Troy Schools District

RFP #2324-22
BP#3B Smith Middle School - ARCH & MEP & Civil - Addendum #3
July 18th, 2024

Content Included in this Addendum:

Cover Page (1 Page)
Barton Malow Write Up (4 Pages)
TMP Addendum Write Up (50 Pages)

TOTAL PAGES: 55 Pages

July 18th, 2024

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

Addendum #3 Bidder Clarifications

A. General Clarifications

- Due to some new information regarding the status of state plan review, we will be issuing a revised schedule early next week. This schedule will primarily change the start times of early categories by roughly a month and a half. In lieu of this information we have decided to push the due date back to July 30th at 2:00PM for ALL categories.
- **ALL BID CATEGORIES ARE DUE ON JULY 30TH @ 2:00 PM.**

B. Clarifications and Additions to Work Scopes

- **Signage**
  - Clarified note on in-wall blocking in work scope
- **Earthwork**
  - Added bike racks to scope of work and clarified signage/markings responsibility
- **Paving**
  - Clarified signage and marking responsibility in scope
- **Carpentry**
  - Move Decorative Formed Metals Section
- **Metal Wall Panels**
  - Add decorative formed metal
- **Gym Equipment**
  - Split category by piece of equipment
  - District reserves the right to award one, all, or any combination of equipment to all contractors.
- **Masonry**
  - Additionally defined Cleaning and de-mudding note in work scope
  - Added Fall zone engineering requirements for section of building adjacent to building structure

C. RFI Responses

Q: S1.3 A- High roof framing plan has a callout for S6.3-1. Is the plate this detail shows continuous for the entire length of the wall along column line 12? please advise
A: Plate is continuous for the interior north/south wall ((1) – 5 ft section and (1) – 8 ft section). Detail 1 is cut showing the east/west wall.

Q: If there isn't a wall tag but the hatching indicates that it's supposed to be metal stud and drywall, is there a standard that we should carry just in case? I'm assuming 2D, 1C, or 1G depending on the application but I wanted to make sure. See page A1.2D, the south wall of the COMMONS room D201 or page A1.2E TEACHER COLLAB room E213 Northeast corner.
A: Exterior walls, refer to section 3/A4.10

Q: Page A1.2D, North of LOUNGE, Room D204 calls out Detail 7 on page A7.8. Is this accurate?
A: Yes.

Q: For the head of wall. Are we required to castle cut and caulk or can we stuff with mineral wool?

A: For CMU refer to details on sheet A8.10, for stud wall refer to wall type legend.

Q: Impact resistant board is called out as 48” and lower. It would be more cost effective to stand up 12’ boards to save on mud and taping seams. Is this acceptable?
A: Yes, acceptable.

Q: On sheet A2.2D, Room D201 (commons) has a ACT 8 specified for the ceiling. There is not an ACT 8 spec section 09 5100. Please clarify what is needed for this particular ceiling.
A: Refer to Addendum #4 when released.

Q: For the stairwell/elevator signage, in order to be code the Inside stairwell signage needs to be quite large, usually quoted at 15"X12". Please clarify is acceptable.
A: Other companies have provided signs as specified, provide code reference.

Q: Is there lightweight concrete required by the roofing contractor? Also, the spec notes a substrate board and vapor barrier, however I do not see where the detail showing either is located. Please advise.
A: No concrete, provide roof assembly as noted on wall sections.

Q: Please clarify solid surface material selection and color for SS Sills.
A: Refer to Addendum #3.

Q: 12 3216 calls for hardwood plywood drawer construction. Can manufacturer standard plywood drawer box construction be acceptable?
A: Clarify intended manufacturer to be used, if not specified, provide a substitution request.

Q: E5.1 shows panel RP-4B, unable to located panel schedule on any E5 prints. Will panel schedule be provided?
A: Added in Addendum #2.

Q: DP-Gen Calls for a Switchboard Configuration with separate sections per NEC. On Print E6.2 Electrical room plan there is not enough space provided to allow this switchboard configuration. Can you please confirm new location of switch board location?
A: Revision in Addendum #3.

Q: CP-5 calls for a Combination Motor Starter on E6.2 Electrical room plan per symbol. CP-5 is not listed in any panel, switchboard, electrical print, or machinal print. Looking for motor data to provide motor starter required. Please advise.
A: CP-5 removed in Addendum #2.

Q: E3.2E shows Elevator Disconnect in room E210. There is no Elevator Information provided in any panel schedule or one-line diagram to quote these disconnect or breakers in panels. Also, is a Special Elevator Disconnect required?
A: Elevator data added in Addendum #2. Disconnect switch requirements indicated in “Elevator Detail – Machine Roomless” on sheet E7.5.

Q: RP-K1 & RP-K2 panel schedules on E5.4 show as empty panel schedules. Please provide breakers and quantities in panel schedules. This will provide more accurate quoting.
A: Revised in Addendum #2.

Q: Finish Plan A10.1A shows EP2, CT3A, CT3B & CT3C to be installed on walls in Toilet Room A132. Note 4 says to reference Details 8, 9, 10 & 11/ A7.8 for wall tile elevations. The elevations do not show a typical toilet room that receives the CT3A, CT3B & CT3C wall tile. The elevation does not show if all the walls in Toilet Room A132 receive wall tile. There is nothing on the finish plan indicating which walls receive wall tile. Do we assume all the walls are to receive wall tile? Is the wall tile full height in this toilet room? Or is epoxy above the wall tile? Or is epoxy on some of the walls? Please provide more information.
A: Refer to Specific notes 4 and 5 on Finish Plans.

Q: On Page S1.2F for column line 25 between M and V can we get sections/details called out?
A: Refer to S1.2D, there is overlap between zones.

Q: For Commons D201 is it Quartz or solid surface countertop?
A: Quartz per A9.2D.

Q: For Commons D201 – what is the bartstool with footrest? What material is it?
A: Refer to spec section 10 0100.

Q: Lounge D204 - The casework plan does not indicate anything, however there are some enlargements on A5.3 that state "solid surface countertop"? Please clarify.
A: Yes, it will be added in Addendum #4.

Q: Are the soffit metal panels (SMP1) in the Metal Wall Panel scope or Carpentry?
A: They are being moved to Metal Wall Panel scope.

Q: Species was not specified; however, a solid wood was called out on detail 10/A8.3. Currently carrying Mixed grain western hemlock. Please clarify.
A: Refer to Spec 09526.

Q: On-center spacing was not specified, however, we were able to pull a 3" on-center dimension from the RCP and elevation for the wood grille. Is that accurate?
A: Refer to spec section 09 4526.

Q: See attached photo. Are these lines supposed to designate a control joint or just dimensions for paint?
A: Dimensions for paint.

Q: A2.1 B for WORKSHOP B128 the West wall hatching shows metal stub but the floor plan A1.1B shows Masonry. Please clarify which on it is.
A: Workshop is Room B138, masonry wall per A1.1B, A2.1 indicates fire rating requirements.

Q: As stated in RFI 98 - Sheet E5.1 shows Panel LP-F feeding 75KVA Transformer T-4. Sheet E5.2 LP-C is shown feeding T-4 and with a 20A Breaker. See RFI 98 Concern. (Secondary Loads are too large for a 20A Primary Feed).
A: Revised in Addendum #2.

Q: Sheet E5.2 -- Schedule LP-F -- Circuit 1,3,5 is a 125A feeding Transformer T-RP-3 -- No T-RP-3 is shown on Sheet E5.1.
A: Revised in Addendum #2 to T-4.

Q: Sheet E5.1 shows Panel LP-2E feeding 75KVA Transformer T-5 and with a 20A Breaker. See RFI 98 Concern (Secondary Loads are too large for a 20A Primary Feed)
No Panel Schedule is shown for Panel 4B
No Feeder sizes are shown for any of the 75KVA Transformer Primary or Secondary Feeders
A:

- Breaker sizes updated in Addendum #2.
- Panel schedule added in Addendum #2.
- Refer to “Feeder and Branch Circuit Sizing Schedule – General Purpose” and “Dry Type Distribution Transformer Circuit Sizing Schedule” located on sheet E0.2.

Q: Please refence drawing C3.1 basketball court - Please confirm the basketball court are to be STD Duty concrete, same thickness and base material as all other STD concrete.
A: Confirmed.

Q: A2.2D Room D201 COMMONS calls out ACT8. The spec only goes to 6. ACT 7 could be considered the OCMC? What would 8 be then?
A: ACT 7 to be added in Addendum #4.

Q: Please see attached floor plan. - do these walls go full height or not? please advise.
A: Refer to Addendum #3, exterior sections, and Sheet A8.10.

Q: Please see attached floor plan – will there be updated wall tags?
A: Refer to Addendum #3.

Q: Note "Lay acoustical insulation for a distance of 48 inches either side of acoustical partitions, unless otherwise indicated" - does this mean for ALL partitions?
A: Acoustic insulation is not called for on A2. Series drawings. Acoustic insulation is not required as part of the ceiling system.

Q: Wanted to confirm if the AP's being installed are one or two data drops per?
A: Aps will receive 1 CAT 6A data drop per location. The square symbol is the AP itself, and the triangle is the data drop.

Addendum

Date	July 16, 2024
Project Name	Troy School District – New Smith Middle School
TMP Project No(s).	22102
Bid Package No.	03B
Addendum No.	Three (3)

ADDENDUM NO. 1 WAS PREVIOUSLY ISSUED ON JULY 10, 2024.
ADDENDUM NO. 2 WAS PREVIOUSLY ISSUED ON JULY 12, 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).:	S1.2B, S1.3D, S6.5, A1.1B, A1.1D, A1.3B, A1.3D, A3.9, A4.25, A5.1, A9.1B, A9.2D, A11.1A, M4.1A, M4.1B, M4.1C, M4.1F, M4.2E, M7.3, E5.1, E6.2
Attachment(s):	Specification Section(s): 00 0107, 05 5000, 22 4200

Item No.	**Specification Changes**
SC-1	Refer to Section No. 00 0110 – TABLE OF CONTENTS (not reissued): A. Added 00 0107 PROFESSIONAL SEALS PAGE to Table of Contents.
SC-2	Refer to Section No. 00 0107 – PROFESSIONAL SEALS PAGE (new): A. Added document, complete.
SC-3	Refer to Section No. 05 5000 – METAL FABRICATIONS (reissued): A. Added paragraphs 1.02.Q through 1.02.T as indicated. B. Added paragraph 2.06.C and all sub-paragraphs as indicated. C. Added paragraph 2.13 and all sub-paragraphs as indicated.
SC-4	Refer to Section No. 22 4200 – PLUMBING FIXTURES (reissued): A. Updated LAV-3 manufacturer and model with an additional selection. B. Updated LAV-4 manufacturer and model with an additional selection.

Item No.	Structural Drawing Changes
SD-1	Refer to Drawing No. S1.2B (reissued): A. Added ladder support framing and Detail cut 13/S6.5 as indicated.
SD-2	Refer to Drawing No. S1.3D (reissued): A. Added ladder support framing and Detail cut 13/S6.5 as indicated.
SD-3	Refer to Drawing No. S6.5 (reissued): A. Added Detail 13/S6.5 as indicated.

Item No.	Architectural Drawing Changes
AD-1	Refer to Drawing No. A1.1B (reissued): A. Revised wall types 1A, 2J, and 2K. Added wall types 4A through 6E as indicated. Note: This revision applies to the following NOT REISSUED sheets: A1.1A, A1.1C, A1.1E, A1.1F, A1.2C, A1.2D, and A1.2E. B. Revised wall furring thickness at column within B104 as indicated.
AD-2	Refer to Drawing No. A1.1D (reissued): A. Added column cover as indicated. B. Revised wall types 1A, 2J, and 2K. Added wall types 4A through 6E as indicated. Revised wall type description for Wall Types 2J and 2K as indicated.
AD-3	Refer to Drawing No. A1.3B (reissued): A. Revised roof access ladder as indicated. B. Added curbs and galvanized pipes as indicated.
AD-4	Refer to Drawing No. A1.3D (reissued): A. Revised roof access ladder as indicated. B. Added curbs and galvanized pipes as indicated.
AD-5	Refer to Drawing No. A3.9 (reissued): A. Section 3: Revised roof access ladder at vestibule roof as indicated.

AD-6	Refer to Drawing No. A4.25 (reissued): A. Detail 3: Added detail as indicated.
AD-7	Refer to Drawing No. A5.1 (reissued): A. Detail 12: Revised detail as indicated.
AD-8	Refer to Drawing No. A9.1B (reissued): A. Revised Solid Surface (SS2) Countertop to Quartz (QTZ1) in Dining Commons as indicated. B. CASEWORK NOTES: Revised note 17 and 20 as indicated.
AD-9	Refer to Drawing No. A9.2D (reissued): A. Revised Quartz Countertop to Solid Surface Countertop (SS1 and SS3) in Commons D201 as indicated. B. CASEWORK NOTES: Revised note 17 and 20 as indicated. Note: This revision applied to the following NOT REISSUED sheets: A9.1A, A9.1C, A9.1D, A9.1E, A9.1F, and A9.2E.
AD-10	Refer to Drawing No. A11.A (reissued): A. Added top of wall elevation as indicated.

Item No.	**Mechanical Drawing Changes**
MD-1	Refer to Drawing No. M4.1A (reissued): A. Adjusted duct silencer sizes as indicated.
MD-2	Refer to Drawing No. M4.1B (reissued): A. Adjusted duct silencer sizes as indicated.
MD-3	Refer to Drawing No. M4.1C (reissued): A. Adjusted duct silencer sizes as indicated.
MD-4	Refer to Drawing No. M4.1F (reissued): A. Adjusted duct silencer sizes as indicated. B. Reworked sheet metal layout and diffuser airflows in Learning Commons F115 as indicated.

MD-5	Refer to Drawing No. M4.2E (reissued): A. Adjusted duct silencer sizes as indicated. B. Reworked sheet metal layout and diffuser airflows in Learning Commons E215 as indicated.
MD-6	Refer to Drawing No. M7.3 (reissued): A. Revised duct silencer schedule as indicated.

Item No.	**Electrical Drawing Changes**
ED-1	Refer to Drawing No. E5.1 (reissued): A. Revised DP-GEN to individual disconnect switches as indicated. B. Revised feeders from generator as indicated.
ED-2	Refer to Drawing No. E6.2 (reissued): A. Revised DP-GEN to individual disconnect switches as indicated.

END OF ADDENDUM NO. 3 - BID PACKAGE NO. 03B

New Smith Middle School

TMP22102

This Document has been prepared under the supervision of the Architect and/or Professional Engineer as indicated by their individual License Seals affixed hereon.

Professional License Seals

Seal	*Seal*	*Seal*
TMP Architecture, Inc. *Architect*	***William A. Kibbe & Associates*** *Structural Engineer*	***Peter Basso Associates, Inc.*** *Mechanical Engineer*

Seal	*Seal*	
Peter Basso Associates, Inc. *Electrical Engineer*	***PEA Group*** *Civil Engineer*	

SECTION 05 5000 - METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated steel items, including:
   1. Loose steel lintels.
   2. Bent metal restraints at top of interior masonry walls.
   3. Steel framing supports for the following:
      a. Roof openings.
      b. Folding panel partitions (operable partitions).
      c. Mechanical and electrical equipment.
      d. Applications where framing and supports are not specified in other Sections.
      e. Other items as indicated on Drawings.
   4. Metal ladders.
   5. Elevator pit ladder.
   6. Elevator hoist beam.
   7. Bollards.
   8. Other items as indicated on Drawings.
B. Prefabricated metal items, including:
   1. Alternating tread stairs.
C. Slotted channel framing.

1.02 REFERENCE STANDARDS

A. ANSI A14.3 - American National Standard for Ladders -- Fixed -- Safety Requirements; 2008 (Reaffirmed 2018).
B. ASME A17.1 - Safety Code for Elevators and Escalators Includes Requirements for Elevators, Escalators, Dumbwaiters, Moving Walks, Material Lifts, and Dumbwaiters with Automatic Transfer Devices; 2019, with Errata (2021).
C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
D. ANSI A14.3 - American National Standard for Ladders -- Fixed -- Safety Requirements; 2008 (Reaffirmed 2018).
E. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.
F. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
G. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
H. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2018.
I. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.
J. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
K. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2020.
L. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.
M. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2020, with Errata (2023).
N. NAAMM MBG 531 - Metal Bar Grating Manual; 2017.
O. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 2004.
P. SSPC-SP 2 - Hand Tool Cleaning; 2018.

Q. ASTM B209/B209M – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014. ****ADD3****
R. ASM B210/B210M – Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes; 2019a.
S. ASTM B211/B211M – Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire; 2019.
T. ASTM B221/B221M – Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wires, Profies, and Tubes; 2021.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
   1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
   2. Design data: Submit drawings and supporting calculations, signed and sealed by a qualified professional structural engineer.
C. Welders' Certificates: Submit certification for welders employed on the project, verifying AWS qualification within the previous 12 months.
D. Designer's Qualification Statement.
E. Fabricator's Qualification Statement.

1.04 QUALITY ASSURANCE

A. Design metal fabrications under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State in which the Project is located.
B. Fabricator: Company specializing in performing the work of this section with minimum 5years of documented experience.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

A. Steel Sections: ASTM A36/A36M.
B. Steel Tubing: ASTM A500/A500M, Grade B, cold-formed or ASTM A501/A501M hot-formed structural tubing.
C. Plates: ASTM A283/A283M.
D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black and hot-dip galvanized finish, as indicated.
E. Slotted Channel Framing:
   1. Slotted Channel Framing: ASTM A653/A653M Grade 33.
      a. Channel Size: 1-5/8 by 1-5/8 inches.
      b. Thickness: 0.060 inch (16 gage), minimum.
      c. Finish: Galvanized, G90 coating.
   2. Fittings and Fasteners: Manufacturer's standard fittings and fasteners; finished to match slotted channel framing.
F. Bolts, Nuts, and Washers: ASTM A307, Grade A, galvanized to ASTM A153/A153M where connecting galvanized components.
G. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
H. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
I. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, complying with VOC limitations of authorities having jurisdiction.

J. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.02 FABRICATION - GENERAL

A. Fit and shop assemble items in largest practical sections, for delivery to site.
B. Fabricate items with joints tightly fitted and secured.
C. Continuously seal joined members by continuous welds.
D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 LOOSE STEEL LINTELS

A. General:
   1. Fabricate loose steel lintels from steel angles, plates, and other shapes as indicated.
      a. Weld adjoining members together to form a single unit.
   2. Size loose steel lintels to provide bearing length at each side of openings equal to 1/12 of clear span but not less than 8 inches, unless otherwise indicated.
   3. Galvanize loose steel lintels located in exterior walls.
   4. Prime loose steel lintels located in interior walls.
   5. Provide lintels at openings for all equipment and ductwork.
B. See Structural Drawings and/or Specifications for masonry and loose steel lintel schedules.

2.04 BENT METAL RESTRAINTS

A. Bent Metal Restraints: Bent metal restraints that restrain top of interior masonry walls.
   1. Fabricate bent metal restraints from 12 gage, 0.108 inch, thick galvanized sheet steel.
      a. L-shaped: 4 inches wide; each leg 4 inches long. Minimum.
   2. Finish: Prime painted.
   3. Fasteners: As appropriate for indicated substrates.

2.05 MISCELLANEOUS FRAMING AND SUPPORTS

A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
B. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.
   1. Fabricate units from slotted channel framing where indicated.
C. Finish: Prime painted unless otherwise indicated or at an exterior location.
D. Fabricate support for suspended toilet partitions as follows:
   1. Beams: Continuous steel shapes of size required to limit deflection to L/360 between hangers, but use not less than C8x11.5 channels or another shape with equivalent structural properties.
   2. Hangers: Steel rods, 1/2 inch in diameter, spaced not more than 36 inches o.c.
      a. Thread rods to receive anchor and stop nuts.
      b. Fit hangers with wedge shape washers for full bearing on sloping flanges of support beam.
   3. Braces and Angles: Steel angles of size required to rigidly brace and support beams.
E. Roof Openings: Unless otherwise indicated, provide steel support framing for roof openings as follows:.
   1. Provide steel support framing around entire perimeter of roof opening; span support framing between primary framing or purlins.

2. Size steel framing not less than the following for spans indicated:
   a. Up to 5 feet: C4x5.4 or L4x4x1/4.
   b. 5 to 7 feet: C5x6.7 or L5x3-1/2x1/4 (LLV).
   c. 7 to 10 feet: C6x8.2 or L6x3-1/2x5/16 (LLV).
   d. Refer to Drawings for conditions other than those listed above.
3. Limit deflection to L/240.

2.06 LADDERS

A. Ladders: Steel; in compliance with ANSI A14.3, including landings; with mounting brackets and attachments; prime paint finish, except galvanized at exterior locations and elsewhere as indicated.
   1. Elevator pit ladders: Comply with ASME A17.1.
   2. Side Rails: 3/8 x 2 inches members spaced at 18 inches, unless otherwise indicated.
   3. Rungs: 1 inch diameter solid round bar spaced 12 inches on center, unless otherwise indicated. Slip-resistant surface, Grade 2 - Medium.
      a. Space rungs 7 inches from wall surface, unless otherwise indicated.
      b. Basis-of-Design Product: Provide SlipNOT, Division of W.S. Molnar Company; SlipNOT Ladder Rung: www.slipnot.com, or a comparable product by one of the following:
         1) Brown- Campbell Corp.: www.brown-campbell.com.
         2) Substitutions: See Section 01 6000 - Product Requirements.
      c. Where galvanized finish is required, rungs shall be galvanized by rung manufacturer.
   4. Support brackets: At top and bottom of ladder, and not more than 60 inches on center.
   5. Landings and Crossovers: Provide steel bar grating platforms supported by steel angles with railings.
      a. Grating: NAAMM MBG 531, welded type.
         1) Top Surface: Non-slip, Grade 2 - Medium.
            (a) Basis-of-Design Product: Provide SlipNOT, Division of W.S. Molnar Company; SlipNOT Grip Grate: www.slipnot.com, or a comparable product by one of the following:
               (1) Substitutions: See Section 01 6000 - Product Requirements.
         2) Fabricate to accommodate design loads.
         3) Limit openings to no more than 1/2 inch in least dimension.
         4) Where galvanized finish is required, grating shall be galvanized by grating manufacturer.

B. Ladder Safety Swing Gates: Steel; ladder safety swing gates shall securely close over ladder and rungs preventing unauthorized use of ladder until gate is unlocked and swung open providing clear access to ladder rungs; prime paint finish, except galvanized at exterior locations and elsewhere as indicated.
   1. Gate Frame: Minimum 1-1/2 inch steel tubing with welded corners.
   2. Gate Infill Panel: Expanded metal shall completely fill gate frame and be welded securely to gate frame along it's entire perimeter.
      a. Standard Expanded Metal:
         1) Style: 1/2 inch, No. 13.
         2) Open Area: 57 percent.
         3) Weight: 1.47 lbs/sq ft.
         4) SWD (Short Way of Design): 0.5 inches.
         5) LWD (Long Way of Design): 1.2 inches.
   3. Gate Size: Width of ladder by 80 inches high, minimum, unless otherwise indicated.
   4. Hardware:
      a. 5 knuckle steel hinges welded to gate frame and ladder siderails; three minimum.
      b. Padlock hasp made of steel plates welded to ladder siderail and gate frame as required to enable the hasp to secure and lock gate across ladder rungs preventing ladder use.

C. Ladders: Aluminum; in compliance with ANSI A14.3, with mounting brackets and attachments. Anodized finish. ****ADD3****
   1. Side Rails: 3/8" x 2 inches minimum members spaced at 18 inches, unless otherwise indicated.
   2. Rungs: 1 inch diameter tubular rod spaced 12 inches on center, unless otherwise indicated. Slip-resistant surface, Grade 2 – Medium.
      a. Rungs to be minimum 7 inches from wall surface, unless otherwise indicated.
   3. Support bracket: Anchor at bottom of ladder with stainless steel bolt

2.07 BOLLARDS

A. Bollards:
   1. Standard Fixed Bollards: Steel pipe, concrete filled, crowned cap, as detailed; galvanized finish.
      a. Steel Pipe: Schedule 40 steel pipe.
      b. Concrete Fill: Refer to Section 03 3000 - Cast-in-Place Concrete.
   2. Surface Mounted Bollards: Steel pipe with minimum 3/8 inch thick steel baseplate welded to bollard base for bolting to concrete slab. Drill baseplates at each corner for 3/4 inch anchor bolts. Galvanized finish.
      a. Steel Pipe: Schedule 40 steel pipe.
      b. Where bollards are to be anchored to sloping concrete slabs, angle baseplates for plumb alignment of bollards.
   3. Covers: High-density polyethylene thermoplastic (HDPE) sleeves with rounded domed top.
      a. Wall Thickness: 1/4 inch.
      b. Color: As selected by Architect from manufacturer's standard colors.
      c. Provide complete with manufacturer's standard adhesive tape for securing sleeve to bollard.
      d. Provide covers for all bollards.
      e. Basis-of-Design Product: Provide Ideal Shield; 1/4" Bollard Cover: www.idealshield.com, or a comparable product by one of the following:
         1) Substitutions: See Section 01 6000 - Product Requirements.

2.08 ELEVATOR HOISTWAY BEAMS

A. Elevator Hoistway Beams: Beam sections; prime paint finish. Size as indicated.

2.09 PREFABRICATED ALTERNATING TREAD STAIRS

A. Alternating Tread Stairs: Open-type alternating tread stair with plate stringers, formed metal treads, and pipe and tube railings; treads shall be slip resistant and shed water.
   1. Material: Steel; connections may be welded or bolted.
   2. Stair Angle: 68 degrees.
   3. Finish: Safety yellow color in powder coat finish.
   4. Manufacturer:
      a. Basis-of-Design: Provide product as manufactured by Lapeyre Stair, Inc: www.lapeyrestair.com, or a comparable product by one of the following:
         1) Substitutions: See Section 01 6000 - Product Requirements.

2.10 MISCELLANEOUS

A. Protective Coating: Zinc molybdate alkyd.
B. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

2.11 FINISHES - STEEL

A. Prepare surfaces to be primed in accordance with SSPC-SP2.
B. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
C. Prime Painting: One coat.
   1. Provide at all fabrications except at galvanized locations and where otherwise indicated.

D. Where indicated, galvanizing of Structural Steel Members: Galvanize after fabrication to ASTM A123/A123M requirements. Provide minimum 1.7 oz/sq ft galvanized coating.
   1. Locations: All exterior locations and elsewhere as indicated.
E. Where indicated, galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements. Provide minimum 1.7 oz/sq ft galvanized coating.
   1. Locations: All exterior locations and elsewhere as indicated.

2.12 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.
B. Maximum Offset Between Faces: 1/16 inch.
C. Maximum Misalignment of Adjacent Members: 1/16 inch.
D. Maximum Bow: 1/8 inch in 48 inches.
E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

2.13 MATERIALS – ALUMINUM **ADD3**

A. Extruded Aluminum: ASTM B221 (ASTM 221M), 6063 alloy, T6 temper.
B. Aluminum-Alloy Drawn Seamless Tubes: ASTM B210/B210M, 6063 alloy, T6 temper.
C. Aluminum-Alloy Bars: ASTM B211/B211M/ 6061 alloy, T6 temper.
D. Bolts, Nuts, and Washers: Stainless Steel.
E. Welding Materials: AWS D1.2/D1.2M; type required for materials being welded.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.
B. Supply setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION - GENERAL

A. Install items plumb and level, accurately fitted, free from distortion or defects.
B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
C. Field weld components as indicated on shop drawings.
D. Perform field welding in accordance with AWS D1.1/D1.1M.
E. Obtain approval prior to site cutting or making adjustments not scheduled.
F. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, except surfaces to be in contact with concrete.

3.04 BENT METAL RESTRAINTS

A. Space restraints 24 inches on center at top of masonry walls, staggered each side of wall.
B. Secure restraints to substrates with appropriate anchors.

3.05 MISCELLANEOUS FRAMING AND SUPPORTS

A. Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

3.06 BOLLARDS

A. Standard Fixed Bollards:
   1. Anchor bollards in place with concrete footings.
      a. Center and align bollards in holes 3 inches above bottom of excavation.
      b. Place concrete and vibrate or tamp for consolidation.
      c. Support and brace bollards in position until concrete has cured.
      d. Hold top of concrete 8 inches below finish grade, unless otherwise indicated.
   2. Fill bollards solidly with concrete, mounding top surface to shed water.

3. Refer to Section 03 3000 “Cast-in-place Concrete” for concrete.

B. Surface Mounted Bollards:

1. Anchor bollard baseplate to existing construction with expansion anchors. Provide four anchors per baseplate, unless otherwise indicated.

C. Install sleeve covers according to manufacturer’s written instructions.

3.07 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

SECTION 22 4200 - PLUMBING FIXTURES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

B. Related Sections include the following:

1. Division 10 Section "Toilet and Bath Accessories."
2. Division 20 Section “Mechanical General Requirements.”
3. Division 20 Section “Basic Mechanical Materials and Methods.”
4. Division 22 Section "Emergency Plumbing Fixtures."
5. Division 22 Section "Security Plumbing Fixtures."
6. Division 22 Section "Drinking Fountains and Water Coolers."
7. Division 22 Section "Domestic Water Piping Specialties" for backflow preventers; individual-fixture, water tempering valves; and specialty fixtures not included in this Section.
8. Division 22 Section “Drainage Piping Specialties” for floor drains, and specialty fixtures not included in this Section.
9. Division 22 Section "Water Distribution" for exterior plumbing fixtures and hydrants.

1.02 **DEFINITIONS**

A. ABS: Acrylonitrile-butadiene-styrene plastic.

B. Accessible Fixture: Plumbing fixture that can be approached, entered, and used by people with disabilities.

C. Cast Polymer: Cast-filled-polymer-plastic material. This material includes cultured-marble and solid-surface materials.

D. Cultured Marble: Cast-filled-polymer-plastic material with surface coating.

E. Fitting: Device that controls the flow of water into or out of the plumbing fixture. Fittings specified in this Section include supplies and stops, faucets and spouts, shower heads and tub spouts, drains and tailpieces, and traps and waste pipes. Piping and general-duty valves are included where indicated.

F. PVC: Polyvinyl chloride plastic.

G. Solid Surface: Nonporous, homogeneous, cast-polymer-plastic material with heat-, impact-, scratch-, and stain-resistance qualities.

1.03 **ACTION SUBMITTALS**

A. Product Data: For each type of plumbing fixture indicated. Include selected fixture and trim, fittings, accessories, appliances, appurtenances, equipment, and supports. Indicate materials and finishes, dimensions, construction details, and flow-control rates.

1.04 **INFORMATIONAL SUBMITTALS**

A. Shop Drawings: Diagram power, signal, and control wiring.

B. Coordination Drawings: Counter cutout templates for mounting of counter-mounted plumbing fixtures.

1.05 **CLOSEOUT SUBMITTALS**

A. Operation and Maintenance Data: For plumbing fixtures and trim to include in operation and maintenance manuals.

1.06 **QUALITY ASSURANCE**

A. Source Limitations: Obtain plumbing fixtures, faucets, and other components of each category through one source from a single manufacturer.

1. Exception: If fixtures, faucets, or other components are not available from a single manufacturer, obtain similar products from other manufacturers specified for that category.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by an NRTL acceptable to authorities having jurisdiction, and marked for intended use.

C. Regulatory Requirements: Comply with requirements in ICC A117.1, "Accessible and Usable Buildings and Facilities" for plumbing fixtures for people with disabilities.

D. Regulatory Requirements: Comply with requirements in Public Law 102-486, "Energy Policy Act," about water flow and consumption rates for plumbing fixtures.

E. Regulatory Requirements: Comply with requirements in Public Law 111-380, "Reduction of Lead in Drinking Water Act," about lead content in materials that will be in contact with potable water for human consumption.

F. Comply with NSF 61, "Drinking Water System Components - Health Effects; Sections 1 through 9," and NSF 372 Drinking Water System Components – Lead Content for potable domestic water piping and components.

G. Select combinations of fixtures and trim, faucets, fittings, and other components that are compatible.

H. Comply with applicable ANSI, ASME, ASSE, ASTM, ICC, NSF, and UL standards and other requirements specified for plumbing fixtures, trim, fittings, components, and features.

1.07 **EXTRA MATERIALS**

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

PART 2 PRODUCTS

2.01 **WATER CLOSETS**

A. Water Closets, WC-1:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. American Standard Companies, Inc.; Madera FloWise 16-1/2" Elongated Toilet.
   b. Kohler Co.; Highcliff Ultra K-96057.
   c. Sloan Valve Company.
   d. Zurn Plumbing Products Group.
2. Description: Accessible, floor-mounting, floor-outlet, vitreous-china fixture designed for flushometer valve operation.
   a. Style: Flushometer valve.
      1) Bowl Type: Elongated with siphon-jet design. Include bolt caps matching fixture.
      2) Supply Spud Location: Top.
      3) Height: 16-1/2 to 16-3/4 inches, universal/accessible.
      4) Design Consumption: 1.28 gal./flush or 1.6 gal./flush.
      5) Color: White.
   b. Flushometer: FV-2-1.
   c. Toilet Seat: TS-1.

B. Water Closets, WC-2:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. American Standard Companies, Inc.; Madera FloWise 16-1/2" Elongated Toilet.
   b. Kohler Co.; Highcliff Ultra K-96057.
   c. Sloan Valve Company.
   d. Zurn Plumbing Products Group.
2. Description: Accessible, floor-mounting, floor-outlet, vitreous-china fixture designed for flushometer valve operation.
   a. Style: Flushometer valve.
      1) Bowl Type: Elongated with siphon-jet design. Include bolt caps matching fixture.
      2) Supply Spud Location: Top.
      3) Height: 16-1/2 to 16-3/4 inches, universal/accessible.
      4) Design Consumption: 1.28 gal./flush or 1.6 gal./flush.
      5) Color: White.
   b. Flushometer: FV-2-2.
   c. Toilet Seat: TS-1.

2.02 MANUAL WATER CLOSET FLUSHOMETERS

A. Flushometers, FV-2-1:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. American Standard Companies, Inc.
   b. Delany Products.
   c. Delta Faucet Company; 81T201.
   d. Kohler Co.: MACH Series.
   e. Sloan Valve Company.
   f. Zurn Plumbing Products Group.
2. Description: Flushometer for water-closet-type fixture. Include brass body with corrosion-resistant internal components, non-hold-open feature, control stop with check valve, vacuum breaker, copper or brass tubing, and polished chrome-plated finish on exposed parts.
   a. Internal Design: Diaphragm or piston operation.
   b. Style: Exposed.
   c. Inlet Size: NPS 1.
   d. Trip Mechanism: Oscillating, low-force ADA compliant lever-handle actuator.
   e. Consumption: 1.28 gal./flush.

f. Tailpiece Size: NPS 1-1/2 and standard length to top of bowl.

2.03 **BATTERY OPERATED SENSOR WATER CLOSET FLUSHOMETERS**

A. Flushometers, FV-2-2:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. American Standard Companies, Inc.
   b. Delany Products.
   c. Delta Faucet Company; 81T201BTA-MMO.
   d. Kohler Co. Wave.
   e. Moen Commercial.
   f. Sloan Valve Company.
   g. Speakman Company.
   h. Zurn Plumbing Products Group.
2. Description: Flushometer for water-closet-type fixture. Include brass body with corrosion-resistant internal components, non-hold-open feature, courtesy flush feature, control stop with check valve, vacuum breaker, copper or brass tubing, and polished chrome-plated finish on exposed parts.
   a. Internal Design: Diaphragm or piston operation.
   b. Style: Exposed.
   c. Inlet Size: NPS 1.
   d. Trip Mechanism: Battery-operated sensor actuator.
   e. Consumption: 1.28 gal./flush.
   f. Tailpiece Size: NPS 1-1/2 and standard length to top of bowl.

2.04 **URINALS**

A. Urinals, UR-1:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. American Standard Companies, Inc.; Washbrook Urinal System.
   b. Kohler Co.; Bardon K 4991-ETSS.
   c. Sloan Valve Company.
   d. Zurn Industries, Inc.; EcoVantage.
2. Description: Wall-mounting, back-outlet, ultra-low water consumption, vitreous-china fixture designed for flushometer valve operation.
   a. Type: High efficiency.
   b. Strainer or Trapway: Open trapway with integral trap.
   c. Design Consumption: Operates in the range of 1/8 gal./flush to 1 gal./flush.
   d. Color: White.
   e. Supply Spud Size: NPS 3/4.
   f. Supply Spud Location: Top.
   g. Outlet Size: NPS 2.
   h. Flushometer: FV-1-1.
   i. Fixture Support: Urinal chair carrier.

2.05 **MANUAL URINAL FLUSHOMETERS**

A. Flushometers, FV-1-1:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. American Standard Companies, Inc.
   b. Delany Products.
   c. Delta Faucet Company; 81T231.
   d. Kohler Co.; MACH Series.
   e. Sloan Valve Company.
   f. Zurn Plumbing Products Group; Z6003-WS1.

2. Description: Flushometer for urinal-type fixture. Include brass body with corrosion-resistant internal components, non-hold-open feature, control stop with check valve, vacuum breaker, copper or brass tubing, and polished chrome-plated finish on exposed parts.
   a. Internal Design: Diaphragm or piston operation.
   b. Style: Exposed.
   c. Inlet Size: NPS 3/4.
   d. Trip Mechanism: Oscillating, low-force ADA compliant lever-handle actuator.
   e. Consumption: 0.125 gal./flush.
   f. Tailpiece Size: NPS 3/4 and standard length to top of fixture.

2.06 TOILET SEATS

A. Toilet Seats, TS-1:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Bemis Manufacturing Company; 1955SSC/1955SSCT.
      b. Centoco Manufacturing Corp.
      c. Church Seats; 295SSC/295SSCT.
      d. Comfort Seats; a Jones Stephens Brand; Model Number C106SSC.
      e. Ferguson Enterprises, Inc.; ProFlo PFTSCOF2000WH.
      f. Olsonite Seat Company; Model 10SSC/10SSCT.
      g. Plumbtech; Plumbing Technologies, LLC.
      h. Sanderson Plumbing Products, Inc.; Beneke Div.
      i. Zurn Plumbing Products Group; 5955STS-WH.
   2. Description: Toilet seat for water-closet-type fixture.
      a. Material: Molded, solid plastic.
      b. Configuration: Open front without cover.
      c. Size: Elongated.
      d. Hinge Type: SC, self-sustaining, check.
      e. Class: Standard commercial.
      f. Color: White.

2.07 LAVATORIES

A. Lavatories, LAV-1:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. American Standard Companies, Inc.; Lucerne Model 0355.012.
      b. Ferguson Enterprises, Inc.; ProFlo PF5504.
      c. Kohler Co.; K 2005 Kingston.
      d. Sloan Valve Company.
      e. Zurn Plumbing Products Group; Z5344.
   2. Description: Accessible, wall-mounting, vitreous-china fixture.
      a. Type: With contoured back and side shields.
      b. Size: 20 by 18 inches rectangular.
      c. Faucet Hole Punching: Three holes, 2-inch centers.
      d. Color: White.
      e. Faucet: LF-1.
      f. Water Temperature Limiting Device: Required.
      g. Drain: Grid.
      h. Drain Piping: NPS 1-1/4 chrome-plated, cast-brass P-trap; NPS 1-1/4, 17 gage tubular brass waste to wall; and wall escutcheon.
         1) Exception: Omit P-trap if hair interceptor is required.
      i. Hair Interceptor: Not required.
      j. Fixture Support: Lavatory with concealed arms.
B. Lavatories, LAV-2:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. American Standard Companies, Inc.; Lucerne Model 0355.012.
b. Ferguson Enterprises, Inc.; ProFlo PF5504.
c. Kohler Co.; K 2005 Kingston.
d. Sloan Valve Company.
e. Zurn Plumbing Products Group; Z5344.

2. Description: Accessible, wall-mounting, vitreous-china fixture.
a. Type: With contoured back and side shields.
b. Size: 20 by 18 inches rectangular.
c. Faucet Hole Punching: Three holes, 2-inch centers.
d. Color: White.
e. Faucet: LF-2.
f. Water Temperature Limiting Device: Required.
g. Drain: Grid.
h. Drain Piping: NPS 1-1/4 chrome-plated, cast-brass P-trap; NPS 1-1/4, 17 gage tubular brass waste to wall; and wall escutcheon.
1) Exception: Omit P-trap if hair interceptor is required.
i. Hair Interceptor: Not required.
j. Fixture Support: Lavatory with concealed arms.

C. Lavatories, LAV-3:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Bradley Corp.
b. Willoughby Industries; WELS-2260.
c. AquaDesign; SLV02-B-60: 60". ****ADD3****
2. Description: Accessible, wall-mounting, multi station lavatory system.
a. Type: Two station solid surface lavatory system.
b. Faucet Hole Punching: One hole per station.
c. Color: Coordinate top material and color with architect.
d. Faucet: LF-1.
e. Water Temperature Limiting Device: Required.
f. Drain: Grid.
g. Drain Piping: NPS 1-1/4 chrome-plated, cast-brass P-trap; NPS 1-1/4, 17 gage tubular brass waste to wall; and wall escutcheon.

D. Lavatories, LAV-4:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Bradley Corp.
b. Willoughby Industries; WELS-2290.
c. AquaDesign; SLV03-B-90: 90". ****ADD3****
2. Description: Accessible, wall-mounting, multi station lavatory system.
a. Type: Three station solid surface lavatory system.
b. Faucet Hole Punching: One hole per station.
c. Color: Coordinate top material and color with architect.
d. Faucet: LF-1.
e. Water Temperature Limiting Device: Required.
f. Drain: Grid.
g. Drain Piping: NPS 1-1/4 chrome-plated, cast-brass P-trap; NPS 1-1/4, 17 gage tubular brass waste to wall; and wall escutcheon.

2.08 LAVATORY FAUCETS

A. Lavatory Faucets, LF-1:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. American Standard Companies, Inc.; Heritage Metering Faucet Model 1340.000.
b. Chicago Faucets; Model 333-665VPA.

c. Delta Faucet Company; 86T Series.
d. Geberit Manufacturing, Inc.
e. Kohler Co.
f. Moen Commercial.
g. Speakman Company; Model S-4122-4DP.
h. T & S Brass and Bronze Works, Inc.
i. Zurn Plumbing Products Group; Z81600.

2. Description: Single-control nonmixing faucet, vandal resistant, single hole with escutcheon plate for 4 inch centers.
a. Body Material: Commercial, solid brass.
b. Finish: Polished chrome plate.
c. Maximum Flow: 0.25 gal.
d. Mounting: Deck, concealed.
e. Valve Handle(s): Push button, requiring less than 5 pounds of operating force.
f. Inlet(s): NPS 1/2.
g. Spout Outlet: Vandal resistant aerator.
h. Operation: Self-closing, metering, with replaceable valve cartridge.

B. Lavatory Faucets, LF-2:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. American Standard Companies, Inc.; Innsbrook Model 6055.205.
b. Chicago Faucets; Model 115.737.21.1.
c. Delta Faucet Company; Model 591-LGHGMHDF.
d. Geberit Manufacturing, Inc.
e. Kohler Co.; K13461 (with K13478-A escutcheon).
f. Moen Commercial.
g. Sloan Valve Company.
h. Speakman Company.
i. Zurn Plumbing Products Group; Z6917.

2. Description: Single hole faucet with escutcheon suitable for 4 inch centers, grid strainer, and no lift rod hole.
a. Body Material: Commercial, solid brass.
b. Finish: Polished chrome plate.
c. Mounting: Deck, concealed.
d. Inlet(s): NPS 1/2.
e. Spout Outlet: Vandal resistant spray, 0.5 gpm.
f. Operation: Sensor/Battery.

2.09 COUNTER-MOUNTING SINKS

A. Sinks, SK-1:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Elkay Manufacturing Co.
b. Franke Consumer Products, Inc., Commercial Div.
c. Just Manufacturing Company.
d. Moen Commercial.

2. Description: Single-bowl, counter-mounting, lay-in stainless-steel sink.
a. Overall Dimensions: 22 inches left to right by 19 inches front to back.
b. Metal Thickness: 18 gage, with sound dampened underside.
c. Bowl:
1) Dimensions: 18 inches by 14 inches by 6 inches deep.
2) Drain: 3-1/2-inch grid.
d. Sink Faucet: SF-1.
e. Water Temperature Limiting Device: Required.

f. Drain Piping: NPS 1-1/2 chrome-plated, cast-brass P-trap; 17 gage tubular brass waste to wall; and wall escutcheon(s).
g. Disposer: Not required.
h. Dishwasher Air-Gap Fitting: Not required.
i. Hot-Water Dispenser: Not required.

B. Sinks, SK-2:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Elkay Manufacturing Co.
b. Franke Consumer Products, Inc., Commercial Div.
c. Just Manufacturing Company.
d. Moen Commercial.
2. Description: Double-bowl, counter-mounting, lay-in stainless-steel sink.
a. Overall Dimensions: 33 inches left to right by 19 inches front to back.
b. Metal Thickness: 18 gage, with sound dampened underside.
c. Left Bowl:
1) Dimensions: 14 inches by 14 inches by 6 inches deep.
2) Drain: 3-1/2-inch outlet for disposer.
a) Location: Centered in bowl.
d. Right Bowl:
1) Dimensions: 14 inches by 14 inches by 6 inches deep.
2) Drain: 3-1/2-inch grid.
a) Location: Centered in bowl.
e. Sink Faucet: SF-1.
f. Water Temperature Limiting Device: Required.
g. Drain Piping: NPS 1-1/2 chrome-plated, cast-brass P-trap; 17 gage tubular brass waste to wall; and wall escutcheon(s).
h. Disposer: D-1.
i. Dishwasher Air-Gap Fitting: Not required.
j. Hot-Water Dispenser: Not required.

C. Sinks, SK-3:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. American Standard Companies, Inc.; Lakewell Service Sink.
b. Kohler Co.; Bannon K 6718.
c. Zurn Plumbing Products Group; Z5888.
2. Description: Trap-standard- and wall-mounting, enameled, cast-iron fixture with roll-rim with plain back and rim guard on front and sides.
a. Size: 22 by 18 inches.
b. Faucet: Sink SF-2.
c. Drain: Grid with NPS 3 outlet.
d. Trap Standard: NPS 3 enameled, cast iron with cleanout and floor flange.
e. Fixture Support: Required.

2.10 **SERVICE SINKS**

A. Service Sinks, SS-1:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. American Standard Companies, Inc.; Florwell Cast Iron Service Sink.
b. Kohler Co.; Whitby K 6710.
c. Zurn Plumbing Products Group; Z5850.
2. Description: Floor-mounting, enameled, cast-iron fixture with front apron, raised back, and coated, wire rim guard.
a. Size: 28 by 28 inches.
b. Color: White.

c. Faucet: Sink SF-7.
d. Drain: Grid with NPS 3outlet.

2.11 **SERVICE BASINS**

A. Service Basins; SB-1:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Acorn Engineering Company.
b. Crane Plumbing, LLC; Fiat Products; an American Standard Brand.
c. Florestone Products Co., Inc.
d. Precast Terrazzo Enterprises, Inc.
e. Stern-Williams Co., Inc.
2. Description: Flush-to-wall, floor-mounting, precast terrazzo fixture with rim guard.
a. Shape: Square.
b. Size: 24 by 24 inches.
c. Height: 12 inches.
d. Tiling Flange: Not required.
e. Rim Guard: On all top surfaces.
f. Color: Not applicable.
g. Faucet: SF-3.
h. Drain: Grid with NPS 3 outlet.

2.12 **SINK FAUCETS**

A. Sink Faucets, SF-1:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. American Standard Companies, Inc.
b. Chicago Faucets; No. 895-317.
c. Delta Faucet Company; Model 27C4842.
d. Kohler Co.; K7305-5A.
e. Moen Commercial.
f. Speakman Company; SC-3085.
g. T & S Brass and Bronze Works, Inc.
h. Zurn Plumbing Products Group; Z812A4-140.
2. Description: Sink faucet. Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes; coordinate outlet with spout and fixture receptor.
a. Body Material: Commercial, solid brass.
b. Finish: Polished chrome plate.
c. Mixing Valve: Two handle.
d. Centers: 4 inches.
e. Mounting: Deck.
f. Handle(s): Wrist blade, 4 inches.
g. Operation: Noncompression, manual.
h. Inlet(s): NPS 1/2.
i. Spout Type: 70 to 120-degree restricted gooseneck.
j. Spout Outlet:
1) Aerator.
2) Laminar flow or plain end for patient care areas.
k. Maximum Flow Rate:
1) 1.5 gpm.

B. Sink Faucets, SF-2:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. American Standard Companies, Inc.
b. Chicago Faucets; Model 305-VBCP.
c. Delta Faucet Company; Model 28C2083.

d. Kohler Co.
e. Moen Commercial.
f. Speakman Company; SC5821-PC-LEV-5H-WH.
g. T & S Brass and Bronze Works, Inc.
h. Zurn Plumbing Products Group.

2. Description: Service sink faucet with stops in shanks, vacuum breaker, hose-thread outlet, and pail hook. Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes; coordinate outlet with spout and fixture receptor. Include 5 foot rubber hose and wall mounted hose clamp.
a. Body Material: Commercial, solid brass.
b. Finish: Polished chrome plate.
c. Maximum Flow Rate: 2.5 gpm, unless otherwise indicated.
d. Mixing Valve: Two handle.
e. Centers: 8 inches.
f. Mounting: Back/wall.
g. Handle(s): Lever.
h. Inlet(s): NPS 1/2.
i. Spout Type: Rigid, solid brass with pail hook.
j. Spout Outlet: Hose thread.
k. Vacuum Breaker: Required.
l. Operation: Noncompression, manual.

C. Sink Faucets, SF-7:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. American Standard Companies, Inc.
b. Chicago Faucets; Model 897.
c. Delta Faucet Company; Model 28C2383.
d. Ferguson Enterprises, Inc.; ProFlo PF1118.
e. Kohler Co.
f. Moen Commercial.
g. Speakman Company; SC5811-RCP-LEV-5H-WHK.
h. Symmons Industries, Inc.
i. T & S Brass and Bronze Works, Inc.
j. Zurn Plumbing Products Group.

2. Description: Service sink faucet with stops in shanks, vacuum breaker, hose-thread outlet, and pail hook. Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes; coordinate outlet with spout and fixture receptor. Include 5 foot rubber hose and wall mounted hose clamp.
a. Body Material: Commercial, solid brass.
b. Finish: Polished chrome plate.
c. Maximum Flow Rate: 2.5 gpm, unless otherwise indicated.
d. Mixing Valve: Two handle.
e. Centers: 8 inches.
f. Mounting: Back/wall.
g. Handle(s): Lever.
h. Inlet(s): NPS 1/2.
i. Spout Type: Rigid, solid brass with wall brace and pail hook.
j. Spout Outlet: Hose thread.
k. Vacuum Breaker: Required.
l. Operation: Noncompression, manual.

2.13 INDIVIDUAL SHOWERS

A. Individual Showers; SH-1:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Acryline USA, Inc.
b. Aker Plastics Co., Inc.
c. Aqua Bath Company, Inc.
d. Aqua Glass Corporation.
e. Aquatic Industries, Inc.
f. Clarion Bathware.
g. Crane Plumbing, L.L.C./Fiat Products.
h. Jacuzzi, Inc.
i. Kohler Co.
j. LASCO Bathware.
k. Praxis Industries, Inc.; Aquarius Products.
l. Sterling Plumbing Group, Inc.

2. Description: Accessible, PMMA shower enclosure with slip-resistant bathing surface and shower rod with curtain.
a. Size: 60 by 36 inches.
b. Surround: One piece.
c. Color: White.
d. Drain Location: Center.
e. Accessibility Options: Include grab bar and bench.
f. Faucet: Shower SH-1.
g. Drain: Grid, NPS 2.

B. Individual Showers; SH-2:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Acryline USA, Inc.
b. Aker Plastics Co., Inc.
c. Aqua Bath Company, Inc.
d. Aqua Glass Corporation.
e. Aquatic Industries, Inc.
f. Clarion Bathware.
g. Crane Plumbing, L.L.C./Fiat Products.
h. Jacuzzi, Inc.
i. Kohler Co.
j. LASCO Bathware.
k. Praxis Industries, Inc.; Aquarius Products.
l. Sterling Plumbing Group, Inc.

2. Description: Accessible, PMMA shower enclosure with slip-resistant bathing surface and shower rod with curtain.
a. Size: 36 by 36 inches.
b. Surround: One piece.
c. Color: White.
d. Drain Location: Center.
e. Accessibility Options: Include grab bar and bench.
f. Faucet: Shower SH-1.
g. Drain: Grid, NPS 2.

2.14 SHOWER FAUCETS

A. Shower Faucets SH-1:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Acorn Controls; Morris Group International; SV16.
b. American Standard Companies, Inc.
c. Bradley Corporation.
d. Chicago Faucets.
e. Delta Faucet Company.

f. Kohler Co.; KP15611-4-CP w K304-KS-NA valve.
g. Lawler Manufacturing Co., Inc.
h. Leonard Valve Company.
i. Moen Commercial.
j. Powers; a Watts Water Technologies Co.
k. Speakman Company.
l. Symmons Industries, Inc.
m. Zurn Plumbing Products Group.

2. Description: Single-handle thermostatic and pressure-balance valve. Include hot- and cold-water indicators; check stops; and shower head, arm, and flange. Coordinate faucet inlets with supplies and outlet with diverter valve.
   a. Body Material: Solid brass.
   b. Finish: Polished chrome plate.
   c. Maximum Flow Rate: 1.5 gpm, unless otherwise indicated.
   d. Diverter Valve: Not required.
   e. Mounting: Concealed.
   f. Backflow Protection Device for Hand-Held Shower: Required.
   g. Operation: Noncompression, manual.
   h. Antiscald Device: ASSE 1016, integral with mixing valve.
   i. Check Stops: Check-valve type, integral with or attached to body; on hot- and cold-water supply connections.
   j. Supply Connections: NPS 1/2.
   k. Shower Head Type: Hand held, slide-bar mounted.
   l. Shower Head Material: Metallic with chrome-plated finish.
   m. Spray Pattern: Fixed.
   n. Integral Volume Control: Required.
   o. Temperature Indicator: Integral with faucet.

B. Shower Faucets SH-2:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Acorn Controls; Morris Group International; SV16.
   b. American Standard Companies, Inc.
   c. Bradley Corporation.
   d. Chicago Faucets.
   e. Delta Faucet Company.
   f. Kohler Co.; KP15611-4-CP w K304-KS-NA valve.
   g. Lawler Manufacturing Co., Inc.
   h. Leonard Valve Company.
   i. Moen Commercial.
   j. Powers; a Watts Water Technologies Co.
   k. Speakman Company.
   l. Symmons Industries, Inc.
   m. Zurn Plumbing Products Group.
2. Description: Single-handle thermostatic and pressure-balance valve. Include hot- and cold-water indicators; check stops; and shower head, arm, and flange. Coordinate faucet inlets with supplies and outlet with diverter valve.
   a. Body Material: Solid brass.
   b. Finish: Polished chrome plate.
   c. Maximum Flow Rate: 2.5 gpm, unless otherwise indicated.
   d. Diverter Valve: Not required.
   e. Mounting: Concealed.
   f. Operation: Noncompression, manual.
   g. Antiscald Device: ASSE 1016, integral with mixing valve.

h. Check Stops: Check-valve type, integral with or attached to body; on hot- and cold-water supply connections.
i. Supply Connections: NPS 1/2.
j. Shower Head Type: Ball joint and head integral with mounting flange.
k. Shower Head Material: Metallic with chrome-plated finish.
l. Spray Pattern: Fixed.
m. Integral Volume Control: Required.
n. Shower-Arm Flow-Control Fitting: 1.5 gpm.
o. Temperature Indicator: Integral with faucet.

2.15 **FIXTURE SUPPLIES**

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. BrassCraft; a Masco Company.
2. McGuire Mfg. Co., Inc.
3. Any of the approved plumbing fixture manufacturers.

B. Description: Chrome-plated brass, loose-key or screwdriver angle stops with brass stems; rigid, chrome-plated copper risers; and chrome-plated wall flanges.

2.16 **PROTECTIVE SHIELDING GUARDS**

A. Protective Shielding Pipe Covers (PSG-1):
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
a. Engineered Brass Co.
b. Insul-Tect Products Co.; a Subsidiary of MVG Molded Products.
c. McGuire Manufacturing Co., Inc.
d. Oatey; Dearborn Safety Series.
e. Plumberex Specialty Products Inc.
f. TCI Products; SG-200BV.
g. TRUEBRO, Inc.
h. Zurn Plumbing Products Group; Z8946-3-NT.
2. Description: Manufactured plastic wraps for covering plumbing fixture hot- and cold-water supplies and trap and drain piping. Comply with Americans with Disabilities Act (ADA) requirements.

2.17 **FIXTURE SUPPORTS**

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Josam Company.
2. MIFAB Manufacturing Inc.
3. Smith, Jay R. Mfg. Co.
4. Tyler Pipe; Wade Div.
5. Watts Drainage Products Inc.; a div. of Watts Industries, Inc.
6. Zurn Plumbing Products Group; Specification Drainage Operation.

B. Urinal Supports:
1. Description: For wall-mounting, urinal-type fixture. Include steel uprights with feet.
2. Accessible-Fixture Support: Include rectangular steel uprights.

C. Lavatory Supports:
1. Description: Lavatory carrier with concealed arms and tie rods for wall-mounting, lavatory-type fixture. Include steel uprights with feet.
2. Accessible-Fixture Support: Include rectangular steel uprights.

D. Sink Supports:
1. Description: For wall-mounting sink-type fixture. Include steel uprights with feet.
a. Type I, sink carrier with exposed arms and tie rods.
b. Type II, sink carrier with hanger plate, bear studs, and tie rod.
c. Type III, sink carrier with hanger plate and exposed arms.

2.18 **INTERCEPTORS**

A. Sediment Interceptors:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Josam Company.
      b. MIFAB Manufacturing Inc.
      c. Smith, Jay R. Mfg. Co.
      d. Tyler Pipe; Wade Div.
      e. Watts Drainage Products Inc.; a div. of Watts Industries, Inc.
      f. Zurn Plumbing Products Group; Specification Drainage Operation.
   2. Description: Manufactured unit with removable screens or strainer and removable cover; designed to trap and retain waste material.
      a. Material: Cast-iron or steel body with acid-resistant lining and coating; or stainless-steel.
      b. Pipe Connections: NPS 1-1/2.

B. Small Capacity Sediment Interceptors:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Josam Company.
      b. MIFAB Manufacturing Inc.
      c. Smith, Jay R. Mfg. Co.; Fig. 8714.
      d. Tyler Pipe; Wade Div.
      e. Watts Drainage Products Inc.; a div. of Watts Industries, Inc.
      f. Zurn Plumbing Products Group; Specification Drainage Operation.
   2. Description: Manufactured unit with removable sediment bucket and removable cover; designed to trap and retain waste material; suitable for installation within casework.
      a. Material: Cast-iron or steel body with acid-resistant lining and coating; or stainless-steel.
      b. Pipe Connections: NPS 1-1/2.

2.19 **DISPOSERS**

A. Disposers, D-1:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. In-Sink-Erator; a div. of Emerson Electric Co.; Badger 5XP.
   2. Description: Continuous-feed, household type food-waste disposer. Include reset button; wall switch; corrosion-resistant chamber with jam-resistant, cutlery- or stainless-steel grinder or shredder; NPS 1-1/2 outlet; quick-mounting, stainless-steel sink flange; anti-splash guard; and combination cover/stopper. Include cord with grounded plug.
      a. Motor: 115-V ac, 1725 rpm, 3/4 hp with overload protection.

PART 3 EXECUTION

3.01 **EXAMINATION**

A. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before plumbing fixture installation.
B. Examine cabinets, counters, floors, and walls for suitable conditions where fixtures will be installed.
C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 **INSTALLATION**

A. Assemble plumbing fixtures, trim, fittings, and other components according to manufacturers' written instructions.
B. Install off-floor supports, affixed to building substrate, for wall-mounting fixtures.
   1. Use carrier supports with waste fitting and seal for back-outlet fixtures.
   2. Use carrier supports without waste fitting for fixtures with tubular waste piping.
   3. Use chair-type carrier supports with rectangular steel uprights for accessible fixtures.
C. Install back-outlet, wall-mounting fixtures onto waste fitting seals and attach to supports.

D. Install floor-mounting fixtures on closet flanges or other attachments to piping or building substrate.
E. Install wall-mounting fixtures with tubular waste piping attached to supports.
F. Install wall-mounting urinals with PVC-DWV piping from urinal outlet to first change in piping direction.
G. Install counter-mounting fixtures in and attached to casework.
H. Install fixtures level and plumb according to roughing-in drawings. Install accessible fixtures at heights required by local codes.
I. Install water-supply piping with stop on each supply to each fixture to be connected to water distribution piping. Attach supplies to supports or substrate within pipe spaces behind fixtures. Install stops in locations where they can be easily reached for operation.
    1. Exception: Fixtures with flushometer valves, and faucets or valves with integral stops.
J. Install ASSE 1070 water-temperature limiting devices on supplies for lavatories and sinks that will be used for handwashing, and where specified. Refer to Division 20 Section “Domestic Water Piping Specialties.”
K. Install trap and tubular waste piping on drain outlet of each fixture to be directly connected to sanitary drainage system.
L. Install tubular waste piping on drain outlet of each fixture to be indirectly connected to drainage system.
M. Install protective shielding guards PSG-1 on exposed traps and supplies of lavatories, and sinks used for hand washing.
N. Install tanks for accessible, tank-type water closets with lever handle mounted on wide side of compartment.
O. Install toilet seats on water closets.
P. Install faucet-spout fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.
Q. Install water-supply flow-control fittings with specified flow rates in fixture supplies at stop valves.
R. Install faucet flow-control fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.
S. Install shower flow-control fittings with specified maximum flow rates in shower arms.
T. Install traps on fixture outlets.
    1. Exception: Omit trap on fixtures with integral traps.
    2. Exception: Omit trap on indirect wastes, unless otherwise indicated.
U. Install disposer in outlet of each sink indicated to have disposer. Install switch where indicated or in wall adjacent to sink if location is not indicated.
V. Install escutcheons at piping wall ceiling penetrations in exposed, finished locations and within cabinets and millwork. Use deep-pattern escutcheons if required to conceal protruding fittings. Escutcheons are specified in Division 20 Section "Basic Mechanical Materials and Methods."
W. Set service basins in leveling bed of cement grout. Grout is specified in Division 20 Section "Basic Mechanical Materials and Methods."
X. Seal joints between fixtures and walls, floors, and countertops using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color. Sealants are specified in Division 07 Section "Joint Sealants."

3.03 **CONNECTIONS**

A. Piping installation requirements are specified in other Division 20 and 22 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
B. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.
C. Individual water line branches, waste lines, vents, and traps for connection to individual fixtures, fixture fittings and specialties shall be in accordance with the schedule on the Drawings.
D. Ground equipment according to Division 26 Section "Grounding and Bonding."
E. Connect wiring according to Division 26 Section "Conductors and Cables."

3.04 **FIELD QUALITY CONTROL**

A. Verify that installed plumbing fixtures are categories and types specified for locations where installed.

B. Check that plumbing fixtures are complete with trim, faucets, fittings, and other specified components.

C. Inspect installed plumbing fixtures for damage. Replace damaged fixtures and components.

D. Test installed fixtures after water systems are pressurized for proper operation. Replace malfunctioning fixtures and components, then retest. Repeat procedure until units operate properly.

3.05 **ADJUSTING**

A. Operate and adjust faucets and controls. Replace damaged and malfunctioning fixtures, fittings, and controls.

B. Operate and adjust disposers and controls. Replace damaged and malfunctioning units and controls.

C. Adjust water pressure at faucets and flushometer valves to produce proper flow and stream.

D. Replace washers and seals, or cartridges of leaking and dripping faucets and stops.

E. Install fresh batteries in sensor-operated mechanisms.

3.06 **CLEANING**

A. Clean fixtures, faucets, and other fittings with manufacturers' recommended cleaning methods and materials. Do the following:

1. Remove faucet spouts and strainers, remove sediment and debris, and reinstall strainers and spouts.
2. Remove sediment and debris from drains.

B. After completing installation of exposed, factory-finished fixtures, faucets, and fittings, inspect exposed finishes and repair damaged finishes.

3.07 **PROTECTION**

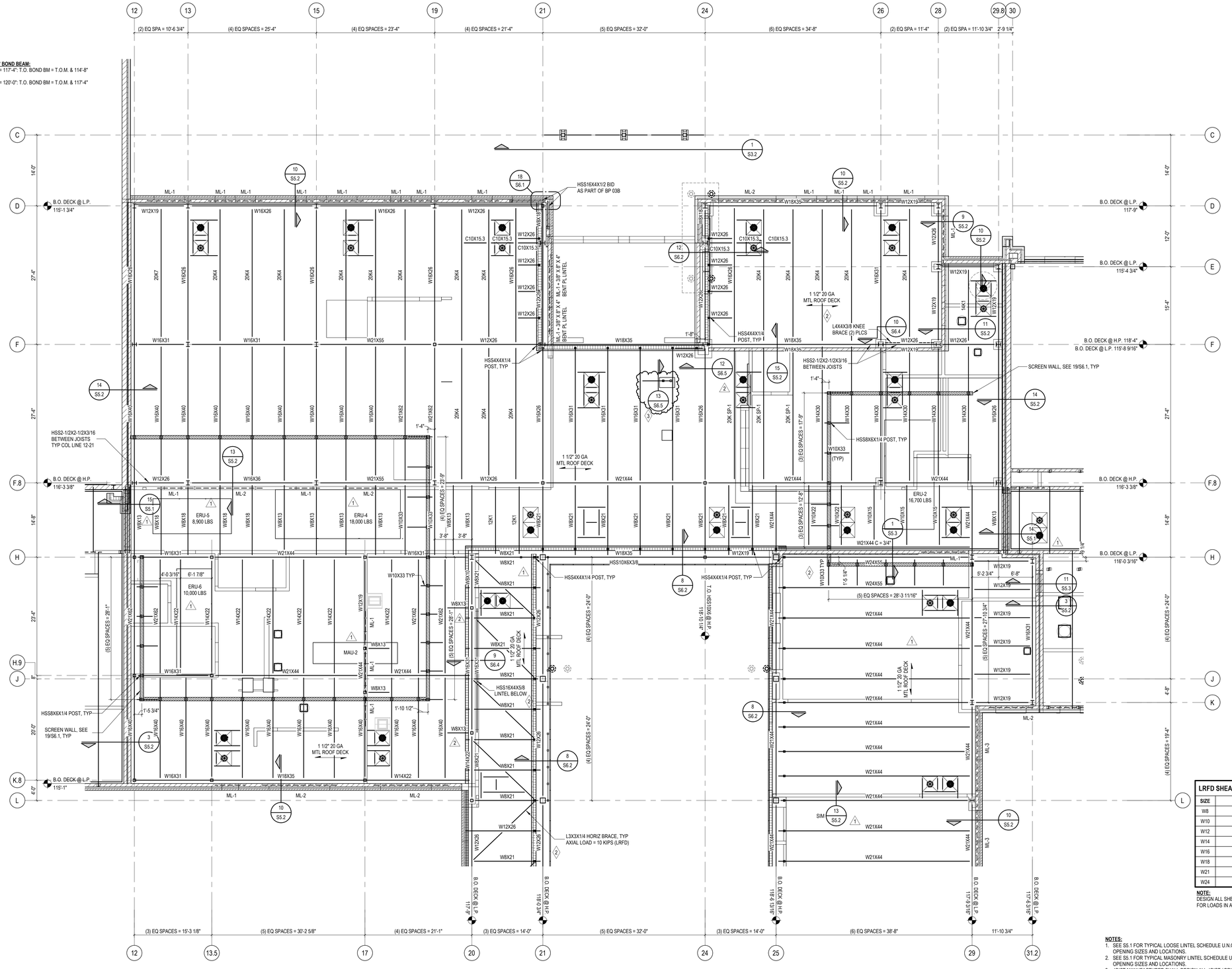
A. Provide protective covering for installed fixtures and fittings.

B. Do not allow use of plumbing fixtures for temporary facilities unless approved in writing by Owner.

END OF SECTION

U.N.O. ZONE 'B' BOND BEAM:
WHERE T.O.M. = 117'-4": T.O. BOND BM = T.O.M. & 114'-8"

WHERE T.O.M. = 120'-0": T.O. BOND BM = T.O.M. & 117'-4"



N

LOW ROOF FRAMING PLAN – ZONE 'B'

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

LRFD SHEAR REACTIONS	
SIZE	SIZE
W8	15 KIPS
W10	15 KIPS
W12	25 KIPS
W14	25 KIPS
W16	40 KIPS
W18	50 KIPS
W21	55 KIPS
W24	65 KIPS

NOTE:
DESIGN ALL SHEAR CONNECTIONS FOR LOADS IN ABOVE TABLE U.N.O.

NOTES:
1. SEE S5.1 FOR TYPICAL LOOSE LINTEL SCHEDULE U.N.O., SEE ARCH FOR OPENING SIZES AND LOCATIONS.
2. SEE S5.1 FOR TYPICAL MASONRY LINTEL SCHEDULE U.N.O., SEE ARCH FOR OPENING SIZES AND LOCATIONS.
3. JOIST MANUFACTURER SHALL DESIGN ALL JOIST / BRIDGING FOR A NET UPLIFT PER UPLIFT DIAGRAMS, SEE S3.1.
4. REFER TO S3.1 FOR SPECIAL JOIST LOAD DIAGRAMS.
5. SEE DRAWING S3.1 FOR ROOF DECK ATTACHMENT DETAIL.
6. ► INDICATES MOMENT CONNECTION. DESIGN CONNECTION FOR LOADS SHOWN, LOADS ARE IN LRFD.
7. SEE 4/S6.1 FOR TYP RTU SUPPORT FRAME. COORDINATE ALL RTU AND OPENING DIMENSIONS WITH MECHANICAL.
8. SEE S6.1 FOR COLUMN AND BEARING PLATE SCHEDULES.

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

WILLIAM A. KIBBE & ASSOCIATES, INC.
ENGINEERS | ARCHITECTS | SURVEYORS

PROJECT TITLE

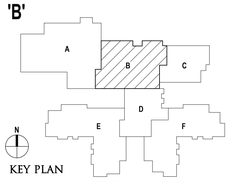
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Low Roof Framing Plan Zone 'B'



KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
07-16-2024	ADDENDUM NO. 3
06-21-2024	BULLETIN NO. 2
06-18-2024	CONSTRUCTION DOCUMENTS
05-30-2024	BULLETIN NO. 1
02-08-2024	ADDENDUM NO. 2
01-23-2024	CONSTRUCTION DOCUMENTS

DRAWN	D. BART
CHECKED	B. KANNERS
APPROVED	E. MANNOR

PROJECT NO.

22102

DRAWING NO.

S1.2B

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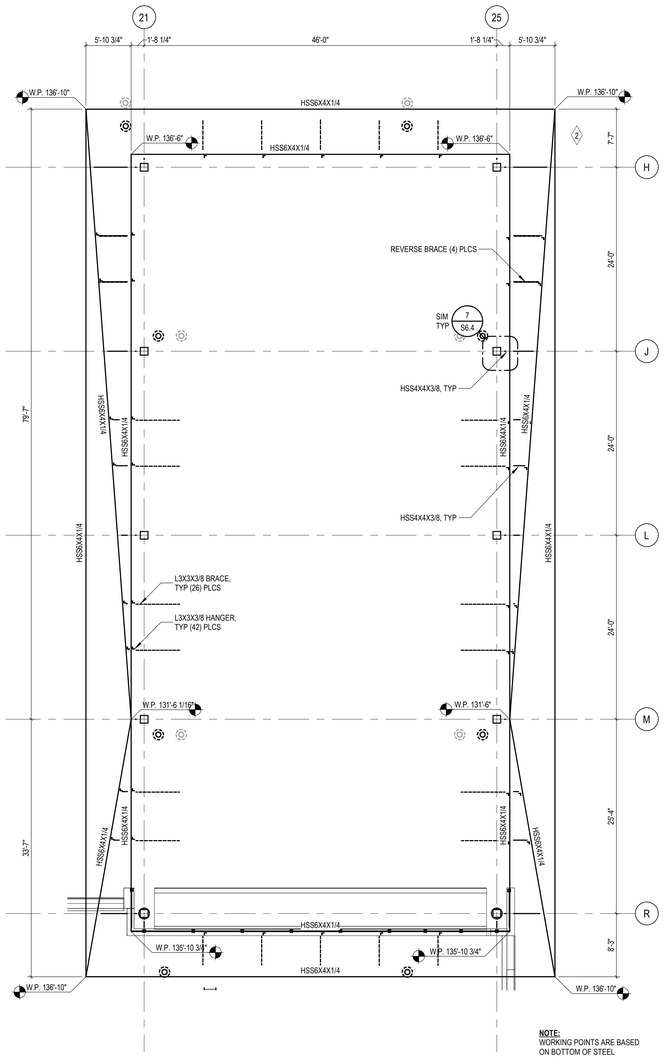
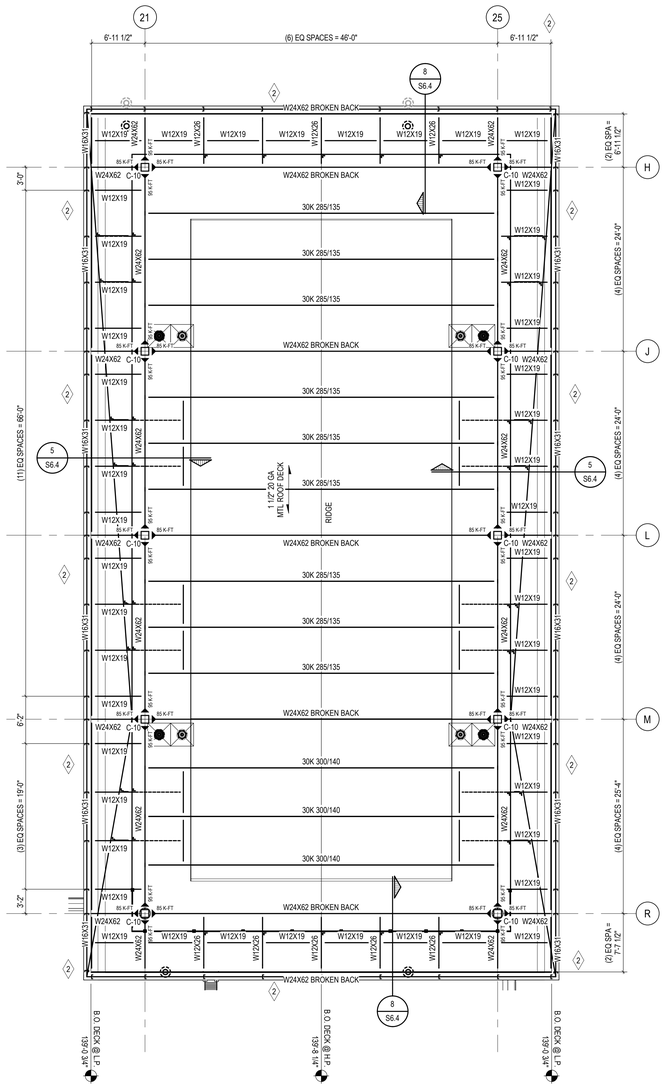


NOTE:
WORKING POINTS ARE BASED ON BOTTOM OF STEEL

N

HIGH ROOF FRAMING PLAN – ZONE 'D'

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



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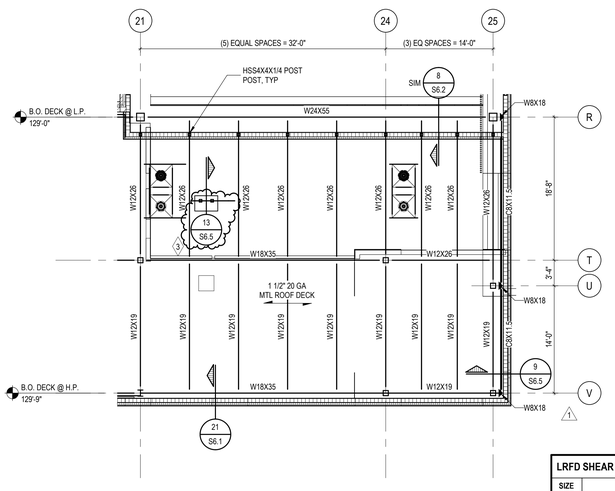
HIGH ROOF FRAMING PLAN – ZONE 'D'

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



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HIGH ROOF FRAMING PLAN – ZONE 'D'

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

LRFD SHEAR REACTIONS	
SIZE	SIZE
W8	15 KIPS
W10	15 KIPS
W12	25 KIPS
W14	25 KIPS
W16	40 KIPS
W18	50 KIPS
W21	55 KIPS
W24	65 KIPS

NOTE:
DESIGN ALL SHEAR CONNECTIONS FOR LOADS IN ABOVE TABLE U.N.O.

NOTES:
1. SEE S5.1 FOR TYPICAL LOOSE LINTEL SCHEDULE U.N.O., SEE ARCH FOR OPENING SIZES AND LOCATIONS.
2. SEE S5.1 FOR TYPICAL MASONRY LINTEL SCHEDULE U.N.O., SEE ARCH FOR OPENING SIZES AND LOCATIONS.
3. JOIST MANUFACTURER SHALL DESIGN ALL JOIST / BRIDGING FOR A NET UPLIFT PER UPLIFT DIAGRAMS, SEE S3.1.
4. REFER TO S3.1 FOR SPECIAL JOIST LOAD DIAGRAMS.
5. SEE DRAWING S3.1 FOR ROOF DECK ATTACHMENT DETAIL.
6. ▶ INDICATES MOMENT CONNECTION. DESIGN CONNECTION FOR LOADS SHOWN, LOADS ARE IN LRFD.
7. SEE 4/S6.1 FOR TYP RTU SUPPORT FRAME. COORDINATE ALL RTU AND OPENING DIMENSIONS WITH MECHANICAL.
8. SEE S6.1 FOR COLUMN AND BEARING PLATE SCHEDULES.

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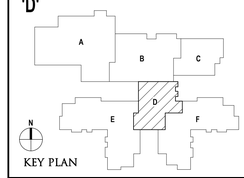
Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

High Roof Framing Plan Zone 'D'



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01-23-2024	CONSTRUCTION DOCUMENTS

DATE: ISSUED FOR:

DRAWN	D. BART
CHECKED	B. KANNERS
APPROVED	E. MANNOR

PROJECT NO.

22102

DRAWING NO.

S1.3D

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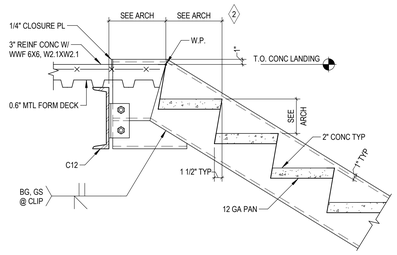
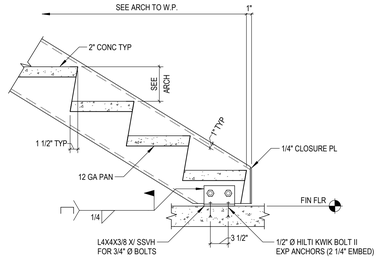


1 S6.5 TYPICAL STAIR DETAIL
SCALE: 1" = 1'-0"



2 S6.5 TYPICAL STAIR DETAIL
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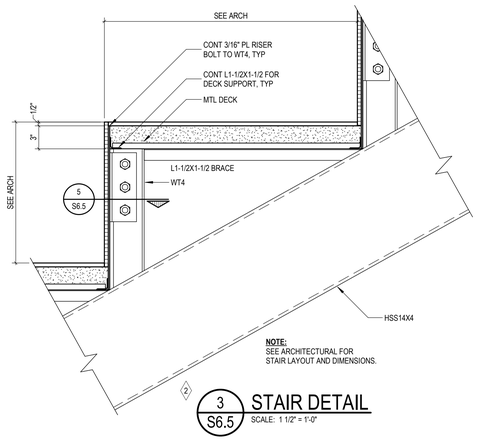

3 S6.5 STAIR DETAIL
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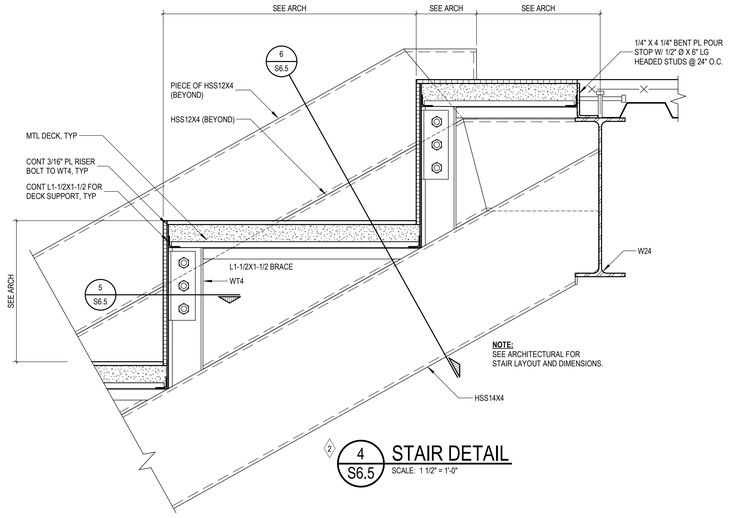

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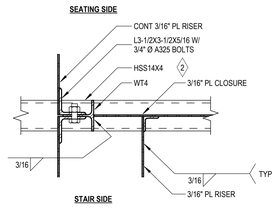

5 S6.5 STAIR DETAIL
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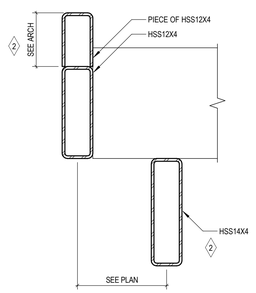

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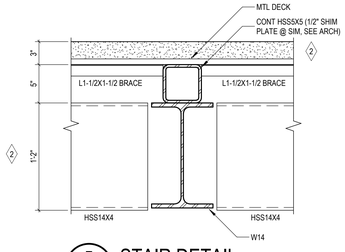

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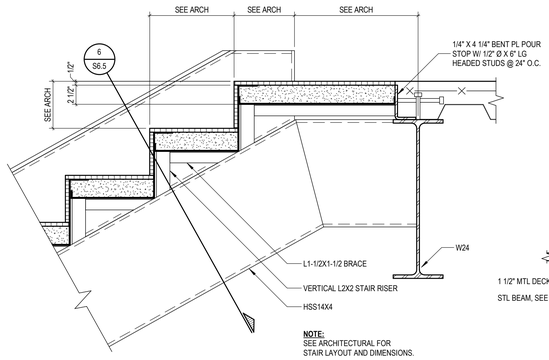

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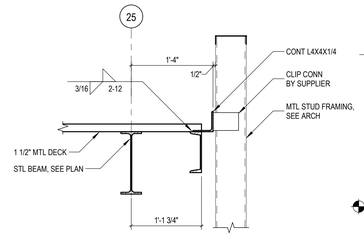

9 S6.5 DETAIL
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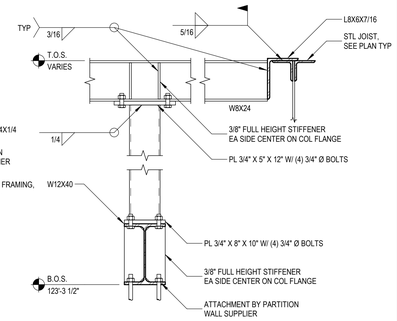
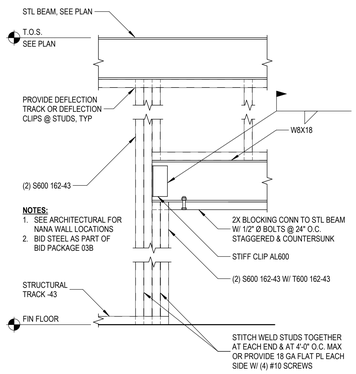
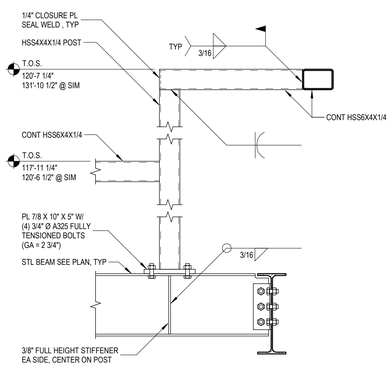


10 S6.5 DETAIL
SCALE: 1" = 1'-0"



11 S6.5 TYPICAL NANA WALL HEADER
NOT TO SCALE



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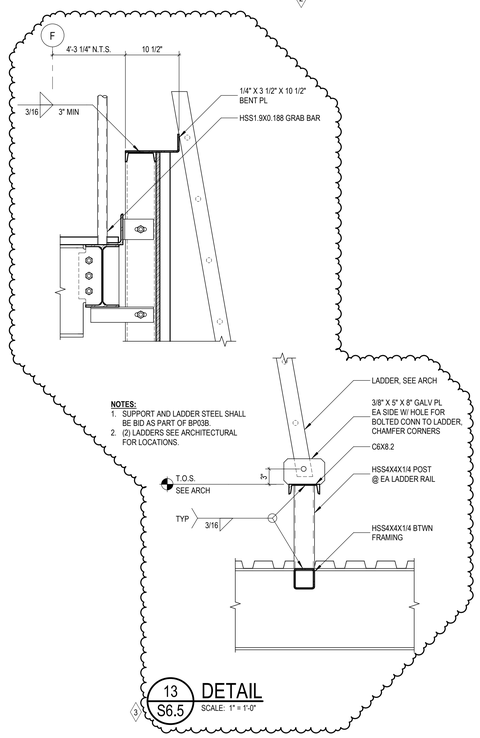


13 S6.5 DETAIL
SCALE: 1" = 1'-0"

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

WILLIAM A. KIBBE & ASSOCIATES, INC.
ENGINEERS | ARCHITECTS | SURVEYORS

PROJECT TITLE

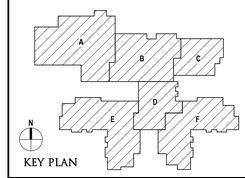
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Steel Details



ISSUE DATES

07-16-2024	ADDENDUM NO. 3
06-21-2024	BULLETIN NO. 2
06-10-2024	CONSTRUCTION DOCUMENTS
05-30-2024	BULLETIN NO. 1
02-08-2024	ADDENDUM NO. 2
01-23-2024	CONSTRUCTION DOCUMENTS
DATE:	ISSUED FOR:

DRAWN	D. BART
CHECKED	B. KANNERS
APPROVED	E. MANNOR

PROJECT NO.

22102

DRAWING NO.

S6.5

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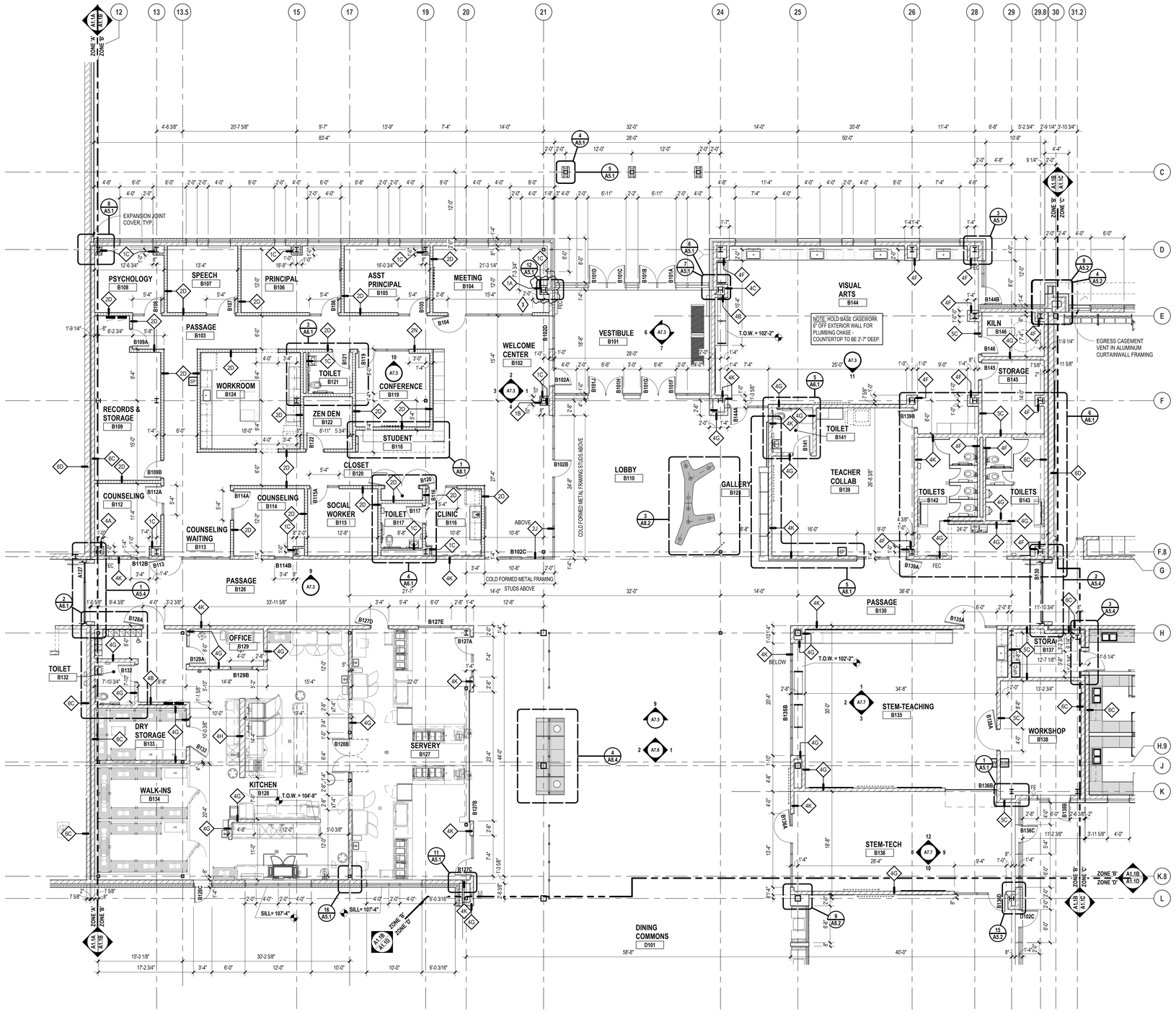


FIRST LEVEL FLOOR PLAN - ZONE 'B'

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
- 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. U465
- 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 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

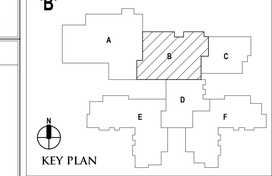
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

First Level Floor Plan - Zone 'B'



KEY PLAN

ISSUE DATES

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

DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A1.1B

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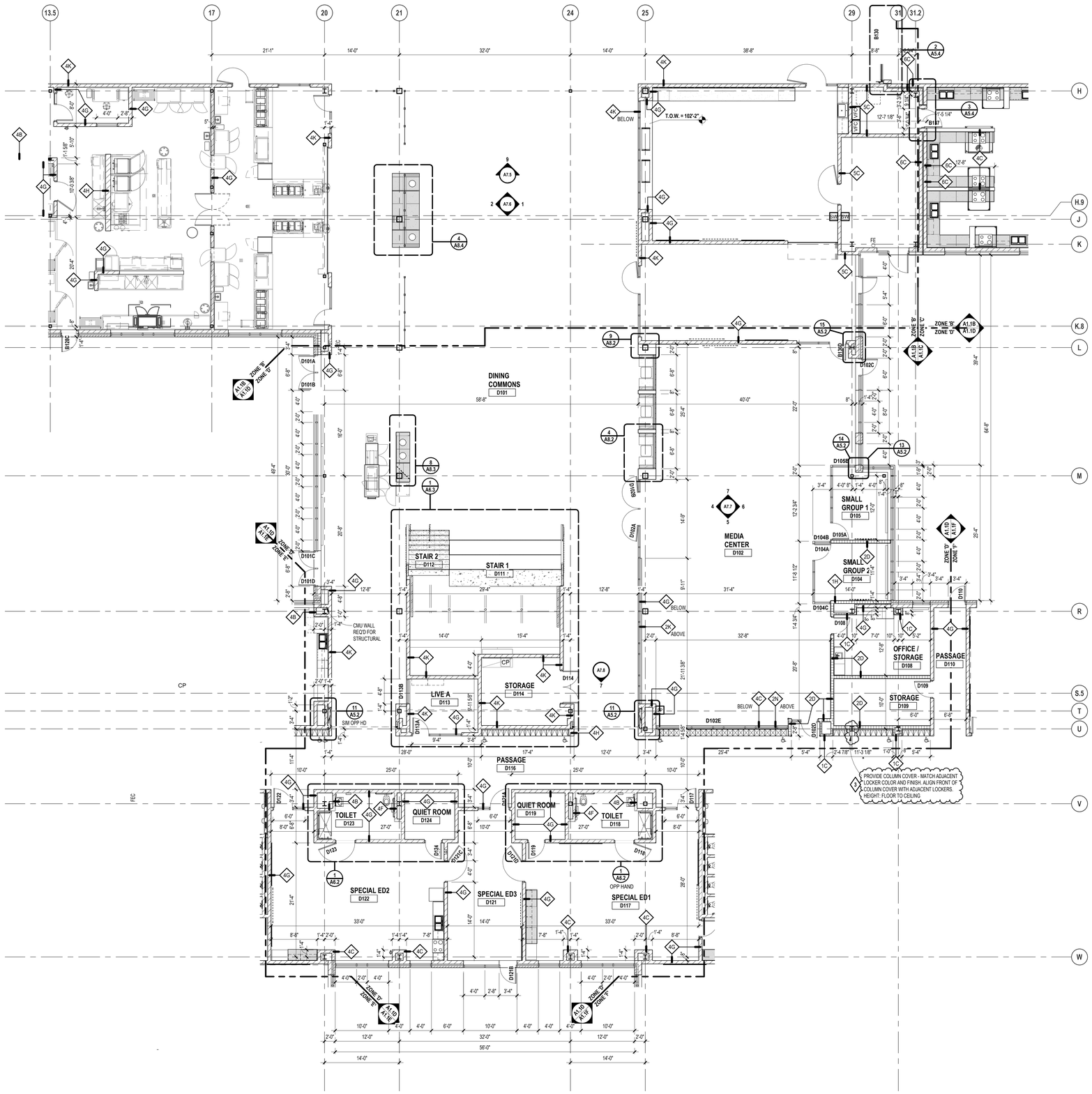

FIRST LEVEL FLOOR PLAN - ZONE 'D'

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

- 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
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- 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.
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- 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
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- 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. U465

- 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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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

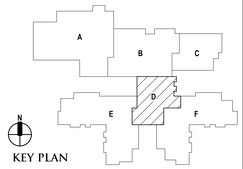
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

First Level Floor Plan - Zone 'D'



KEY PLAN

ISSUE DATES

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.

A1.1D

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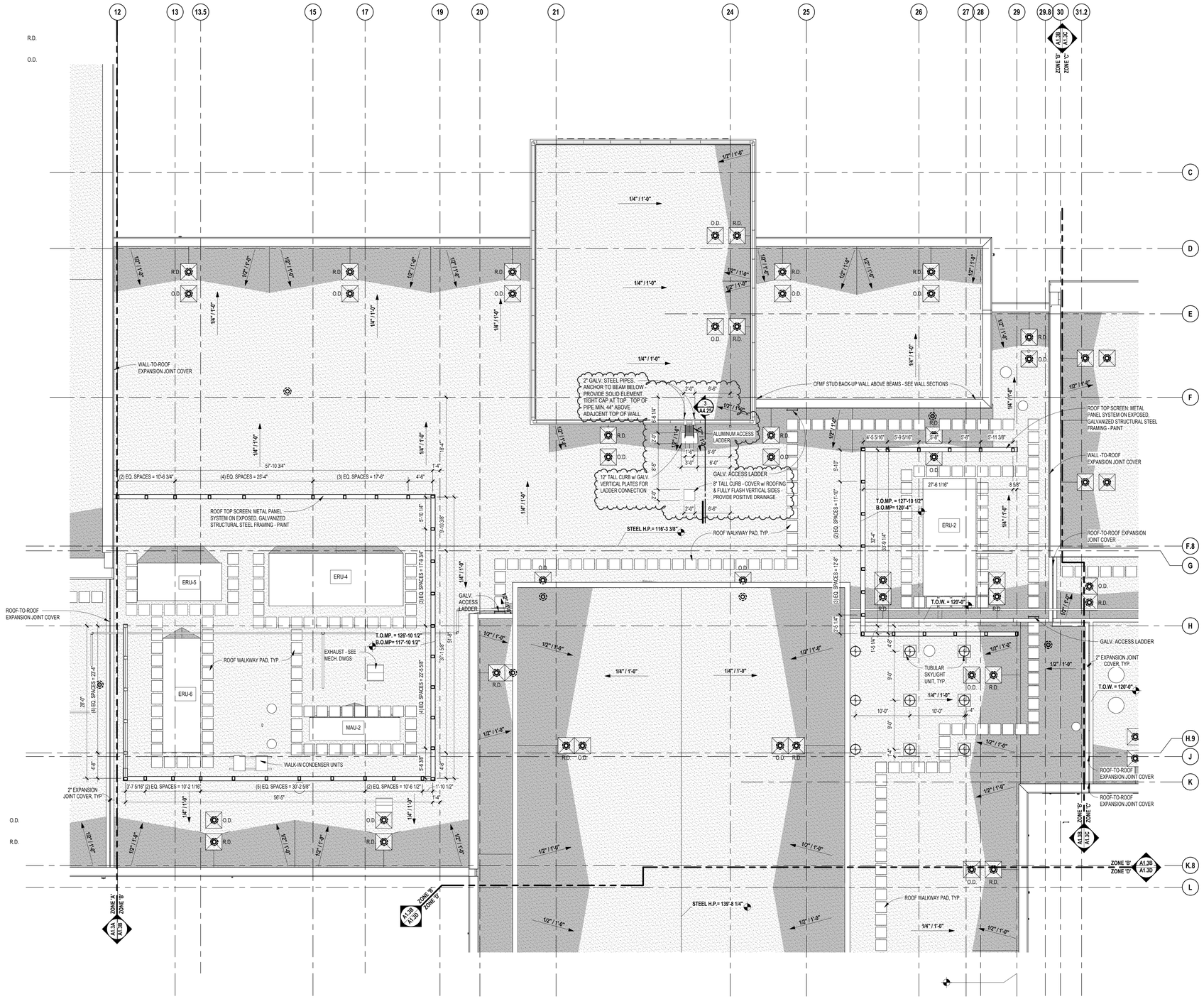

ROOF LEVEL PLAN - ZONE 'B'

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

ROOF PLAN LEGEND

- RD/OD — COMBINATION PRIMARY / SECONDARY ROOF DRAIN
- RD — ROOF DRAIN (PRIMARY)
- OD — ROOF DRAIN (SECONDARY)
- EXHAUST FAN [RELIEF VENT] [INTAKE HOOD]
- EF[RV] [IH]
- RTU — ROOF TOP MECHANICAL UNIT
- CU — CONDENSING UNIT (CU) ON EQUIPMENT RAILS
- ROOFING ON TAPERED INSULATION (1/2" PER FOOT, MIN) ON UNIFORM THICKNESS (NON-TAPERED) INSULATION
- ROOFING ON UNIFORM THICKNESS (NON-TAPERED) INSULATION ON SLOPED METAL DECK
- ROOFING ON CEMENTITIOUS WOOD FIBER DECK WITH BONDED URETHANE INSULATION
- ROOF PATCH / TIE-IN (SEE GENERAL NOTE 3)
- (0.0+½) — APPROXIMATE THICKNESS OF TAPERED INSULATION (IN ADDITION TO UNIFORM THICKNESS INSULATION)
- INDICATES PITCH OF ROOF SURFACE TOWARDS DRAINS (TAPERED INSULATION OR SADDLES)
- SLOPE — INDICATES SLOPE OF ROOF DECK AND SUPPORTING STEEL (ROOF SURFACE ALSO IF NOT OTHERWISE INDICATED)

ROOF PLAN NOTES

1. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS OF PLUMBING VENTS (FLASH AS PER S.M.A.C.N.A. AND N.R.C.A. STANDARDS).
2. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL OPENINGS, IF ANY, IN NEW AND/OR EXISTING ROOFS. DETAILS OF SIMILAR OPENINGS REFERENCED ON THIS SHEET ARE APPLICABLE.
3. WHERE NEW OPENINGS OCCUR IN EXISTING ROOF AREAS, INSTALL SUPPLMENTAL FRAMING UNDER SHEATHING PRIOR TO CUTTING HOLE IN SHEATHING. REPAIR ROOFING TO 2'-0" (MIN) AROUND OPENING.
4. INFORMATION FOR EXISTING CONDITIONS TAKEN FROM HISTORICAL DRAWINGS AND VISUAL INSPECTIONS OF EACH BUILDING. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO INSTALLATION OF NEW WORK AND REPORT ALL DISCREPANCIES TO THE ARCHITECT.
5. LOCATIONS AND QUANTITIES OF ALL EXISTING ROOF PENETRATIONS ARE APPROXIMATE AND MUST BE VERIFIED BY CONTRACTOR PRIOR TO WORK IN THOSE AREAS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER FLASHING OF ALL EXISTING DRAINS, CURBS, VENT STACKS, ETC., AFFECTED WITHIN THE PROJECT SCOPE.
7. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS OF NEW PENETRATIONS, FLASH AS SPECIFIED.
8. SEE MECHANICAL DRAWINGS FOR ADDITIONAL OPENINGS, IF ANY, IN NEW AND/OR EXISTING ROOFS. DETAILS OF SIMILAR OPENINGS REFERENCED ON THIS SHEET ARE APPLICABLE.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES ON OR NEAR PROJECT ROOFS DURING THE WORK. PROVIDE PROPER SAFETY MEASURES NEAR ELECTRICAL SERVICE LINES.

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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

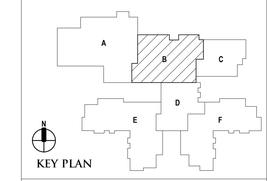
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Roof Level Plan - Zone 'B'



KEY PLAN

ISSUE DATES

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

DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A1.3B

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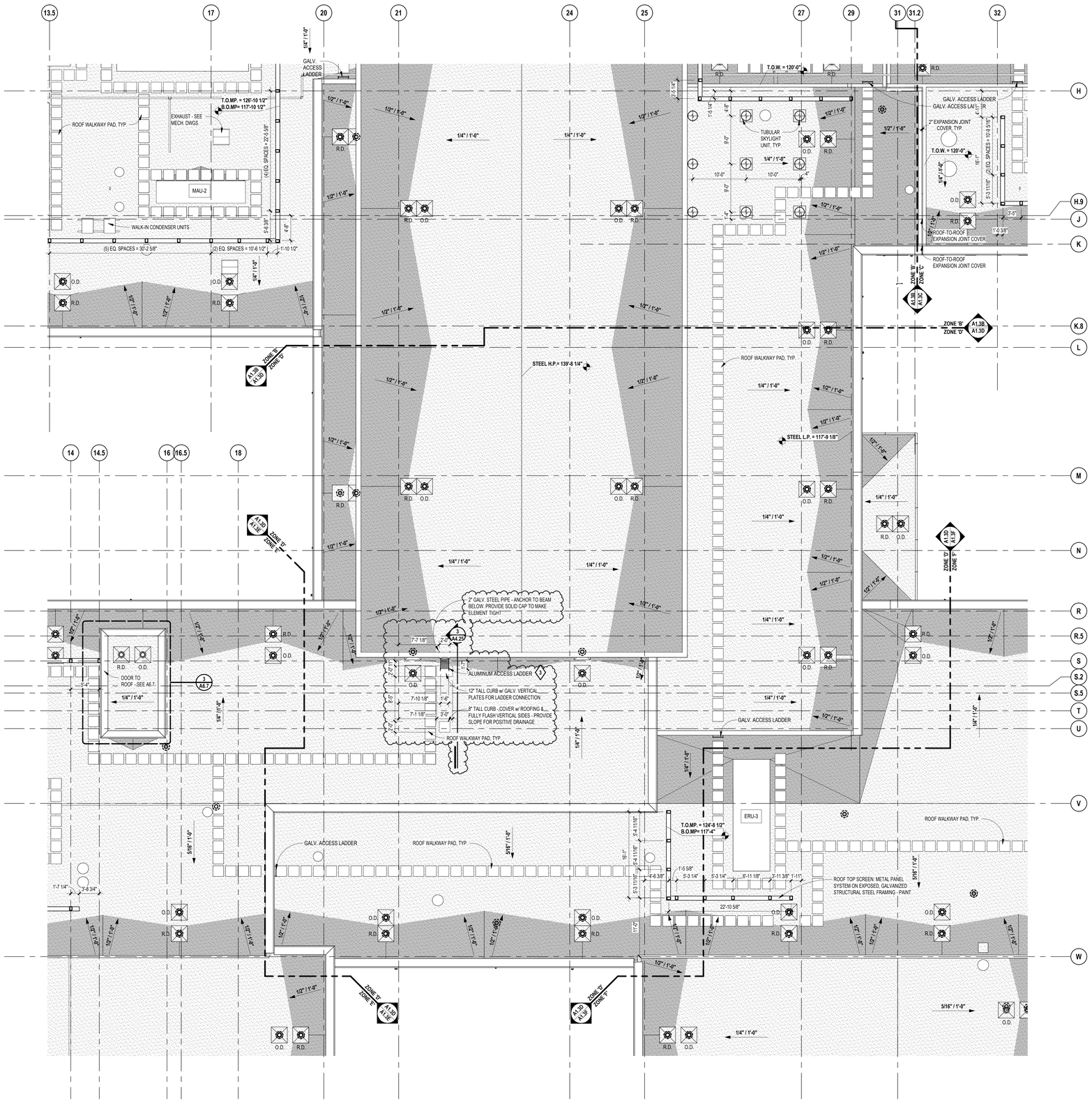

ROOF LEVEL PLAN - ZONE 'D'

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

ROOF PLAN LEGEND

- RD/OD — COMBINATION PRIMARY / SECONDARY ROOF DRAIN
- RD — ROOF DRAIN (PRIMARY)
- OD — ROOF DRAIN (SECONDARY)
- EF[RV], [IH] — EXHAUST FAN [RELIEF VENT] [INTAKE HOOD]
- RTU — ROOF TOP MECHANICAL UNIT
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- ROOFING ON TAPERED INSULATION (1/2" PER FOOT, MIN) ON UNIFORM THICKNESS (NON-TAPERED) INSULATION
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- ROOF PATCH / TIE-IN (SEE GENERAL NOTE 3)
- (0.0+/-) — APPROXIMATE THICKNESS OF TAPERED INSULATION (IN ADDITION TO UNIFORM THICKNESS INSULATION)
- INDICATES PITCH OF ROOF SURFACE TOWARDS DRAINS (TAPERED INSULATION OR SADDLES)
- SLOPE — INDICATES SLOPE OF ROOF DECK AND SUPPORTING STEEL (ROOF SURFACE ALSO IF NOT OTHERWISE INDICATED)

ROOF PLAN NOTES

1. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS OF PLUMBING VENTS (FLASH AS PER S.M.A.C.N.A. AND N.R.C.A. STANDARDS).
2. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL OPENINGS, IF ANY, IN NEW AND/OR EXISTING ROOFS. DETAILS OF SIMILAR OPENINGS REFERENCED ON THIS SHEET ARE APPLICABLE.
3. WHERE NEW OPENINGS OCCUR IN EXISTING ROOF AREAS, INSTALL SUPPLMENTAL FRAMING UNDER SHEATHING PRIOR TO CUTTING HOLE IN SHEATHING. REPAIR ROOFING TO 2'-0" (MIN) AROUND OPENING.
4. INFORMATION FOR EXISTING CONDITIONS TAKEN FROM HISTORICAL DRAWINGS AND VISUAL INSPECTIONS OF EACH BUILDING. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO INSTALLATION OF NEW WORK AND REPORT ALL DISCREPANCIES TO THE ARCHITECT.
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7. REFER TO MECHANICAL DRAWINGS FOR LOCATIONS OF NEW PENETRATIONS, FLASH AS SPECIFIED.
8. SEE MECHANICAL DRAWINGS FOR ADDITIONAL OPENINGS, IF ANY, IN NEW AND/OR EXISTING ROOFS. DETAILS OF SIMILAR OPENINGS REFERENCED ON THIS SHEET ARE APPLICABLE.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES ON OR NEAR PROJECT ROOFS DURING THE WORK. PROVIDE PROPER SAFETY MEASURES NEAR ELECTRICAL SERVICE LINES.

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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

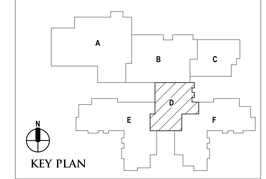
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Roof Level Plan - Zone 'D'



KEY PLAN

ISSUE DATES

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

DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A1.3D

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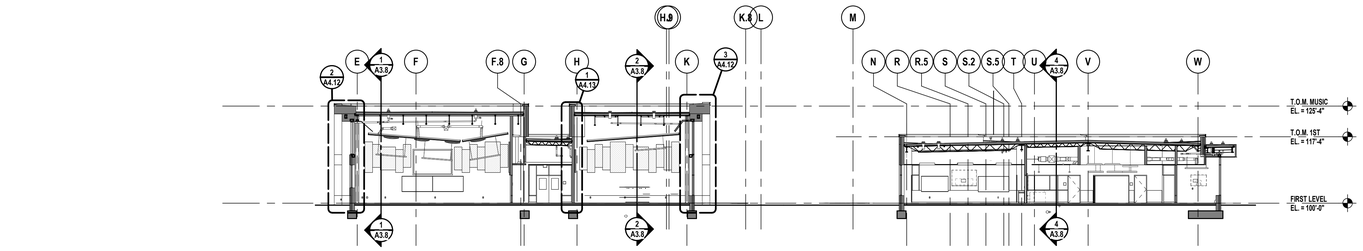
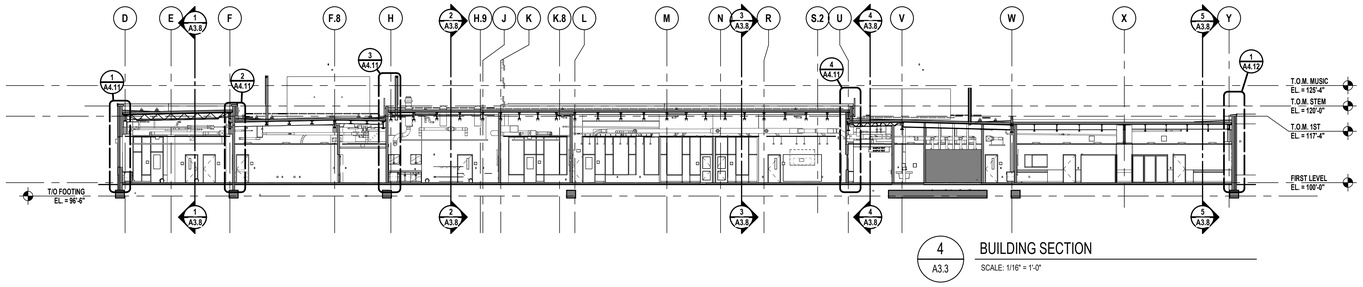


5 A3.2 BUILDING SECTION
SCALE: 1/16" = 1'-0"



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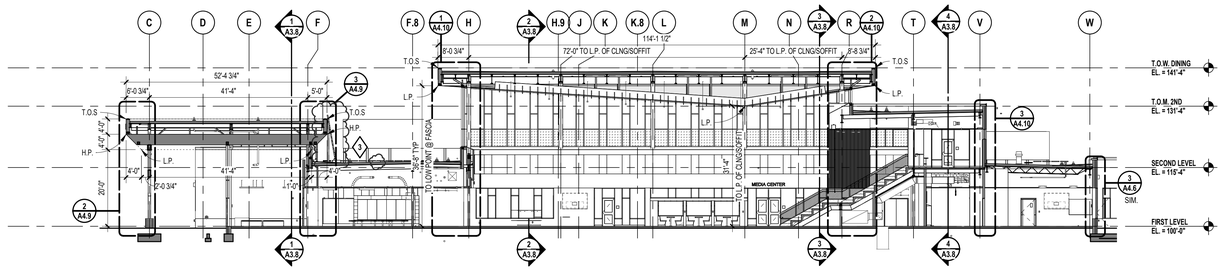

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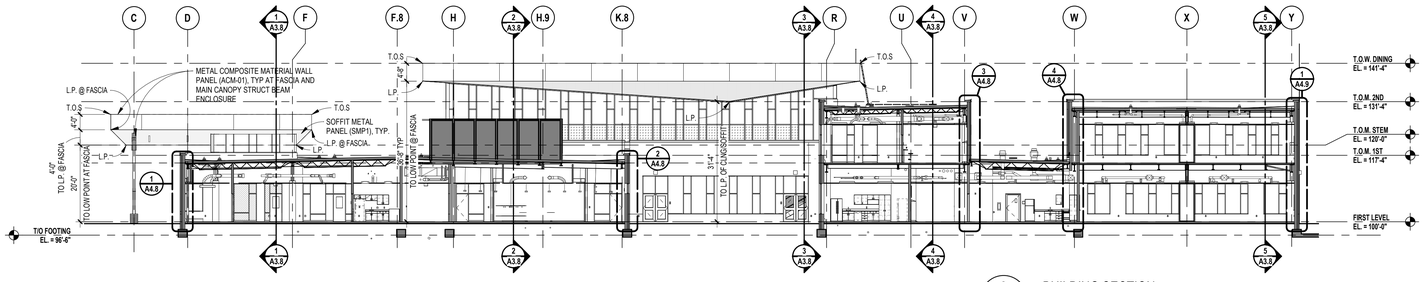

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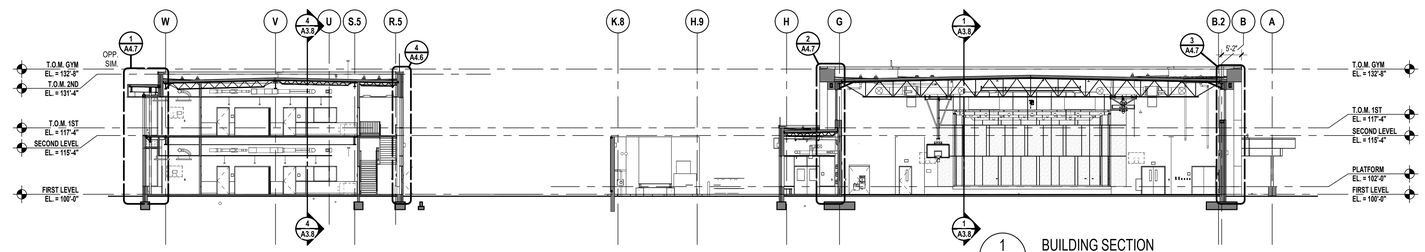

1 A3.2 BUILDING SECTION
SCALE: 1/16" = 1'-0"

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PH - 248.338.4561 FX - 248.338.0223
EM - INFO@TMP-ARCHITECTURE.COM

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

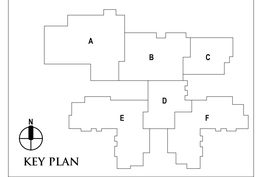
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Building Sections



KEY PLAN

ISSUE DATES

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

DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A3.9

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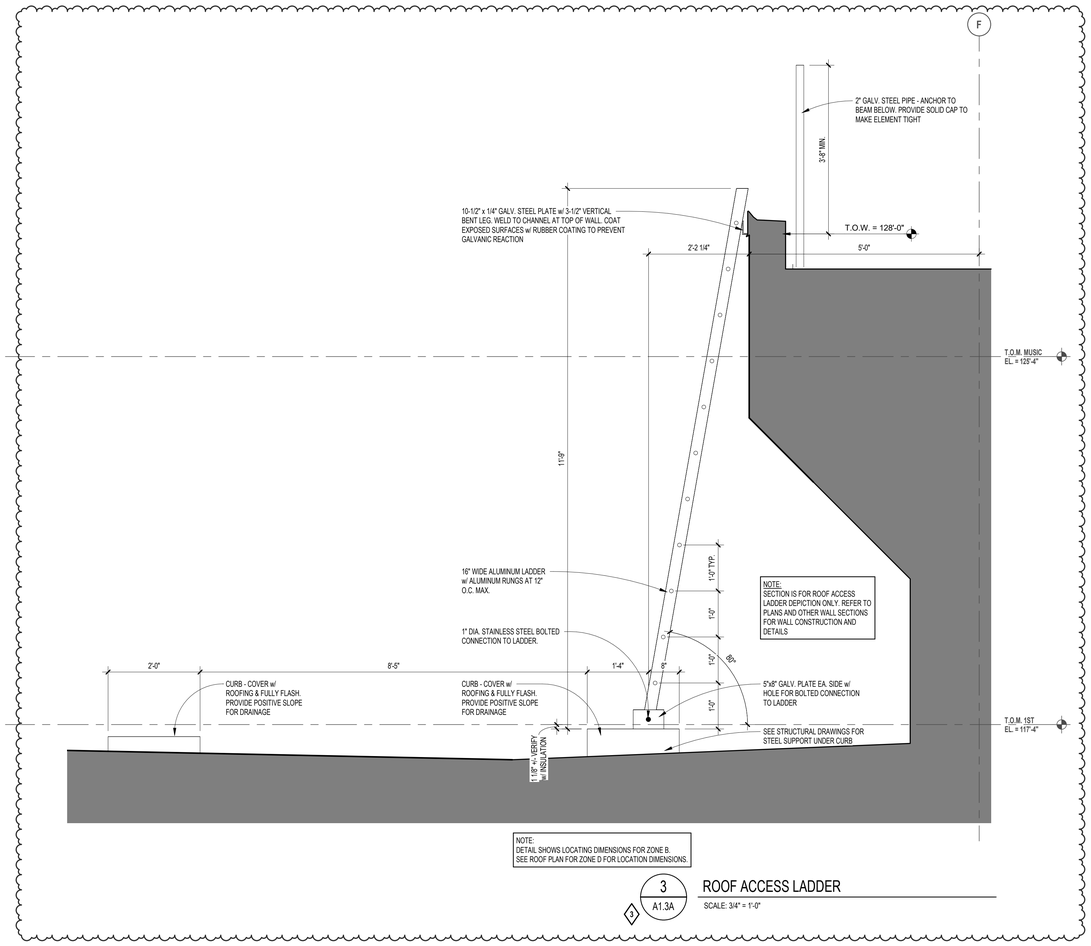
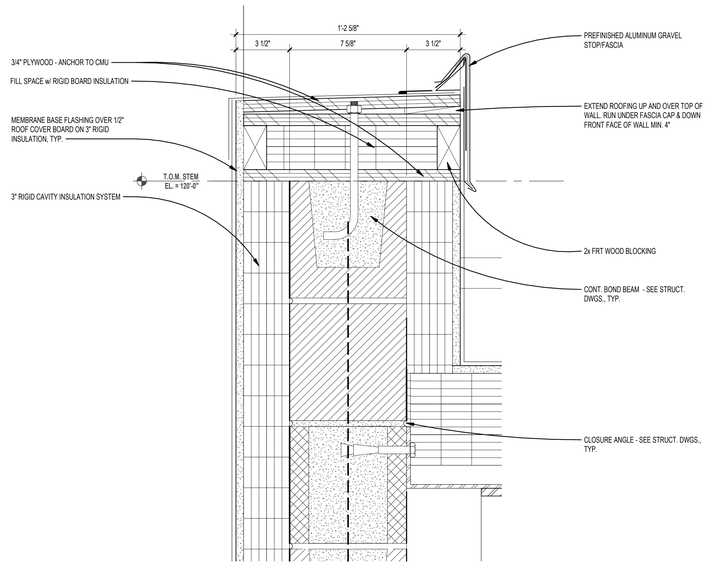


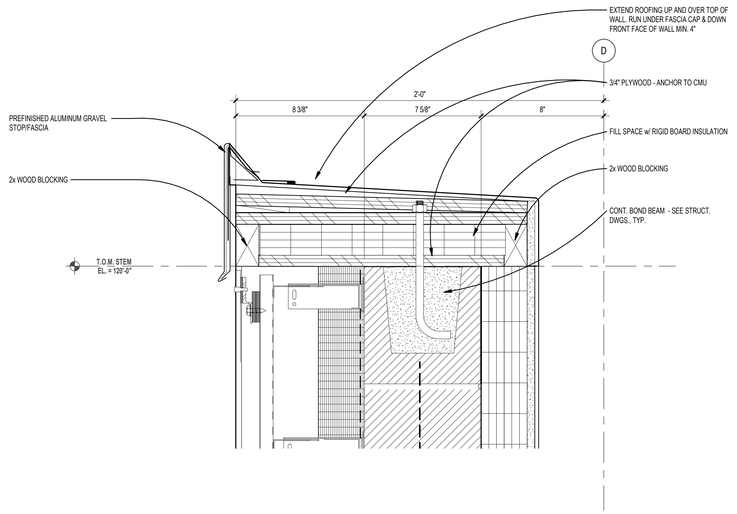
3 / A1.3A — ROOF ACCESS LADDER

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



2 / A4.11 — WALL SECTION DETAIL

SCALE: 3" = 1'-0"



1 / A4.11 — WALL SECTION DETAIL

SCALE: 3" = 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 Section Details

ISSUE DATES

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

DRAWN	dc
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

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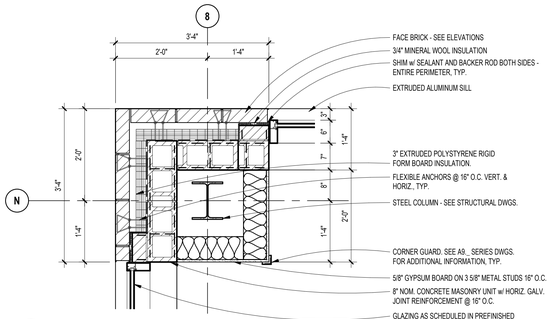

20 / A1.1E — PLAN DETAIL
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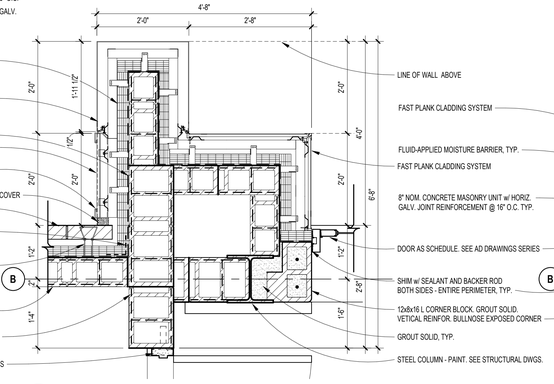

14 / A1.1A — PLAN DETAIL
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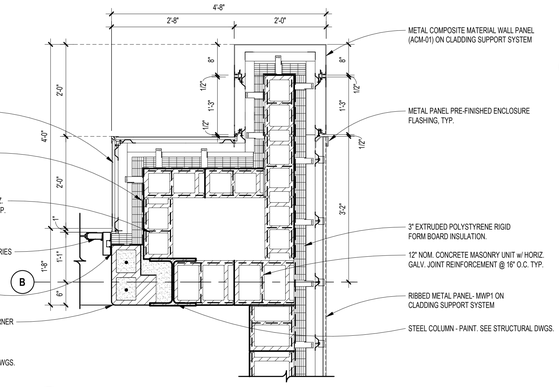

9 / A1.1A — PLAN DETAIL
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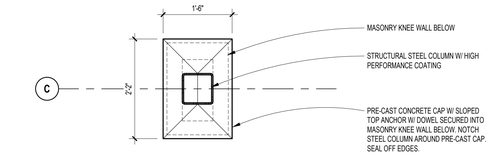

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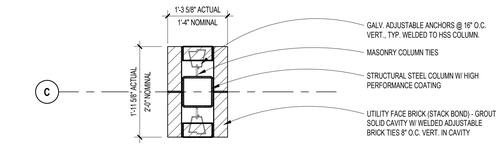

4 / A1.1B — PLAN DETAIL
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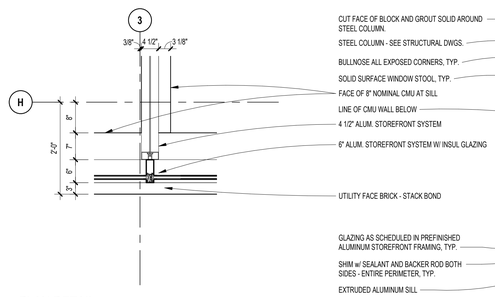

18 / A1.1A — PLAN DETAIL
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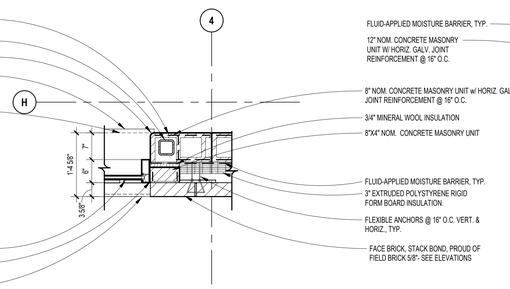

13 / A1.1A — PLAN DETAIL
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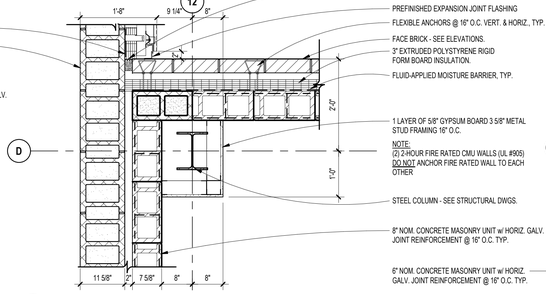
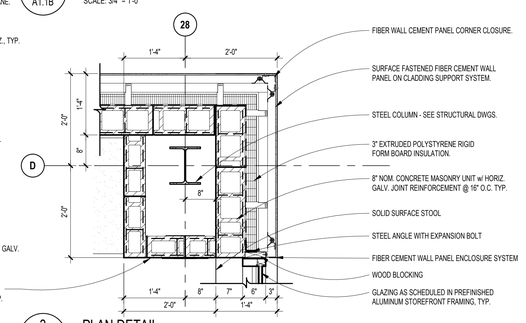


8 / A1.1A — PLAN DETAIL
SCALE: 3/4" = 1'-0"



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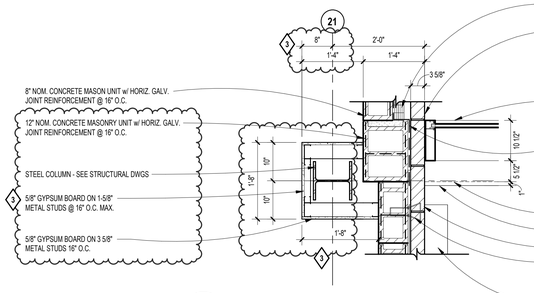
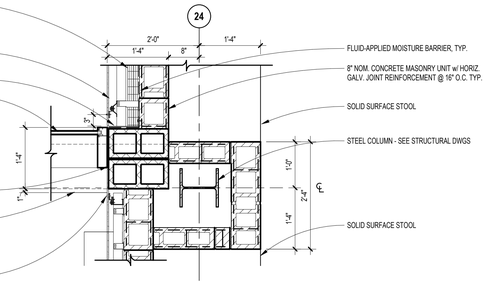
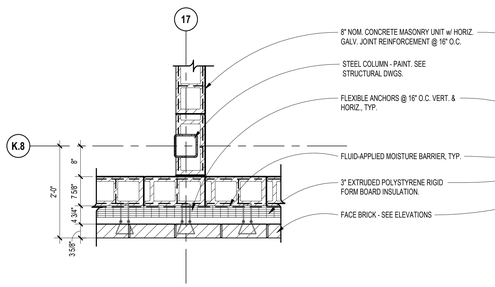
SCALE: 3/4" = 1'-0"



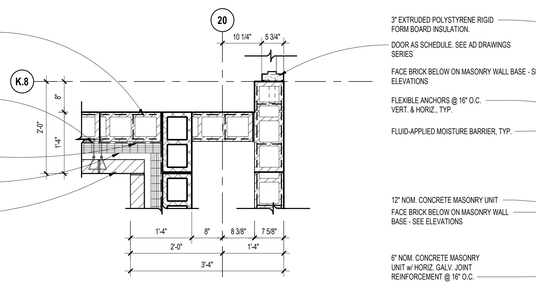
12 / A1.1B — PLAN DETAIL
SCALE: 3/4" = 1'-0"



7 / A1.1B — PLAN DETAIL
SCALE: 3/4" = 1'-0"



16 / A1.1B — PLAN DETAIL
SCALE: 3/4" = 1'-0"



11 / A1.1B — PLAN DETAIL
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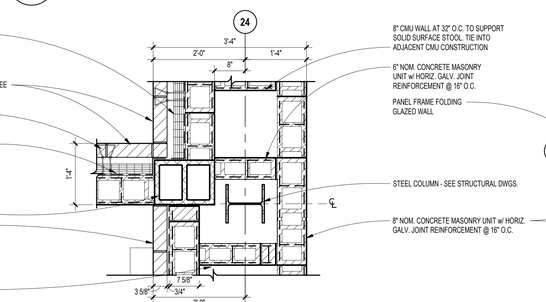

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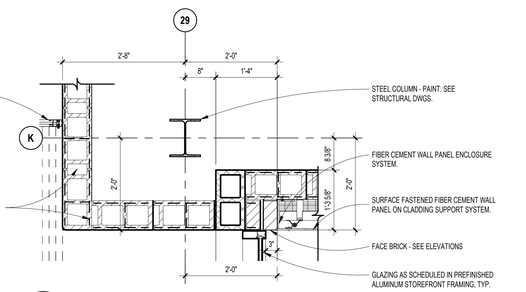


1 / A1.1B — PLAN DETAIL
SCALE: 3/4" = 1'-0"

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

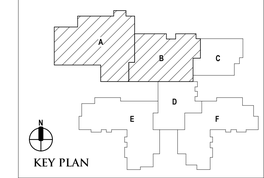
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Plan Details



KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
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06-18-2024	CONSTRUCTION DOCUMENTS

DRAWN	AAR
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APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A5.1

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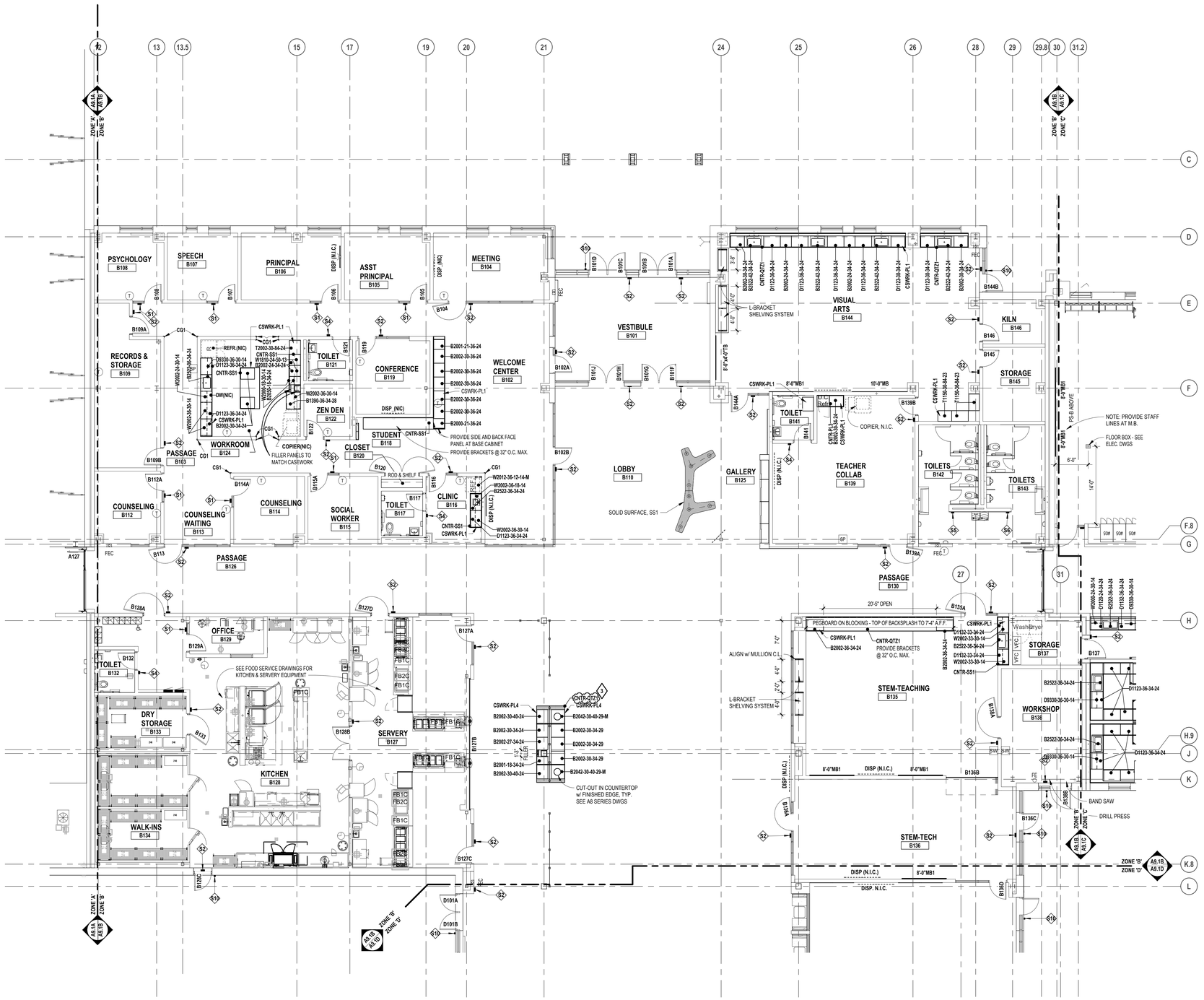

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FIRST LEVEL CASEWORK AND EQUIPMENT PLAN - ZONE 'B'

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 (12" 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
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- 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
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- 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

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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 Casework & Equipment Plan - Zone 'B'

KEY PLAN

ISSUE DATES

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

DRAWN	do
CHECKED	jw
APPROVED	dl

PROJECT NO.

22102

DRAWING NO.

A9.1B

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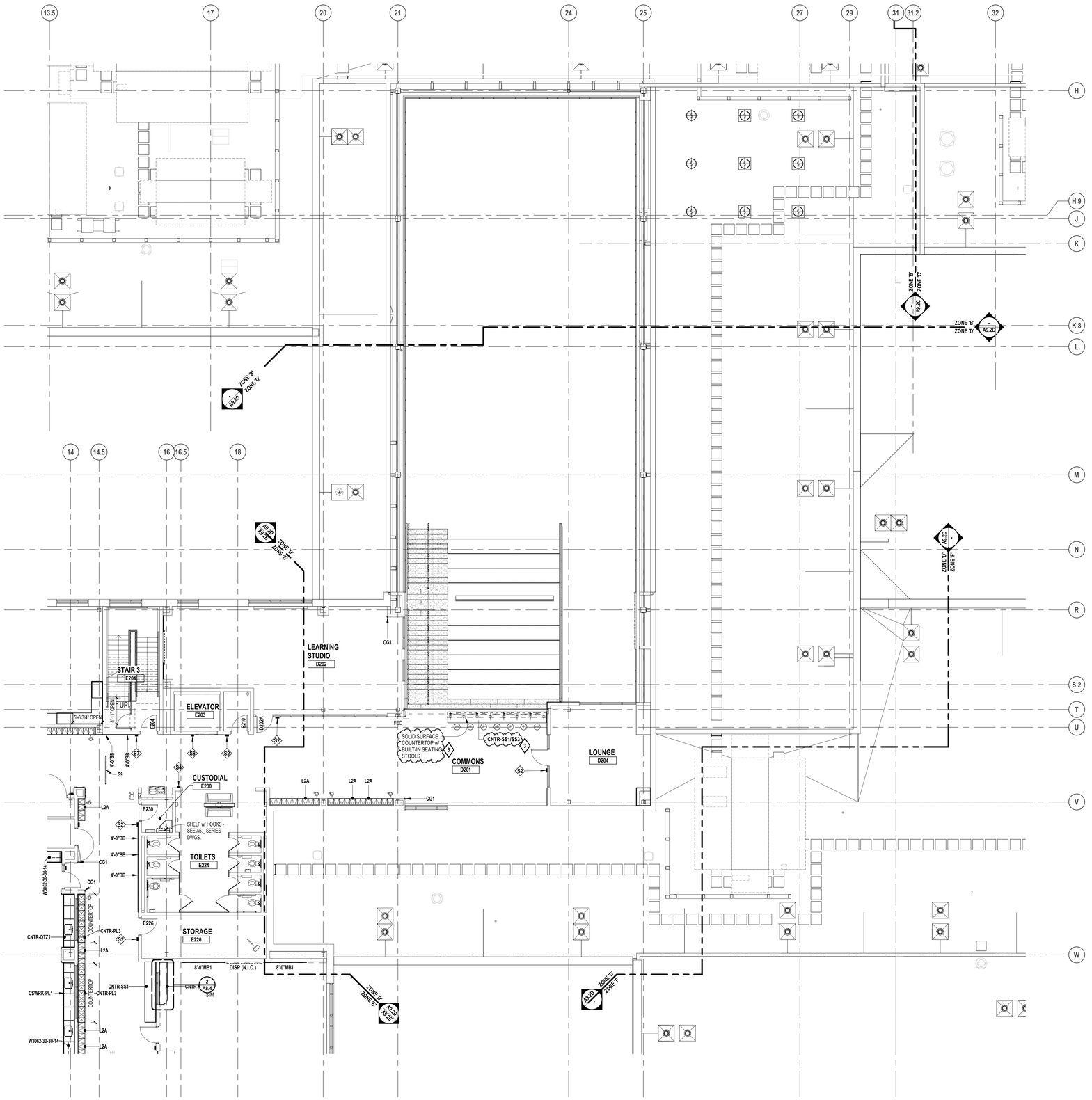

SECOND FLOOR CASEWORK PLAN - ZONE 'D'

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)
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- TYPE L-7: DOUBLE-TIER ATHLETIC LOCKERS (24" X 15" X 72" HIGH), VENTILATED, ON 18" TALL CMU BASE
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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:

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

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PH - 248.338.4561 FX - 248.338.0223
EM - INFO@TMP-ARCHITECTURE.COM

REGISTRATION SEAL

CONSULTANT

PROJECT TITLE

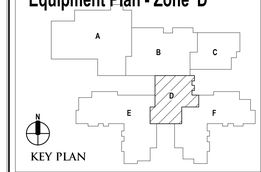
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

Second Level Casework & Equipment Plan - Zone 'D'



KEY PLAN

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DRAWN	do
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PROJECT NO.

22102

DRAWING NO.

A9.2D

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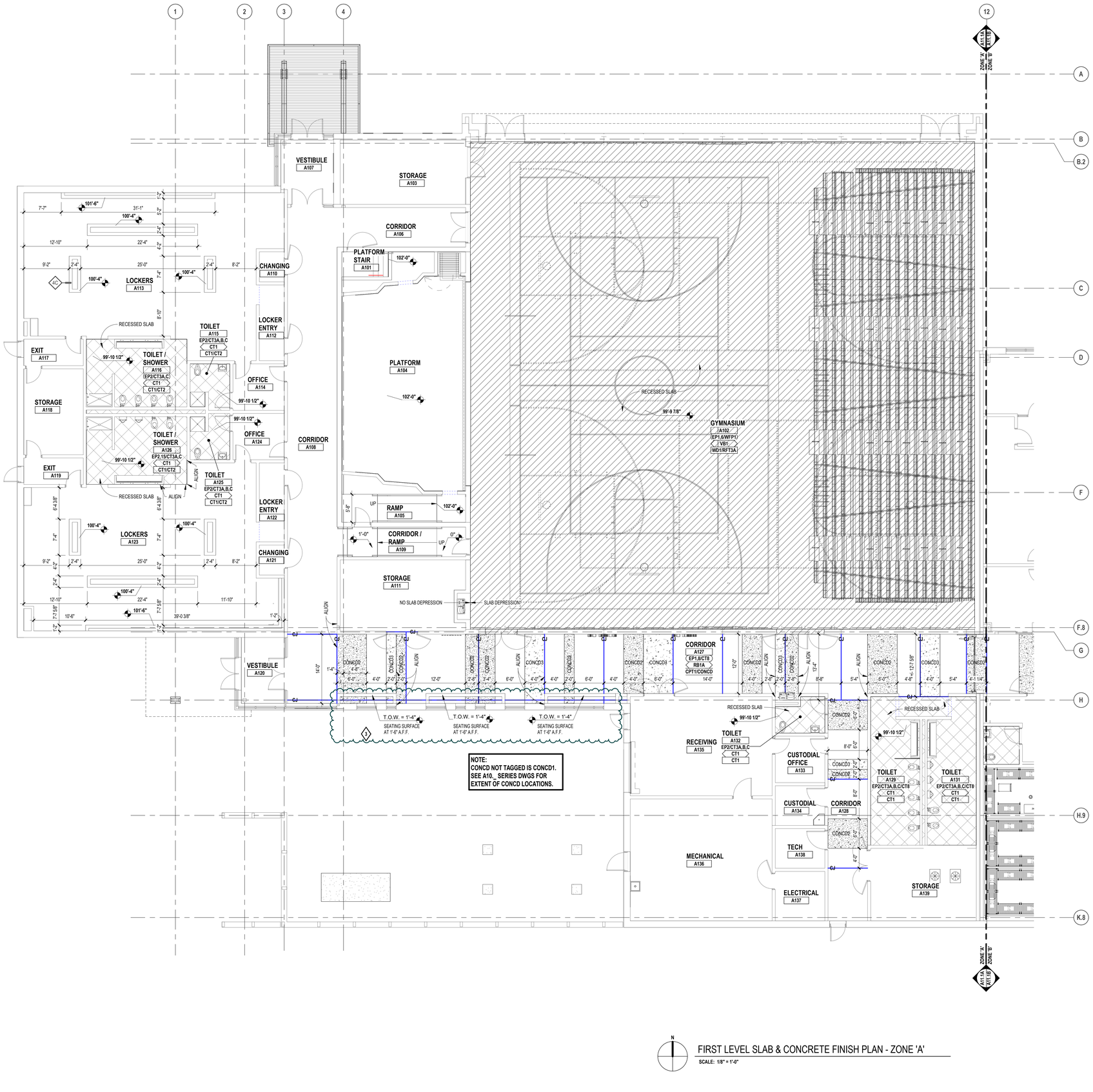

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FIRST LEVEL SLAB & CONCRETE FINISH PLAN - ZONE 'A'

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

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1191 WEST SQUARE LAKE ROAD
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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 Slab and Concrete Finish Plan - Zone 'A'

KEY PLAN

ISSUE DATES

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

DRAWN	gm
CHECKED	jw
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PROJECT NO.

22102

DRAWING NO.

A11.1A

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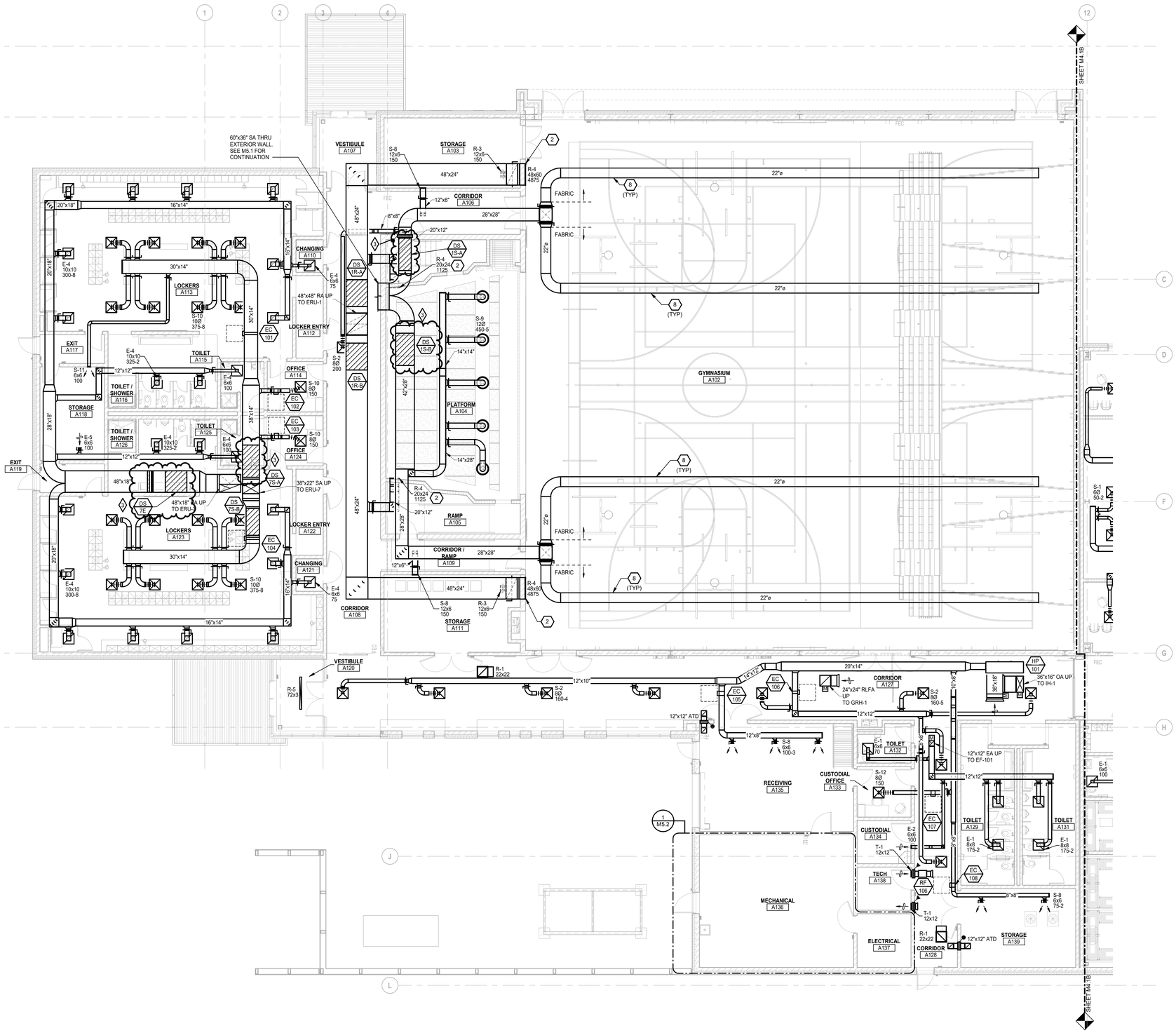


FIRST LEVEL SHEET METAL PLAN - ZONE 'A'

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

SHEET METAL GENERAL NOTES:

1 THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.

2 INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.

3 PIPING AND DUCTWORK SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.

4 COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.

5 PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

6 REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR DIMENSIONED LOCATION OF GRILLES, REGISTERS, AND DIFFUSERS.

7 REFER TO TEMPERATURE CONTROLS STANDARD MOUNTING HEIGHTS DETAIL FOR ELEVATIONS OF WALL MOUNTED TEMPERATURE CONTROL DEVICES.

CONSTRUCTION KEY NOTES:

1 RELOCATED KILN BY OWNER. ROUTE 6ø INCHES EXHAUST CONNECTION FROM KILN UP THROUGH ROOF AND TERMINATE WITH VENT CAP. KILN EXHAUST SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER RECOMMENDATIONS.

2 MOUNT BOTTOM OF GRILLE 8 INCHES A.F.F.

3 ROUTE 6ø DRYER EXHAUST UP THROUGH ROOF AND TERMINATE WITH GOOSENECK.

4 PROVIDE DIGITAL TIMER FOR INDICATED EF.

5 REFER TO LEARNING STUDIO E128 FOR TYPICAL SHEET METAL LAYOUT.

6 REFER TO LEARNING STUDIO E134 FOR TYPICAL SHEET METAL LAYOUT.

7 REFER TO ACTIVE STUDIO F138 FOR TYPICAL SHEET METAL LAYOUT.

8 PROVIDE FABRIC DUCTWORK IN GYMNASIUM. MECHANICAL CONTRACTOR TO COORDINATE LAYOUT WITH STRUCTURAL STEEL AND JOIST CONFIGURATION.

9 ROUTE GREASE DUCT FROM HOOD UP TO EXHAUST FAN.

10 ROUTE 6ø EA UP THROUGH ROOF TO ROOF CAP ACCESSORY.

11 BALANCE TO AIRFLOW INDICATED.

12 ROUTE 6ø EA THROUGH WALL TO BRICK VENT ACCESSORY.

13 PROVIDE DOUBLE WALLED DUCT.

14 DUCT LOCATED BENEATH STAIRS.

15 ROUTE DUCT TIGHT TO CEILING.

16 REFER TO FOOD SERVICE DRAWINGS FOR CONNECTION TO DISHWASHER.

17 28x10 MAKEUP AIR CONNECTION TO HOOD.

18 PROVIDE 4" CONCRETE CURB AROUND ALL MEZZANINE FLOOR DUCT PENETRATIONS.

19 24x12 SA STACKED ABOVE 24x12 EA.

20 16x12 SA STACKED ABOVE 12x12 EA.

TMP ARCHITECTURE

TMP ARCHITECTURE INC

1191 WEST SQUARE LAKE ROAD - BOX 289
BLOOMFIELD HILLS - MICHIGAN - 48302
PH - 248.338.4561 FX - 248.338.0223
EM - INFO@TMP-ARCHITECTURE.COM

REGISTRATION SEAL

CONSULTANT

Peter Basso Associates Inc
CONSULTING ENGINEERS
5145 Livernois, Suite 100
Troy, Michigan 48098-3276
Tel: 248-879-5666
Fax: 248-879-0007
www.PeterBassoAssociates.com
PBA Project No: 2023.0154

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

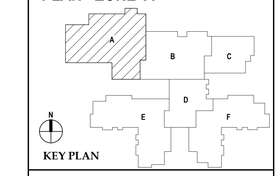
Bid Package No. 03B

Troy School District
TROY, MI

DRAWING TITLE

FIRST LEVEL SHEET METAL PLAN - ZONE 'A'

KEY PLAN



ISSUE DATES

07-16-2024	ADDENDUM #3
07-12-2024	ADDENDUM #2
06-18-2024	CONSTRUCTION DOCUMENTS
DATE:	ISSUED FOR:

DRAWN	JRB
CHECKED	KLH
APPROVED	SVM

PROJECT NO.

22102

DRAWING NO.

M4.1A

7/15/2024 1:14:29 PM Autodesk Docs://22102_Troy Smith MS/2023-0154_TSD Smith MS_MEP_v22.rvt

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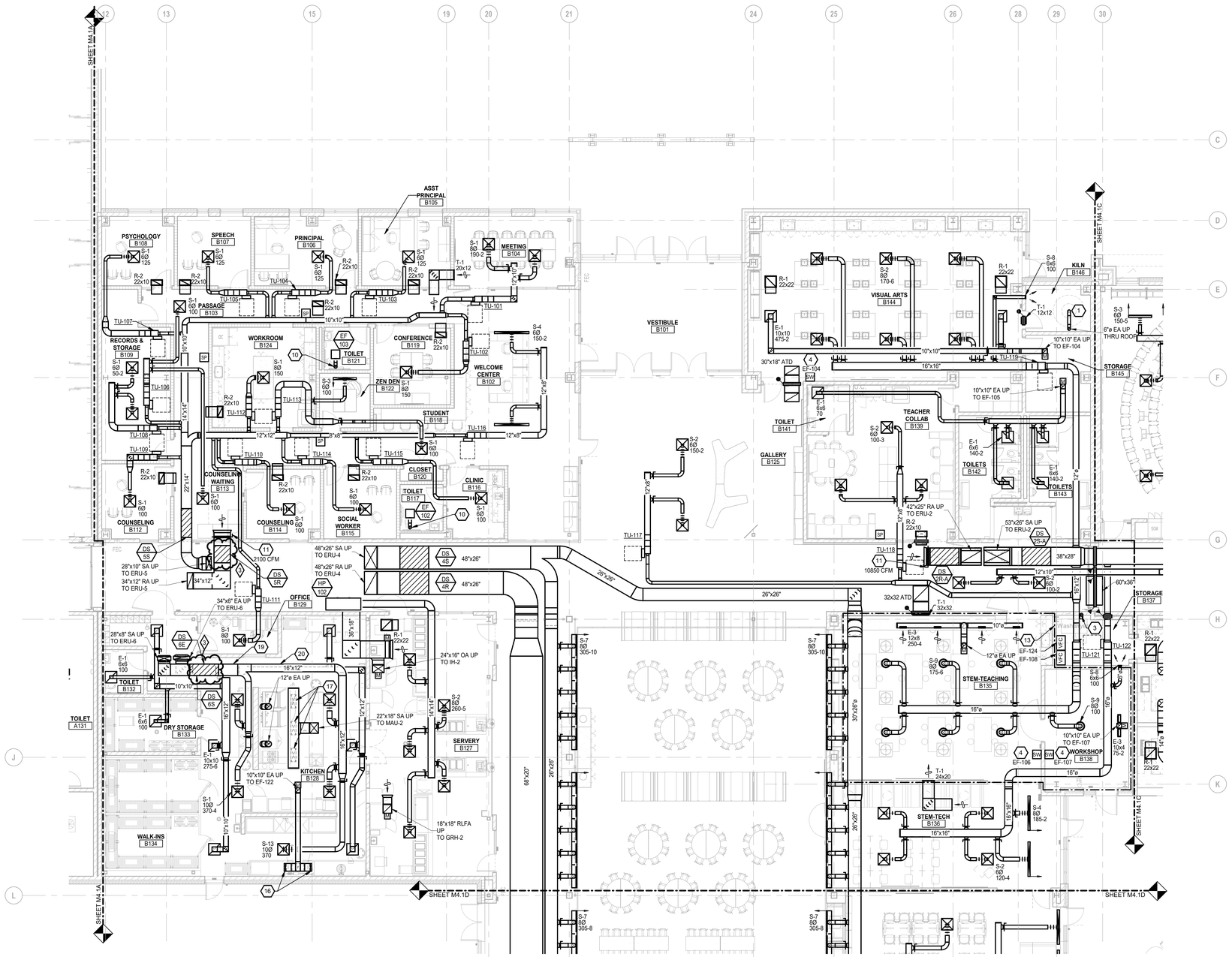

FIRST LEVEL SHEET METAL PLAN - ZONE 'B'

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

SHEET METAL GENERAL NOTES:

1 THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.

2 INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.

3 PIPING AND DUCTWORK SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.

4 COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.

5 PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

6 REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR DIMENSIONED LOCATION OF GRILLES, REGISTERS, AND DIFFUSERS.

7 REFER TO TEMPERATURE CONTROLS STANDARD MOUNTING HEIGHTS DETAIL FOR ELEVATIONS OF WALL MOUNTED TEMPERATURE CONTROL DEVICES.

CONSTRUCTION KEY NOTES:

1 RELOCATED KILN BY OWNER. ROUTE 6ø INCHES EXHAUST CONNECTION FROM KILN UP THROUGH ROOF AND TERMINATE WITH VENT CAP. KILN EXHAUST SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER RECOMMENDATIONS.

2 MOUNT BOTTOM OF GRILLE 8 INCHES A.F.F.

3 ROUTE 6ø DRYER EXHAUST UP THROUGH ROOF AND TERMINATE WITH GOOSENECK.

4 PROVIDE DIGITAL TIMER FOR INDICATED EF.

5 REFER TO LEARNING STUDIO E128 FOR TYPICAL SHEET METAL LAYOUT.

6 REFER TO LEARNING STUDIO E134 FOR TYPICAL SHEET METAL LAYOUT.

7 REFER TO ACTIVE STUDIO F138 FOR TYPICAL SHEET METAL LAYOUT.

8 PROVIDE FABRIC DUCTWORK IN GYMNASIUM. MECHANICAL CONTRACTOR TO COORDINATE LAYOUT WITH STRUCTURAL STEEL AND JOIST CONFIGURATION.

9 ROUTE GREASE DUCT FROM HOOD UP TO EXHAUST FAN.

10 ROUTE 6ø EA UP THROUGH ROOF TO ROOF CAP ACCESSORY.

11 BALANCE TO AIRFLOW INDICATED.

12 ROUTE 6ø EA THROUGH WALL TO BRICK VENT ACCESSORY.

13 PROVIDE DOUBLE WALLED DUCT.

14 DUCT LOCATED BENEATH STAIRS.

15 ROUTE DUCT TIGHT TO CEILING.

16 REFER TO FOOD SERVICE DRAWINGS FOR CONNECTION TO DISHWASHER.

17 28x10 MAKEUP AIR CONNECTION TO HOOD.

18 PROVIDE 4" CONCRETE CURB AROUND ALL MEZZANINE FLOOR DUCT PENETRATIONS.

19 24x12 SA STACKED ABOVE 24x12 EA.

20 16x12 SA STACKED ABOVE 12x12 EA.

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PBA Project No: 2023.0154

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

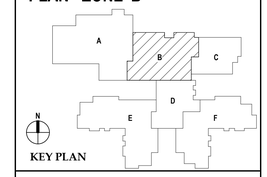
Bid Package No. 03B

Troy School District
TROY, MI

DRAWING TITLE

FIRST LEVEL SHEET METAL PLAN - ZONE 'B'

KEY PLAN



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DRAWN	JRB
CHECKED	KLH
APPROVED	SVM

PROJECT NO.

22102

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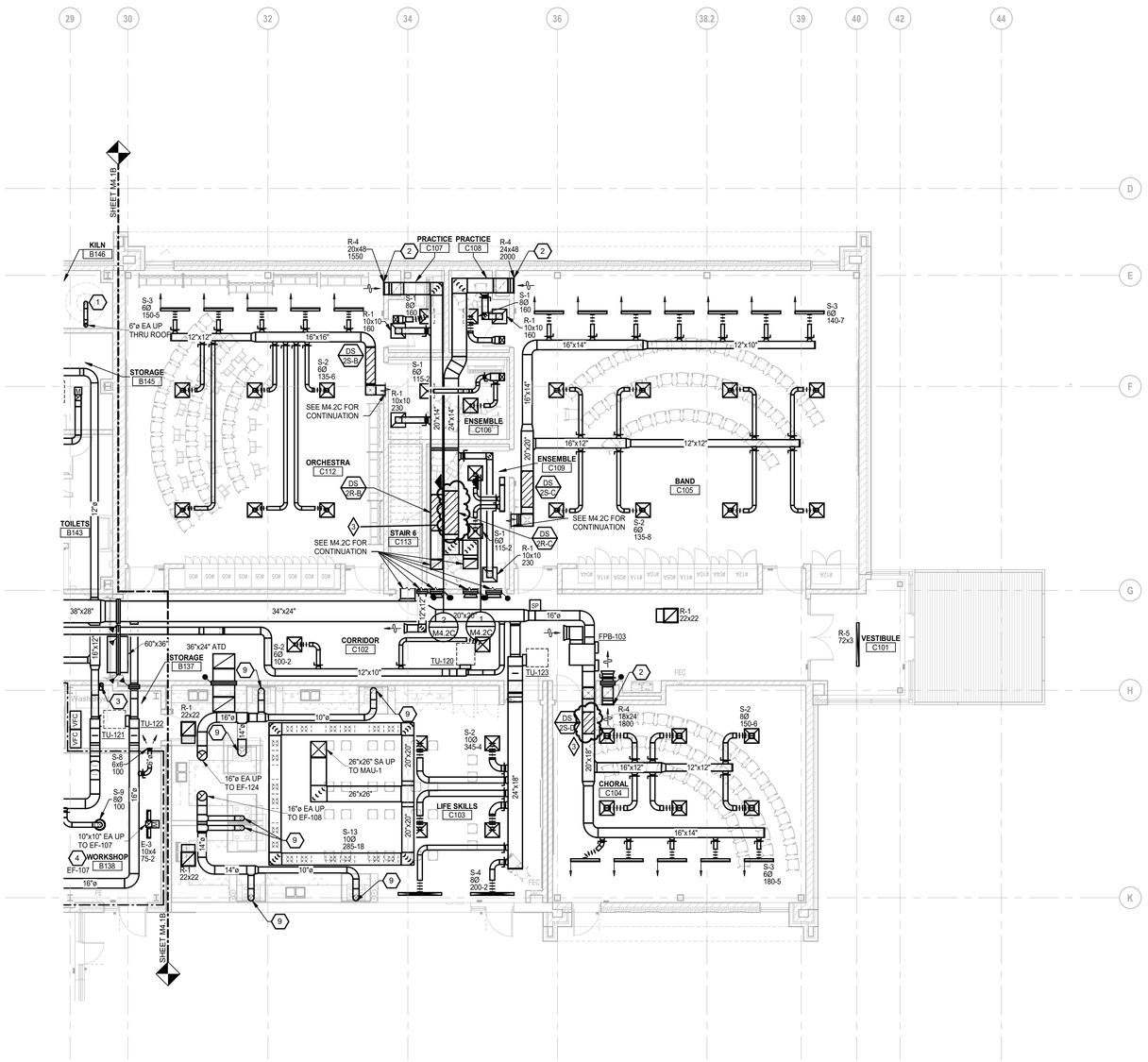

FIRST LEVEL SHEET METAL PLAN - ZONE 'C'

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

SHEET METAL GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.
2. INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.
3. PIPING AND DUCTWORK SHALL NOT BE INSTALLED ABOVE ELECTRICAL TRANSFORMERS, SWITCHBOARDS, PANELBOARDS OR MOTOR CONTROL CENTERS.
4. COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
5. PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.
6. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR DIMENSIONED LOCATION OF GRILLES, REGISTERS, AND DIFFUSERS.
7. REFER TO TEMPERATURE CONTROLS STANDARD MOUNTING HEIGHTS DETAIL FOR ELEVATIONS OF WALL MOUNTED TEMPERATURE CONTROL DEVICES.

CONSTRUCTION KEY NOTES:

1. RELOCATED KILN BY OWNER. ROUTE 6ø INCHES EXHAUST CONNECTION FROM KILN UP THROUGH ROOF AND TERMINATE WITH VENT CAP. KILN EXHAUST SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER RECOMMENDATIONS.
2. MOUNT BOTTOM OF GRILLE 8 INCHES A.F.F.
3. ROUTE 6ø DRYER EXHAUST UP THROUGH ROOF AND TERMINATE WITH GOOSENECK.
4. PROVIDE DIGITAL TIMER FOR INDICATED EF.
5. REFER TO LEARNING STUDIO E128 FOR TYPICAL SHEET METAL LAYOUT.
6. REFER TO LEARNING STUDIO E134 FOR TYPICAL SHEET METAL LAYOUT.
7. REFER TO ACTIVE STUDIO F138 FOR TYPICAL SHEET METAL LAYOUT.
8. PROVIDE FABRIC DUCTWORK IN GYMNASIUM. MECHANICAL CONTRACTOR TO COORDINATE LAYOUT WITH STRUCTURAL STEEL AND JOIST CONFIGURATION.
9. ROUTE GREASE DUCT FROM HOOD UP TO EXHAUST FAN.
10. ROUTE 6ø EA UP THROUGH ROOF TO ROOF CAP ACCESSORY.
11. BALANCE TO AIRFLOW INDICATED.
12. ROUTE 6ø EA THROUGH WALL TO BRICK VENT ACCESSORY.
13. PROVIDE DOUBLE WALLED DUCT.
14. DUCT LOCATED BENEATH STAIRS.
15. ROUTE DUCT TIGHT TO CEILING.
16. REFER TO FOOD SERVICE DRAWINGS FOR CONNECTION TO DISHWASHER.
17. 28x10 MAKEUP AIR CONNECTION TO HOOD.
18. PROVIDE 4" CONCRETE CURB AROUND ALL MEZZANINE FLOOR DUCT PENETRATIONS.
19. 24x12 SA STACKED ABOVE 24x12 EA.
20. 16x12 SA STACKED ABOVE 12x12 EA.

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PBA Project No: 2023.0154

PROJECT TITLE

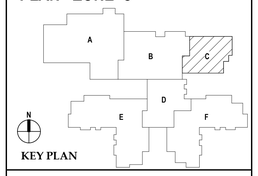
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
TROY, MI

DRAWING TITLE

FIRST LEVEL SHEET METAL PLAN - ZONE 'C'



KEY PLAN

ISSUE DATES

DATE:	ISSUED FOR:
07-16-2024	ADDENDUM #3
06-18-2024	CONSTRUCTION DOCUMENTS

DRAWN	JRB
CHECKED	KLH
APPROVED	SVM

PROJECT NO.

22102

DRAWING NO.

M4.1C

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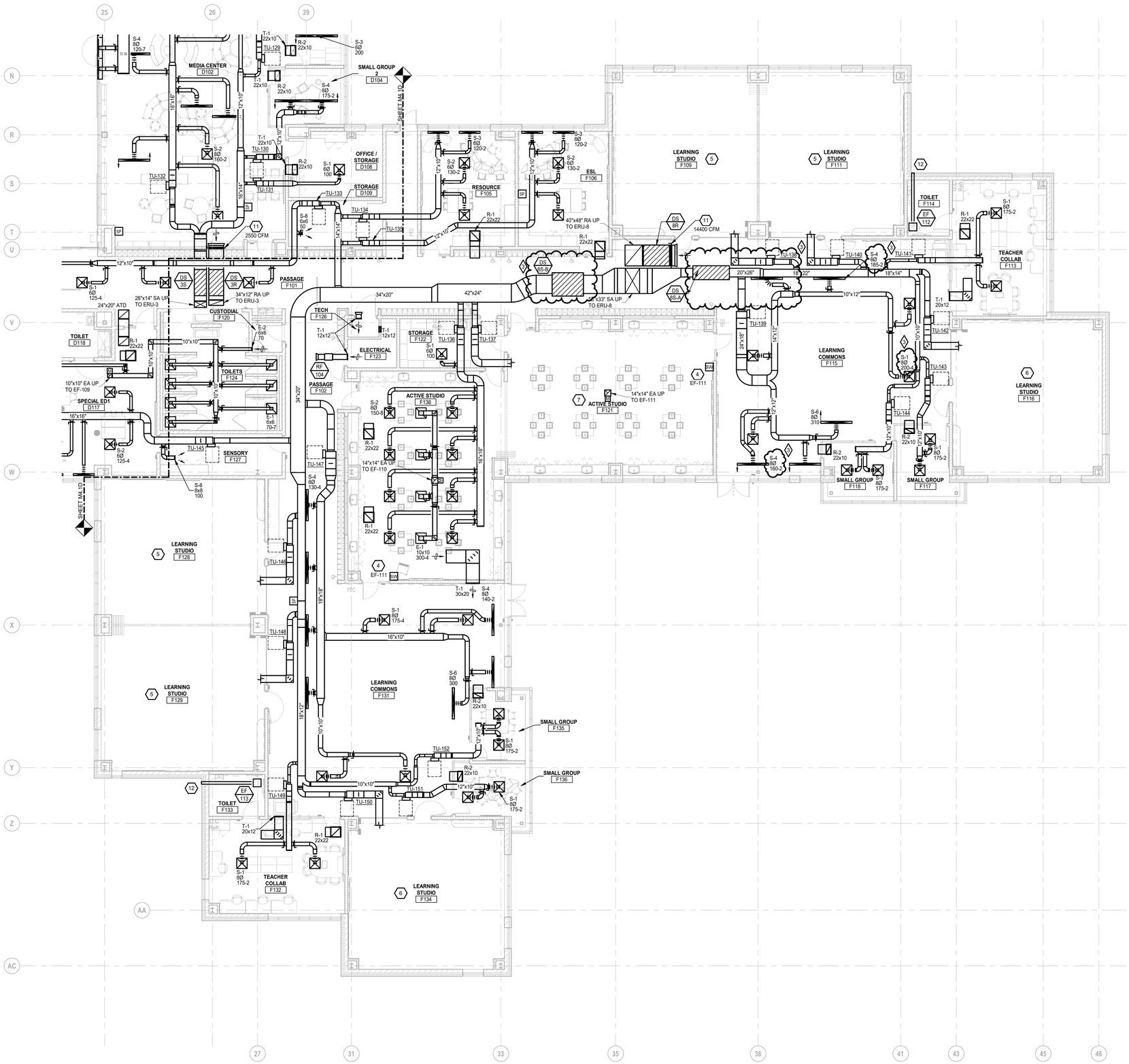

FIRST LEVEL SHEET METAL PLAN - ZONE 'F'

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

SHEET METAL GENERAL NOTES:

1 THESE DRAWINGS ARE DIAGRAMMATIC, AND REPRESENT THE GENERAL INTENT AND ARRANGEMENT OF SYSTEMS. THEY ARE NOT TO BE CONSIDERED FABRICATION/COORDINATION/SHOP DRAWINGS. COORDINATION WITH OTHER TRADES IS REQUIRED. PROVIDE THE ADDITIONAL FITTINGS AND OFFSETS THAT WILL BE REQUIRED TO COMPLETE EACH SYSTEM AND TO AVOID INTERFERENCES WITH ALL OTHER SYSTEMS INCLUDING THE STRUCTURE, PIPING SYSTEMS, ELECTRICAL CONDUITS, BUS DUCTS, CABLE TRAY, LIGHT FIXTURES, ETC. AND/OR OTHER SPACE CONSTRAINTS.

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7 REFER TO TEMPERATURE CONTROLS STANDARD MOUNTING HEIGHTS DETAIL FOR ELEVATIONS OF WALL MOUNTED TEMPERATURE CONTROL DEVICES.

CONSTRUCTION KEY NOTES:

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2 MOUNT BOTTOM OF GRILLE 8 INCHES A.F.F.

3 ROUTE 6ø DRYER EXHAUST UP THROUGH ROOF AND TERMINATE WITH GOOSENECK.

4 PROVIDE DIGITAL TIMER FOR INDICATED EF.

5 REFER TO LEARNING STUDIO E126 FOR TYPICAL SHEET METAL LAYOUT.

6 REFER TO LEARNING STUDIO E134 FOR TYPICAL SHEET METAL LAYOUT.

7 REFER TO ACTIVE STUDIO F138 FOR TYPICAL SHEET METAL LAYOUT.

8 PROVIDE FABRIC DUCTWORK IN GYMNASIUM. MECHANICAL CONTRACTOR TO COORDINATE LAYOUT WITH STRUCTURAL STEEL AND JOIST CONFIGURATION.

9 ROUTE GREASE DUCT FROM HOOD UP TO EXHAUST FAN.

10 ROUTE 6ø EA UP THROUGH ROOF TO ROOF CAP ACCESSORY.

11 BALANCE TO AIRFLOW INDICATED.

12 ROUTE 6ø EA THROUGH WALL TO BRICK VENT ACCESSORY.

13 PROVIDE DOUBLE WALLED DUCT.

14 DUCT LOCATED BENEATH STAIRS.

15 ROUTE DUCT TIGHT TO CEILING.

16 REFER TO FOOD SERVICE DRAWINGS FOR CONNECTION TO DISHWASHER.

17 28x10 MAKEUP AIR CONNECTION TO HOOD.

18 PROVIDE 4" CONCRETE CURB AROUND ALL MEZZANINE FLOOR DUCT PENETRATIONS.

19 24x12 SA STACKED ABOVE 24x12 EA.

20 16x12 SA STACKED ABOVE 12x12 EA.

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PBA Project No: 2023.0154

PROJECT TITLE

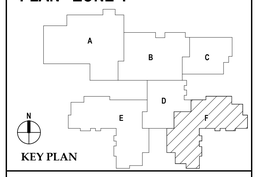
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
TROY, MI

DRAWING TITLE

FIRST LEVEL SHEET METAL PLAN - ZONE 'F'



KEY PLAN

ISSUE DATES

07-16-2024	ADDENDUM #3
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DRAWN	JRB
CHECKED	KLH
APPROVED	SVM

PROJECT NO.
22102

DRAWING NO.
M4.1F

7/15/2024 1:15:33 PM Autodesk Docs://22102_Troy Smith MS/2023-0154_TSD Smith MS_MEP_v22.rvt

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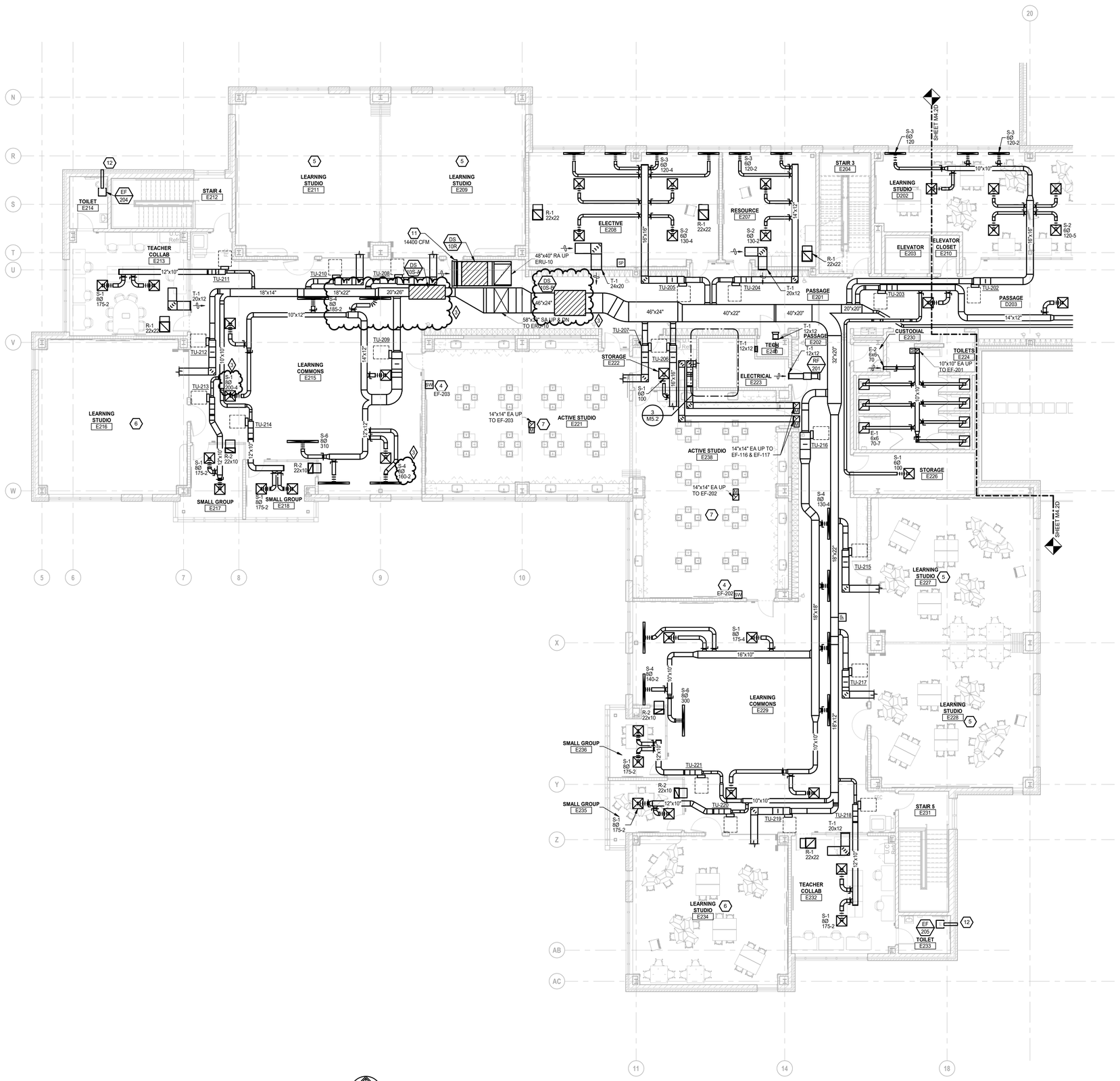

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5 REFER TO LEARNING STUDIO E128 FOR TYPICAL SHEET METAL LAYOUT.

6 REFER TO LEARNING STUDIO E134 FOR TYPICAL SHEET METAL LAYOUT.

7 REFER TO ACTIVE STUDIO F138 FOR TYPICAL SHEET METAL LAYOUT.

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17 28x10 MAKEUP AIR CONNECTION TO HOOD.

18 PROVIDE 4" CONCRETE CURB AROUND ALL MEZZANINE FLOOR DUCT PENETRATIONS.

19 24x12 SA STACKED ABOVE 24x12 EA.

20 16x12 SA STACKED ABOVE 12x12 EA.

SECOND LEVEL SHEET METAL PLAN - ZONE 'E'

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

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PROJECT TITLE

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Bid Package No. 03B

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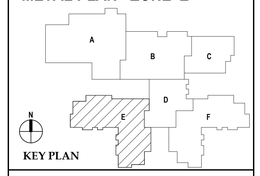
TROY, MI

DRAWING TITLE

SECOND LEVEL SHEET METAL PLAN - ZONE 'E'

KEY PLAN



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PROJECT NO.
22102

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M4.2E

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GRILLE, REGISTER, AND DIFFUSER SCHEDULE

UNIT IDENTIFICATION									MODEL NUMBER	KEYED NOTES
DES.	NO.	TYPE	FACE SIZE	NECKSIZE	FRAME TYPE	ACCESSORY	CONSTRUCTION	FINISH		
S	1	DIFFUSER	24x24	SEE PLANS	NOTE 2	-	STEEL	WHITE	SCDA	1
S	2	DIFFUSER	24x24	SEE PLANS	NOTE 2	-	STEEL	WHITE	SCDA	2
S	3	DIFFUSER	48x4.5	SEE PLANS	NOTE 2	-	STEEL	WHITE	SDS75	3
S	4	DIFFUSER	72x4.5	SEE PLANS	NOTE 2	-	STEEL	WHITE	SDS75	3
S	5	DIFFUSER	48x5	SEE PLANS	NOTE 2	-	STEEL	WHITE	SDS100	3
S	6	DIFFUSER	72x5	SEE PLANS	NOTE 2	-	STEEL	WHITE	SDS100	3
S	7	DIFFUSER	48x5	SEE PLANS	NOTE 2	-	STEEL	METALIC GREY	SDS100	3, 4
S	8	GRILLE	NECK SIZE + 1-1/4"	SEE PLANS	NOTE 2	-	STEEL	WHITE	510	
S	9	DIFFUSER	-	SEE PLANS	DUCT MOUNTED	-	STEEL	WHITE	RCD	
S	10	DIFFUSER	24x24	SEE PLANS	NOTE 2	-	ALUMINIUM	WHITE	ASCDA	1
S	11	GRILLE	NECK SIZE + 1-1/4"	SEE PLANS	NOTE 2	-	ALUMINIUM	WHITE	610	
S	12	DIFFUSER	24x24	SEE PLANS	NOTE 2	-	STEEL	WHITE	VPD	
S	13	DIFFUSER	24x24	SEE PLANS	NOTE 2	-	STEEL	WHITE	RAVD	
R	1	GRILLE	24x24	SEE PLANS	NOTE 2	-	STEEL	WHITE	PDDR	
R	2	GRILLE	24x12	SEE PLANS	NOTE 2	-	STEEL	WHITE	PDDR	
R	3	GRILLE	NECK SIZE + 1-1/4"	SEE PLANS	NOTE 2	-	STEEL	WHITE	530	
R	4	GRILLE	NECK SIZE + 1-1/4"	SEE PLANS	NOTE 2	-	STEEL	NOTE 3	90	4
R	5	GRILLE	72x4	SEE PLANS	NOTE 2	SIGHT BAFFLE	STEEL	NOTE 3	SDR50	2, 4
T	1	GRILLE	NECK SIZE + 1-1/4"	SEE PLANS	NOTE 2	-	STEEL	WHITE	530	
E	1	GRILLE	24x24	SEE PLANS	NOTE 2	-	STEEL	WHITE	PDDR	
E	2	GRILLE	NECK SIZE + 1-1/4"	SEE PLANS	NOTE 2	-	STEEL	WHITE	530	
E	3	GRILLE	NECK SIZE + 1"	SEE PLANS	DUCT MOUNTED	-	ALUMINIUM	WHITE	SDGER	
E	4	GRILLE	24x24	SEE PLANS	NOTE 2	-	ALUMINIUM	WHITE	PDDR	
E	5	GRILLE	NECK SIZE + 1-1/4"	SEE PLANS	NOTE 2	-	ALUMINIUM	WHITE	630	

GENERAL NOTES:
1. MODEL NUMBERS ARE PRICE UNLESS OTHERWISE NOTED.
2. COORDINATE EXACT FRAME TYPE WITH ARCHITECTURAL TRADES.
3. COLOR SELECTION BY ARCHITECT.

KEYED NOTES:
1. HORIZONTAL THROW PATTERN
2. VERTICAL THROW PATTERN
3. 2 SLOT
4. PROVIDE COLOR SAMPLE TO ARCHITECT PRIOR TO ORDERING.

SEWAGE PUMP AND SUMP PUMP SCHEDULE

UNIT IDENTIFICATION				PUMP					BASIN					ELECTRICAL					
DES.	NO.	SYSTEM SERVED	SIMPLEX OR DUPLEX	QUANTITY	FLOW EACH GPM	W.P.D. FT. HEAD	HP EACH	RPM	CONSTRUCTION	DIAMETER INCHES	DEPTH INCHES	COVER TYPE	MODULATION / CONTROL TYPE	VOLTS	PHASE	SCCR KA	OPTIONS / ACCESSORIES	MODEL NUMBER	KEYED NOTES
SP	1	DRAIN TILE	DUPLEX	2	13.0	20.0	0.75	1750	FIBERGLASS	36	72	GRATE	AUTO	208	3	5		1607	
SP	2	ELEVATOR	SIMPLEX	1	50.0	20.0	0.75	1750	FIBERGLASS	36	36	GRATE	AUTO	120	1	5		1601	

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

FUEL FIRED DOMESTIC WATER HEATER SCHEDULE

UNIT IDENTIFICATION			FUEL							ELECTRICAL							
				MANUFACTURER REQUIRED INLET PRESSURE AT GAS TRAIN													
DES.	NO.	STORAGE CAPACITY GALLONS	TYPE	MIN	MAX	INPUT MBH	RECOVERY GPH	E.W.T. °F	L.W.T. °F	MODULATION / CONTROL TYPE	VOLTS	PHASE	FLA	MOP	SCCR KA	OPTIONS / ACCESSORIES	MODEL NUMBER	KEYED NOTES
DWH	1	650.0	NATURAL GAS	8	14	650	772	40	140	AUTO	120	1	0	0	5		AWH0650NPM	1
DWH	2	65.0	NATURAL GAS	8	14	125	145	40	140	AUTO	120	1	0	0	5		SWR125N	

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

KEYED NOTES:
1. PROVIDE 650 GALLON HOT WATER STORAGE TANK.

DOMESTIC HOT WATER SYSTEM EXPANSION TANK SCHEDULE

UNIT IDENTIFICATION		SYSTEM SERVED	ESTIMATED TOTAL SYSTEM VOLUME GALLONS	TYPE	OPERATING PRESSURES AT EXPANSION TANK			SYSTEM OPERATING TEMPERATURES		EXPANSION VOLUME GALLONS	MINIMUM TANK VOLUME GALLONS	DIMENSIONS		MODEL NUMBER	KEYED NOTES
DES.	NO.				INITIAL PSIG	PRE-CHARGE PSIG	MAX (OPERATING) PSIG	MINIMUM °F	MAXIMUM °F			DIAMETER INCHES	HEIGHT INCHES		
ET	1	DOMESTIC	80	BLADDER	40	40	125	40	240	80	60	24	55	WTA-448	
ET	2	KITCHEN	4	DIAPHRAGM	40	40	150	40	240	3.5	2.5	10	14	PTA-5	

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.

THERMOSTATIC MIXING VALVE SCHEDULE

UNIT IDENTIFICATION		MINIMUM FLOW GPM	MAXIMUM FLOW GPM	PRESSURE DROP AT MAXIMUM FLOW PSIG	MODEL	KEYED NOTES
DES.	NO.					
MV	1	1	226	50.00	6NB-LF	

GENERAL NOTES:
1. MODEL NUMBERS ARE LEONARD UNLESS OTHERWISE NOTED.

DUCT SILENCER SCHEDULE

UNIT IDENTIFICATION		SYSTEM TYPE	SYSTEM SERVED	AIRFLOW CFM	A.P.D. IN. W.G.	MAX P.D. IN. W.G.	VELOCITY AT DIL RATING FPM	DYNAMIC INSERTION LOSS (DIL) dB								TARGET NOISE CRITERIA	DIMENSIONS			CONSTRUCTION					MODEL NUMBER	KEYED NOTES
DES.	NO.							63	125	250	500	1K	2K	4K	8K		W INCHES	H INCHES	L INCHES	TYPE	OUTER CASING TYPE	FILL MATERIAL	LINER	CASING MATERIAL		
DS	1R-A	RA	ERU-1	6150	0.24	0.35	769	8	16	30	50	55	50	37	24	25	48	24	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RL60/1E	
DS	1R-B	RA	ERU-1	6150	0.24	0.35	769	8	16	30	50	55	50	37	24	25	48	24	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RL60/1E	
DS	1S-A	SA	ERU-1	5125	0.27	0.35	941	7	13	24	43	46	41	30	20	25	28	28	72	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RH72/2G	
DS	1S-B	SA	ERU-1	7175	0.31	0.35	879	10	16	26	45	47	47	33	22	25	42	28	72	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM72/2F	
DS	2R-A	RA	ERU-2	11300	0.21	0.35	1529	5	10	19	33	30	20	13	10	30	36	42	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM60/5C	
DS	2R-B	RA	RF-101	1940	0.13	0.35	998	6	12	22	36	37	26	17	12	25	20	16	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM60/4D	
DS	2R-C	RA	RF-102	2390	0.14	0.35	1024	6	11	21	40	47	38	25	19	25	24	16	72	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RL72/1B	
DS	2S-A	SA	ERU-2	11300	0.23	0.35	1529	5	9	17	34	43	35	27	19	30	38	28	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RH60/1E	
DS	2S-B	SA	FPB-101	1560	0.17	0.35	878	8	13	19	29	24	18	14	10	25	16	16	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RL60/UD	
DS	2S-C	SA	FPB-102	2060	0.08	0.35	742	8	11	16	22	17	13	10	8	25	20	20	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RL60/XC	
DS	2S-D	SA	FPB-103	1800	0.03	0.35	720	5	6	8	12	9	8	7	5	25	20	18	36	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM36/XB	
DS	3R	RA	ERU-3	2550	0.17	0.35	900	7	14	25	39	44	34	22	15	30	34	12	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM60/3E	
DS	3S	SA	ERU-3	2550	0.16	0.35	937	6	10	20	37	41	33	25	17	30	28	14	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RH60/2F	
DS	4R	RA	ERU-4	11000	0.16	0.35	1269	6	10	19	36	45	35	26	18	40	48	26	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RH60/1E	
DS	4S	SA	ERU-4	11000	0.22	0.35	1269	5	10	18	34	40	32	21	16	40	48	26	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM60/2D	
DS	5R	RA	ERU-5	2100	0.02	0.35	741	4	4	7	11	8	7	6	4	30	34	12	36	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM36/VA	
DS	5S	SA	ERU-5	2100	0.15	0.35	982	6	12	19	31	27	20	13	10	30	22	14	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM60/8D	
DS	6E	EA	ERU-6	1850	0.07	0.35	925	5	8	15	27	22	16	11	9	40	24	12	48	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM48/6C	
DS	6S	SA	ERU-6	1850	0.14	0.35	925	8	11	16	20	15	12	10	9	40	24	12	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RL60/2C	
DS	7E	EA	ERU-7	6400	0.07	0.35	1067	4	7	13	24	19	13	10	8	40	48	18	48	RS	STANDARD	GLASS FIBER	NO	ALUMINUM	RM48/6B	
DS	7S-A	SA	ERU-7	3400	0.2	0.35	920	8	13	22	44	49	48	33	24	30	38	14	72	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM72/1E	
DS	7S-B	SA	ERU-7	3000	0.14	0.35	1029	7	10	17	26	22	16	12	10	40	30	14	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RL60/9C	
DS	8R	RA	ERU-8	15000	0.17	0.35	1125	9	14	18	25	19	13	11	8	30	48	40	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM60/XD	
DS	8S-A	SA	ERU-8	5760	0.2	0.35	1595	8	13	25	46	47	41	29	20	30	32	38	84	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RHX84/2F	
DS	8S-B	SA	ERU-8	11470	0.25	0.35	1639	7	12	21	41	48	45	28	21	30	54	36	72	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RMX72/1D	
DS	9R	RA	ERU-9	15000	0.13	0.35	1164	7	10	17	25	20	14	11	9	30	72	28	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RL60/9B	
DS	9S	SA	ERU-9	15000	0.27	0.35	1385	6	12	22	37	38	30	19	14	30	60	26	72	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM72/4D	
DS	10R	RA	ERU-10	15000	0.17	0.35	1125	9	14	18	25	19	13	11	8	30	56	30	60	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RM60/XD	
DS	10S-A	SA	ERU-10	5760	0.2	0.35	1595	8	13	25	46	47	41	29	20	30	32	38	84	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RHX84/2F	
DS	10S-B	SA	ERU-10	11470	0.32	0.35	1496	8	13	23	41	44	41	28	20	30	58	36	72	RS	STANDARD	GLASS FIBER	NO	22 GA GALVANIZED	RMX72/2E	

GENERAL NOTES:
1. DUCT SILENCER MODEL NUMBERS ARE BASED ON VIBRO-ACOUSTICS UNLESS OTHERWISE NOTED.
2. LENGTH SHOWN FOR ELBOW SILENCERS IS CENTERLINE LENGTH.
3. VELOCITY SHOWN IS +(FORWARD FLOW) OR -(REVERSE FLOW) AS DEFINED BY ASTM E477-99.
4. PRESSURE DROP, DYNAMIC INSERTION LOSS AND SELF GENERATED NOISE PER ASTM E477-99.
5. MAXIMUM PRESSURE DROP WITH SYSTEM EFFECTS = SILENCER PRESSURE DROP PER ASTM E477-99 + SYSTEM EFFECTS FOR NEARBY DUCT ELEMENTS.
6. TYPE: RS = RECTANGULAR STRAIGHT; RE = RECTANGULAR ELBOW; REE = RECTANGULAR EXTENDED ELBOW; CS = CIRCULAR STRAIGHT; CE = CIRCULAR ELBOW.
7. FABRICATE SILENCER CASINGS OF STAINLESS STEEL WHERE SILENCERS ARE CONNECTED TO A PVC COATED OR STAINLESS STEEL DUCT SYSTEM.

PLUMBING CONNECTION SCHEDULE

UNIT IDENTIFICATION		CW INCHES	HW INCHES	SAN INCHES	VENT INCHES	KEYED NOTES
DES.	NO.					
EEW	1	-	-	-	-	2
EWC	1	1/2	-	1 1/2	1 1/2	
FD	1	-	-	3	-	
FD	2	-	-	4	-	
FS	2	-	-	3	-	
LAV	1	1/2	1/2	1 1/2	1 1/2	
SH	1	3/4	3/4	-	-	1
SK	1	3/4	3/4	1 1/2	1 1/2	
SS	1	3/4	3/4	3	-	
UR	1	3/4	-	2	1 1/2	
WC	1	1 1/2	-	4	2	

GENERAL NOTES:
1. INDIVIDUAL WATER LINE BRANCHES, WASTE LINES, VENTS, AND TRAPS FOR CONNECTION TO INDIVIDUAL FIXTURES, FIXTURE FITTINGS, AND SPECIALTIES SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE OR AS INDICATED ON DRAWINGS, WHICHEVER IS GREATER.

KEYED NOTES:
1. PROVIDE MIXING VALVE.
2. PROVIDE 1/2" TEMPERED WATER.

WATER SOURCE HEAT PUMP SCHEDULE

UNIT IDENTIFICATION		NOMINAL SIZE (TONS)	FAN			LOOP WATER			COOLING MODE (90 °F ENT. WATER TEMP.)					HEATING MODE (70 °F ENT. WATER TEMP.)					COMPRESSORS			ARRANGEMENT	ELECTRICAL						MODEL NUMBER	KEYED NOTES
									AIR		TOTAL CAPACITY MBH	SENS. CAPACITY MBH		MINIMUM E.E.R.	AIR		TOTAL CAPACITY MBH		MINIMUM C.O.P.					VOLTS	PHASE	FLA	MOP	SCCR KA	OPTIONS / ACCESSORIES		
DES.	NO.		AIRFLOW CFM	ESP IN. W.G.	HP	FLOW GPM	FLUID TYPE	MAX W.P.D. FT. HEAD	E.A.T. °F	L.A.T. °F			THR MBH		E.A.T. °F	L.A.T. °F		THA MBH		NO. OF COMP.	R.L.A. EA.	L.R.A. EA.									
HP	101	6	2000	0.5	1	18	PG30	16.55	80	57	67.3	48	83.7	14	55	85	61.8	47.7	4.4	1	8.5	66.1	HORIZONTAL	480	3	15.4	25	5	B	WGTH0721	1
HP	102	4	1400	0.5	1	12	PG30	7.25	80	59	46.1	31.9	56.9	14.5	55	81	40	31.3	4.6	1	6.4	41	HORIZONTAL	480	3	11.9	15	5	B	WGTH0491	1

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE DAIKIN 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. INTERNAL STATIC PRESSURE VALUE SHALL INCLUDE WET COIL PRESSURE DROP. EXTERNAL PRESSURE INCLUDES DIRTY FILTER PRESSURE DROP AS SCHEDULED.

KEYED NOTES:
1. PROVIDE WITH 120V/1PH CONDENSATE PUMP.

PACKAGED BOOSTER PUMP SCHEDULE

UNIT IDENTIFICATION											MOTOR				ELECTRICAL					
DES.	NO.	SYSTEM SERVED	LOCATION	TYPE	NUMBER OF PUMPS	DISCHARGE WATERFLOW GPM	PUMP INLET PRESSURE HEAD PSIG	PUMP DISCHARGE PRESSURE HEAD PSIG	PUMP MODEL NUMBER	OVERLOAD GPM	RPM EACH	HP EACH	CAPACITY CONTROL	MODULATION / CONTROL TYPE	VOLTS	PHASE	SCCR KA	OPTIONS / ACCESSORIES	MODEL NUMBER	KEYED NOTES
BP	1	DOMESTIC WATER	MECHANICAL A136	SUCTION	2	180	33.00	60.00	HVL2D3		3500	5.00		AUTO	460	3	5		HVL2D3	

GENERAL NOTES:
1. REFER TO SCHEDULES GENERAL NOTES.
2. MODEL NUMBERS ARE BELL & GOSSETT UNLESS OTHERWISE NOTED.

TMP ARCHITECTURE

TMP ARCHITECTURE INC
1191 WEST SQUARE LAKE ROAD - BOX 289
BLOOMFIELD HILLS - MICHIGAN - 48302
PH - 248.338.4561 FX - 248.338.0223
EM - INFO@TMP-ARCHITECTURE.COM

REGISTRATION SEAL

CONSULTANT

Peter Basso Associates Inc
CONSULTING ENGINEERS
5145 Livernois, Suite 100
Troy, Michigan 48098-3276
Tel: 248-879-5666
Fax: 248-879-0007
www.PeterBassoAssociates.com
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

07-16-2024	ADDENDUM #3
07-12-2024	ADDENDUM #2
06-18-2024	CONSTRUCTION DOCUMENTS

DATE: ISSUED FOR:

DRAWN KLH
CHECKED KLH
APPROVED SVM

PROJECT NO.
22102

DRAWING NO.
M7.3

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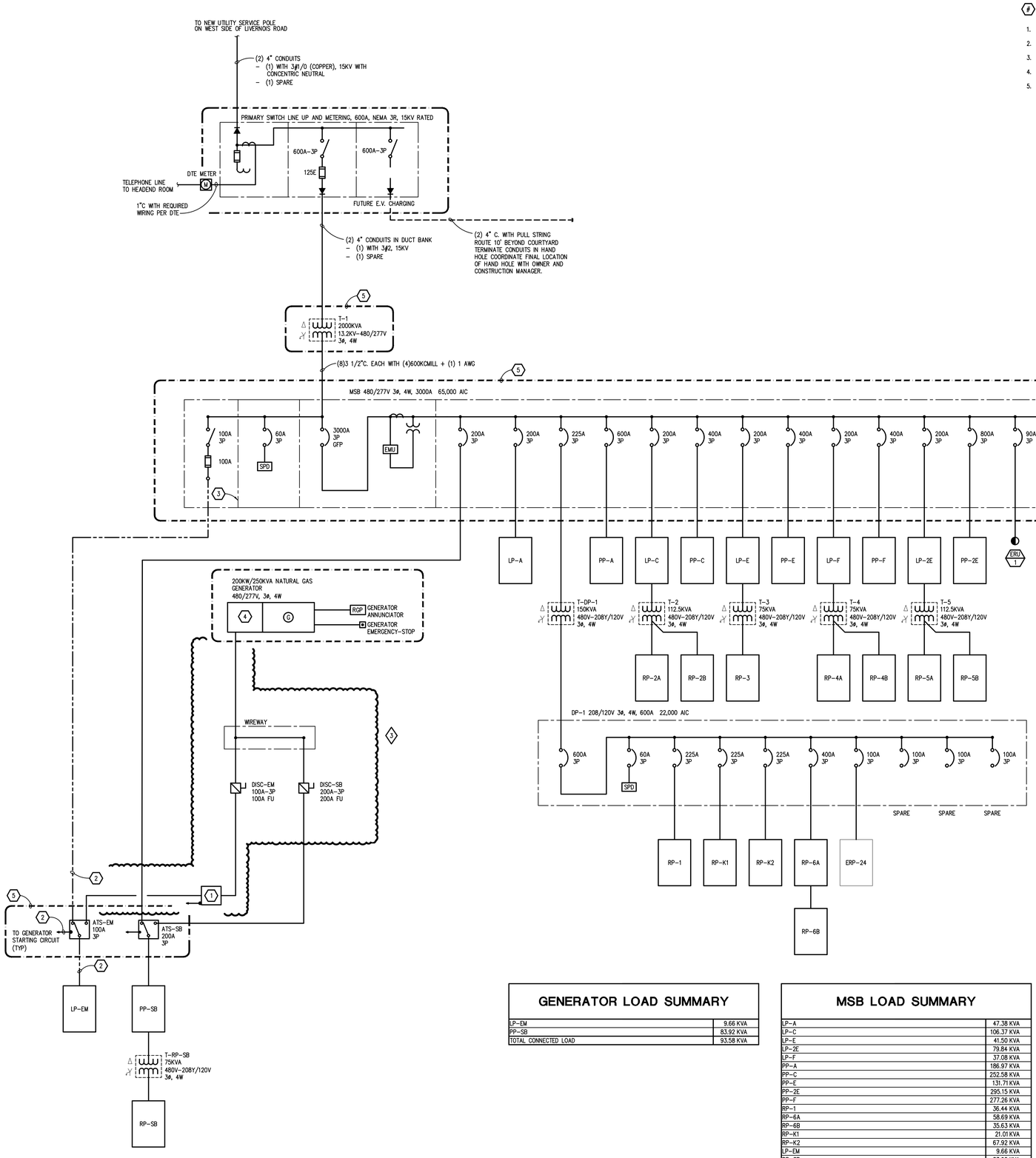

CONSTRUCTION KEY NOTES:

1. PORTABLE GENERATOR DOCKING STATION.
2. LISTED 2 HOUR FIRE-RATED CONDUIT AND CABLING ASSEMBLY PER 700.10(D).
3. SEPARATE VERTICAL SECTIONS PER 700.10(B)(6).
4. PROVIDE GENERATOR PROTECTION RELAYS.
5. PRE-PURCHASED EQUIPMENT COORDINATE WITH OWNER AND CONSTRUCTION MANAGER.

DIAGRAM GENERAL NOTES:

1. THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.
2. FEEDER AND BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "FEEDER AND BRANCH CIRCUIT SIZING SCHEDULE–GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
3. TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE "TRANSFORMER CIRCUIT SIZING SCHEDULE–GENERAL PURPOSE" ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
4. MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH THE MOTOR CIRCUIT SIZING SCHEDULES ON THE "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS SPECIFICALLY NOTED OTHERWISE.
5. BASIS OF DESIGN IS EATON DISTRIBUTION EQUIPMENT AND ASCO TRANSFER SWITCHES. IF THE CONTRACTOR ELECTS TO PROVIDE EQUIPMENT FROM OTHER APPROVED MANUFACTURERS, THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE THE LAYOUT AND CLEARANCE REQUIREMENTS IN ALL SPACES CONTAINING ELECTRICAL EQUIPMENT AND PROVIDE EQUIPMENT MEETING THE SPECIFICATIONS AND ACHIEVING CODE REQUIRED CLEARANCES WITHIN THE SPACE PROVIDED.
6. VARIABLE FREQUENCY CONTROLLERS (VFC) FURNISHED BY MECHANICAL TRADES. ELECTRICAL CONTRACTOR SHALL INSTALL VFC, PROVIDE POWER FEEDER FROM DISTRIBUTION EQUIPMENT TO VFC AND PROVIDE POWER FEEDER FROM VFC TO MOTOR. REFER TO SPECIFICATIONS FOR APPLICATION OF VFC POWER CABLE FROM VFC TO MOTOR.

GENERATOR LOAD SUMMARY

LP–EM	9.66 KVA
PP–SB	83.92 KVA
TOTAL CONNECTED LOAD	93.58 KVA

MSB LOAD SUMMARY

LP–A	47.38 KVA
LP–C	106.37 KVA
LP–E	41.50 KVA
LP–2E	79.84 KVA
LP–F	37.08 KVA
PP–A	186.97 KVA
PP–C	252.58 KVA
PP–E	131.71 KVA
PP–2E	295.15 KVA
PP–F	277.26 KVA
RP–1	36.44 KVA
RP–6A	58.69 KVA
RP–6B	35.63 KVA
RP–K1	21.01 KVA
RP–K2	67.92 KVA
LP–EM	9.66 KVA
PP–SB	83.92 KVA
ERU–1	69.8 KVA
ERU–4	61.5 KVA
ERU–7	42.4 KVA
TOTAL CONNECTED LOAD	1942.8 KVA

SHORT-CIRCUIT CALCULATIONS

FAULT POINT	PANEL / TRANSFORMER	SOURCE FAULT POINT	SOURCE Isc	CONDUIT TYPE	CONDUCTOR MATERIAL	CONDUCTOR OR BUS SIZE	'c' VALUE	E (V)	L (FT)	XFMR kVA	XFMR %Z	f	M	Isc
1	XFMR T–1							480		2000	5.75			41,838
2	MSB	1	41,838	NM	CU	8 SETS OF 600 KCML	28033	480	50.0			0.034	0.97	40,476
3	LP–EM	2	40,476	M	CU	1 SET OF 3	4774	480	50.0			1.530	0.40	16,001
4	PP–SB	2	40,476	M	CU	1 SET OF 3/0	12844	480	50.0			0.569	0.64	25,805
5	T–RP–SB(PRIMARY)	4	25,805	M	CU	1 SET OF 1	7293	480	10.0			0.128	0.89	22,883
6	T–RP–SB(SECONDARY)	5	22,883					208		75	3.61	9.146	0.10	5,205
7	RP–SB	6	5,205	M	CU	1 SET OF 4/0	15082	208	10.0			0.029	0.97	5,059
8	LP–A	2	40,476	M	CU	1 SET OF 3/0	12844	480	10.0			0.114	0.90	36,343
9	T–DP–1(PRIMARY)	2	40,476	M	CU	1 SET OF 4/0	15082	480	35.0			0.339	0.75	30,230
10	T–DP–1(SECONDARY)	9	30,230					208		150	3.46	5.790	0.15	10,274
11	DP–1	10	10,274	M	CU	2 SETS OF 350 KCML	19704	208	15.0			0.033	0.97	9,950
12	RP–1	11	9,950	M	CU	1 SET OF 4/0	15082	208	10.0			0.055	0.95	9,431
13	RP–K1	11	9,950	M	CU	1 SET OF 4/0	15082	208	70.0			0.385	0.72	7,186
14	RP–K2	11	9,950	M	CU	1 SET OF 4/0	15082	208	70.0			0.385	0.72	7,186
15	PP–A	2	40,476	M	CU	2 SETS OF 350 KCML	19704	480	20.0			0.074	0.93	37,683
16	PP–C	2	40,476	M	CU	1 SET OF 600 KCML	22965	480	320.0			2.035	0.33	13,336
17	T–2(PRIMARY)	16	13,336	M	CU	1 SET OF 2/0	10755	480	10.0			0.045	0.96	12,765
18	T–2(SECONDARY)	17	12,765					208		112.5	4.37	4.117	0.20	5,756
19	RP–2A	18	5,756	M	CU	1 SET OF 600 KCML	22965	208	10.0			0.021	0.98	5,639
20	RP–2B	19	5,639	M	CU	1 SET OF 600 KCML	22965	208	10.0			0.020	0.98	5,526
21	LP–C	2	40,476	M	CU	1 SET OF 3/0	12844	480	320.0			3.639	0.22	8,726
22	LP–E	2	40,476	M	CU	1 SET OF 3/0	12844	480	150.0			1.706	0.37	14,960
23	T–3(PRIMARY)	22	14,960	M	CU	1 SET OF 1	7293	480	10.0			0.074	0.93	13,929
24	T–3(SECONDARY)	23	13,929					208		75	3.61	5.567	0.15	4,894
25	RP–3	24	4,894	M	CU	1 SET OF 4/0	15082	208	10.0			0.027	0.97	4,766
26	PP–E	2	40,476	M	CU	1 SET OF 600 KCML	22965	480	150.0			0.954	0.51	20,715
27	LP–F	2	40,476	M	CU	1 SET OF 3/0	12844	480	280.0			3.184	0.24	9,674
28	T–4(PRIMARY)	27	9,674	M	CU	1 SET OF 1	7293	480	10.0			0.048	0.95	9,232
29	T–4(SECONDARY)	28	9,232					208		75	3.61	3.690	0.21	4,543
30	RP–4	29	4,543	M	CU	1 SET OF 4/0	15082	208	10.0			0.025	0.98	4,431
31	PP–F	2	40,476	M	CU	1 SET OF 600 KCML	22965	480	280.0			1.781	0.36	14,556
32	LP–2E	2	40,476	M	CU	1 SET OF 3/0	12844	480	170.0			1.933	0.34	13,800
33	T–5(PRIMARY)	32	13,800	M	CU	1 SET OF 1	7293	480	10.0			0.068	0.94	12,918
34	T–5(SECONDARY)	33	12,918					208		112.5	4.37	4.167	0.19	5,770
35	RP–5	34	5,770	M	CU	1 SET OF 4/0	15082	208	10.0			0.032	0.97	5,591
36	RP–6	11	9,950	M	CU	1 SET OF 4/0	15082	208	145.0			0.787	0.56	5,538
37	PP–2E	2	40,476	M	CU	2 SETS OF 600 KCML	22965	480	170.0			0.541	0.65	26,273
38	ERU–1	2	40,476	M	CU	1 SET OF 3	4774	480	150.0			4.589	0.18	7,242
39	ERU–4	2	40,476	M	CU	1 SET OF 3	4774	480	160.0			4.895	0.17	6,866
40	ERU–7	2	40,476	M	CU	1 SET OF 6	2425	480	140.0			8.432	0.11	4,291

THE FOLLOWING THREE PHASE CALCULATIONS ARE BASED ON THE "POINT–BY POINT" METHOD WHERE:

$Isc = Isc \times M$, $M = 1/(1+f)$

CONDUCTOR OR BUS: $f = \frac{1.732 \times L \times Isc}{C \times n \times E}$

UTILITY XFMR: $Isc = \frac{kVA \times 100{,}000}{E \times 1.732 \times \%Z}$

XFMR: $f = \frac{Ip(sc) \times Ep \times 1.73 \times \%Z}{100{,}000 \times KVA}$, $Is(sc) = \frac{Ep \times M \times Ip(sc)}{Es}$

L = LENGTH (ft) OF CONDUCTOR, C = CONSTANT FROM TABLE, n = NUMBER OF CONDUCTORS PER PHASE
Isc = AVAILABLE SHORT CIRCUIT (A), E = VOLTAGE OF CIRCUIT

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TMP ARCHITECTURE

TMP ARCHITECTURE INC
1191 WEST SQUARE LAKE ROAD · BOX 289
BLOOMFIELD HILLS · MICHIGAN · 48302
PH · 248.338.4561 FX · 248.338.0223
EM · INFO@TMP-ARCHITECTURE.COM

REGISTRATION SEAL

CONSULTANT

Peter Basso Associates Inc
CONSULTING ENGINEERS
5145 Livernois, Suite 100
Troy, Michigan 48098-3276
Tel: 248-879-5666
Fax: 248-879-0007
www.PeterBassoAssociates.com
PBA Project No.: 2023.0154

PROJECT TITLE

NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
Troy, Michigan

DRAWING TITLE

ONE LINE DIAGRAM

ISSUE DATES

07-16-2024	ADDENDUM #3
07-12-2024	ADDENDUM #2
06-18-2024	CONSTRUCTION DOCUMENTS

DATE: ISSUED FOR:

DRAWN	DDS
CHECKED	ZDB
APPROVED	STP

PROJECT NO.

22102

DRAWING NO.

E5.1

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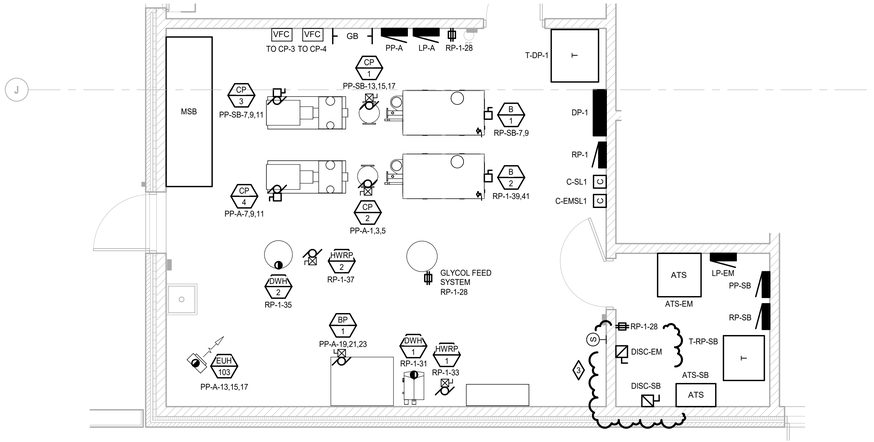
THE FOLLOWING DIMENSION EQUALS ONE INCH WHEN PRINTED TO SCALE. 1"



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E3.1A

ENLARGED MECHANICAL ROOM ELECTRICAL PLAN

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

ELECTRICAL GENERAL NOTES:

1 THESE DRAWINGS REPRESENT THE GENERAL EXTENT AND ARRANGEMENT OF SYSTEMS. COORDINATE EXACT EQUIPMENT LOCATIONS, ELEVATIONS, AND FINAL CONNECTION REQUIREMENTS. PROVIDE EACH SYSTEM COMPLETE, INCLUDING ALL NECESSARY COMPONENTS, FITTINGS AND OFFSETS.

2 INSTALL SYSTEMS SUCH THAT REQUIRED CLEARANCE AND SERVICE ACCESS SPACE IS PROVIDED AROUND ALL MECHANICAL AND ELECTRICAL EQUIPMENT, AND AROUND ANY COMPONENTS WHICH REQUIRE SERVICE ACCESS.

3 COORDINATE AND PROVIDE ACCESS DOORS WITHIN INACCESSIBLE CEILING, SHAFT, AND CHASE AREAS FOR ALL COMPONENTS WHICH REQUIRE SERVICE ACCESS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.

4 PROVIDE SUPPLEMENTARY STEEL AS REQUIRED FOR THE PROPER SUPPORT OF ALL SYSTEMS.

5 TRANSFORMER SECONDARY CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH TRANSFORMER CIRCUIT SIZING SCHEDULE SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.

6 MOTOR CIRCUIT PROTECTION SHALL BE SIZED IN ACCORDANCE WITH MOTOR CIRCUIT SIZING SCHEDULES SHOWN ON "ELECTRICAL STANDARD SCHEDULES DRAWING" UNLESS OTHERWISE NOTED.

7 COORDINATE THE MOUNTING HEIGHTS OF DEVICES WITH ARCHITECTURAL ELEVATIONS AND THE TRADES INSTALLING THE WORK.

8 COORDINATE EXACT LOCATIONS OF ALL FLOOR SERVICE FITTINGS AND POKE-THROUGH ASSEMBLIES WITH FINAL FURNITURE LAYOUT DRAWINGS.

9 REFER TO MECHANICAL SCHEDULE SHEETS FOR ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT. PROVIDE ALL CONNECTIONS, STARTERS, DISCONNECTS, ETC. AS REQUIRED BY SCHEDULES AND WHERE NOTED ELSEWHERE. VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH SHOP DRAWINGS SUBMITTALS. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND ELECTRICAL DRAWINGS. WHERE CIRCUIT SIZES ARE SHOWN ON THE ELECTRICAL DRAWINGS THAT DIFFER FROM WHAT IS INDICATED ON THE MECHANICAL SCHEDULES, PROVIDE THE CIRCUIT OF HIGHER AMPACITY.

10 REFER TO TEMPERATURE CONTROLS SHEETS FOR REQUIRED FIRE ALARM CONTROL MODULES, DUCT SMOKE DETECTORS, AND MOTOR CONTROLLERS. PROVIDE ALL ACCESSORIES INDICATED.

11 THE FIRE ALARM DEVICES SHOWN ON PLAN ARE A PARTIAL REPRESENTATION OF THE FIRE ALARM SYSTEM. PROVIDE THE DESIGN AND INSTALLATION OF A COMPLETE AND FUNCTIONAL FIRE ALARM SYSTEM IN ACCORDANCE WITH THE SPECIFICATIONS, DRAWINGS, AND ALL APPLICABLE CODES. THE FIRE ALARM VENDOR SHALL PROVIDE LAYOUT DRAWINGS INDICATING THE REQUIRED QUANTITIES AND LOCATIONS OF MANUAL PULL STATIONS, NOTIFICATION APPLIANCES, SMOKE AND HEAT DETECTORS, CONTROL MODULES, INTERFACE MODULES, MODULES FOR SPRINKLER FLOW AND TAMPER SWITCHES, ALL CONTROL PANELS, POWER SUPPLIES, AND ADDITIONAL DEVICES AND EQUIPMENT REQUIRED. COORDINATE LOCATIONS OF DEVICES WITH ARCHITECTURAL FINISHES AND REFLECTED CEILING PLANS, INCLUDING ADDITIONAL SMOKE AND HEAT DETECTORS REQUIRED FOR NON-SMOOTH CEILING APPLICATIONS. INCLUDE ALLOWANCES FOR ADJUSTMENT OF DEVICES BY THE ARCHITECT AT THE TIME OF SUBMITTAL TO COORDINATE WITH BUILDING FINISHES AND OTHER CEILING ELEMENTS.

12 REFER TO LIGHTING CONTROL SCHEDULE FOR ROOM CONTROL AND EMERGENCY LIGHTING CIRCUIT CONTROL REQUIREMENTS. DESIGNATION FOR ROOM IS INDICATED AS A LETTERED OVAL SYMBOL.

13 CONNECT EXIT SIGNS TO EMERGENCY LIGHTING BRANCH CIRCUIT SERVICE THE AREA. CONNECT AHEAD OF ANY LIGHTING CONTROL DEVICE OR SYSTEM.

14 PROVIDE SINGLE GANG JUNCTION BOX WITH 3/4" C. PULL STRING AND BUSHING TO ACCESSABLE CEILING SPACE AT SPEAKER AND CLOCK LOCATIONS. COORDINATE MOUNTING HEIGHT WITH TECHNOLOGY CONTRACTOR.

CONSTRUCTION KEY NOTES:

1 MOUNT RECEPTACLES HORIZONTALLY

2 ELECTRICAL CONTRACTOR SHALL INSTALL 4" SQUARE JUNCTION BOX WITHIN 3'-0" OF ELECTRICAL BACKBOARD WINCH UP IN CEILING SPACE. ALSO INSTALL 4 POLE, TWIST LOCK, SINGLE RECEPTACLE, PROVIDED BY WINCH MANUFACTURERS, INTO THE JUNCTION BOX.

3 ELECTRICAL CONTRACTOR SHALL INSTALL ALL CONTROLS, PUSHBUTTONS, KEY SWITCHES ETC. (PROVIDED WITH EACH BASKETBALL BACKBOARD), FOR A COMPLETE OPERABLE SYSTEM. KEY SWITCHES GANGED IN PAIRS IN ONE COVER PLATE TO CONTROL THE BACKSTOP SWING AND HEIGHT ADJUSTER.

4 HEAT TRACE, BY OTHERS.

5 DUCT SMOKE DETECTOR SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. COORDINATE MOUNTING LOCATION AND QUANTITY WITH THE MECHANICAL DUCTWORK CONTRACTOR. ELECTRICAL CONTRACTOR SHALL WIRE DUCT SMOKE DETECTOR/RTU SUPPLY/ RETURN FAN MOTOR STARTER SO THAT UPON DETECTION OF SMOKE, THE SUPPLY/RETURN FAN WILL SHUT DOWN. THIS SHALL BE ACCOMPLISHED VIA THE FIRE ALARM CONTROL PANEL. PROVIDE ALL REQUIRED CONTROL MODULES AND RELAYS. COORDINATE WITH WITH THE TEMPERATURE CONTROL/FIRE ALARM CONTRACTOR. PROVIDE WEATHER PROOF ENCLOSURES AS REQUIRED.

6 REFER TO ARCHITECTURAL FLOOR PLANS, DOOR HARDWARE SCHEDULE ON ARCHITECTURAL DRAWINGS, ACCESS CONTROL SYSTEM SPECIFICATION SECTION AND ACCESS CONTROL DOOR DIAGRAM(S) ON E7 SERIES FOR RACEWAY AND BACK BOX REQUIREMENTS FOR DOOR OR BANK OF DOORS INDICATED. PROVIDE ALL RACEWAYS AND BACK BOXES REQUIRED. COORDINATE WITH DOOR HARDWARE AND SECURITY CONTRACTORS.

7 PROVIDE 2-2" AND 1-1" U.O.N. CONDUITS FOR TECHNOLOGY AND AUXILIARY SYSTEM WIRE AS INDICATED. STUB CONDUITS FROM CEILING SPACE. PROVIDE PLASTIC BUSHINGS AT EACH END. PROVIDE REMOVABLE/RESEALABLE FIRE STOP PUTTY IN EACH CONDUIT AND FIRE STOP AROUND EACH CONDUIT. COORDINATE WITH TECHNOLOGY CONTRACTOR FOR EXACT LOCATION OF CONDUIT. PROVIDE MINIMUM OF 1" CONDUIT FOR ALL OTHER AREAS REQUIRING SLEEVES.

8 PROVIDE (1)2" CONDUIT WITH PULL STRING AND BUSHINGS FOR TECHNOLOGY. ROUTE UNDER BUILDING AND TERMINATE AT EXTERIOR OF BUILDING.

9 COORDINATE MOUNTING LOCATION WITH TECHNOLOGY CONTRACTOR.

10 CONNECT FIRE ALARM DEVICES TO ELECTRIC COILING DOOR AND FIRE ALARM SYSTEM. ROLL-UP DOOR SHALL CLOSE UPON ACTIVATION OF THE SMOKE DETECTORS ASSOCIATED WITH THE COILING FIRE DOOR. COORDINATE WITH COILING DOOR CONTRACTOR FOR ALL SMOKE DETECTORS AND CONTROL MODULES REQUIRED FOR A COMPLETE SYSTEM.

11 HAND DRYERS FURNISHED BY OTHERS AND INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL TRADES.

12 SMOKE DAMPER DUCT SMOKE DETECTOR. SMOKE DETECTOR SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. COORDINATE INSTALLATION WITH MECHANICAL CONTRACTOR SO THAT UPON DETECTION OF SMOKE THE SUPPLY/RETURN FAN WILL SHUT DOWN. ELECTRICAL CONTRACTOR SHALL WIRE DUCT DETECTOR TO FIRE ALARM SYSTEM, AND CIRCUIT DAMPER ACTUATOR. PROVIDE A 20A-1P SWITCH AT EACH ACTUATOR. CONTROL OF AIR HANDLING EQUIPMENT IS VIA THE FIRE ALARM CONTROL PANEL. PROVIDE ALL REQUIRED CONTROL MODULES AND RELAYS. COORDINATE WORK WITH THE TEMPERATURE CONTROLS CONTRACTOR AND FIRE ALARM MANUFACTURER. DAMPER SHALL CLOSE UPON DETECTION OF SMOKE AND SHUT DOWN ASSOCIATED AIR HANDLER. DAMPER SHALL ALSO CLOSE UPON NORMAL SHUTDOWN OF AIR HANDLER.

13 CARBON MONOXIDE DETECTOR. COORDINATE QUANTITY WITH FIRE MARSHAL.

14 SCOREBOARD. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO ROUGH IN.

15 WALL MOUNT TRANSFORMER.

16 ELECTRIC RANGE. PROVIDE WALL MOUNTED GFCI MODULE ABOVE COUNTER.

17 LIGHTING RELAY PANEL FOR THEATRICAL LIGHTING SYSTEM. REFER TO THEATRICAL LIGHTING EQUIPMENT DRAWINGS.

TMP ARCHITECTURE

TMP ARCHITECTURE INC

1191 WEST SQUARE LAKE ROAD - BOX 289
BLOOMFIELD HILLS - MICHIGAN - 48302
PH - 248.338.4561 FX - 248.338.0223
EM - INFO@TMP-ARCHITECTURE.COM

REGISTRATION SEAL

CONSULTANT

Peter Basso Associates Inc
CONSULTING ENGINEERS
5145 Livernois, Suite 100
Troy, Michigan 48098-3276
Tel: 248-879-5666
Fax: 248-879-0007
www.PeterBassoAssociates.com
PBA Project No: 2023.0154

PROJECT TITLE

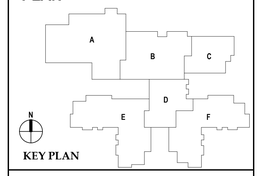
NEW SMITH MIDDLE SCHOOL

Bid Package No. 03B

Troy School District
TROY, MI

DRAWING TITLE

ENLARGED ELECTRICAL PLAN



KEY PLAN

ISSUE DATES

07-16-2024	ADDENDUM #3
07-12-2024	ADDENDUM #2
06-18-2024	CONSTRUCTION DOCUMENTS

DATE:	ISSUED FOR:
DRAWN	DDS
CHECKED	ZDB
APPROVED	STP

PROJECT NO.

22102

DRAWING NO.

E6.2

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