1	2.1	11.5
ERU	4	74.4	62.3	55.1	54.0	263.8	232.8	330	90	100	68.9	Y	166.7	17.5	4.1	11.5	60.6	89.3	320.3	293.7	70	61	68.9	7.6	4.1	11.5
ERU	5	74.8	62.6	55.0	54.1	51.9	45.5	66.6	90	100	13.9	N	-	17.8	2.8	11.5	55.5	85.1	67.3	61.3	70	61	13.9	8.2	2.8	11.5
ERU	6	77.6	65.2	55.2	54.3	61.2	45.4	84.8	90	100	17.7	Y	29	16.1	6.5	11.5	47.1	88.9	83.7	73.8	70	61	17.7	6.8	6.5	11.5
ERU	7	76.9	64.3	54.9	53.8	199.9	154	277.3	90	100	57.9	N	-	15.6	4.7	11.5	40.8	81.9	285	252.4	70	61	57.9	7.2	4.7	11.5
ERU	8	76.9	64.4	55.4	54.5	446	353.9	555.2	90	100	115.9	N	-	15.6	6.8	11.5	23.5	58.7	572.5	538.5	70	60	115.9	8.2	6.8	11.5
ERU	9	76.3	63.7	55.1	54.2	446	348.9	555.2	90	100	115.9	N	-	15.6	6.8	11.5	23.5	58.7	572.5	538.5	70	60	115.9	8.2	6.8	11.5
ERU	10	76.9	64.4	55.4	54.5	423.8	343.9	555.2	90	100	115.9	N	-	15.6	6.8	11.5	23.5	58.7	572.5	538.5	70	60	115.9	8.2	6.8	11.5

ENERGY RECOVERY UNIT WITH INTEGRAL HEAT PUMP SCHEDULE (C)

UNIT IDENTIFICATION		PRE-FILTERS		RETURN FILTERS		ELECTRICAL						CURB				MAXIMUM UNIT DIMENSIONS				
												TYPE								
DES.	NO.	EFF. (%)	SP " TOTAL	EFF. (%)	SP " TOTAL	VOLTS	PHASE	MCA	MOP	SCCR KA	OPTIONS / ACCESSORIES	STANDARD	VIBRATION ISOLATION SPRING CURB	HEIGHT	UNIT WEIGHT (LBS.)	LENGTH INCHES	WIDTH INCHES	HEIGHT INCHES	MODEL NUMBER	KEYED NOTES
ERU	1	85	0.7	85	0.70	480	3	84	90	10	B	NO	YES	24	20750	282.0	127.0	98.0	ERU-SS-WH-12300-HP-460	
ERU	2	85	0.7	85	0.70	480	3	89	110	10	B	NO	YES	24	16700	259.0	117.0	98.0	ERU-SS-WH-11300-HP-460	
ERU	3	85	0.7	85	0.70	480	3	22	30	5	B	NO	YES	24	10800	251.0	83.0	72.0	ERU-SS-WH-2600-HP-460	
ERU	4	85	0.7	85	0.70	480	3	74	90	10	B	NO	YES	24	18000	256.0	116.0	92.0	ERU-SS-WH-11000-HP-460	
ERU	5	85	0.7	85	0.70	480	3	19	25	5	B	NO	YES	24	8700	186.0	83.0	72.0	ERU-SS-WH-2100-HP-460	
ERU	6	85	0.7	85	0.70	480	3	20	25	5	B	NO	YES	24	10000	251.0	83.0	54.0	ERU-SS-WH-1800-HP-460	
ERU	7	85	0.7	85	0.70	480	3	51	60	5	B	NO	YES	24	14900	263.0	106.0	86.0	ERU-SS-WH-6400-HP-460	
ERU	8	85	0.7	85	0.70	480	3	108	125	10	B	NO	YES	24	19300	263.0	127.0	110.0	ERU-SS-WH-15000-HP-460	
ERU	9	85	0.7	85	0.70	480	3	108	125	22	B	NO	YES	24	19750	266.0	127.0	110.0	ERU-SS-WH-15000-HP-460	
ERU	10	85	0.7	85	0.70	480	3	108	125	22	B	NO	YES	24	19300	263.0	127.0	110.0	ERU-SS-WH-15000-HP-460	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE INNOVENT UNLESS OTHERWISE NOTED
3. DESIGN MINIMUM OUTSIDE AIRFLOW CFM (VENTILATION) LISTED IS BASED ON THE ESTIMATED MAXIMUM OCCUPANT LOAD. REFER TO TEMPERATURE CONTROL DRAWINGS FOR OUTSIDE AIR CONTROL SEQUENCE.
4. MERV DESIGNATES THE "MINIMUM EFFICIENCY REPORTING VALUE" AS EVALUATED UNDER ASHRAE STANDARD 52.2 1999.
5. AIR HANDLING UNIT TOTAL STATIC PRESSURE FOR CONSTANT AIR VOLUME SYSTEMS IS BASED ON THE AVERAGE/MIDLIFE FILTER AIR PRESSURE DROP UNLESS NOTED OTHERWISE.

KEYED NOTES:
1. PROVIDE SINGLE POINT ELECTRICAL CONNECTION WITH MAIN DISCONNECT.

ELECTRIC PROPELLER FAN UNIT HEATER SCHEDULE

UNIT IDENTIFICATION			FAN				ELECTRICAL							
DES.	NO.	CAPACITY MBH	CFM	HEATING ELEMENT KW	FINAL AIR TEMPERATURE °F	MODULATION / CONTROL TYPE	VOLTS	PHASE	FLA	MOP	SCCR KA	OPTIONS / ACCESSORIES	MODEL NUMBER	KEYED NOTES
EUH	101	11.2	400	3.3	26	AUTO	480	3	4.0	15	5	A	P3PUH03CA1	
EUH	102	17	400	5	40	AUTO	480	3	6.1	15	5	A	P3PUH05CA1	
EUH	103	11.2	400	3.3	26	AUTO	480	3	4.0	15	5	A	P3PUH03CA1	
EUH	104	11.2	400	3.3	26	AUTO	480	3	4.0	15	5	A	P3PUH03CA1	
EUH	201	17	400	5	40	AUTO	480	3	6.1	15	5	A	P3PUH05CA1	
EUH	202	11.2	400	3.3	26	AUTO	480	3	4.0	15	5	A	P3PUH03CA1	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE MARKEL UNLESS OTHERWISE NOTED.

ELECTRIC CENTRIFUGAL FAN CABINET UNIT HEATER SCHEDULE

UNIT IDENTIFICATION			AIR			FAN		HEATING ELEMENT	DIMENSIONS			RECESS DEPTH INCHES	FILTER		MODULATION / CONTROL TYPE	ELECTRICAL						MODEL NUMBER	KEYED NOTES
DES.	NO.	CAPACITY MBH	AIRFLOW CFM	E.D.B. °F	L.D.B. °F	HP	RPM	TOTAL KW	LENGTH INCHES	HEIGHT INCHES	DEPTH INCHES		TYPE	AREA SQ. FT.		VOLTS	PHASE	FLA	MOP	SCCR KA	OPTIONS / ACCESSORIES		
ECUH	101	27.3	500	60	111	0	0	8	46	26	10	4	THROWAWAY	-	AUTO	480	3	11.7	20	5	A	6346D084833	
ECUH	102	20.5	500	60	98	0	0	6	46	26	10	4	THROWAWAY	-	AUTO	480	3	8.1	15	5	A	6346D064833	
ECUH	103	34.1	500	60	123	0	0	10	46	26	10	4	THROWAWAY	-	AUTO	480	3	15.4	20	5	A	6346D104833	
ECUH	104	34.1	500	60	123	0	0	10	46	26	10	4	THROWAWAY	-	AUTO	480	3	15.4	20	5	A	6346D104833	
ECUH	105	27.3	500	60	111	0	0	8	46	26	10	4	THROWAWAY	-	AUTO	480	3	11.7	20	5	A	6346D084833	
ECUH	106	13.6	250	60	110	0	0	4	33	26	10	4	THROWAWAY	-	AUTO	480	3	6.0	15	5	A	6333D044833	
ECUH	107	13.6	250	60	110	0	0	4	33	26	10	4	THROWAWAY	-	AUTO	480	3	6.0	15	5	A	6333D044833	
ECUH	108	13.6	250	60	110	0	0	4	33	26	10	4	THROWAWAY	-	AUTO	480	3	6.0	15	5	A	6333D044833	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE MARKEL UNLESS OTHERWISE NOTED.

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PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
TROY, MI

DRAWING TITLE

MECHANICAL SCHEDULES

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2204	ADDENDUM #4
07-12-2024	ADDENDUM #2
06-18-2024	CONSTRUCTION DOCUMENTS

DRAWN	KLH
CHECKED	KLH
APPROVED	SVM

PROJECT NO.
22102

DRAWING NO.
M7.4

CONDENSING BOILER SCHEDULE

UNIT IDENTIFICATION			FUEL							FLUID						DIMENSIONS			ELECTRICAL								
				MANUFACTURER REQUIRED INLET PRESSURE AT GAS TRAIN																							
DES.	NO.	SYSTEM SERVED	TYPE	MIN	MAX	INPUT MBH	NET OUTPUT MBH (160/80 °F RWT)	BOILER PRESSURE RATING PSIG	RELIEF VALVE PRESSURE PSIG	NUMBER OF CONTROL STAGES	E.W.T. °F	L.W.T. °F	FLOW GPM	FLUID TYPE	W.P.D. FT	MODULATION / CONTROL TYPE	WIDTH INCHES	LENGTH INCHES	HEIGHT INCHES	VOLTS	PHASE	FLA	MOP	SCCR KA	OPTIONS / ACCESSORIES	MODEL NUMBER	KEYED NOTES
B	1	HPL SYSTEM	NATURAL GAS	3.5	14	2000	1920	160	60.00	10:1	60	100	100	PG30	1.5	AUTO	35	77	80	208	1	10	20	5	A	SL-2000	
B	2	HPL SYSTEM	NATURAL GAS	3.5	14	2000	1920	160	60.00	10:1	60	100	100	PG30	1.5	AUTO	35	77	80	208	1	10	20	5	A	SL-2000	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE PATTERSON KELLEY UNLESS OTHERWISE NOTED.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

KEYED NOTES:
1. BOILERS ARE SIZED AT 1/3 OF THE ANTICIPATED BUILDING LOAD.
2. BOILERS ARE SIZED AT 2/3 OF THE ANTICIPATED BUILDING LOAD.

PUMP SCHEDULE

UNIT IDENTIFICATION												MOTOR				ELECTRICAL					
DES.	NO.	SYSTEM SERVED	LOCATION	TYPE	COUPLING TYPE	WATERFLOW GPM	FLUID TYPE	COLDEST SYSTEM OPERATING TEMP. °F. FOR PUMP SELECTION	PUMP HEAD FT.	OVERLOAD GPM	MINIMUM EFFICIENCY %	BHP	HP	RPM	MODULATION / CONTROL TYPE	VOLTS	PHASE	SCCR KA (NOTE 4)	OPTIONS / ACCESSORIES	MODEL NUMBER	KEYED NOTES
CP	1	B-1	MECHANICAL A136	INLINE	CLOSE	100	PG30	40	20	NON-OVERLOADING	67	0.79	1	1725	AUTO	480	3	22	---	e-90 2AAB	
CP	2	B-2	MECHANICAL A136	INLINE	CLOSE	100	PG30	40	20	NON-OVERLOADING	67	0.79	1	1725	AUTO	480	3	22	---	e-90 2AAB	
CP	3	HPL SYSTEM	MECHANICAL A136	BASE MOUNTED	FLEXIBLE	740	PG30	40	80	NON-OVERLOADING	80	19.2	25	1732	VFC	480	3	22	---	VSX-VSC 4x6x105.A	
CP	4	HPL SYSTEM	MECHANICAL A136	BASE MOUNTED	FLEXIBLE	740	PG30	40	80	NON-OVERLOADING	80	19.2	25	1732	VFC	480	3	22	---	VSX-VSC 4x6x105.A	
HWRP	1	DOMESTIC	MECHANICAL A136	INLINE	CLOSE	10	WATER	40	14	NON-OVERLOADING	0	0	0.17	33000	AQUASTAT	120	1	5		PL-36B	
HWRP	2	DOMESTIC	MECHANICAL A136	INLINE	CLOSE	1	WATER	40	8	NON-OVERLOADING	0	0	0.17	3300	AQUASTAT	120	1	5		PL-36B	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBER ARE BELL & GOSSETT UNLESS OTHERWISE NOTED.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL. EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.
4. CONTROLLER (E.G. VARIABLE FREQUENCY CONTROLLER, MOTOR STARTER) FOR SPECIFIED EQUIPMENT SHALL BE MANUFACTURED AND MARKED PER NEC WITH A MINIMUM SHORT CIRCUIT CURRENT RATING AS INDICATED.

DIRECT FIRED MAKE-UP AIR UNIT SCHEDULE

UNIT IDENTIFICATION			SUPPLY FAN							COOLING SECTION-DX							HEATING SECTION - GAS FIRED (NATURAL GAS)					MAXIMUM UNIT DIMENSIONS			CURB			MAXIMUM UNIT OPERATING WEIGHT LBS.	ELECTRICAL											
										COIL ENTERING AIR		COIL LEAVING AIR		NET UNIT CAPACITY			AIR TEMP.		CAPACITY (MBH)		MANUFACTURER REQUIRED INLET PRESSURE AT GAS TRAIN				TYPE					UNIT		FAN		CONDENSER					
DES.	NO.	AREA SERVED	AIRFLOW CFM	MINIMUM OUTSIDE AIR FLOW CFM	E.S.P. IN. W.G.	T.S.P. IN. W.G.	FAN SPEED RPM	BHP	HP	E.D.B. °F	E.W.B. °F	L.D.B. °F	L.W.B. °F	TOTAL MBH	SENSIBLE MBH	MINIMUM NUMBER OF CIRCUITS	E.A.T. °F	L.A.T. °F	INPUT	OUTPUT	MIN	MAX	LENGTH INCHES	HEIGHT INCHES	WIDTH INCHES	STANDARD	VIBRATION ISOLATION SPRING CURB	HEIGHT		VOLTS	PHASE	MCA	MOP	MCA	MOP	MCA	MOP	SCCR KA	OPTIONS / ACCESSORIES	MODEL NUMBER	KEYED NOTES
MAU	1	C103 LIFE SKILLS	5150	5150	0.50	1.65	1981	2.51	3	91.0	74.0	74.0	66.9	140.2	96.3	1	-10	77	600	486	7	14	272	45	87	NO	YES	24	6700	480	3	26.9	35	-	-	-	-	5	B	IGX-P116-H22-MF-10-O	
MAU	2	B128 KITCHEN	2250	2250	0.50	1.23	1101	0.69	1	88.0	72.0	74.8	66.5	43.7	13.2	1	-10	70	197.9	182	7	14	202	75	50	NO	YES	24	2500	208	3	-	-	4.8	15	21.4	30	5	A	A2-D.250-20D-MPU	BASED ON CAPTIVEAIRE

GENERAL NOTES:
1. REFER TO SCHEDULE GENERAL NOTES.
2. MODEL NUMBERS ARE GREENHECK UNLESS OTHERWISE NOTED
3. DESIGN MINIMUM OUTSIDE AIRFLOW CFM (VENTILATION) LISTED IS BASED ON THE ESTIMATED MAXIMUM OCCUPANT LOAD. REFER TO TEMPERATURE CONTROL DRAWINGS FOR OUTSIDE AIR CONTROL SEQUENCE.

ELECTRIC COIL SCHEDULE

UNIT IDENTIFICATION				DUCT SIZE (IN.)		HEATING ELEMENT KW	FINAL AIR TEMPERATURE °F		ELECTRICAL							
DES.	NO.	CAPACITY MBH	AIRFLOW CFM	WIDTH	HEIGHT			MODULATION / CONTROL TYPE	VOLTS	PHASE	FLA	SCCR KA	OPTIONS / ACCESSORIES	MODEL NUMBER	KEYED NOTES
EC	101	64.8	3100	30	14	20.5	90	SCR	480	3	24.7	5	B	DF C100H	
EC	102	3.4	150	8	8	1.0	91	SCR	480	3	1.2	5	B	DF C100H	
EC	103	3.4	150	8	8	1.0	91	SCR	480	3	1.2	5	B	DF C100H	
EC	104	61.4	3000	30	14	19.0	90	SCR	480	3	22.9	5	B	DF C100H	
EC	105	5.1	300	12	8	2.0	91	SCR	480	3	2.4	5	B	DF C100H	
EC	106	20.5	150	12	12	7.0	91	SCR	480	3	8.4	5	B	DF C100H	
EC	107	3.4	150	8	8	1.0	91	SCR	480	3	1.2	5	B	DF C100H	
EC	108	3.4	150	8	8	1.0	91	SCR	480	3	1.2	5	B	DF C100H	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE NEPTRONIC UNLESS OTHERWISE NOTED.

HVAC SYSTEM EXPANSION TANK SCHEDULE

UNIT IDENTIFICATION			ESTIMATED TOTAL SYSTEM VOLUME GALLON	TYPE	FLUID TYPE	SYSTEM FILL VALVE OR GLYCOL PUMP PRESSURE SETTING PSIG	OPERATING PRESSURES AT EXPANSION TANK		SYSTEM OPERATING TEMPERATURES		EXPANSION VOLUME GALLONS	ACCPETANCE FACTOR	MINIMUM TANK VOLUME GALLONS	DIMENSIONS		MODEL NUMBER	KEYED NOTES
DES.	NO.	SYSTEM SERVED					PRE-CHARGE PSIG	MAX (OPERATING) PSIG	MINIMUM °F	MAXIMUM °F				DIAMETER INCHES	HEIGHT INCHES		
ET	3	HPL SYSTEM	6000	BLADDER	PG30	20	24	50	40	100	120	0.4	295	36	88	B1200	

GENERAL NOTES:
1. MODEL NUMBERS ARE BELL & GOSSETT UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL PRE-CHARGE THE TANK TO THE VALUE INDICATED IN THE SCHEDULE. FOR TANKS THAT ARE SUPPLIED PRE-CHARGED BY THE MANUFACTURER, THE CONTRACTOR SHALL CONFIRM THE PRESSURE AND MAKE ADJUSTMENTS AS REQUIRED.
3. FLUID TYPE: W = WATER, PGXX = PROPYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL, EGXX = ETHYLENE GLYCOL SOLUTION XX PERCENTAGE OF GLYCOL.

CLOSED CIRCUIT COOLING TOWER SCHEDULE

UNIT IDENTIFICATION			AIR		FANS		CONDENSER WATER					SPRAY PUMPS		DIMENSIONS				ELECTRICAL - FAN			SPRAY PUMP MODULATION / CONTROL TYPE	ELECTRICAL - SPRAY PUMP					
DES.	NO.	TYPE	AIRFLOW CFM	E.W.B. °F	QUANTITY	HP EACH	FLUID	FLOW GPM	E.W.T. °F	L.W.T. °F	MAX W.P.D. FT. HD.	QUANTITY	HP EACH	WIDTH INCHES	HEIGHT	DEPTH INCHES	FAN MODULATION / CONTROL TYPE	VOLTS	PHASE	OPTIONS / ACCESSORIES		VOLTS	PHASE	SCCR KA	OPTIONS / ACCESSORIES	MODEL NUMBER	KEYED NOTES
CT	1	COUNTERFLOW	93600	78	2	15.00	PG30	740	100	90	20.1	1	5	102	180	216	VFC	480	3	---	AUTO	480	3	22	---	ATWB-903J18	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE EVAPCO UNLESS OTHERWISE NOTED.
3. UNIT PROVIDED (2) 6 KW IMMERSION HEATERS, 480V, 3 PHASE.
4. UNIT PROVIDED WITH (2) 120V FAN MOTOR SPACE HEATERS.
5. SHIPPING WEIGHT=17,440 LBS, OPERATING WEIGHT=25,610 LBS, HEAVIEST SECTION=12,690 LBS.

GRAVITY RELIEF HOOD SCHEDULE

UNIT IDENTIFICATION							HOOD SIZE						
DES.	NO.	SYSTEM SERVED	CFM	THROAT SIZE INCHES	THROAT VELOCITY FPM	STATIC PRESSURE DROP IN. W.G.	WIDTH INCHES	LENGTH INCHES	HEIGHT INCHES	CURB HEIGHT INCHES	HOOD CONSTRUCTION	MODEL NUMBER	KEYED NOTES
GRH	1	HP-101	2000	24x24	500	0.08	38	39	19	18	ALUMINIUM	FGR-24X24	
GRH	2	HP-102	1400	18x18	660	0.10	32	39	19	18	ALUMINUM	FGR-18X18	

GENERAL NOTES:
1. MODEL NUMBERS ARE GREENHECK UNLESS OTHERWISE NOTED.
2. PROVIDE WITH BIRD SCREEN.

INTAKE HOOD SCHEDULE

UNIT IDENTIFICATION								HOOD SIZE					
DES.	NO.	SYSTEM SERVED	CFM	THROAT SIZE INCHES	HOOD INTAKE VELOCITY FPM	THROAT VELOCITY FPM	STATIC PRESSURE DROP IN. W.G.	WIDTH INCHES	LENGTH INCHES	HEIGHT INCHES	CURB HEIGHT INCHES	HOOD CONSTRUCTION	MODEL NUMBER	KEYED NOTES
IH	1	HP-101	2000	16x36	250	500	0.06	40	51	16	18	ALUMINIUM	FGI-16X36	
IH	2	HP-102	1400	16x24	260	525	0.09	36	39	16	18	ALUMINIUM	FGI-16X24	
IH	3	EF-123	1300	18x18	290	600	0.05	32	39	16	18	ALUMINIUM	FGI-18X18	

GENERAL NOTES:
1. MODEL NUMBERS ARE GREENHECK UNLESS OTHERWISE NOTED.
2. PROVIDE WITH BIRD SCREEN.

FAN POWERED AIR TERMINAL UNIT WITH ELECTRIC COIL SCHEDULE

UNIT IDENTIFICATION		PRIMARY INLET AIRFLOW		FAN			DUCT CONNECTIONS			ELECTRIC TEMPERING COIL				DISCHARGE SOUND POWER/RADIATED SOUND POWER - dB							ELECTRICAL							
								OUTLET (INCHES)			AIR																	
DES.	NO.	MINIMUM CFM	MAXIMUM CFM	AIRFLOW CFM	MOTOR HP	E.S.P. IN. W.G.	PRIMARY INLET DIAMETER (INCHES)	W	H	CAPACITY MBH	AIRFLOW CFM	E.D.B. °F	L.D.B. °F	HEATING ELEMENT KW	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	MODULATION / CONTROL TYPE	VOLTS	PHASE	MCA	MOP	SCCR KA	OPTIONS / ACCESSORIES	MODEL NUMBER	KEYED NOTES
FPB	101	725	1560	825	1/2	0.25	12	15	16	44.3	1560	64	91	13.0	73/62	64/54	58/49	53/41	48/36	42/30	B	480	3	23.9	25	5	B	FDV4012	
FPB	102	1050	2000	950	1	0.25	16	17.5	20	60	2000	63	90	17.0	67/60	59/54	55/52	53/45	50/40	44/34	B	480	3	32.9	35	5	B	FDV5016	
FPB	103	575	1800	1225	1	0.25	16	17.5	20	46	1800	67	90	13.5	66/59	57/52	54/51	52/44	49/38	43/32	B	480	3	27.7	30	5	B	FDV5016	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE PRICE UNLESS OTHERWISE NOTED.
3. MAXIMUM NC LEVEL BASED ON 0.3 IN. W.G. DOWNSTREAM STATIC PRESSURE AND 3 IN. W.G. PRIMARY AIR PRESSURE DROP.
4. MAXIMUM RADIATED NC LEVEL SHALL NOT EXCEED 35.

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PBA Project No: 2023.0154

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
TROY, MI

DRAWING TITLE

MECHANICAL SCHEDULES

ISSUE DATES

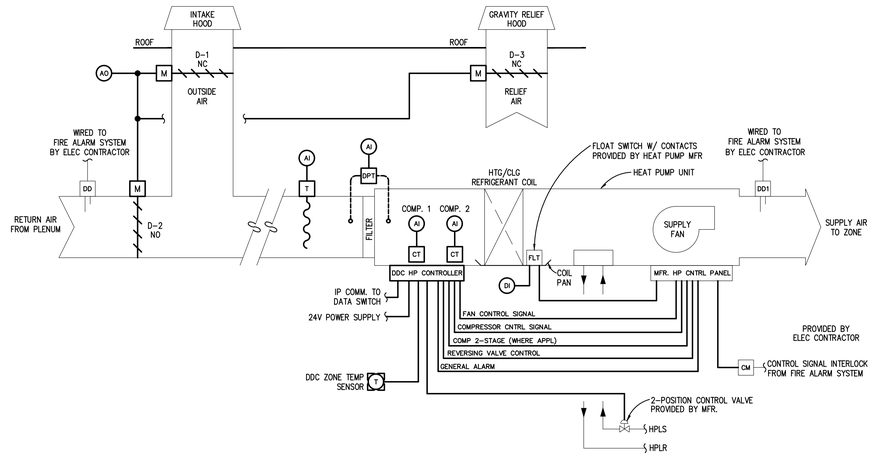
07-23-2204	ADDENDUM #4
07-12-2024	ADDENDUM #2
06-18-2024	CONSTRUCTION DOCUMENTS

DATE: ISSUED FOR:

DRAWN KLH
CHECKED KLH
APPROVED SVM

PROJECT NO.
22102

DRAWING NO.
M7.5



HEAT PUMP CONTROLS

HP-101 SERVES CORRIDOR A127 AND ASSOCIATED ROOMS
HP-102 SERVES THE SERVERY

NOTES:

1. REFER TO SHEET METAL PLANS FOR QUANTITY OF UNITS AND LOCATIONS OF ASSOCIATED HEAT PUMP (HP) ZONE TEMP SENSORS.
2. HP WATER SOURCE ISOLATION CONTROL VALVE SHALL BE FURNISHED BY HP UNIT SUPPLIER, INSTALLED BY MECHANICAL CONTRACTOR, AND WIRED TO DDC CONTROLS BY TC CONTRACTOR. COORDINATE CONTROL WIRING REQUIREMENTS AND TERMINATIONS WITH HEAT PUMP UNIT SUPPLIER.
3. HP IMMERSION TEMPERATURE SENSOR SHALL BE FURNISHED BY HP UNIT SUPPLIER, INSTALLED BY MECHANICAL CONTRACTOR, AND WIRED TO CONTROLS BY TC CONTRACTOR. COORDINATE WIRING REQUIREMENTS AND TERMINATIONS WITH HEAT PUMP UNIT SUPPLIER.
4. FOR INDIVIDUAL ZONE HEAT PUMPS THAT ARE 2000CFM AND HIGHER OR WHERE A ZONE IS FED FROM MULTIPLE HEAT PUMPS THAT TOTAL 2000 CFM AND HIGHER: ELECTRICAL CONTRACTOR SHALL PROVIDE FIRE ALARM SYSTEM COMPONENTS (CM) AND WIRING FROM FIRE ALARM SYSTEM TO HEAT PUMP CONTROLS. TC CONTRACTOR SHALL PROVIDE WIRING FROM CM TO UNIT CONTROL FOR SHUTDOWN.
5. TC CONTRACTOR SHALL PROVIDE BACnet IP DDC CONTROLLER AND COMM. INTERFACE WIRING TO THE BAS NETWORK.
6. TC CONTRACTOR SHALL PROVIDE COMPONENTS AND FIELD WIRING FOR COIL CONDENSATE HIGH LEVEL CUT-OUT AND REMOTE ALARM MONITORING BY DDC.
7. TC CONTRACTOR SHALL PROVIDE DAMPERS/ECONOMIZER CONTROLS THRU DDC.
8. HEAT PUMP SUPPLIER REPRESENTATIVE SHALL PROVIDE PERSONNEL FOR START-UP, PROGRAMMING, AND WIRING COORDINATION WITH TC CONTRACTOR.

SEQUENCE OF OPERATION

HEAT PUMP UNIT CONTROL:

NOTES:

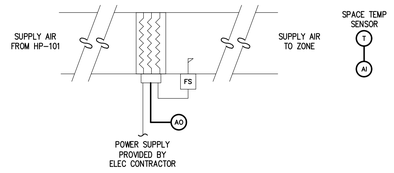
1. HEAT PUMP (HP) UNIT SHALL INCLUDE PACKAGED CONTROLLER FOR REFRIGERANT SAEFTIES AND INTERFACE WIRING.
2. ALL SETPOINTS, RESET SETPOINTS, DEADBANDS, DELAY TIMERS, MODE POINTS, ETC., INCLUDING TIME-OF-DAY HOURS OF OPERATION AND SETPOINTS DESCRIBED IN SEQUENCE SHALL BE ADJUSTABLE BY BAS OPERATORS. APPROPRIATE DEADBANDS SHALL BE USED TO PREVENT SHORT CYCLING SITUATIONS. HPC PROGRAMMING SHALL PREVENT "LOOP WINDUP".

SEQUENCE OF OPERATION:

1. HEAT PUMP UNIT SHALL HAVE START/STOP CAPABILITY FROM THE HPC CONTROLLER (HPC) WITH ZONE TEMPERATURE SENSOR PROVIDING SYSTEM OVERRIDES, ALARMS, AND SYSTEM MONITORING. HEAT PUMP SHALL OPERATE BASED ON TIME OF DAY SCHEDULED OCCUPIED MODE AND UNOCCUPIED CYCLE MODE. HP-102 ZONE TEMPERATURESENSOR SHALL ALLOW 1-HR. OVERRIDE CONTROL FROM PUSHBUTTON.
2. HPC SHALL DEACTIVATE THE COMPRESSOR CONTROLS IF WATER TEMPERATURE IS NOT APPROPRIATE FOR A TWO MINUTE DELAY TO PREVENT LOCAL SAFETY CUTOUT FROM OCCURRING.
3. HPC SHALL NOT ALLOW DISCHARGE AIR TEMPERATURE TO EXCEED 90°F SETPOINT AND NOT DECREASE BELOW 55°F SETPOINT.
4. DURING BUILDING OCCUPANCY, HP FAN SHALL OPERATE CONTINUOUSLY, HPC SHALL COMMAND THE ASSOCIATED MIXED AIR DAMPERS TO MAINTAIN SCHEDULED OUTSIDE AIRFLOW.
5. DURING BUILDING UNOCCUPANCY, HP FAN SHALL BE CYCLED ON & OFF TO MAINTAIN UNOCCUPIED MODE ZONE TEMPERATURE SETPOINTS. ASSOCIATED OUTSIDE AIR DAMPERS SHALL REMAIN CLOSED WITH RETURN DAMPER IN FULL AIR RECIRCULATION POSITION.
6. HP-101 AND HP-102: WHEN ZONE TEMPERATURE RISES ABOVE COOLING SETPOINT, THE HPC HP CONTROLLER SHALL SWITCH REVERSING VALVE TO COOLING MODE, OPEN WATER SOURCE HP LOOP VALVE AND ACTIVATE COMPRESSOR (2-STAGES WHERE APPLICABLE) TO ACHIEVE ZONE TEMPERATURE COOLING SETPOINT.
7. HP-101 ONLY: WHEN ZONE TEMPERATURE FALLS BELOW HEATING SETPOINT, THE HPC HP CONTROLLER SHALL CLOSE THE WATER SOURCE HP LOOP VALVE AND DEACTIVATE COMPRESSOR (2-STAGES WHERE APPLICABLE), AND MODULATE THE ELECTRIC HEATING COIL CONTROL (SCR) TO ACHIEVE ZONE TEMPERATURE HEATING SETPOINT. HPC HP CONTROLLER SHALL **NOT** SWITCH REVERSING VALVE TO HEATING MODE.
7. HP-102 ONLY: WHEN ZONE TEMPERATURE FALLS BELOW HEATING SETPOINT, THE HPC HP CONTROLLER SHALL SWITCH REVERSING VALVE TO HEATING MODE, OPEN WATER SOURCE HP LOOP VALVE AND ACTIVATE COMPRESSOR (2-STAGES WHERE APPLICABLE) TO ACHIEVE ZONE TEMPERATURE HEATING SETPOINT.
8. CONDENSATE PAN FLOAT SWITCH, UPON HIGH LEVEL, SHALL DEACTIVATE HP COOLING CONTROL AND HPC SHALL PROVIDE THE BAS WITH AN ALARM.
9. HPC SHALL OVERRIDE COMPRESSOR AS REQUIRED TO PREVENT DISCHARGE AIR TEMPERATURE FROM DROPPING BELOW LOW LIMIT SETPOINT OF 52°F.
10. HPC SHALL MONITOR GENERAL ALARM FROM HEAT PUMP CONTROL.
11. WHEN HEAT PUMP IS DEACTIVATED, THE WATER SOURCE HEAT PUMP LOOP VALVE SHALL REMAIN CLOSED.

MIXED AIR DAMPERS CONTROL:

12. WHEN THE HEAT PUMP BACNET STATUS INDICATES UNIT IS RUNNING, HPC SHALL OPEN THE DAMPERS TO THE MINIMUM AIR CFM POSITION.
13. HPC SHALL PROVIDE DRY BULB ECONOMIZER CONTROL WHEN OA TEMPERATURE IS 55°F OR LESS. HPC SHALL MODULATE THE DAMPERS TO MAINTAIN 55°F MIXED AIR TEMPERATURE SETPOINT.
14. WHEN THE HEAT PUMP'S BACNET STATUS INDICATES THE UNIT IS OFF, HPC SHALL CLOSE THE DAMPERS TO OUTSIDE AIR. IN UNOCCUPIED CYCLE MODE, HPC SHALL CLOSE THE DAMPERS TO OUTSIDE AIR.
15. IF CONDENSATE PAN FLOAT REACHES HIGH LEVEL, THE HEAT PUMP SHALL BE DEACTIVATED AND HPC SHALL PROVIDE THE BAS WITH AN ALARM.
16. HPC SHALL MONITOR COMPRESSOR(S) CURRENT FOR BAS DIAGNOSTIC DISPLAY. HPC SHALL NOT ALLOW COMPRESSORS TO OPERATE ABOVE MAX. DESIGN CURRENT DRAW.
17. ZONE TEMPERATURE SETPOINTS SHALL BE AS FOLLOWS:
    - HEATING UNOCCUPIED SETPOINT = 62°F
    - HEATING OCCUPIED SETPOINT = 70°F
    - COOLING OCCUPIED SETPOINT = 75°F
    - COOLING UNOCCUPIED SETPOINT = 80°F
18. BAS OPERATOR SHALL HAVE THE ABILITY TO GLOBALLY MODIFY SETPOINTS.
19. FILTER STATUSES SHALL BE MONITORED BY HPC THRU RESPECTIVE DIFFERENTIAL PRESSURE (DP) TRANSMITTER (DPT). WHEN EACH FILTER'S DP REACHES DP SET POINT MINUS 0.2" W.G., HPC SHALL PROVIDE LOADED FILTER WARNING TO BAS. WHEN EACH FILTER'S DP REACHES DP SET POINT, HPC SHALL PROVIDE DIRTY FILTER ALARM TO BAS. INITIAL DP SET POINT SHALL BE 1.0 INCH W.G. EMCS CONTRACTOR SHALL ADJUST DPT BASED ON MANUFACTURER'S LOADED FILTER DATA.



HP-101 ELECTRIC HEATING COIL CONTROL

TYPICAL WHERE SHOWN FOR SPACES WITH A DUCT-MOUNTED ELECTRIC (EC) HEATING COIL

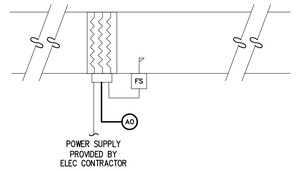
NOTES:

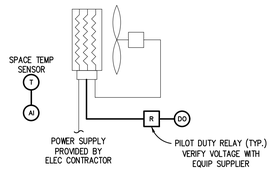
1. REFER TO FLOOR PLANS FOR LOCATION OF UNITS. COORDINATE WIRING REQUIREMENTS AND TERMINATIONS WITH EQUIPMENT SUPPLIER.
2. ELECTRIC HEAT COILS SHALL BE PROVIDED WITH SCR CONTROL AND OVER-TEMP OR AIRFLOW CUT-OUT DEVICES BY THE MFR.

SEQUENCE OF OPERATION

NOTE: ALL SETPOINTS, RESET SETPOINTS, DEADBANDS, DELAY TIMERS, ETC., DESCRIBED IN THE SEQUENCE OF OPERATION SHALL BE ADJUSTABLE BY BUILDING AUTOMATION SYSTEM (BAS) OPERATORS. APPROPRIATE DEADBANDS SHALL BE USED TO PREVENT SHORT CYCLING SITUATIONS. DDC PROGRAMMING SHALL PREVENT "LOOP WINDUP".

1. EC SHALL HAVE START/STOP CAPABILITY FROM THE DDC SYSTEM. EC SHALL OPERATE BASED ON BAS TIME OF DAY SCHEDULED OCCUPIED MODE AND UNOCCUPIED MODE.
2. DDC SHALL MONITOR SPACE TEMPERATURE SENSOR AND MODULATE THE EC CONTROL CIRCUIT TO MAINTAIN SPACE TEMPERATURE SETPOINTS.
3. ZONE TEMPERATURE SETPOINTS SHALL BE AS FOLLOWS:
    - HEATING UNOCCUPIED SETPOINT = 62°F
    - HEATING OCCUPIED SETPOINT = 70°F
    - COOLING OCCUPIED SETPOINT = 75°F
    - COOLING UNOCCUPIED SETPOINT = 80°F
4. DDC SHALL PROVIDE A 2°F DEADBAND FOR CONTROL.





EUH/EC HEATING CONTROL

TYPICAL WHERE SHOW FOR SPACES WITH AN ELECTRIC UNIT HEATER AND DUCT-MOUNTED ELECTRIC HEATING COIL

NOTES:

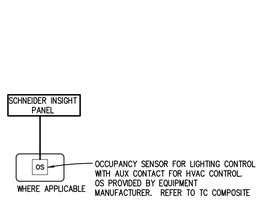
1. REFER TO FLOOR PLANS FOR LOCATION OF UNITS. COORDINATE WIRING REQUIREMENTS AND TERMINATIONS WITH EQUIPMENT SUPPLIER.
2. ELECTRIC HEAT COILS SHALL BE PROVIDED WITH SCR CONTROL AND OVER-TEMP OR AIRFLOW CUT-OUT DEVICES BY THE MFR.

SEQUENCE OF OPERATION

NOTE: ALL SETPOINTS, RESET SETPOINTS, DEADBANDS, DELAY TIMERS, ETC., DESCRIBED IN THE SEQUENCE OF OPERATION SHALL BE ADJUSTABLE BY BUILDING AUTOMATION SYSTEM (BAS) OPERATORS. APPROPRIATE DEADBANDS SHALL BE USED TO PREVENT SHORT CYCLING SITUATIONS. HPC PROGRAMMING SHALL PREVENT "LOOP WINDUP".

1. EUH/EC SHALL HAVE START/STOP CAPABILITY FROM THE DDC SYSTEM. EC/EUH SHALL OPERATE BASED ON BAS TIME OF DAY SCHEDULED OCCUPIED MODE AND UNOCCUPIED MODE.
2. IN OCCUPIED MODE, DDC SHALL MONITOR SPACE TEMPERATURE SENSOR AND MODULATE THE EC CONTROL CIRCUIT TO MAINTAIN SPACE TEMPERATURE SETPOINTS AS FIRST STAGE OF HEAT. IF REQUIRED, DDC SHALL CYCLE EUH ON/OFF AS 2ND STAGE OF HEAT TO MAINTAIN SPACE TEMPERATURE SETPOINTS.
3. IN UNOCCUPIED MODE, DDC SHALL MONITOR SPACE TEMPERATURE SENSOR AND CYCLE EUH ON/OFF TO MAINTAIN SPACE TEMPERATURE SETPOINTS.
4. ZONE TEMPERATURE SETPOINTS SHALL BE AS FOLLOWS:
    - HEATING UNOCCUPIED SETPOINT = 62°F
    - HEATING OCCUPIED SETPOINT = 70°F
    - COOLING OCCUPIED SETPOINT = 75°F
    - COOLING UNOCCUPIED SETPOINT = 80°F
5. DDC SHALL PROVIDE A 2°F DEADBAND FOR CONTROL.

4



SCHNEIDER LIGHTING CONTROL

TYPICAL:

NOTES:

1. TC CONTRACTOR SHALL WIRE SCHNEIDER INSIGHT CONTROLLER TO ROOM OCCUPANCY SENSOR(S) WITH AUXILIARY CONTACTS AS PROVIDED BY EQUIPMENT MANUFACTURE. REFER TO SCHNEIDERL LIGHTING FLOOR PLANS FOR OCCUPANCY SENSOR APPLICATIONS AND LOCATIONS AND REFER TO SHEET TO TC COMPOSITE PLANS FOR ASSOCIATED AREAS SERVED BY LIGHTING CONTROL PANEL. COORDINATE WIRING REQUIREMENTS WITH SCHNEIDER CONTRACTOR.

SEQUENCE OF OPERATION:

1. WHEN ZONE IS UNOCCUPIED DURING SCHEDULED OCCUPIED MODE AS DETERMINED BY MONITORING THE LIGHTING OCCUPANCY SENSOR AUX CONTACTS, LIGHTS SHALL TURN OFF.

BAS LIGHTING CONTROL

TYPICAL:

NOTES:

1. TC CONTRACTOR SHALL WIRE SCHNEIDER INSIGHT CONTROLLER TO ROOM OCCUPANCY SENSOR(S) WITH AUXILIARY CONTACTS AS PROVIDED BY EQUIPMENT MANUFACTURE. REFER TO SCHNEIDER LIGHTING FLOOR PLANS FOR OCCUPANCY SENSOR APPLICATIONS AND LOCATIONS AND REFER TO SHEET TO TC COMPOSITE PLANS FOR ASSOCIATED AREAS SERVED BY LIGHTING CONTROL PANEL. COORDINATE WIRING REQUIREMENTS WITH SCHNEIDER CONTRACTOR.

SEQUENCE OF OPERATION:

1. WHEN ZONE IS UNOCCUPIED DURING SCHEDULED OCCUPIED MODE AS DETERMINED BY MONITORING THE LIGHTING OCCUPANCY SENSOR AUX CONTACTS, LIGHTS SHALL TURN OFF.

TC GENERAL NOTES

TC GENERAL NOTES ON DRAWING M8.1 APPLY TO THIS DRAWING.

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PBA Project No.: 2023.0154

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

TEMPERATURE CONTROLS

ISSUE DATES

07-23-2024	ADDENDUM #4
06-18-2024	CONSTRUCTION DOCUMENTS

DATE:	ISSUED FOR:
DRAWN	DJT
CHECKED	KLH
APPROVED	SVM

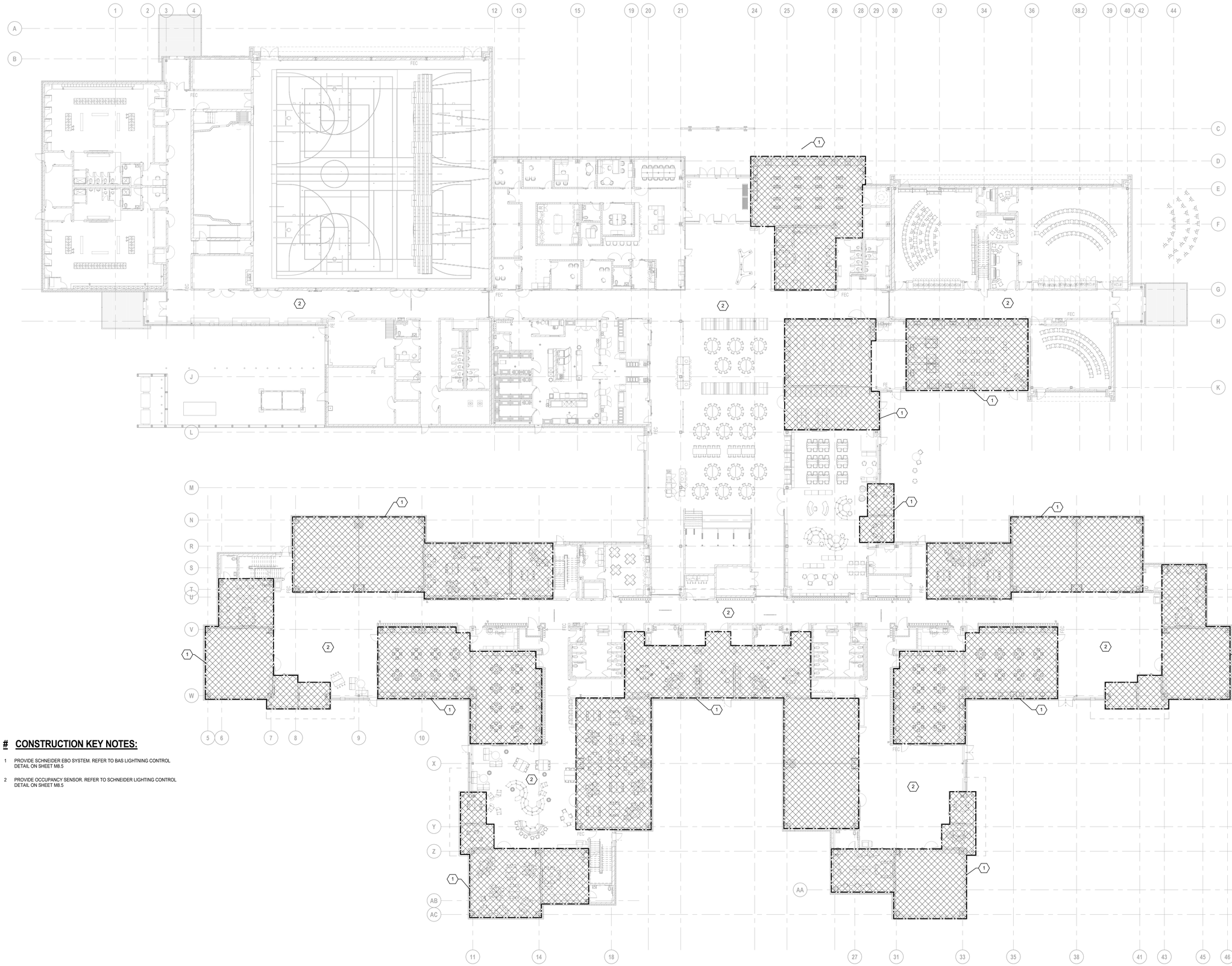
PROJECT NO.

22102

DRAWING NO.

M8.5

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



CONSTRUCTION KEY NOTES:

1 PROVIDE SCHNEIDER EBO SYSTEM. REFER TO BAS LIGHTNING CONTROL DETAIL ON SHEET M8.5

2 PROVIDE OCCUPANCY SENSOR. REFER TO SCHNEIDER LIGHTING CONTROL DETAIL ON SHEET M8.5

FIRST LEVEL TEMPERATURE CONTROLS PLAN
SCALE: 1/16" = 1'-0"

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PROJECT TITLE

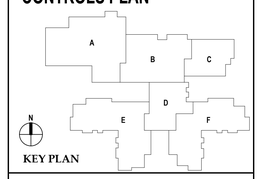
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
TROY, MI

DRAWING TITLE

FIRST LEVEL TEMPERATURE CONTROLS PLAN



KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2204	ADDENDUM #4

DRAWN	WTF
CHECKED	KLH
APPROVED	SVM

PROJECT NO.
22102

DRAWING NO.
M8.12

THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"

CONSTRUCTION KEY NOTES:

1 PROVIDE SCHNEIDER EBO SYSTEM. REFER TO BAS LIGHTNING CONTROL DETAIL ON SHEET M8.5

2 PROVIDE OCCUPANCY SENSOR. REFER TO SCHNEIDER LIGHTING CONTROL DETAIL ON SHEET M8.5

SECOND LEVEL TEMPERATURE CONTROLS PLAN

SCALE: 1/16" = 1'-0"

TMP ARCHITECTURE

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PROJECT TITLE

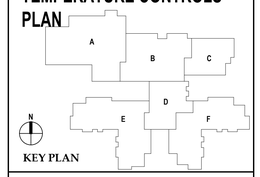
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
TROY, MI

DRAWING TITLE

SECOND LEVEL TEMPERATURE CONTROLS PLAN



KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
07-23-2204	ADDENDUM #4

DRAWN	WTF
CHECKED	KLH
APPROVED	SVM

PROJECT NO.

22102

DRAWING NO.

M8.13

400 ft

1:2237

N

BLAZE CONTRACTING, INC.

An Employee Owned Company

About Report

Site:	Smith Middle School
Design:	pq41bf7868-3D_model.dxf...
Survey:	18 Jul 2024
Created by:	Rocco St Louis
Created at:	Jul 23, 2024

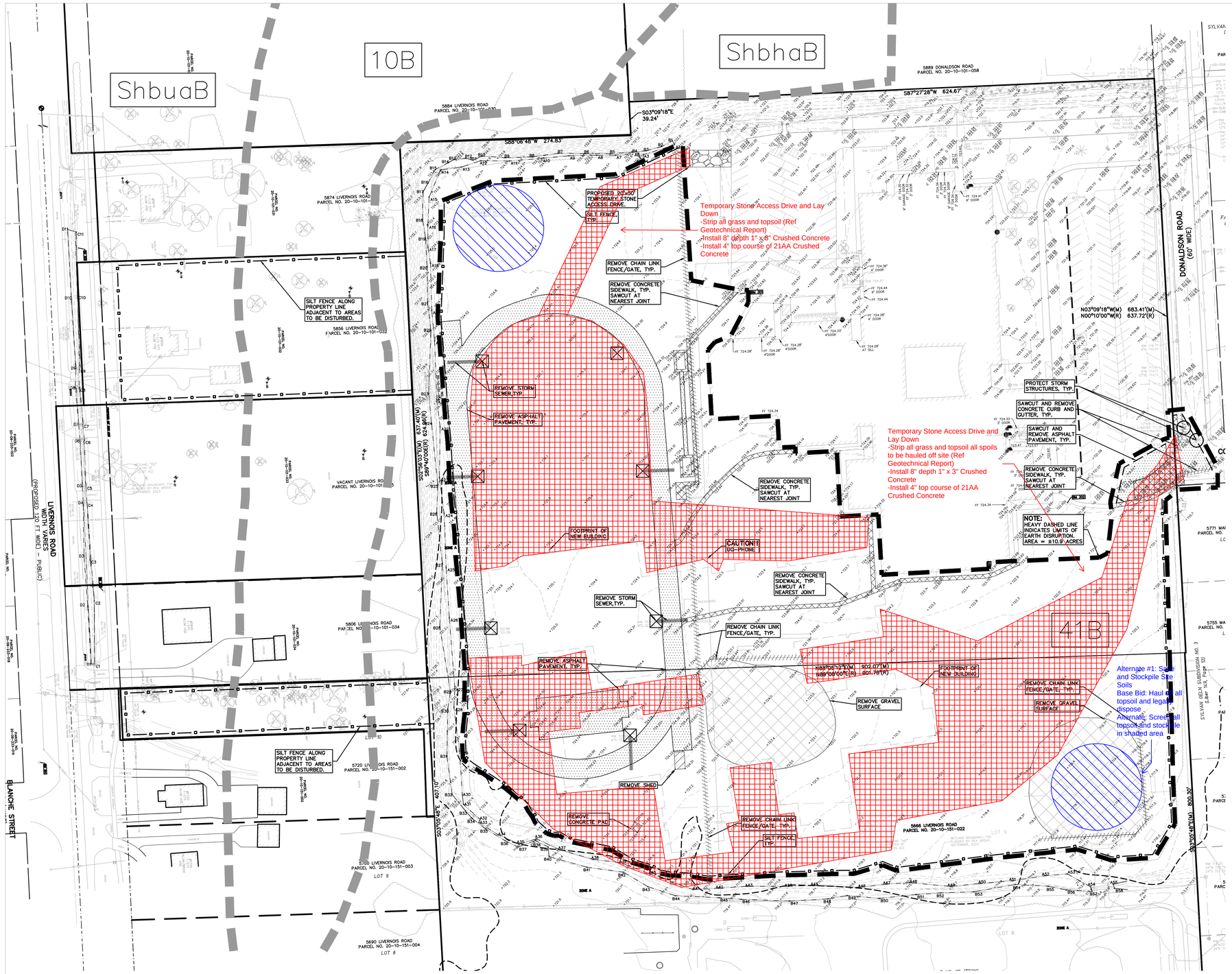
Area Summary

Cut:	9 789 yd³
Net:	11 220 yd³
Fill:	21 009 yd³
Total:	30 798 yd³

Legends

Design
Cut/Fill
Survey

-1 ft
-0.1 ft
0.1 ft
1 ft



SEQUENCE OF CONSTRUCTION:

START DAY	END DAY	
1	750	INSTALL CRUSHED CONCRETE ACCESS APPROACH AT SITE ROAD APPROACH.
1	750	INSTALL TEMPORARY SOIL EROSION CONTROL MEASURES, SILT FENCES, INLET PROTECTION, ETC. AS NECESSARY.
1	750	MAINTAIN A 25' BUFFER OF VEGETATION AROUND PERIMETER OF SITE WHERE POSSIBLE.
1	15	REMOVE ALL VEGETATION, TREES AND BRUSH FROM THE PROPOSED CONSTRUCTION AREA UNLESS MARKED TO REMAIN. STRIP AND STOCKPILE TOPSOIL AS REQUIRED. ALL STOCKPILES MUST BE GRADED AND SEEDED.
5	14	REMOVE ALL PAVEMENT, CURB, UTILITIES, ETC. AS REQUIRED TO INSTALL THE PROPOSED WORK AS SHOWN ON THE TOPOGRAPHIC SURVEY AND DEMOLITION PLAN.
5	14	DISPOSE OF ALL EXCESS/UNSUITABLE MATERIALS OFF SITE IN A LEGAL MANNER. NO ON-SITE BURN OR BURY PITS ALLOWED.
14	28	ROUGH GRADE SITE. SEED AND MULCH BLANKETS MUST BE INSTALLED AS SHOWN WITHIN 5 DAYS OF FINAL GRADE. REPAIR AND/OR RE-INSTALL ANY TEMPORARY SOIL EROSION CONTROL MEASURES THAT WERE DAMAGED DURING GRADING OPERATIONS.
28	60	INSTALL SITE UTILITIES (STORM SEWER, SANITARY SEWER, WATER MAIN ETC.). INSTALL INLET PROTECTION AT ALL PROPOSED CATCH BASINS.
28	90	TEMPORARY SEEDING MUST BE PROVIDED IN AREAS NOT TO BE WORKED ON FOR 15 DAYS OR LONGER.
30	80	BEGIN CONSTRUCTION OF BUILDING.
70	80	FINE GRADE SITE AND PREPARE FOR SITE PAVING OPERATIONS.
80	110	INSTALL ALL PAVEMENT, SIDEWALKS, CURBING AS PROPOSED. IF PERMANENT LANDSCAPING IS NOT TO BE INSTALLED SOON AFTER PAVING IS COMPLETE, ALL AREAS WITHIN 20 FEET OF BACK OF CURB MUST BE TEMPORARILY SEEDED. REPAIR INLET PROTECTION, SILT FENCE AND ANY OTHER DAMAGED SOIL EROSION CONTROL MEASURES AS NECESSARY.
90	119	FINAL GRADE, REDISTRIBUTE STOCKPILED TOPSOIL, ESTABLISH VEGETATION AND INSTALL ALL PERMANENT LANDSCAPING IN ALL DISTURBED AREAS NOT BUILT.
118	120	CLEAN PAVEMENT AND REMOVE ALL TEMPORARY SOIL EROSION CONTROL MEASURES. RE-ESTABLISH VEGETATION AS REQUIRED.
750	750	REMOVE SEDIMENTATION CONTROLS ONCE ENTIRE SITE HAS BEEN PERMANENTLY STABILIZED.

SOIL EROSION AND SEDIMENTATION CONTROL SEQUENCE OF CONSTRUCTION

1. SEE OAKLAND COUNTY W.R.C. SOIL EROSION AND SEDIMENTATION CONTROL DETAILS SHEET FOR ALL SOIL EROSION CONTROL RELATED DETAILS.
2. PLACE SILT FENCE ON EXISTING STORM SEWER STRUCTURES, ACCORDING TO PLANS.
3. INSTALL TEMPORARY CRUSHED CONCRETE ACCESS DRIVE AT ALL CONSTRUCTION ENTRANCES. (80'x24'x8" W/MINIMUM OF 1"-3" CRUSHED CONCRETE – NO FINES).
4. REMOVE CURB, PAVEMENT, TREES, ETC. AS DIRECTED ON THE DEMOLITION PLAN.
5. STRIP AND STOCKPILE TOPSOIL FOR RESTORATION REQUIREMENTS.
6. DISPOSE OF ALL EXCESS, UNSUITABLE MATERIALS OFF SITE IN A LEGAL MANNER. NO BURN OR BURY PITS ALLOWED.
7. UNSUITABLE MATERIALS CONSIST OF, BUT ARE NOT NECESSARILY LIMITED TO THE FOLLOWING: CONCRETE, ASPHALT, TREES, BRUSH, STUMPS, ROOTS, OR OTHER MISCELLANEOUS DEBRIS OR TRASH.
8. MASS GRADE THE SITE IN ACCORDANCE WITH THE PLANS.
9. INSTALL SEED, MULCH AND EROSION CONTROL BLANKETS AS SHOWN ON THE PLAN WITHIN 5 DAYS OF COMPLETION OF MASS GRADING OR WHENEVER DISTURBED AREAS WILL REMAIN UNCHANGED FOR 30 DAYS OR GREATER. 3-4" TOPSOIL WILL BE USED WHERE VEGETATION IS REQUIRED.
10. COMPLETE ROUGH GRADING OF SITE AND INSTALL UTILITIES. PLACE INLET FILTERS AT ALL INLETS AND CATCH BASINS, AS SHOWN.
11. FINISH GRADE AND PAVE SITE AS PROPOSED TO DRAIN TO STORM SEWER SYSTEM. REPAIR INLET FILTERS AS REQUIRED.
12. APPLY TOPSOIL, SEED AND MULCH/SOD TO ALL DISTURBED AREAS UPON COMPLETION OF GRADING. THE CONTRACTOR SHALL STAGE CONSTRUCTION ACTIVITIES IN ORDER TO MINIMIZE THE EXPOSURE OF UNSTABILIZED AREAS.
13. CLEAN PAVEMENT AND STORM SEWERS. REMOVE SILT FENCE, AND INLET FILTERS ONCE VEGETATION HAS BEEN ESTABLISHED.
14. ALL DIRT AND MUD TRACKED ONTO PUBLIC ROADS SHALL BE REMOVED DAILY.

SOIL EROSION MAINTENANCE SCHEDULE AND NOTES:

1. THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY:

   JOSH EISENMAN
   BARTON MALOW BUILDERS
   26500 AMERICAN DRIVE
   SOUTHFIELD, MI 48034
   586.651.2658
2. IF ANY DAMAGE HAS OCCURRED AS A RESULT OF STORM WATER DISCHARGE FROM THE SITE, THE FOLLOWING STEPS SHALL BE IMPLEMENTED.
3. ANY DEBRIS OR DIRT ON ANY PAVED AREA RESULTING FROM CONSTRUCTION TRAFFIC SHALL BE CLEANED IN A PROMPT MANNER BY THE CONTRACTOR. THE CONSTRUCTION DRIVE SHALL BE CLEANED AT THE END OF EACH DAY.
4. ALL DIRT AND MUD TRACKED ONTO PAVED AREAS SHALL BE REMOVED BY THE CONTRACTOR DAILY BY SCRAPING. STREET SWEEPING IS REQUIRED WEEKLY.
5. SILT FENCE MAINTENANCE SHALL INCLUDE THE REMOVAL OF ANY BUILT UP SEDIMENT WHEN THE SEDIMENT HEIGHT ACCUMULATES TO 1/3 TO 1/2 OF THE HEIGHT OF THE FENCE. THE CONTRACTOR IS RESPONSIBLE TO REMOVE, REPLACE, RETRENCH OR REBACKFILL THE SILTATION FENCE SHOULD IT FALL OR BE DAMAGED DURING CONSTRUCTION.
6. CONTRACTOR SHALL PROVIDE WATER TRUCK TO WATER DOWN THE SITE ON A DAILY BASIS AS REQUIRED TO MAINTAIN DUST CONTROL.
7. IF HIGH GROUNDWATER IS ANTICIPATED OR ENCOUNTERED DURING CONSTRUCTION A DEWATERING PLAN MUST BE SUBMITTED TO THE CITY ENGINEERING DIVISION FOR REVIEW.

FLOODPLAIN:
PER FLOOD INSURANCE RATE MAP NUMBER 26125C0532F, DATED SEPTEMBER 29, 2006

BY GRAPHICAL PLOTTING, THE SITE LIES WITHIN:

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
THE 1% ANNUAL CHANCE FLOOD (100 YEAR FLOOD), ALSO KNOWN AS THE BASE FLOOD, IS THE FLOOD THAT HAS A 1% CHANCE OF BEING EQUALED OR EXCEEDED IN ANY GIVEN YEAR. THE SPECIAL FLOOD HAZARD AREA IS THE AREA SUBJECT TO FLOODING BY THE 1% ANNUAL CHANCE FLOOD. AREAS OF SPECIAL FLOOD HAZARD INCLUDE ZONES A, AE, AH, AO, AR, A99, V AND VE. THE BASE FLOOD ELEVATION IS THE WATER-SURFACE ELEVATION OF THE 1% ANNUAL CHANCE FLOOD.

ZONE A - NO BASE FLOOD ELEVATIONS DETERMINED.

OTHER AREAS
ZONE X
AREA TO BE DETERMINED OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

LEGAL DESCRIPTION:

PARCEL ID 20-10-101-054
Land in the City of Troy, Oakland County, Michigan, described as follows:

T2N, R11E, SEC 10 PART OF NW 1/4 BEG AT PT DIST S 571.05 FT & S 88-57-00 E 697.50 FT & S 00-10-00 E 169.24 FT FROM NW SEC COR, TH S 89-40-00 E 624.96 FT, TH S 00-10-00 E 683.20 FT, TH N 89-08-00 W 901.78 FT, TH N 00-10-00 W 637.72 FT, TH S 89-02-00 E 275.00 FT, TH N 00-10-00 W 39.24 FT TO BEG 13.79 A

PARCEL ID 20-10-151-022
Land in the City of Troy, Oakland County, Michigan, described as follows:

T2N, R11E, SEC 10 SUPERVISOR'S PLAT NO 25 LOTS 5, 6 & 7, ALSO E 900 FT OF LOTS 8 & 9, ALSO LOT 10 EXC W 357.82 FT OF S 104.29 FT

BENCHMARKS:

(GPS DERIVED - NAVD88)

BM #300
ARROW ON A HYDRANT LOCATED AT THE SOUTHWEST CORNER OF THE FRONT PARKING LOT.
ELEV. - 724.13

BM #301
ARROW ON A HYDRANT LOCATED ON THE SOUTHWEST CORNER OF THE BACK PARKING LOT.
ELEV. - 726.34

GENERAL DEMOLITION NOTES:

THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT:

1. ALL MATERIAL TO BE REMOVED, WHETHER SPECIFICALLY NOTED IN THE PLANS OR NOT, SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF OFF-SITE IN A LEGAL MANNER. NO ON-SITE BURY OR BURN PITS SHALL BE ALLOWED.
2. ALL DEMOLITION WORK SHALL CONFORM TO ALL LOCAL CODES AND ORDINANCES.
3. STAGING/PHASING OF DEMOLITION AND CONSTRUCTION IS TO BE COORDINATED WITH THE OWNER AND THE CONTRACTOR PRIOR TO CONSTRUCTION.
4. SPECIFIC DEMOLITION ITEMS HAVE BEEN INDICATED ON THE PLANS AS A GUIDE TO THE GENERAL SCOPE OF THE WORK. IT IS THE INTENT THAT THESE ITEMS SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR ABOVE AND BELOW GROUND, UNLESS SPECIFICALLY NOTED OTHERWISE, AND THAT DEMOLITION WILL INCLUDE BUT WILL NOT NECESSARILY BE LIMITED TO THESE ITEMS. CONTRACTOR SHALL VISIT SITE TO VERIFY EXISTING CONDITIONS AND EXTENTS OF THE DEMOLITION THAT WILL BE REQUIRED PRIOR TO SUBMITTING A BID.
5. REMOVE ALL STRUCTURES DESIGNATED FOR REMOVAL ACCORDING TO THE DEMOLITION PLAN. THIS INCLUDES FOUNDATIONS, FOOTINGS, FOUNDATION WALLS, FLOOR SLABS, UNDERGROUND UTILITIES, CONCRETE, ASPHALT, TREES, ETC.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP, NOISE, DUST CONTROL, STREET SWEEPING AND HOURS OF OPERATION IN ACCORDANCE WITH THE LOCAL CODES.
7. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADES, SIGNAGE, MARKINGS, LIGHTS AND OTHER TRAFFIC CONTROL DEVICES TO PROTECT THE WORK ZONE AND SAFELY MAINTAIN TRAFFIC PER AGENCY REQUIREMENTS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
8. THE CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES TO CONFIRM THAT UTILITY LEADS HAVE BEEN TAKEN OUT OF SERVICE PRIOR TO DEMOLITION.
9. ALL BUILDING GAS LEADS, METERS AND ASSOCIATED EQUIPMENT SHALL BE REMOVED AS SHOWN ON THE PLANS. COORDINATE ALL ASSOCIATED WORK WITH THE APPROPRIATE UTILITY COMPANY.
10. REMOVE ALL OVERHEAD AND UNDERGROUND ELECTRICAL LINES WITHIN THE AREA OF CONSTRUCTION AS SHOWN ON THE PLANS. COORDINATE SHUTDOWNS AND REMOVALS WITH ELECTRICAL SERVICE PROVIDER OR THE APPROPRIATE UTILITY COMPANY. (NOTE: PHONE AND CABLE T.V. SERVICES MAY ALSO BE LOCATED ON OVERHEAD LINES.)
11. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF SIGNS AND SUPPORTS WITHIN THE WORK AREA, AS NECESSARY TO FACILITATE CONSTRUCTION. SIGNS SHALL BE PROTECTED OR STOCKPILED FOR REUSE AS SPECIFIED IN THE PLANS OR AS REQUIRED BY THE AGENCY OF JURISDICTION. THE CONTRACTOR SHALL REPLACE ANY DAMAGED SIGNS AND SUPPORTS AT NO ADDITIONAL COST TO THE OWNER.
12. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE 811/ONE CALL UTILITY LOCATING CENTER, THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

DEMOLITION LEGEND:

- ITEM TO BE REMOVED
- CURB/FENCE REMOVAL
- CONCRETE PAVEMENT AND SIDEWALK REMOVAL
- AREA OR ITEMS TO BE REMOVED
- UTILITY REMOVAL
- ASPHALT REMOVAL
- SAWCUT LINE

SYMBOLS: EROSION CONTROL:

- (SP-2) SILT FENCE
- (SP-9) TEMPORARY STONE ACCESS DRIVE

REFER TO O.C.W.R.C. SOIL EROSION AND SEDIMENTATION CONTROL DETAILS SHEET FOR ALL DEVICE DETAILS.

GENERAL SITE CONDITIONS:

1. ACCORDING TO THE SOIL SURVEY INFORMATION SUPPLIED BY THE USDA NRCS, THE SITE CONSISTS OF THE FOLLOWING SOIL TYPES:
   - 10B MARLETTE SANDY LOAM, 1 TO 6 PERCENT SLOPES
   - 41B AQUENTS, SANDY, LOAMY, UNDULATING
   - ShbhaB SHEBEON SANDY LOAM, 0 TO 4 PERCENT SLOPES
   - ShbuaB SHEBEON-URBAN LAND COMPLEX, 0 TO 4 PERCENT SLOPES
2. TOTAL DISTURBED AREA = ±10.9 ACRES
3. N.P.D.E.S. NOTICE OF COVERAGE IS REQUIRED

EROSION CONTROL QUANTITIES:

SILT FENCE	3,875 LF
TEMPORARY CONSTRUCTION ACCESS DRIVE	1 EA.

NORTH

0 25 50 100
SCALE: 1" = 50'

811 Know what's below. Call before you dig.

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO REPRESENTATION IS EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

TMP ARCHITECTURE

TMP ARCHITECTURE INC
1191 WEST SQUARE LAKE ROAD
BLOOMFIELD HILLS - MICHIGAN - 48302
PH - 248.338.4561 FX - 248.338.0223
EM - INFO@TMP-ARCHITECTURE.COM

REGISTRATION SEAL

CONSULTANT

PEA GROUP
t: 844.813.2949
www.peagroup.com

PROJECT TITLE
New Smith Middle School Bid Package No. 03A

Troy School District
Troy, Michigan

DRAWING TITLE
DEMOLITION AND SESC PLAN

ISSUE DATES

02/08/24	ADDENDUM 2
01/23/24	BIDS

DATE:	ISSUED FOR:
DRAWN	JW
CHECKED	TD
APPROVED	TD

PROJECT NO.
22102

DRAWING NO.
C-2.0

	Wednesday 7/31	Thursday 8/1	Friday 8/2	Monday 8/5	Tuesday 8/6	Wednesday 8/7	Thursday 8/8	Friday 8/9	Monday 8/12	Tuesday 8/13	Wednesday 8/14
8:15 AM	Mechanical 2nd Low	Electrical 2nd Low	Metal Wall Panels 2nd Low	Flooring 2nd Low				Temp Controls 2nd Low			
9:15 AM	Mechanical 1st Low	Electrical 1st Low	Metal Wall Panels 1st Low	Flooring 1st Low				Temp Controls 1st Low	Food Service Equipment 2nd Low		
10:15 AM	Masonry 2nd Low	Plumbing 2nd Low		Hard Tile 2nd Low		Painting 2nd Low	Fire Supression 2nd Low	Asphalt 2nd Low	Food Service Equipment 1st Low	Landscape 2nd Low	Accoustical Wall Units 2nd Low
11:15 AM	Masonry 1st Low	Plumbing 1st Low		Hard Tile 1st Low		Painting 1st Low	Fire Supression 1st Low	Asphalt 1st Low	Earthwork 2nd Low	Landscape 1st Low	Accoustical Wall Units 1st Low
1:15 PM	Carpentry 2nd Low		Casework 2nd Low	Wood Athletic Flooring 2nd Low	Roofing 2nd Low	Elevators 2nd Low	Fire Alarm 2nd Low		Earthwork 1st Low		
2:15 PM	Carpentry 1st Low	General Trades 2nd Low	Casework 1st Low	Wood Athletic Flooring 1st Low	Roofing 1st Low	Elevators 1st Low	Fire Alarm 1st Low		Gym Equipment 2nd Low	Signage 2nd Low	Structured Cabling 2nd Low
3:15 PM		General Trades 1st Low			Aluminum Entrances 2nd Low				Gym Equipment 1st Low	Signage 1st Low	Structured Cabling 1st Low
4:15 PM					Aluminum Entrances 1st Low						

SECTION 013700
3D COORDINATION

PART 3 - EXECUTION

3.01 3D COORDINATION PROCESS – GENERAL REQUIREMENTS.

A. The Barton Malow Builders 3D Coordination process utilizes 3D models from the Design team and trades to spatially coordinate the installation of components in a virtual environment prior to field installation. All trades assigned to this specification section shall provide models to be used in the 3D coordination process. Models shall be updated throughout construction to incorporate change, including after model sign-off.

B. 3D Coordination Schedule
   1. All trades shall conduct 3D coordination following the schedule referenced below. This schedule shall be maintained throughout construction and utilized in conjunction with the master P6 project schedule. In the event of discrepancy, the master P6 project schedule shall supersede.
   2. All schedules are subject to change and shall be updated as needed throughout the project lifecycle.

Coordination Area	Duration	Start Date	Sign-Off Date
Level 1	6 Weeks	September 3rd 2024	October 14th 2024
Level 2	3 Weeks	October 15th 2024	November 4th 2024
Total Estimated Duration:	9 Weeks	September 3rd 2024	November 4th 2024

C. Barton Malow Builders will lead the coordination process. All trades shall be responsible for resolving clashes related to their scope of work. All 3D coordinated work shall take precedence over field routed systems.

D. Design Models
   1. Contractor shall utilize models and exports (2D/3D) obtained from TMP Architecture, Inc. (and it's Engineers, Consultants and Subcontractors) to facilitate coordination. Model origin point shall be coordinated with TMP Architecture, Inc..
   2. In the event that 3D models are not available from TMP Architecture, Inc. (and it's Engineers, Consultants and Subcontractors), 3D coordination shall still be performed. Trades are responsible for modeling systems following the workflows, guidelines, and procedures specified by Barton Malow Builders.
   3. Models shall be provided in Revit 2022format and updated as needed throughout construction.
   4. Barton Malow Builders shall distribute design models for use by all trades. Trades, in conjunction with Barton Malow Builders, shall utilize design models to perform 3D coordination.
   5. In the event that contract documents are updated, TMP Architecture, Inc. (and it's Engineers, Consultants and Subcontractors) shall provide updated design models reflecting this change. Updated models shall be distributed to all trades by Barton Malow Builders. Trades are responsible to incorporate these changes within the timeframe dictated by Barton Malow Builders.
   6. Barton Malow Builders is not responsible for the validity of design team models/content. Design models shall be utilized at risk and are the responsibility of each trade to review, validate, and utilize in the production of a constructible trade model.

E. 3D Coordination Team
   1. The following Bid Categories are required to participate in the 3D coordination process:

Bid Category #	Bid Category Title
3B.18	Plumbing
3B.19	Fire Suppression
3B.20	Mechanical
3B.21	Electrical

2. The 3D coordination team will utilize design and trade models, including but not limited to architectural, structural, MEP/FP, etc., to generate a federated 3D model. This federated model shall be used to identify and resolve issues applicable to all systems. All clashes/issues within each coordination area shall be resolved prior to sign-off.
3. Each 3D coordination team member shall generate a constructible model inclusive of all systems and provide sufficient detailing labor to meet the coordination schedule.
4. A master contact list shall be generated by Barton Malow Builders to facilitate coordination. Each trade shall provide contact information for personnel performing 3D coordination (name, email, phone number, etc.).

F. 3D Coordination Meetings
1. A mandatory 3D coordination kick-off meeting will be held. Topics to be reviewed include but are not limited to contact information, team collaboration, execution, meeting cadence, coordination schedule, above-ceiling system zones, use of coordinated elements during construction, project specific requirements, modeling and documentation standards, etc.
2. Meetings will occur on a weekly basis, at minimum. Supplemental meetings will be scheduled as needed to maintain schedule.
3. Barton Malow Builders will facilitate the meeting and hold authority on all final decisions, emphasizing what is best for the overall project. It is the responsibility of each trade to provide model content clash free with itself, other trades, and design model elements. Barton Malow Builders is not responsible for listing out every clash that occurs, nor for any clashes left unresolved at the time of sign-off.
4. The intent of the weekly meeting shall be to review and resolve all issues identified within the federated Navisworks model within the timeframe dictated by the 3D coordination schedule. Specifically, meetings shall focus on:
    a. Resolution of issues that cannot be resolved offline between trades
    b. Identification of any additional information needed within model objects to support scheduling, sequencing, logistics, or estimating goals
    c. Review and incorporation of change generated by Bulletins/RFI/CCDs/etc.
5. Meetings will not be used to resolve individual trades' work. If a trade does not post a fully coordinated and constructible system of its own scope of work, they will be considered unprepared for the meeting and responsible for any delay to the project schedule, as well as any associated cost tied to the delay.
6. Each trade shall:
    a. Provide updated models relevant to the coordination area prior to the meeting.
    b. Review clash results from the federated model relevant to their scope of work and all relevant models from other trades.
    c. Collaborate outside of the coordination meeting with any/all 3D coordination team members to resolve all clashes that can be resolved without overall team input.
    d. Be ready to discuss all clashes/issues requiring overall team input. This includes but is not limited to MEP routing collaboration, RFI submission, bulletin incorporation, submittal discrepancy, etc.

e. Attend every coordination meeting with a representative(s) authorized to make decisions. Attendees must be able to work within the model and implement changes.
f. Be prepared to work within and navigate models on their own workstations.
g. Come to the meeting prepared.

7. Meeting minutes shall be used to facilitate the meeting and list all key issues impacting 3D coordination, including but not limited to open issues, RFIs, submittals, design/owner change, etc.

G. Submittals
1. All trades are required to submit shop drawings after sign-off of each area. Submittals shall be approved prior to work being installed in the field. Required submittals generated from 3D coordination include but are not limited to floor sleeve/opening drawings, wall penetration drawings, hanger layout/point load drawings, equipment pad layout drawings, overhead MEP routing drawings, and access panel drawings.
2. Submittals shall be fully annotated and include the proper level of detail needed for adequate review. This includes but is not limited to dimensions from column line/s to CL of system, lengths of runs and offsets, top/bottom/center elevations above finish floor, labeling and callouts, equipment identification, etc.
3. Barton Malow Builders and TMP Architecture, Inc. (and it's Engineers, Consultants and Subcontractors) reserve the right to request additional detail be provided as needed. In the event of discrepancy, TMP Architecture, Inc.e (and it's Engineers, Consultants and Subcontractors) specifications shall govern.
4. Barton Malow Builders reserves the right to accelerate or delay submittal due dates as needed to support the overall project and schedule.
5. Dependent on project need, drawings may be requested in composite format. Trades are required to work collaboratively to generate and provide composite drawings.
6. Submittals shall be provided in various formats as required by the project and specified by the Lead Coordinator. This includes but is not limited to PDF, RVT, NWC, DWG, etc.

H. 3D Coordination Sign-Off
1. Trades shall comply with the following language within the 3D coordination sign-off form:
a. Signer, as a representative of their organization, acknowledges this model is complete and fully coordinated per the requirements established by Barton Malow. These requirements, and all others referenced in the 013700 3D Coordination specification section, shall continue to be adhered to throughout construction. Signer confirms the signed-off model shows all systems fully coordinated, constructible, code compliant, and without any further coordination required, less the exceptions noted below. Signer agrees all work shown within this model accurately represents the upcoming installation of each system.
b. This coordination area is ready for final sign off per the published NWD model posted to BIM360/Build. The signed-off model shall act as the conditions by which all systems shall be installed. If any parties deviate from this model after sign-off, it is at that parties' own risk. That party shall be responsible for any impact the deviation(s) may have on others (cost, schedule, etc.). The same party is required to make others aware of those changes. Further, parties who make model updates/additions after sign-off are responsible for ensuring those changes are clash free. This includes updates due to future bulletins/RFIs. Change generated from future bulletins/RFI's/etc. shall be evaluated on a case-by-case basis and quantified through the change management process as applicable. This sign-off model will be saved and used for record purposes as needed. Any remaining clashes in this coordination model, at the time of this sign-off, shall be considered false or minor. These instances shall be corrected in future no-cost model updates, and/or no-cost field correction/s, as well as reflected in as-built documentation. Any remaining items not meeting these criteria shall be documented below for record.

2. A signed off Navisworks NWD model shall be published, saved and referenced throughout construction.
3. A current progress model reflecting all change post sign-off will continue to be updated throughout construction.
4. The federated model is not considered signed off until all parties, including the Lead Coordinator, Project Manager, TMP Architecture, Inc. (and it's Engineers, Consultants and Subcontractors), and Troy School District, have approved all constructible systems and routings.
5. The Lead Coordinator shall determine if re-opening a previously signed off area is necessary due to design changes or any other circumstance.

I. Progress Models
1. Progress models shall be continually updated by all trades throughout construction. This includes any required updates post sign-off to account for circumstances including but not limited to RFIs, bulletins, CCDs, design and owner changes, field-routing of systems, as-built conditions, etc.
2. Upon project completion, updated models shall be turned over and considered the Final 3D Coordination Model. This model shall be submitted electronically in various formats as required by Troy School District, including but not limited to NWC, NWD, Revit, AutoCAD, and PDF.

J. Federated Model Standards
1. General
   a. Megann Nafus shall maintain all federated models throughout construction. Navisworks Manage shall be used for generation, management, and clash detection of all federated models. Models shall be posted in .NWF/.NWD format.
   b. Clash detection shall utilize a 1/16” tolerance. Barton Malow Builders reserves the right to modify tolerance or clearance thresholds as needed.
   c. Model coordinates shall be established using project internal coordinates, shared coordinates, column grids, or any combination thereof. Trades are responsible to align their models to the federated model and coordinate with Barton Malow Builders) as needed.
2. Design File Utilization
3. Trades shall be responsible for generating Revit views, file exports, saved viewpoints, and any other miscellaneous file formats needed to create the complete turnover model. This includes compiling major equipment data parameters on an excel spreadsheet, or alignment of project specific equipment tagging with Owner facility tagging. All shall be provided on an as needed basis and as specified by Owner's Actual Name.
   a. Megann Nafus shall utilize the design models to generate exports used for 3D coordination. Exports shall be void of excessive notations, leaders, bubbles, marks, grid lines, etc.
4. Gap Modeling
   a. Gap modeling will be completed on all model elements not shown yet needed to perform 3D coordination. Trades are responsible to gap model as needed to fulfill the requirements of 3D coordination. Barton Malow Builders will evaluate the element in question on a case-by-case basis and hold final authority on all decisions.
   b. Barton Malow Builders may perform gap modeling to support the project and maintain schedule. Barton Malow Builders shall be indemnified of any gap modeled elements. Gap modeled elements shall be utilized at risk and are the responsibility of each trade to review, validate, and utilize in the production of a constructible trade model.
5. File Naming
   a. Federated models shall comply with the following naming convention:
   b. 0X_Project Abbreviation_Coordination Area
   c. Example: Project CGL, Level 2

1) 02_CGL_LVL2.nwd

6. Documentation and Reporting
   a. The Megann Nafus shall review the federated models, generate clash viewpoints, and distribute models to all trades per the coordination schedule.
   b. Clash trending/tracking tools shall be used at the discretion of Barton Malow Builders ation) to ensure clash resolution is occurring within the timeframe needed to meet scheduled sign off dates.

K. 6D Facility As Built / Turnover Models
   1. 6D turnover models shall be provided upon request and based off specific client/project need. Equipment/systems will be tagged within the model and include all required identification information as specified by Troy School District. This identification information will correspond with project specific close-out documentation and include but not be limited to COBie data, equipment schedules, material schedules, O&M manuals, etc. This includes requests for PDF deliverables containing embedded model content.
   2. Barton Malow Builders will provide a location for trades to submit required documentation. Barton Malow Builders will generate the completed 3D coordination model based on these documents for turn-over to the owner.
   3. Navisworks will be utilized to embed links within the turnover model. Links include but are not limited to closeout documents, submittals, O&M manuals, RFI's/Images, etc.
   4. Trades shall embed smart data within their own models and provide closeout documents in the format and timeframe dictated by Barton Malow Builders.

L. Commissioning
   1. Trades shall be aware of job-specific commissioning requirements and coordinate with the commissioner as required.

M. BIMxP Implementation
   1. Trades shall comply with the BIMxP and miscellaneous design documents. The BIMxP may be provided by Troy School District, TMP Architecture, Inc. (and it's Engineers, Consultants and Subcontractors), Barton Malow Builders, or any combination thereof. In the event of discrepancy, Barton Malow Builders shall hold final authority on all decisions.

3.02 REQUIREMENTS OF ALL TRADES

A. Trade Model File Naming and Uploading
   1. File naming convention shall comply with the following:
      a. Project Abbreviation_Coordination Area_Trade_System_
      b. Example: Project CGL, Level 2, Barton Malow Builders, Mechanical Pipe System.
         1) CGL_L2_BMB_MP_.nwc
      c. Typical system abbreviations include but are not limited to:
         1) _SM_ Sheet Metal
         2) _MP_ Mechanical Pipe
         3) _PL_ Plumbing
         4) _EL_ Electrical
         5) _FP_ Fire Protection
   2. Each model posted by the trade shall contain sub-layers for the purpose of system identification and isolation.
      a. Example: CGL_L2_BMB_SM_ shall contain but not be limited to sub-layers for Supply, Return, Exhaust, Fire Smoke-Dampers, VAV clearance, AC Door Access, Fan Coil Units, FCU Access, Equipment, Equipment Pads, Equipment Clearances, and Hangers.
   3. Trades shall upload model files to Autodesk Build on a weekly basis. Additional uploads shall be provided as needed to maintain schedule.
   4. Trades shall maintain a current control copy of their own model files outside of the project's web-based posting site, including copies of all previously posted files.

5. Upon request, or as needed, trades shall upload native files used to generate clash detection files to a location determined by Barton Malow Builders. Base native model file types include but are not limited to Revit, AutoCAD, Tekla, etc.

B. File Types
1. Trades shall generate and post exports of their native model files. Exports shall be specific to each coordination area. Export file types include but are not limited to .NWC, .DWG, .DWFx, .RVT, .IFC, etc. Barton Malow Builders reserves the right to request trades provide alternate file types as needed to support the overall 3D coordination process.

C. File Storage
1. All files shall be stored utilizing BIM360/Build. Model files shall never be tampered with by non-owners of the file. If a model is inadvertently modified, the responsible trade is required to alert Barton Malow Builders immediately.

D. Model File Standards
1. All trade models shall be provided in LOD 400. Refer to EXHIBIT 1 – Article 2 for further definition.
2. Trades shall post model files void of clashes within their own scope of work (i.e., systems shall not be clashing with itself).
3. These files shall be void of all text and annotations.

E. Model Elements
1. Model files shall include all elements necessary for accurate spatial coordination. This includes but is not limited to:
    a. Architecture
        1) Masonry - CMU and masonry veneer walls, foundations, grouting, reinforcing, bond beams, and any 3D geometry necessary for evaluating connection details with other systems.
        2) Millwork - 3D geometry of casework and information pertaining to product data, finishes, and hardware.
        3) Metal Wall Panels - Panels, soffits, returns, and connection details.
        4) Roofing and Cornice - 3D geometry information necessary for evaluating connection detailing with other systems.
        5) Doors, Frames, and Hardware - Associated data assigned to Model Elements, 3D geometry for king studs and headers.
        6) Overhead doors - tracks, controls, equipment with information assigned to the model objects, 3D geometry for code clearances.
        7) Glazing - Aluminum Framing, Storefronts, Curtainwalls and their connections, curtain wall embeds.
        8) Cold Form Metal Framing - Engineered Stud framing, GWB Partitions, Acoustics including walls, blocking, soffits, ceilings.
        9) Toilet Partitions - 3D geometry including supports to structure, embedded information assigned to model objects.
    b. Structure
        1) Cast In Place and Precast Concrete - Geometry, footings and foundations, pile caps, walls, columns, slabs (with turn-downs), construction joints, grade beams, openings and block-outs, embeds and reinforcing, connections to steel, and masonry.
        2) Miscellaneous Metals / Supplemental Steel - Kickers, stairs, railings, and any required support steel separate from superstructure.
    c. Piping
        1) Piping of all sizes, fittings, connections, slope, valves, clearances, sleeves, sprinkler heads, insulation, maintenance and access points, cleanouts, and all piping that is grouped, racked, or banked.
    d. Sheet Metal/Ductwork

1) Ductwork to outside dimensions, layout and routing of all rigid and flex ductwork, insulation, reheat coils, VAVs, VFDs, terminal units, dampers, filters, sleeves, registers, grilles, diffusers, diffuser boot connections.

e. Power/Lighting/Low Voltage/AV
   1) Light fixtures, clearance above fixtures for maintenance, detectors, speakers, sensors, sleeves, pull boxes, maintenance and access points, cable tray, 12” clearance above tray, 12” clearance on one side of tray, raceways, conduits 1" or more in diameter and all conduits that are grouped, racked, or banked.
   2) A/V equipment, screens, and speakers

f. Hangers and supports (including sway bracing and equipment bracing), wall/floor penetration sleeves, clearances, maintenance and access points, access doors.

g. All maintenance and access points modeled and compliant with code, with semi-transparent clearance from maintenance point to finish floor.

h. Miscellaneous
   1) Food Service Equipment - 3D geometry including clearances and connections.
   2) Elevators - Cabs, controls, hoists, framing, equipment, and clearances.

F. MEP Equipment
1. All trades are required to accurately model project specific equipment and incorporate it within models. This includes but is not limited to accurate manufacturer dimensions, clearances, AHUs, substations, panels, VFDs, fixtures, pumps, heat exchangers, etc.
2. Equipment shall be based on approved submittals and include final termination/tie-in/connection point coordination. All trades shall ensure equipment is approved prior to sign-off of each respective coordination area.

G. Architectural Standards
1. As dictated by the project, and where able, systems shall be routed:
   a. 6” from adjacent walls to promote acoustics and mitigate overheating.
   b. 18” from adjacent full height walls to provide adequate space for wall top-out.
   c. 6” above top of ceiling to allow for proper access to ACT.
   d. Perpendicular through all walls to provide clean penetrations.

H. Temporary Systems
1. Temporary systems that remain throughout construction or are abandoned in place shall be modeled by the responsible trade.

I. Existing Conditions
1. Existing components to remain shall be modeled as required by all applicable trades. This will ensure existing and new scope is coordinated and aligns to the surrounding facility. Each trade is responsible for documenting infield conditions by any means necessary to accurately reflect their scope area within the 3D model. This includes laser scanning to capture existing conditions.
2. Barton Malow Builders may provide reality capture content, including laser scans, to support the project and maintain schedule. Barton Malow Builders shall be indemnified of any reality capture content provided. This content shall be utilized at risk and is the responsibility of each trade to review, validate, and utilize in the production of a constructible trade model.

J. Phased Construction
1. Barton Malow Builders reserves the right to request trade model files include phasing parameters to support construction. Methods of achieving phasing include but are not limited to Revit phasing, filters, separate model files broken down by phase, etc.

K. Field Routing
1. Modeled and coordinated systems take precedence over field routing. If an element is not modeled, it will be assumed as field routed. All field routed systems shall not interfere with

previously modeled/coordinated work. This includes conflicts with clearances. Trades who field route are responsible to ensure their installation will not conflict with others.

L. Priority Walls
1. Trades shall evaluate all walls and determine which are considered priority. Priority walls shall be evaluated based on sequencing and/or proximity to adjacent systems. These shall include but not be limited to full-height walls requiring top-out, or partial height walls requiring kickers.
2. Trades shall coordinate with Barton Malow Builders to ensure proper installation and sequencing. This includes installation of priority walls or wall top-out prior to adjacent MEP/FP.

M. Optimized Routing
1. Trades shall comply with and follow design intent. Any optimization to routing must be within the bounds of design intent. Minor modifications to system routings are expected throughout 3D coordination and shall be provided as part of 3D coordination at no cost. This shall hold true so long as design intent is followed. Minor modification shall be defined, reviewed, and approved by TMP Architecture, Inc. (and it's Engineers, Consultants and Subcontractors) and Barton Malow Builders.
2. If cost is associated with modified routing, design intent cannot be followed, or design is not constructible, trades are responsible to contact Barton Malow Builders immediately. Proper documentation must be submitted at the time the issue is identified, typically in the form of an RFI.
3. Trades shall coordinate each system with the intent to simplify design intent where applicable and optimize installation. This can be defined as, but is not limited to:
    a. Mitigation, reduction, or elimination of system offsets.
4. Modified routing or elevation above ceiling.
    a. Proper clearance to maintenance and access points.
    b. Mitigation of impact to surrounding systems, architecture, or structural features.

N. Flypaper Sherlock
1. Barton Malow Builders will utilize Flypaper Sherlock to aid clash detection and review. This is a Navisworks Manage add-on software that automates the grouping of clashes, generates heat maps highlighting congested areas, and provides issue markup for enhanced communication.
2. Trades performing clash detection shall acquire this tool to facilitate a more efficient process. Product Information is available at https://flypaper.com/sherlock/

O. System Hierarchy
1. During 3D coordination, priority will be given to the least flexible systems. General hierarchy in order of appearance shall be:
    a. Structural Steel
    b. Supplemental Steel/Miscellaneous Metals
    c. Architecture
    d. MEP/FP Equipment
    e. Maintenance and Access Points/Code clearances
    f. Gravity Piping
    g. Sheet Metal/Ductwork
    h. Cable Tray
    i. Conduit
    j. Pneumatic tube
    k. Light Fixtures
    l. Refrigerant Piping
    m. Fire Protection (wet)
    n. Domestic Plumbing

o. Hangers

2. Hierarchy shall remain mutable as needed to promote an overall coordination effort best for the project. Barton Malow Builders reserves the right to modify this hierarchy as needed and shall hold authority on all final decisions related to routing in conjunction with TMP Architecture, Inc. (and it's Engineers, Consultants and Subcontractors), and Troy School District Name.

P. Structural Steel Spray Fireproofing and Deflection
1. Trade shall account for spray fireproofing and deflection while conducting 3D coordination. To accomplish this, trade shall provide:
a. 2” clearance around all structural steel to account for spray fireproofing.
b. 3” clearance below bottom of structural steel to account for 2” of spray fireproofing, and 1” of assumed deflection.

Q. Model Color Matrices
1. Trades shall model all elements in color and provide a color matrix defining each system within their scope of work. This includes all sub-systems. RGB colors shall be provided. Colors shall be distinct between trades to differentiate systems. Barton Malow Builders reserves the right to request trades provide alternate colors to promote system identification.

3.03 REQUIREMENTS OF THE STRUCTURAL STEEL TRADE

A. Model Generation and Origin Point
1. Trade shall obtain Structural Revit files from the TMP Architecture, Inc. (and it's Engineers, Consultants and Subcontractors) and use as the base structural model.
2. Trade shall develop and provide a structural steel fabrication model (also referred to as a mill order/procurement model) within the time frame dictated by Barton Malow Builders.
3. Trade shall provide model updates as dictated by Barton Malow Builders and ensure all trades are referencing the most up-to-date structural model.
4. The base/insertion/datum point of the structural steel fabrication model must match the point established by the TMP Architecture, Inc. (and it's Engineers, Consultants and Subcontractors) design models. At the discretion of Barton Malow Builders, structural steel trade may use a work plane base point or other export method to ensure models align. No detailing work shall take place until the base point/project internal/shared coordinates of the structural steel fabrication model and design models match.

B. Model Elements
1. Trade shall model all structural framing members as 3D objects with surfaces. This includes but is not limited to structural steel, supplemental steel, cross Bracing, wind Bracing, metal decking, slab on metal deck, gusset plates, connection details, edge of slab details (pour stop), brick relief angles, embeds, anchor bolts, and other miscellaneous metals. Elements shall be properly sized and located within the model.
2. Barton Malow Builders reserves the right to request certain elements be filtered/hidden/removed from the structural steel fabrication model to facilitate file sharing between all parties. It is the responsibility of the structural steel trade to comply with these requests prior to sharing/uploading with the 3D coordination team. This includes but is not limited to hardware, supplemental steel, miscellaneous metals, bolts, connections, etc.

C. Model File Type
1. Trade shall provide a structural steel fabrication model in a format usable by all trades. Typical examples include but are not limited to .IFC, .RVT, .DWG, .NWC.
2. Trade shall resolve all modeling issues related to their scope of work, including but not limited to improper scale, missing components, improper display graphics (solid surface/wire mesh), export settings, file format, etc.

D. Shop Drawings

1. Trade shall submit a final structural steel fabrication model and 2D shop drawings to the design team and structural engineer of record. Approved shop drawings shall be used for field erection. Barton Malow (Designation) shall dictate submittal due dates.
2. Trade shall submit approved model files to Barton Malow Builders for insertion into federated 3D coordination models.

3.04 MISCELLANEOUS REQUIREMENTS, TOLERANCES AND CLEARANCES

A. General
1. Identify Mechanical chases and coordinate riser tap locations/elevations.
2. Align clash detection standards with facility standards.
3. Abide by all current code books and requirements.
4. Trades are responsible to model all underground and in-wall systems. Sawcut extents within an existing slab shall be modeled.
5. Plumbing, Pneumatics, and other utilities penetrating slabs shall be coordinated with structural elements. Core drilling through slabs/walls/beams must be approved by the structural EOR and may require X-Ray penetration prior to coring.
6. Trades shall model place holders where applicable for portions of work yet to be designed.

B. Civil/Site Mechanical
1. Civil coordinates may not align with building coordinates. Ensure state plane and project internal/shared coordinates align. Ensure all utility connection points/inverts align.
2. Ensure grading is properly sloped away from doors and openings.

C. Architecture
1. Main walking or egress paths shall be modeled as found on the Life Safety sheets. Paths shall have a clearance 7’-0” AFF, and 6’-8” on stairs. Verify MEP routing does not conflict with this walking path.
2. Clearances on platforms, catwalks, and ladders shall be modeled and comply with OSHA.
3. Ladders greater than 20 feet high require a safety cage.
4. Per OSHA, minimum guardrail height is 42” tall with +/- of 3”. Verify required height against tapered roof insulation.
5. Verify tapered roof insulation against mechanical curbs and ensure a minimum of 12” clear to account for flashing.
6. Roof mounted equipment on stands shall be coordinated and properly sequenced with roof insulation.
7. Roof mounted equipment on stands shall be coordinated and properly sequenced with roof insulation.

D. Mechanical Rooms
1. Equipment pads shall be coordinated with all MEP equipment and be reviewed against floor drains, floor cleanouts, slab sleeves/openings, door swings, walkway clearances, etc.

E. Fire Protection
1. Dry FP systems shall be sloped as required and be routed as high as possible.
2. Sprinkler discharge and coverage zones shall be coordinated against adjacent MEP and additional heads provided as needed.
3. Head coverage shall be evaluated against architectural soffits or horizontal features.
4. Flexible head connections shall be provided only when approved by all parties.

F. Plumbing and HVAC Piping
1. All components requiring future access shall be modeled with at least 24” radial clearance. This includes but is not limited to CO’s, shut-off valves, floor drains, pumps, control panels, etc.
2. Gravity lines shall be as high as possible and meet slope requirements. When feasible, runs should be inside of beam pockets.

3. Bathroom fixtures and connections shall not conflict with adjacent structure. This includes verifying adequate in-wall space is provided for wall mount fixtures.
4. Provide clean outs as specified per national/regional building code, and design/owner requirements.

G. Ductwork/Sheet Metal
1. Return Air Mains and Branches shall typically be routed below gravity lines. Adequate space for diffuser boot connections shall be provided.
2. Grease duct shall be modeled as high as possible and pitch back to hood. Pitch and access shall comply with code; grease traps shall be avoided if possible.
3. Supply/return diffuser spacing shall be monitored throughout the 3D coordination process.
4. In line equipment shall be modeled and accessible per code. If able, access shall be less than 24” from top of ceiling.

H. Electrical
1. Electrical rooms shall be fully modeled and include but not be limited to panels, conduit, disconnects, starters, VFDs, tray, equipment, etc.
2. Pull boxes and junction boxes shall be modeled with clearance for access.
3. Low voltage wiring and equipment shall be modeled and include but not be limited to occupancy sensors, range switches, thermostats, etc. Low voltage shall be coordinated with other scopes, including but not limited to casework, doors, kitchen equipment, furniture, etc.
4. All Audio/Visual equipment and infrastructure shall be modeled, including all required structural supports. Clearances for maintenance and use of A/V equipment shall be modeled.
5. All lighting shall be modeled, including specialty theme/show lights. Trade shall coordinate final locations of devices with all applicable parties holding authority, including Troy School District.

I. Special Equipment
1. Beverage Conduits shall be modeled following bend radii requirements.
2. Kitchen equipment, laundry equipment and hoods shall be modeled and correspond with final equipment selection/approved shop drawings. Connections shall be coordinated.
3. Elevator equipment room layouts shall be requested in advance. Trades shall coordinate against these layouts and ensure systems are routed properly to accommodate final layout.

3.05 THE FIELD TECHNOLOGY PLAN

A. The Field Technology Plan (FTP) establishes the best practice for utilizing mobile technology in the field. This includes but is not limited to accessing 3D federated models, read/write RFI’s, review plans, submittals, shop drawings, etc.

B. Field Kiosk
1. A field kiosk may be centrally located during construction to promote 3D model access, plan review, RFI review, submittal review, etc. These kiosks shall be equipped with a TV and computer; additional compartments for hard copy plans/documents will be included.

C. Tablets/iPads
1. Barton Malow Builders will utilize tablets/iPads for mobile viewing. Trades are required to make tablets/iPads available to field teams. Devices shall include data plan for internet access and be able to access Autodesk BIM360/Build, NWD models, PDF files, and MS Office products.

D. Mobile Technology Usage
1. Wireless internet may be available on specific projects and shall be used for project related activity only. Misuse of onsite mobile technology shall be reported and may result in loss of access privileges.

2. Documentation shall be distributed utilizing BIM360/Build and will be accessible on computers, tablets/iPads, field kiosks, cell phones, etc.

E. Field Discrepancy
1. When a field issue arises, the 3D federated model shall be used in conjunction with design documents and shop drawings to determine potential errors and resolutions.

F. Clearance Zones
1. Clearance zones within the model shall not be encroached in the field. If encroachment occurs, the signed off model will be used to resolve the issue. If field conditions require change to the model, it shall be tracked, recorded and updated within the model.

G. Zone Plan Meetings
1. Pre-zone Installation Meetings will be held for 3D model review and communication, clearance discussions, procedure discussions, and enhanced planning. Trades shall be present and the design team is encouraged to participate.
2. These meetings shall occur before entering each installation zone. The field team will review the upcoming tasks and plan utilizing the coordinated models, schedule, electronic documents, RFI's and approved submittals.

H. Quality Control
1. Trades shall continually verify all installed material for compliance with the model.
2. Trades shall be fluent with the 3D tablets/Field Kiosks. Work in place shall be installed based on approved shop drawings and verified using the 3D model.

I. Field Change Procedure
1. If change is identified as required in the field:
2. A change plan will be reviewed with the 3D Coordination team to ensure the proposed changes will not generate new, unforeseen issues.
3. Any change must be approved via RFI for proper documentation. Any relevant pictures and backup shall accompany the RFI.
4. Changes shall be properly documented on the corresponding trades' as-built field plans. Field changes shall be incorporated into 3D models throughout construction.

J. Owner Change Procedure:
1. All owner change shall be incorporated into the 3D coordination process.
2. As applicable, shop drawings shall be updated by all impacted trades.

EXHIBIT 1

4.01 ARTICLE 1: GENERAL PROVISIONS

A. This document defines protocols, expected levels of development, and authorized uses of Building Information Models on this Project. It assigns specific responsibility for the development of each Model Element to a defined Level of Development at each Project phase. ***Where a provision in this Exhibit conflicts with a provision in the Agreement into which this Exhibit is incorporated, the provision in this Exhibit will prevail.***
1. ***The parties agree to incorporate this Exhibit by reference into any other agreement for services or construction for the Project.***

4.02 LEVEL OF DEVELOPMENT (LOD)

A. The following LOD descriptions identify the specific content requirements and associated authorized uses for each Model Element from 300 thru 500 progressively detailed levels of completeness.

B. **LOD 300** – The Model Element is graphically represented within the Model as a specific system, object, or assembly in terms of quantity, size, shape, location, and orientation. Existing building elements are modeled as shown on building record drawings. Non-graphic information should also be attached to the Model Element such as object description, object tags (door number, equipment number, etc.), and quantities.

Examples of the details required for systems modeled to LOD 300 include, but are not limited to: site utilities; masonry; steel decking; correct slopes for gravity piping for sanitary; storm or wet fire suppression systems; piping materials specifically called out on documents included with model element attributes (generic manufacturer for system components are acceptable); insulation around pipe and duct; duct dampers included with the duct system; doors/frames (hollow metal and storefront); and owner furnished FFandE.

Authorized uses include:

1. **Construction**. Suitable for the generation of traditional construction documents.
2. **Analysis**. The quantity, size, shape, location, and orientation of the element as designed can be measured directly from the model without referring to non-modeled information such as notes or dimension callouts.
3. **Schedule**. The Model Element may be used to show ordered, time-scaled appearance of detailed elements and systems.

C. **LOD 350** – The Model Element is graphically represented within the Model as a specific system, object, or assembly in terms of quantity, size, shape, location, orientation, and interfaces with other building systems. Non-graphic information should also be attached to the Model Element such as system type and load data.

Authorized uses include:

1. **Construction**. Suitable for the creation of shop drawings.
2. **Analysis**. The Model Element may be analyzed for performance of selected systems by application of specific performance criteria. Parts necessary for coordination of element with nearby or attached elements are modeled. These parts will include such items as supports and connections. The quantity, size, shape, location, and orientation of the element as designed can be measured directly from the model without referring to non-modeled information such as notes or dimension callouts.
3. **Schedule**. The Model Element may be used to show ordered, time-scaled appearance of detailed elements and systems.

D. **LOD 400** – The Model Element is graphically represented within the Model as a specific system, object, or assembly in terms of size, shape, location, quantity, and orientation with detailing, fabrication, assembly, and installation information. Non-graphic information should also be attached to the Model Element and shall include data such as manufacturer name, model number, and serial number.

Examples of items and details required in LOD 400 models include, but are not limited to: concrete; concrete reinforcing steel; anchor bolts; structural steel; steel stairs; handrails; floor/roof penetration steel; significantly sized support hangers and stanchions for all systems; uni-strut associated with system components if it is located in a tight overhead space (case by case basis); architectural millwork/casework; metal panels and support steel; curtainwall system; steel stud framing including kickers and trusses at floor penetrations; valve locations; access panels (these should be modeled with the system they provide access to); conduit racks or other substantially wide/bundled electrical routing (these can be generically modeled, i.e. extruded boxes, space claims); single conduit runs associated with any system (lighting, power, controls, etc.) if needed to coordinate concrete coring; kitchen equipment; MEP/FP and low voltage systems and equipment; pull box locations; and clearance zones.

Authorized uses include:

1. **Construction**. Model Elements are virtual representations of the proposed element and are suitable for coordination purposes and construction.
2. **Analysis**. An LOD 400 Element is modeled at sufficient detail and accuracy for fabrication of the represented component. The Model may be analyzed for performance of approved selected systems based on specific Model Elements. The quantity, size, shape, location, and orientation of the element as designed can be measured directly from the model without referring to non-modeled information such as notes or dimension callouts.

3. **Schedule**. The Model Element may be used to show ordered, time-scaled appearance of detailed specific elements and systems including construction means and methods.

E. **LOD 500** – The Model Element is a field verified representation in terms of size, shape, location, quantity, and orientation. Non-graphic information shall be updated with actual installed items.

Authorized uses include:

1. **General Usage**. The Model Element may be utilized for maintaining, altering, and adding to the Project, but only to the extent consistent with any licenses granted in the Agreement or in a separate licensing agreement.
2. **Other Authorized Uses**. The Model will be a tool for accessing as-built information for facility management and maintenance purposes.

F. **Reliance on Model Elements**

1. Barton Malow Builders may choose to utilize a Model Elements Table to further break down model elements detail responsibilities further than the above LOD descriptions prior to or during coordination.

END OF SECTION 013700