BID ADDENDUM NO. 2

November 12, 2025
Corning-Painted Post ASD
2025 Middle School Phase III Alterations Project
2649-153

SED #57-10-00-01-0-024-044 - MIDDLE SCHOOL

The following Addendum items shall be considered a part of the contract documents prepared by HUNT ENGINEERS, ARCHITECTS, LAND SURVEYORS & LANDSCAPE ARCHITECT, DPC.
Bid Document date of October 20, 2025

Clarifications

1.) New playground equipment, fall protection and the installation of both are to be provided by Owner through separate contract. General trades Contractor to provide all site work associated with new playground.
2.) There are (12) total typical changing room benches and (2) ADA changing room benches required in the two pool locker rooms. These are shown on details 7/MS-5.2 and 8/MS-5.2.

Specifications issued by this Addendum:

04 05 11 - MASONRY MORTARING AND GROUTING
04 20 00 - UNIT MASONRY
05 40 00 - COLD-FORMED METAL FRAMING
07 21 00 - THERMAL INSULATION
07 25 00 - WEATHER BARRIERS
07 42 13_23 - METAL COMPOSITE MATERIAL WALL PANELS
08 71 00 - DOOR HARDWARE
22 51 00 – SWIMMING POOL PLUMBING SYSTEMS
27 05 33.13 - CONDUIT FOR COMMUNICATIONS SYSTEMS

Drawings issued by this Addendum:

AD2-A1 - SERVERY TRENCHING
AD2-A2 – REVISED DOOR HARDWARE
AD2-A3 – ENLARGED POOL PLAN
AD2-A4 – DOOR DEMOLITION NOTES
AD2-E1 - KITCHEN-DISHWASHING DEMOLITION
AD2-E2 - KITCHEN-DISHWASHING NEW WORK
AD2-E3 - ELECTRICAL POWER PLAN - ELEC. RM. A213A
AD2-E4 - UPDATED LIGHT FIXTURE SCHEDULE
AD2-E5 - MEZZANINE ELECTRICAL DEMOLITION

AD2-H1 – FIRST FLOOR HVAC DEMOLITON PLAN – AREA B
AD2-H2 – FIRST FLOOR HVAC PLAN – AREA A MODIFICATIONS
AD2-H3 – FIRST FLOOR HVAC PLAN – AREA B MODIFICATIONS
AD2-H4 – POOL HVAC DETAIL
AD2-H5 – PARTIAL DEMOLITION PLANS – AREA D
AD2-H6 – PARTIAL PIPING PLANS – AREA D
AD2-H7 – MECHANICAL ELEVATION DEMO DETAIL MODIFICATIONS
AD2-P1 - KITCHEN DEMOLITION PLAN
AD2-P2 - DEMOLITION NOTES- PLUMBING
AD2-P3 - KITCHEN EQUIPMENT PLAN
AD2-P4 - KITCHEN SANITARY PLAN
AD2-P5 – REVISED POOL SANITARY PLAN

Revisions to Project Manual issued by this Addendum:

ITEM AD2-1 **Refer to Section 00 01 12 - TABLE OF CONTENTS**
ADD specification section 04 05 11 - MASONRY MORTARING AND GROUTING

ITEM AD2-2 **Refer to Section 00 01 12 - TABLE OF CONTENTS**
ADD specification section 04 20 00 - UNIT MASONRY

ITEM AD2-3 **Refer to Section 00 01 12 - TABLE OF CONTENTS**
ADD specification section 05 40 00 - COLD-FORMED METAL FRAMING

ITEM AD2-4 **Refer to Section 00 01 12 - TABLE OF CONTENTS**
ADD specification section 07 21 00 - THERMAL INSULATION

ITEM AD2-5 **Refer to Section 00 01 12 - TABLE OF CONTENTS**
ADD specification section 07 25 00 - WEATHER BARRIERS

ITEM AD2-6 **Refer to Section 00 01 12 - TABLE OF CONTENTS**
ADD specification section 07 42 13_23 - METAL COMPOSITE MATERIAL WALL PANELS

ITEM AD2-7 **Refer to Section 00 10 00 - SUMMARY**
ADD paragraph 1.9.A.15 to read:
" 15. Division 22 - Plumbing:
a. Specification Section 22 51 00 - Swimming Pool Plumbing Systems"

ITEM AD2-8 **Refer to Section 00 10 00 - SUMMARY**
AMEND paragraph 1.10.A.2 to read:
" 2. Provide the complete work of Division 22 – Plumbing with the following exception:
a. Specification Section 22 51 00 - Swimming Pool Plumbing Systems"

ITEM AD2-9 Refer to Section 08 45 00 - TRANSLUCENT WALL AND ROOF ASSEMBLIES

AMEND paragraph 2.1.A to read:

" A. Solid Plastic Panel -Translucent Roof Systems:

1. Palram Americas, Inc; SUNGLAZE FR® Solid Standing Seam Panel System: www.palram.com/#sle. "
2. Kingspan; U-Lite™ Canopy System: www.kingspan.com/us/en/.
3. Solutions in Polycarbonate; WeatherShade Mono Canopy System: http://www.solutionsinpc.com/products.html
4. Substitutions: See Section 01 60 00 - Product Requirements."

ITEM AD2-10 Refer to section 08 71 00 - DOOR HARDWARE

DELETE this specification section in its entirety

ADD specification section 08 71 00 - DOOR HARDWARE included in this addendum

ITEM AD2-11 Refer to section 09 21 16- GYPSUM BOARD ASSEMBLIES

ADD paragraph 2.3.D to read:

" D. Exterior Sheathing Board: Sizes to minimize joints in place; ends square cut.:

1. Application: Exterior sheathing, unless otherwise indicated.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
3. Fungal Resistance: No fungal growth when tested in accordance with ASTM G21.
4. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
5. Core Type: Type X.
6. Type X Thickness: 5/8 inch.
7. Edges: Square.
8. Glass Mat Faced Products:
   a. CertainTeed Corporation; GlasRoc Type X Exterior Sheathing: www.certainteed.com/#sle
   b. Georgia-Pacific Gypsum; DensGlass Sheathing: www.gpgypsum.com/#sle
   c. Georgia-Pacific Gypsum; DensGlass Fireguard Sheathing: www.gpgypsum.com/#sle
   d. Gold Bond Building Products, LLC provided by National Gypsum Company; Gold Bond eXP Fire-Shield Sheathing: www.goldbondbuilding.com/#sle
   e. USG Corporation; Securock Brand UltraLight Glass-Mat Sheathing Firecode X 5/8 in. (15.9 mm): www.usg.com/#sle
   f. Substitutions: See Section 01 60 00 - Product Requirements."

ITEM AD2-12 Refer to section 11 66 23 – GYMNASIUM EQUIPMENT

ADD paragraph 2.3, E to read:

E. At Main Gymnasium, Ceiling-Suspended Backstop Assemblies: Capable of mounting both rectangular and fan-shaped backboards.

1. Framing: Fully welded center strut; forward folding framing
    a. Support steel and fittings anchored to overhead structural framing members with adjustable hangers for precise plumbing of backstop.
    b. Heavy structural steel weldment at center strut for goal direct-through-backboard attachment to eliminate strain on backboard.
    c. Brace assembly shall lock in place upon deployment, and be automatically released by cable hoist during retraction.
2. Folding Control System: Electric hoist that holds backstop with 115 volt actuator, integral limit switches that provide automatic shut-off in both positions, and safety catch with automatic reset.
    a. Hoist shall be capable of holding backstop at any position.
    b. Motor: 3/4 hp with key switch control.
        1.) Provide key switches master keyed to school's system. Gang one half of total switches together in two locations (one each side of the folding partition). Coordinate switches with operable partition contractor.
3. Height Adjuster: Raises or lowers assembly by 2 feet to adjust goal height.
4. Height Control System: Electric hoist that adjusts backstop with 115 volt actuator, and integral limit switches that provide automatic shut-off in both positions.
5. Framing Color: As selected from manufacturer's standard selection.

ITEM AD2-13 Refer to section 22 51 00 – SWIMMING POOL PLUMBING SYSTEMS

DELETE this specification section in its entirety

ADD specification section 22 51 00 – SWIMMING POOL PLUMBING SYSTEMS included in this addendum.

ITEM AD2-14 Refer to Section 27 05 33.13 – CONDUIT FOR COMMUNICATIONS SYSTEMS

DELETE this specification section in its entirety

ADD specification section 27 05 33.13 – CONDUIT FOR COMMUNICATIONS SYSTEMS issued by this addendum

Revisions to Drawings issued by this Addendum:

ITEM AD2-15 Refer to MS-S3.1 FOUNDATION DETAILS

ADD Note 1 to details 13, 14, 15, 16 and 17 that reads “PROVIDE 1” x 1/2” BENTONITE STRIP WATERSTOP IN THE JOINTS BETWEEN THE EXISTING AND NEW CONCRETE.”

ITEM AD2-16 Refer to MS-A0 Drawings

AMEND Demolition Key Note #44 to read: "Remove existing lockers, base, and accessories. Modify existing wood benches, cutting and sanding as required to provide proper length in front of lockers to remain. Refinish entire bench after modifications are complete. Remove and reuse bench brackets for a complete installation. Patch floor as required for smooth finish and to match existing.

ITEM AD2-17 Refer to MS-A0 Drawings

ADD Demolition Key Note #D56 to DEMOLITION KEY NOTES. Note #D56 to read, "REMOVE EXISTING WALL TILES IN THEIR ENTIRETY. PATCH DAMAGED SURFACES SCHEDULED TO REMAIN IN PLACE. PREPARE SURFACES FOR NEW FINISHES."

ITEM AD2-18 Refer to MS-A0 Drawings

ADD Demolition Key Note #D57 to DEMOLITION KEY NOTES. Note #D57 to read, "REMOVE EXISTING BLEACHER SYSTEM IN ITS ENTIRETY. PATCH DAMAGED SURFACES SCHEDULED TO REMAIN IN PLACE. PREPARE SURFACES FOR NEW INSTALLATION."

ITEM AD2-19 Refer to Drawing MS-A0.2– FIRST FLOOR DEMOLITION PLAN - AREA B

AMEND View #1 with AD2-A1 - SERVERY TRENCHING, as issued with this addendum.

ITEM AD2-20 Refer to Drawing MS-A0.4– FIRST FLOOR DEMOLITION PLAN - AREA D

AMEND Demo Key Note #D7 to read "REMOVE EXISTING SCOREBOARD WITH CARE AND STORE FOR REINSTALLATION AT AUX GYM. PATCH DAMAGED SURFACES TO REMAIN. PREPARE SURFACES FOR NEW SCOREBOARD INSTALLATION."

ITEM AD2-21 Refer to Drawing MS-A0.4– FIRST FLOOR DEMOLITION PLAN – AREA D

AMEND Note #D14 in View #1 to be #D56.

ITEM AD2-22 Refer to Drawing MS-A0.5– FIRST FLOOR DEMOLITION PLAN – AREA F

AMEND Note #D5 in View #1 to be #D57.

ITEM AD2-23 Refer to Drawing MS-A0.5– FIRST FLOOR DEMOLITION PLAN – AREA F

AMEND View #1 with AD2-A4 – DOOR DEMOLITION NOTES, as issued with this addendum.

ITEM AD2-24 Refer to Drawing MS-A1.1– FIRST FLOOR PLAN - AREA A & E

ADD Plan Drawing Note #1 & Note #40 to View #2 at Aux Gym exterior egress stair. Note#40 is to read "PARGE OVER EXPOSED CONCRETE WALLS AROUND THE EGRESS STAIR ONCE CONCRETE WALL IS PATCHED & REPAIRED TO COVER EXPOSED REBAR"

ITEM AD2-25 Refer to Drawing MS-A1.1– FIRST FLOOR PLAN - AREA A & E

ADD Plan Drawing Note #41 to View#2 at Aux Gym above door D111-1. Note#41 is to read "INSTALL SALVAGED SCOREBOARD FROM THE MAIN GYM. COORDINATE WITH ELECTRICAL DRAWINGS."

ITEM AD2-26 Refer to Drawing MS-A1.1– FIRST FLOOR PLAN - AREA A & E

AMEND Plan Drawing Note#37 to read "PROVIDE CEILING MOUNTED FIXED BACKSTOP & RIM SUSPENDED FROM STRUCTURE ABOVE. SEE SPECIFICATIONS"

ITEM AD2-27 Refer to Drawing MS-A1.4– FIRST FLOOR PLAN - AREA D

AMEND Plan Drawing Note#12 to read "PROVIDE CEILING MOUNTED FORWARD FOLD BACKSTOP & RIM SUSPENDED FROM CEILING ABOVE. SEE SPECIFICATIONS"

ITEM AD2-28 Refer to Drawing MS-A1.5 – FIRST FLOOR PLAN - AREA F

ADD View #5 with AD2-A3 – ENLARGED POOL PLAN, as issued with this addendum.

ITEM AD2-29 Refer to Drawing MS-A5.1–INTERIOR ELEVATIONS

AMEND Text Note "NEW BACKBOARD MOUNTED TO EXG BACKSTOP RACK" in View #5 & View #6 to read "PROVIDE CEILING MOUNTED FIXED BACKSTOP & RIM SUSPENDED FROM STRUCTURE ABOVE."

ITEM AD2-30 Refer to Drawing MS-A5.3– POOL INTERIOR ELEVATIONS & DETAILS

DELETE Text Note "PROVIDE PHENOLIC LOCKERS (ALT. #3)" from View #4

ITEM AD2-31 Refer to Drawing MS-A5.3– POOL INTERIOR ELEVATIONS & DETAILS

AMEND Acoustical wall panel layout in View #2 to match View #9 on MS-A8.9

ITEM AD2-32 Refer to Drawing MS-A6.1–DOOR AND STOREFRONT SCHEDULE AND DETAIL

AMEND DOOR SCHEDULE with AD2-A2 – REVISED DOOR HARDWARE, as issued with this addendum.

ITEM AD2-33 Refer to Drawing MS-E1.3 – FIRST FLOOR POWER PLAN – AREA D

AMEND Note P9: "TYPCIAL, PROVIDE NEW CORD REELS. EACH CORD REEL TO BE CENTERED OVER THEIR OWN REPSECTIVE WORKTABLE. RECEPTACLES TO BE NEMA 5-20R. BASIS OF DESIGN HUBBEL #HBLW35123."

ITEM AD2-34 Refer to Drawing MS-L2.1 – SITE IMPROVEMENT PLAN

AMEND Note 15: "BY DIRECT PURCHASE, ONE ADA POWERSCAPE 3 BAY SWING, 4 BELT SEATS AND 2 ZERO G 5-12 SEATS BY GAMETIME, SEE FOUNDATION DETAIL 14/MS-L5.1. SITE CONTRACTOR RESPONSIBLE FOR PREPARING SITE FOR EQUIPMENT FOUNDATIONS."

ITEM AD2-35 Refer to Drawing MS-L2.1 – SITE IMPROVEMENT PLAN

AMEND Note 18: "BY DIRECT PURCHASE, RUBBERBOND ELEVATE PLAYGROUND SURFACING AND COMMERCIAL GRADE FILTER FABRIC, SEE DETAIL 15/MS-L5.1. SITE CONTRACTOR RESONSIBLE FOR PREPARING SITE INCLUDING SUBGRADE, AGGREGATE, FLAT PANEL DRAINS AND CONCRETE SIDEWALK PERIMETER."

ITEM AD2-36 Refer to MS-H0.4 – FIRST FLOOR HVAC DEMOLITION PLAN – AREA E

ADD Detail 2 per AD2-H1 – FIRST FLOOR HVAC DEMOLITION PLAN – AREA B, as issued with this addendum.

ITEM AD2-37 Refer to MS-H1.1 – FIRST FLOOR HVAC PLAN AREA A

AMEND Detail 1 with drawing AD2-H2 – FIRST FLOOR HVAC PLAN – AREA A MODIFICATIONS, as issued with this addendum.

ITEM AD2-38 Refer to MS-H1.2 – FIRST FLOOR HVAC PLAN AREA B

AMEND Detail 1 with drawing AD2-H3 – FIRST FLOOR HVAC PLAN – AREA B MODIFICATIONS, as issued with this addendum.

ITEM AD2-39 Refer to MS-H1.6 – FIRST FLOOR HVAC PLAN – AREA F

ADD Detail 4 per AD2-H4 – POOL HVAC DETAIL, as issued with this addendum.

ITEM AD2-40 Refer to MS-H1.8 – PARTIAL MECHANICAL ROOM PIPING PLANS

DELETE Detail 1 in its entirety.

ADD Detail 1 per AD2-H5 – PARTIAL DEMOLITION PLANS – AREA D, issued by this addendum.

ITEM AD2-41 Refer to MS-H1.8 – PARTIAL MECHANICAL ROOM PIPING PLANS

DELETE Detail 2 in its entirety.

ADD Detail 2 per AD2-H5 – PARTIAL DEMOLITION PLANS – AREA D, issued by this addendum.

ITEM AD2-42 Refer to MS-H1.8 – PARTIAL MECHANICAL ROOM PIPING PLANS

DELETE Detail 3 in its entirety.

ADD Detail 3 per AD2-H6 – PARTIAL PIPING PLANS – AREA D, issued by this addendum.

ITEM AD2-43 Refer to MS-H1.8 – PARTIAL MECHANICAL ROOM PIPING PLANS
DELETE Detail 4 in its entirety.
ADD Detail 4 per AD2-H6 – PARTIAL PIPING PLANS – AREA D, issued by this addendum.

ITEM AD2-44 Refer to MS-H1.8 – PARTIAL MECHANICAL ROOM PIPING PLANS
AMEND Detail 5 with drawing AD2-H7 – MECHANICAL ELEVATION DEMO DETAIL MODIFICATIONS, as issued with this addendum.

ITEM AD2-45 Refer to MS-E0.1 – FIRST FLOOR DEMOLITION PLAN – AREA A AND B
AMEND Detail 2 with drawing AD2-E1 – KITCHEN-DISHWASHING DEMOLITION, as issued with this addendum.

ITEM AD2-46 Refer to MS-E1.1 – FIRST FLOOR POWER PLAN – AREA A AND B
AMEND Detail 2 with drawing AD2-E2 – KITCHEN-DISHWASHING NEW WORK, as issued with this addendum.

ITEM AD2-47 Refer to MS-E1.1 – FIRST FLOOR POWER PLAN – AREA A AND B
ADD Detail 4 per AD2-E3 – ELECTRICAL POWER PLAN -ELEC. RM. A213A, as issued by this addendum.

ITEM AD2-48 Refer to MS-E3.1 – SCHEDULES AND DETAILS
AMEND LIGHT FIXTURE SCHEDULE with AD2-E4 – UPDATED LIGHT FIXTURE SCHEDULE, as issued by this addendum.

ITEM AD2-49 Refer to MS-E0.3 – FIRST FLOOR POWER PLAN – AREA A AND B
DELETE Detail 2 in its entirety.
ADD Detail 2 per AD2-E5 – MEZZANINE ELECTRICAL DEMOLITION, issued by this addendum

ITEM AD2-50 Refer to MS-P0.1 – MSP0.4 – DEMOLITION SERIES
AMEND Demolition Notes per AD2-P2 DEMOLITION NOTES - PLUMBING, issued by this addendum.

ITEM AD2-51 Refer to MS-P3.1 – SCHEDULES & DETAILS
ADD MS-1 to read “MOP SINK, ACORN ENGINEERING TSH-3624, FAUCET: CHICAGO 835-RCF (EXPOSED FITTINGS, CEILING SUPPLY), PROVIDE MOP HOLDER AND HOSE BRACKET.

ITEM AD2-52 Refer to MS-P1.4 – SCHEDULES & DETAILS

AMEND To detail 2, FIRST FLOOR SANITARY PLAN - AREA F, with AD2-P5 – REVISED POOL SANITARY PLAN, issued in this addendum.

End of Addendum 2

SECTION 04 05 11
MASONRY MORTARING AND GROUTING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Mortar for masonry.

B. Grout for masonry.

1.2 RELATED REQUIREMENTS

A. Section 04 20 00 - Unit Masonry: Installation of mortar and grout.

1.3 REFERENCE STANDARDS

A. ASTM C91/C91M - Standard Specification for Masonry Cement; 2023.

B. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2018.

C. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

D. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2018.

E. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2019a, with Editorial Revision.

F. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2018.

G. ASTM C476 - Standard Specification for Grout for Masonry; 2022.

H. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry; 2020.

I. ASTM C1019 - Standard Test Method for Sampling and Testing Grout for Masonry; 2020.

J. ASTM C1072 - Standard Test Methods for Measurement of Masonry Flexural Bond Strength; 2022.

K. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms; 2022a.

L. ASTM C1714/C1714M - Standard Specification for Preblended Dry Mortar Mix for Unit Masonry; 2019a.

M. ASTM E518/E518M - Standard Test Methods for Flexural Bond Strength of Masonry; 2022.

N. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022.

1.4 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Include design mix and indicate whether the Proportion or Property specification of ASTM C270 is to be used. Also include required environmental conditions and admixture limitations.

C. Samples: Submit two samples of mortar, illustrating mortar color and color range.

D. Reports: Submit reports on mortar indicating conformance of mortar to property requirements of ASTM C 270 and test and evaluation reports per ASTM C 780 for aggregate ratio and water content, air content, consistency, and compressive strength.

E. Reports: Submit reports on grout indicating compliance of component grout materials to requirements of ASTM C476 and test and evaluation reports to requirements of ASTM C1019.

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

G. Manufacturer's Installation Instructions: Submit packaged dry mortar manufacturer's installation instructions.

1.5 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.7 FIELD CONDITIONS

A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.

B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

PART 2 PRODUCTS

2.1 MORTAR AND GROUT APPLICATIONS

A. At Contractor's option, mortar and grout may be field-mixed from packaged dry materials or made from factory premixed dry materials with addition of water only.

B. Mortar Color: Natural gray unless otherwise indicated.

C. Mortar Mix Designs: ASTM C270, Property Specification.
1. Masonry below grade and in contact with earth: Type S.
2. Exterior Masonry Veneer: Type N.
3. Engineered Masonry: Type M.
4. Exterior Repointing Mortar: Type N with maximum 2 percent ammonium stearate or calcium stearate per cement weight.
5. Interior, Non-loadbearing Masonry: Type N.

D. Grout Mix Designs:
1. Bond Beams and Lintels: 3,000 psi strength at 28 days; 8-10 inches slump; mix in accordance with ASTM C476.
2. Engineered Masonry: 3,000 psi strength at 28 days; 8-10 inches slump; mix in accordance with ASTM C476.
   a. Fine grout for spaces with smallest horizontal dimension of 2 inches or less.
   b. Coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

2.2 MATERIALS

A. Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C1714/C1714M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
   1. Color: Standard gray.

B. Packaged Dry Material for Grout for Masonry: Premixed cementitious materials and dried aggregates; capable of producing grout of the specified strength in accordance with ASTM C476 with the addition of water only.

C. Portland Cement: ASTM C150/C150M.
   1. Type: Type I - Normal; ASTM C150/C150M.
   2. Color: Standard gray.

D. Masonry Cement: ASTM C91/C91M.
   1. Type: Type N; ASTM C91/C91M.

E. Hydrated Lime: ASTM C207, Type S.

F. Mortar Aggregate: ASTM C144, standard masonry type.

G. Grout Aggregate: ASTM C404, coarse.

H. Water: Clean and potable.

I. Bonding Agent: Latex type.

2.3 MORTAR MIXING

A. Thoroughly mix mortar ingredients using mechanical batch mixer, in accordance with ASTM C270 and in quantities needed for immediate use.

B. Maintain sand uniformly damp immediately before the mixing process.

C. Do not use anti-freeze compounds to lower the freezing point of mortar.

D. If water is lost by evaporation, re-temper only within two hours of mixing.

E. Use mortar within two hours after mixing at temperatures of 90 degrees F or two-and-one-half hours at temperatures under 50 degrees F.

2.4 GROUT MIXING

A. Mix grout in accordance with ASTM C94/C94M.

B. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476 for fine and coarse grout.

C. Add admixtures in accordance with manufacturer's instructions; mix uniformly.

D. Do not use anti-freeze compounds to lower the freezing point of grout.

PART 3 EXECUTION

3.1 PREPARATION

A. Apply bonding agent to existing concrete surfaces.

B. Plug clean-out holes for grouted masonry with brick masonry units. Brace masonry to resist wet grout pressure.

3.2 INSTALLATION

A. Install mortar and grout to requirements of section(s) in which masonry is specified.

B. Install grout in accordance with ACI 530.1 Specifications for Masonry Structures and ASTM C476.

C. Work grout into masonry cores and cavities to eliminate voids.

D. Do not install grout in lifts greater than 16 inches without consolidating grout by rodding.

E. Do not displace reinforcement while placing grout.

F. Remove excess mortar from grout spaces.

3.3 GROUTING

A. Perform all grouting by means of low-lift technique. Do not employ high-lift grouting.

B. Low-Lift Grouting:
1. Limit height of pours to 12 inches.
2. Limit height of masonry to 16 inches above each pour.
3. Pour grout only after vertical reinforcing is in place; place horizontal reinforcing as grout is poured. Prevent displacement of bars as grout is poured.
4. Place grout for each pour continuously and consolidate immediately; do not interrupt pours for more than 1-1/2 hours.

3.4 FIELD QUALITY CONTROL

A. An independent testing agency will perform field tests, in accordance with provisions of Section 01 40 00 - Quality Requirements.

B. Test and evaluate mortar mix in accordance with ASTM C 780 procedures.

C. Test and evaluate grout mix in accordance with ASTM C 1019 procedures.

D. Prism Tests: Test masonry and mortar panels for compressive strength in accordance with ASTM C1314, and for flexural bond strength in accordance with ASTM C1072 or ASTM E518/E518M; perform tests and evaluate results as specified in individual masonry sections.

END OF SECTION

SECTION 04 20 00
UNIT MASONRY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Concrete block.

B. Reinforcement and anchorage.

C. Flashings.

D. Accessories.

1.2 RELATED REQUIREMENTS

A. Section 01 40 00 - Quality Requirements.

B. Section 04 05 11 - Masonry Mortaring and Grouting.

C. Section 05 50 00 - Metal Fabrications: Loose steel lintels.

D. Section 07 62 00 - Sheet Metal Flashing and Trim: Through-wall masonry flashings.

E. Section 07 84 00 - Firestopping: Firestopping at penetrations of fire-rated masonry and at top of fire-rated walls.

F. Section 07 92 00 - Joint Sealants: Sealing control and expansion joints.

1.3 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.

B. ASTM A580/A580M - Standard Specification for Stainless Steel Wire; 2018.

C. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2019.

D. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement; 2022.

E. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2022.

F. ASTM C67/C67M - Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile; 2021.

G. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2022.

H. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units; 2022.

I. ASTM C140/C140M - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units; 2022c.

J. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry; 2020.

K. BIA Technical Notes No. 18A - Accommodating Expansion of Brickwork; 2019.

L. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing; 2017.

M. BIA Technical Notes No. 13 - Ceramic Glazed Brick Exterior Walls; 2017.

N. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls; 2005.

O. BIA Technical Notes No. 46 - Maintenance of Brick Masonry; 2017.

P. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022.

Q. MSJC (Masonry Standards Joint Committee) Code - ACI (American Concrete Institute) 530/ASCE (American Society of Civil Engineers) 5/TMS (The Masonry Society) 402 - Building Code Requirements for Masonry Structures.

R. MSJC (Masonry Standards Joint Committee) Specification - ACI (American Concrete Institute) 530.1/ASCE (American Society of Civil Engineers) 6/TMS (The Masonry Society) 602 - Specifications For Masonry Structures.

S. UL (FRD) - Fire Resistance Directory; Current Edition.

1.4 ADMINISTRATIVE REQUIREMENTS

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

1.5 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.

C. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 60 00 - Product Requirements, for additional provisions.

1.6 QUALITY ASSURANCE

A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.

B. Perform Work in accordance with MSJC Code and MSJC Specification.

C. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.

D. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

B. Handle and store pre-faced concrete block units in protective cartons or trays. Do not remove from protective packaging until ready for installation.

PART 2 PRODUCTS

2.1 CONCRETE MASONRY UNITS

A. Manufacturers:
1. Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:
a. Southern Tier Concrete Products.
b. Dagostino Building Blocks.
c. York Building Products, Inc.
d. Substitutions: Section 01 60 00 - Product Requirements.

B. Concrete Block: Comply with referenced standards and as follows:
1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
2. Special Shapes: Provide nonstandard blocks configured for corners.
3. Load-Bearing Units: ASTM C90, normal weight.
a. Both hollow and solid block, as indicated.
4. Nonloadbearing Units: ASTM C129.
a. Both hollow and solid block, as indicated.

2.2 MORTAR AND GROUT MATERIALS

A. Mortar and Grout: As specified in Section 04 05 11.

2.3 REINFORCEMENT AND ANCHORAGE

A. Manufacturers:
1. Blok-Lok Limited: www.blok-lok.com/#sle.
2. Hohmann & Barnard, Inc: www.h-b.com/#sle.
3. WIRE-BONDwww.wirebond.com/#sle.
4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Reinforcing Steel: Type specified in Section 03 30 00; size as indicated on drawings; uncoated finish.

C. Single Wythe Joint Reinforcement: ASTM A951/A951M.
1. Type: Truss or ladder.
2. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M, Class 3.
3. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.

D. Multiple Wythe Joint Reinforcement: ASTM A951/A951M.
1. Type: Truss or ladder.
2. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M, Class 3.
3. Size: 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.

E. Strap Anchors: Bent steel shapes, 1-1/2 inch width, 0.105 inch thick, 24 inch length, with 1-1/2 inch long, 90 degree bend at each end to form a U or Z shape or with cross pins, hot dip galvanized to ASTM A153/A153M, Class B.

F. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch of mortar coverage from masonry face.
   1. Concrete frame: Dovetail anchors of bent steel strap, nominal 1 inch width x 0.024 in thick, with trapezoidal wire ties 0.1875 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
   2. Steel frame: Crimped wire anchors for welding to frame, 0.25 inch thick, with trapezoidal wire ties 0.1875 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.

G. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
   1. Anchor plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
   2. Wire ties: Manufacturer's standard shape, 0.1875 inch thick.
   3. Vertical adjustment: Not less than 3-1/2 inches.

H. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws; corrosion resistant finish or hot dip galvanized to ASTM A153/A153M.

2.4 FLASHINGS

A. Metal Flashing Materials: Pre-Finished Aluminum, as specified in Section 07 62 00.

2.5 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
   1. Manufacturers:
      a. Blok-Lok Limited: www.blok-lok.com/#sle.
      b. Hohmann & Barnard, Inc: www.h-b.com/#sle.
      c. WIRE-BOND: www.wirebond.com/#sle.
      d. Substitutions: See Section 01 60 00 - Product Requirements.

B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; in maximum lengths available.
   1. Manufacturers:
      a. Hohmann & Barnard, Inc: www.h-b.com/#sle.
      b. WIRE-BOND: www.wirebond.com/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
   1. Dove Tail Mortar Diverter: Panels designed for installation at flashing locations.

D. Weeps:
   1. Type: Extruded propylene with honeycomb design.
   2. Color(s): As selected by Architect from manufacturer's full range.
      a. Manufacturers:
         1) Blok-Lok Limited: www.blok-lok.com/#sle.
         2) Hohmann & Barnard, Inc: www.h-b.com/#sle.
         3) WIRE-BOND: www.wirebond.com/#sle.
         4) Substitutions: See Section 01 60 00 - Product Requirements.

E. Cavity Vents:
   1. Type: Extruded propylene with honeycomb design.
   2. Color(s): As selected by Architect from manufacturer's full range.

a. Manufacturers:
   1) Blok-Lok Limited: www.blok-lok.com/#sle.
   2) Hohmann & Barnard, Inc: www.h-b.com/#sle.
   3) WIRE-BOND: www.wirebond.com/#sle.
   4) Substitutions: See Section 01 60 00 - Product Requirements.

F. Drainage Fabric: Polyester or polypropylene mesh bonded to a water and vapor-permeable fabric.

G. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials. All material cleaning shall be done as recommended by material supplier.

PART 3 EXECUTION

3.1 EXAMINATION

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

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.2 PREPARATION

A. Direct and coordinate placement of metal anchors supplied for installation under other sections.

B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.3 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:
   1. Bond: Running. unless shown otherwise in contract documents.
   2. Coursing: One unit and one mortar joint to equal 8 inches.
   3. Mortar Joints: Concave.

3.4 PLACING AND BONDING

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with face shell bedding on head and bed joints.

C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

D. Remove excess mortar and mortar smears as work progresses.

E. Remove excess mortar with water repellent admixture promptly. Do not use acids, sandblasting or high pressure cleaning methods.

F. Interlock intersections and external corners.

G. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

H. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

I. Cut mortar joints flush where wall tile is scheduled or resilient base is scheduled.

J. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.

K. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.5 WEEPS/CAVITY VENTS

A. Install weeps in veneer and cavity walls at 24 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.

B. Install cavity vents in veneer and cavity walls at 32 inches on center horizontally below shelf angles and lintels and near top of walls.

3.6 CAVITY MORTAR CONTROL

A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.

B. For cavity walls, build inner wythe ahead of outer wythe to receive cavity insulation and air/vapor retarder adhesive.

C. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

D. Install cavity wall vents in veneer at 16 inch o.c. horizontally at top of exterior walls and below windowsills.

3.7 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHE MASONRY, AND CAVITY WALL MASONRY

A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.

B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.

C. Place continuous joint reinforcement in first and second joint below top of walls.

D. Lap joint reinforcement ends minimum 6 inches.

E. Reinforce stack bonded unit joint corners and intersections with strap anchors 16 inches on center.

F. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 24 inches horizontally and 16 inches vertically.

3.8 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

A. Masonry Back-Up: Embed anchors to bond veneer at maximum 16 inches on center vertically and 24 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

B. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches on center vertically and 24 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.9 REINFORCEMENT AND ANCHORAGES - MULTIPLE WYTHE UNIT MASONRY

A. Use individual metal ties installed in horizontal joints to bond wythes together. Provide ties spaced as indicated on drawings.

B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

3.10 MASONRY FLASHINGS

A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
   1. Extend flashings full width at such interruptions and at least 6 inches, minimum, into adjacent masonry or turn up flashing ends at least 1 inch, minimum, to form watertight pan at nonmasonry construction.

B. Extend metal flashings through exterior face of masonry and terminate in an angled drip with hemmed edge. Install joint sealer below drip edge to prevent moisture migration under flashing.

C. Extend plastic, laminated, and EPDM flashings to within 1/2 inch of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.

D. Lap end joints of flashings at least 6 inches, minimum, and seal watertight with flashing sealant/adhesive.

3.11 LINTELS

A. Install loose steel lintels over openings.

B. Maintain minimum 6 inch bearing on each side of opening.

3.12 GROUTED COMPONENTS

A. Reinforce bond beams with 2, No. 5 bars, 1 inch from bottom web unless noted otherwise on contract documents.

B. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.

3.13 CONTROL AND EXPANSION JOINTS

A. Locate control and expansion joints as indicated on drawings and in accordance with recommendations of BIA Technical Notes No. 18A.
   1. Where joint locations are not indicated, or discrepancy exists between indicated joints and BIA recommendations, notify Architect for approval prior to proceeding.

B. Do not continue horizontal joint reinforcement through control or expansion joints.

C. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

D. Form expansion joint as detailed on drawings.

3.14 BUILT-IN WORK

A. As work progresses, install built-in metal door frames and glazed frames and other items to be built into the work and furnished under other sections.

B. Install built-in items plumb, level, and true to line.

C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
   1. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.

D. Do not build into masonry construction organic materials that are subject to deterioration.

3.15 TOLERANCES

A. Maximum Variation from Alignment of Columns: 1/4 inch.

B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.

C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.16 CUTTING AND FITTING

A. Cut and fit for chases, pipes, conduit, sleeves, grounds, and ductwork. Coordinate with other sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.17 PARGING

A. Dampen masonry walls prior to parging.

B. Scarify each parging coat to ensure full bond to subsequent coat.

C. Parge masonry walls in two uniform coats of mortar to a total thickness of 3/4 inch.

D. Steel trowel surface smooth and flat with a maximum surface variation of 1/8 inch per foot.

E. Strike top edge of parging at 45 degrees.

3.18 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 40 00 - Quality Requirements.
   1. The agency shall monitor the proportioning, mixing, and consistency of mortar and grout; the placement of mortar, grout and masonry units; and the placement or reinforcing steel for compliance with the contract documents.

B. Clay Masonry Unit Tests: Test each variety of clay masonry in accordance with ASTM C67/C67M requirements, sampling 5 randomly chosen units for each 50,000 installed.

C. Concrete Masonry Unit Tests: Test each variety of concrete unit masonry in accordance with ASTM C140/C140M for compliance with requirements of this specification.

D. Mortar Tests: Test each type of mortar in accordance with ASTM C780, testing with same frequency as masonry samples.

E. The agency shall prepare one set of prisms for testing at 7 days and one set for testing at 28 days. Tests are to be conducted by the agency for each 3,000 square feet of wall installed, but not less than two tests.

3.19 CLEANING

A. Remove excess mortar and mortar droppings.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

3.20 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

B. Protect base of walls from mud and mortar splatter.

C. Protect masonry and other items built into masonry walls from mortar droppings and staining caused by mortar.

D. Protect tops of masonry work with waterproof coverings secured in place without damaging masonry. Provide coverings where masonry is exposed to weather when work is not in progress.

END OF SECTION

SECTION 05 40 00
COLD-FORMED METAL FRAMING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Formed steel stud exterior wall and interior wall framing.

B. Formed steel joist and purlin framing and bridging.

C. Water-resistive barrier over sheathing.

1.2 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Wood blocking and miscellaneous framing.

B. Section 07 25 00 - Weather Barriers: Water-resistive barrier over sheathing.

C. Section 09 21 16 - Gypsum Board Assemblies: Cold-formed steel nonstructural framing.

1.3 REFERENCE STANDARDS

A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members; 2016, with Supplement (2020).

B. AISI S240 - North American Standard for Cold-Formed Steel Structural Framing; 2015, with Errata (2020).

C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.

D. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings; 2020.

E. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members; 2015.

F. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2020.

G. ICC (IBC) - International Building Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with work of other sections that is to be installed in or adjacent to metal framing systems, including but not limited to structural anchors, cladding anchors, utilities, insulation, and firestopping.

1.5 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on cold-formed steel structural members; include material descriptions and base steel thickness.

C. Shop Drawings: Indicate component details, framed openings, bearing, anchorage, loading, welds, and type and location of fasteners, and accessories or items required of related work.

1. Indicate stud layout.
2. Describe method for securing studs to tracks and for bolted framing connections.

D. Steel Framing Industry Association (SFIA) Certification:
1. Submit documentation that metal studs and connectors used on project meet or exceed requirements of International Building Code.
2. Design Data:
3. Design calculations sufficient to demonstrate compliance with design criteria; signed and sealed by a professional structural engineer.

E. Manufacturer's Installation Instructions: For lateral-force resisting systems, indicate welding procedure specifications.

F. Mill Certifications: Submit mill certifications for steel delivered to site. Certify steel bare metal thickness in 0.001 inch, yield strength, tensile strength, total elongation in 2 inch or 8 inch gage length, chemical analysis and galvanized coating thickness.

1.6 QUALITY ASSURANCE

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Designer Qualifications: Design framing system under direct supervision of a professional structural engineer experienced in designing this work and licensed in the State of New York.

C. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, and with minimum three years of documented experience.

D. Manufacturer Qualifications: Member of Steel Stud Manufacturers Association (SSMA): www.ssma.com/#sle.

E. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience and approved by manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Structural Framing:
1. ClarkDietrich: www.clarkdietrich.com/#sle.
2. MarinoWARE: www.marinoware.com/#sle.
3. Substitutions: See Section 01 60 00 - Product Requirements.

B. Connectors:
1. Same manufacturer as metal framing.

2.2 PERFORMANCE REQUIREMENTS

A. Comply with requirements for Contractor's design-related professional design services indicated in Section 01 40 00 - Quality Requirements.

B. Design Requirements: Design cold-formed framing systems, components and connectors to withstand specified design loads in compliance with ICC (IBC), ASCE 7, AISI S100, and AISI S240.

C. Regulatory Requirements: Comply with applicable building code criteria for loads, including seismic loads.
1. Maximum Allowable Deflection: 1/600 of span or 0.3 inches, whichever is less.

2. Able to tolerate movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to seasonal or cyclic day/night temperature ranges.
3. Able to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.
4. Design and size components to withstand seismic loads and sway displacement as calculated in accordance with the applicable codes.

2.3 MATERIALS

A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S240.
   1. Structural Grade: As required to meet design criteria.
   2. Corrosion Protection Coating Designation: CP 60 in accordance with AISI S240.

2.4 STRUCTURAL FRAMING COMPONENTS

A. Wall Studs and Track Sections: AISI S240; c-shaped studs and u-shaped track sections in stud-matching nominal width and compatible height.
   1. Thickness and Depth: Depth as indicated on the drawings; thickness and structural grade as required to meet design criteria.
   2. Stud Spacing: 16" o.c. maximum
   3. Provide components fabricated from ASTM A1011/A1011M, Designation SS (structural steel).

B. Headers: AISI S240; manufactured, engineered one-member or two-member assemblies, with wide flanges, designed to replace conventional box or nested header framing at openings.
   1. Jamb Mounting Clips: Manufacturer's standard.
   2. Cripple Stud Clips: Manufacturer's standard.
   3. Products:
      a. ClarkDietrich; RedHeader PRO: www.clarkdietrich.com/#sle.
      b. MarinoWARE; QuickFrame: www.marinoware.com/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Joists: AISI S240; manufactured, engineered open-web steel joists.
   1. Thickness and Depth: Depth as indicated on drawings; thickness and structural grade as required to meet specified design criteria.

2.5 ACCESSORIES

A. Bracing, Furring, Bridging: Formed sheet steel, thickness determined for conditions encountered; finish to match framing components.

B. Plates, Gussets, Clips: Formed Sheet Steel, thickness determined for conditions encountered; finish to match framing components.

C. Galvanizing Repair: Touch up bare steel with zinc-rich paint in compliance with ASTM A780/A780M.

D. Water-Resistive Barrier: 60 minute water-resistive Kraft building paper.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements; Coordination and project conditions.

B. Verify that substrate surfaces and building framing components are ready to receive work.

C. Verify rough-in utilities are in proper location.

3.2 INSTALLATION - GENERAL

A. Install structural members and connections in compliance with ASTM C1007.

3.3 INSTALLATION OF STUDS

A. Construct corners using minimum of three studs. Install double studs at wall openings, door and window jambs.

B. Install load-bearing studs full length in one piece. Splicing of studs is not permitted.

C. Install load-bearing studs; brace, and reinforce to develop full strength and achieve design requirements.

D. Coordinate placement of insulation in multiple stud spaces made inaccessible after erection.

E. Install intermediate studs above and below openings to align with wall stud spacing.

F. Provide deflection allowance in stud track, directly below horizontal building framing at non-loadbearing framing.

G. Attach cross studs or furring channels to studs for attachment of fixtures anchored to walls.

H. Install framing between studs for attachment of mechanical and electrical items, and to prevent stud rotation.

I. Touch-up field welds and damaged corrosion-protected surfaces zinc-rich paint in compliance with ASTM A780/A780M.

J. Touch-up field welds and damaged corrosion protected surfaces with primer.

3.4 INSTALLATION OF JOISTS AND PURLINS

A. Make provisions for erection stresses. Provide temporary alignment and bracing until permanent bracing and attachments are installed.

B. Place joists at 12 inches on center; not more than 2 inches from abutting walls, and connect joists to supports using fastener method.

C. Set floor and ceiling joists parallel and level, with lateral bracing and bridging.

D. Locate joist end bearing directly over load-bearing studs or provide load distribution on top of stud track.

E. Provide web stiffeners at reaction points.

F. Touch-up field welds and damaged galvanized surfaces with primer to match shop coatings.

3.5 INSTALLATION OF WALL SHEATHING

A. Install wall sheathing with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using self-tapping screws.
   1. Provide plywood wall sheathing at least 32 inches wide at building corners, measured horizontally.
   2. Place water-resistive barrier horizontally over wall sheathing, weather lapping edges, and ends.

3.6 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

3.7 TOLERANCES

A. Maximum Variation from True Position: 1/8 inch.

B. Maximum Variation of any Member from Plane: 1/8 inch.

END OF SECTION

SECTION 07 21 00
THERMAL INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Board insulation and integral vapor retarder at cavity wall construction, perimeter foundation wall, underside of floor slabs, over roof deck, over roof sheathing, and interior wall with facer providing exposed finish.

B. Batt insulation in interior wall construction.

1.2 REFERENCE STANDARDS

A. ASTM C240 - Standard Test Methods for Testing Cellular Glass Insulation Block; 2021.

B. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation; 2022.

C. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2022.

D. ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation; 2014 (Reapproved 2019).

E. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2022a.

F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023.

G. ASTM E2357 - Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies; 2018.

1.3 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

C. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

1.4 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.1 APPLICATIONS

A. Insulation at Perimeter of Foundation: Extruded polystyrene (XPS) board.

B. Insulation Inside Masonry Cavity Walls: Polyisocyanurate board.

C. Insulation Over Metal Stud Framed Walls, Continuous: Polyisocyanurate board.

D. Insulation over Roof Deck: Polyisocyanurate board.

2.2 FOAM BOARD INSULATION MATERIALS

A. Extruded Polystyrene Board Insulation: ASTM C 578, Type IV; Extruded polystyrene board cellular type surface; with the following characteristics:
   1. Type and Compressive Resistance: Type IV, 25 psi (173 kPa), minimum.
   2. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
   3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
   4. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88), minimum, per 1 inch thickness at 75 degrees F mean temperature.
   5. All Extruded Polystyrene Board Insulation shall be HFC free.
   6. Board Thickness: As noted on drawings.
   7. Board Edges: Square.
   8. Type and Water Absorption: Type XII, 0.3 percent by volume, maximum, by total immersion.
   9. Products:
      a. Dow Chemical Company: www.dowbuildingsolutions.com/#sle.
      b. Kingspan Insulation LLC: www.trustgreenguard.com/#sle.
      c. Owens Corning Corporation: www.ocbuildingspec.com/#sle.

B. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, comply with ASTM C1289.
   1. Classifications:
      a. Type I: Faced with aluminum foil on both major surfaces of the core foam.
         1) Class 1 - Non-reinforced core foam.
         2) Compressive Strength: 16 psi, minimum.
         3) Thermal Resistance, R-value: At 1-1/2 inch thick; 9.0, minimum, at 75 degrees F.
   2. Board Size: 48 inch by 96 inch.
   3. Board Thickness: 1.5 inch.
   4. Board Edges: Square.
   5. Products:
      a. Atlas Roofing Corporation; ACFoam Supreme Foil Faced Roof Insulation: www.atlasroofing.com/#sle.
      b. Carlisle Coatings & Waterproofing, Inc; R2+ Matte: www.carlisleccw.com/#sle.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

2.3 ACCESSORIES

A. Tape: Reinforced polyethylene film with acrylic pressure sensitive adhesive.
   1. Application: Sealing of interior circular penetrations, such as pipes or cables.
   2. Width: Are required for application.
   3. Temperature Resistance: Range of minus 40 to 212 degrees F.

B. Insulation Fasteners: Impaling clip of unfinished steel with washer retainer and clips, to be adhered to surface to receive insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.

C. Support for Cladding and Continuous Insulation: Thermal clips.
   1. Thermally-broken clips that provide attachment support for girts, angles, channels, and other cladding support framing.
   2. Fasteners: As recommended by clip manufacturer.

D. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

B. Verify substrate surfaces are flat, free of irregularities.

3.2 BOARD INSTALLATION AT EXTERIOR WALLS

A. Adhere 6 inches wide strip of polyethylene sheet over expansion joints with double beads of adhesive each side of joint.
   1. Tape seal joints between sheets.
   2. Extend sheet full height of joint.

B. Apply adhesive to back of boards:
   1. Three continuous beads per board length.

C. Install rigid insulation directly to steel studs or exterior grade sheathing at 16 inches on center with manufacturer recommended mechanical fasteners, and tape joints with manufacturer's minimum 4 inches wide sealant tape; comply with ASTM E2357.

D. Install boards horizontally on walls.

E. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.3 BOARD INSTALLATION USING CLADDING AND CONTINUOUS INSULATION SUPPORTS

A. Install supports in accordance with manufacturer's installation instructions.

B. Install supports in compliance with system orientation, sizes, and locations as indicated on drawings and in accordance with approved shop drawings.

C. Install supports to fill in exterior wall spaces without gaps or voids in insulation.

D. Trim insulation neatly to fit spaces and provide a continuous thermal layer.

3.4 BOARD INSTALLATION OVER LOW SLOPE ROOF DECK

A. Board Installation Over Roof Deck, General:
   1. See applicable roofing specification section for specific board installation requirements.
   2. Fasten insulation to deck in accordance with roofing manufacturer's written instructions and applicable Factory Mutual requirements.
   3. Do not apply more insulation than can be covered with roofing on the same day.

3.5 BOARD INSTALLATION OVER STEEP SLOPE ROOF SHEATHING OR ROOF STRUCTURE

A. Installation of board insulation over steep slope roof structure or roof sheathing, see Section 06 10 00.

3.6 BATT INSTALLATION

A. Install in interior wall spaces without gaps or voids. Do not compress insulation.

B. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

C. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

D. Metal Framing: Install with factory applied vapor retarder membrane facing warm side of building spaces. Lap ends and side flanges of membrane over framing members.

E. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.

F. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over face of member

G. Tape seal tears or cuts in vapor retarder.

3.7 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

3.8 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07 25 00
WEATHER BARRIERS

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

A. Section 07 21 00 - Thermal Insulation: Weather barrier installed in conjunction with batt insulation.

B. Section 07 62 00 - Sheet Metal Flashing and Trim: Metal flashings installed in conjunction with weather barriers.

1.2 DEFINITIONS

A. Weather Barriers: Materials or assemblies forming water-resistive barriers, air barriers, vapor retarders, or combination of one or more assemblies.

1.3 REFERENCE STANDARDS

A. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023.

C. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials; 2022a.

D. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials; 2021a.

1.4 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on material characteristics.

C. Manufacturer's Installation Instructions: Indicate preparation, installation methods, and storage and handling criteria.

1.5 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.

PART 2 PRODUCTS

2.1 WATER-RESISTIVE BARRIERS

A. Water-Resistive and Air Barrier, Multilayers: Outer layers of nonwoven, spunbonded polypropylene with vapor permeable, watertight polymeric middle layer.
   1. Air Permeance: 0.0011 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.

2. Water Vapor Permeance: 28 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedure A - Desiccant Method, at 73.4 degrees F.
3. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 3 months of weather exposure.
4. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, Class A when tested in accordance with ASTM E84.
5. Seam and Perimeter Tape: As recommended by sheet manufacturer.
6. Products:
   a. National Shelter Products, Inc; DRYline HPX Commercial: www.nationalshelter.com/#sle.
   b. SIGA Cover Inc; SIGA-Majvest 200: www.siga.swiss/global_en/#sle.
   c. Substitutions: See Section 01 60 00 - Product Requirements.

2.2 ACCESSORIES

A. Flashings and Sealants: As recommended by water-resistive barrier manufacturer for application.

B. Building Insulation: See Section 07 21 00.

C. Metal Flashings: See Section 07 62 00.

D. Sealant for Cracks and Joints In Substrates: Resilient elastomeric joint sealant compatible with substrates and weather barrier materials.
   1. Application: Apply at 30 to 40 mil, 0.030 to 0.040 inch nominal thickness.
   2. Color: Green.

E. Flexible Flashing: Self-adhering sheet flashing complying with ASTM D1970/D1970M; waive slip resistance requirement if not installed on roof.
   1. Width: 4 inches.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that surfaces and conditions comply with requirements of this section.

3.2 PREPARATION

A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

B. Clean and prime substrate surfaces to receive adhesives and sealants in accordance with manufacturer's installation instructions.

3.3 INSTALLATION

A. Install materials in accordance with manufacturer's installation instructions.

B. Apply sealants within recommended temperature range in accordance with manufacturer's installation instructions.

C. Self-Adhered Sheets:
   1. Prepare substrate in accordance with sheet manufacturer's installation instructions; fill and tape joints in substrate and between dissimilar materials.
   2. Lap sheets shingle-fashion to shed water and seal laps airtight.

3. Upon placement of sheets, firmly press onto substrate with resilient hand roller; ensure that laps are firmly adhered with no gaps or fishmouths.
4. Use same material, or other material approved by sheet manufacturer, to seal sheets to adjacent substrates, and as flashing.
5. At expansion joints, provide transition to joint assemblies approved by sheet manufacturer.

D. Openings and Penetrations in Exterior Water-Resistive Barriers:
1. Install flashing over sills, covering entire sill framing member, and extend at least 5 inches onto water-resistive barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
2. At openings filled with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.
3. At openings filled with nonflanged frames, seal water-resistive barrier to each side of framing at opening using flashing at least 9 inches wide, and covering entire depth of framing.
4. At head of openings, install flashing under water-resistive barrier extending at least 2 inches beyond face of jambs; seal water-resistive barrier to flashing.
5. At interior face of openings, seal gaps between window and door frames and rough framing using appropriate joint sealant over backer rod.
6. Service and Other Penetrations: Form flashing around penetrating items and seal to surface of water-resistive barrier.

3.4 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Owner's Inspection and Testing: Cooperate with Owner's testing agency.
1. Allow access to work areas and staging.
2. Notify Owner's testing agency in writing of schedule for work of this section to allow sufficient time for testing and inspection.
3. Do not cover work of this section until testing and inspection is accepted.

C. Do not cover installed water-resistive barriers until required inspections have been completed.

D. Obtain approval of installation procedures from water-resistive barrier manufacturer based on a mock-up installed in place, prior to proceeding with remainder of installation.

3.5 PROTECTION

A. Do not leave materials exposed to weather longer than recommended by manufacturer.

B. Do not leave paper- or felt-based barriers exposed to weather for longer than one week.

END OF SECTION

SECTION 07 42 13.23
METAL COMPOSITE MATERIAL WALL PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Exterior cladding consisting of formed metal composite material (MCM) sheet, secondary supports, and anchors to structure, attached to solid backup.

B. Matching flashing and trim.

1.2 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Installation of anchors.

B. Section 04 20 00 - Unit Masonry: Installation of anchors.

C. Section 05 40 00 - Cold-Formed Metal Framing: Panel support framing.

D. Section 07 25 00 - Weather Barriers: Water-resistive barrier behind wall panel system.

E. Section 07 62 00 - Sheet Metal Flashing and Trim: Metal flashing components integrated with this wall system.

F. Section 07 92 00 - Joint Sealants: Sealing joints between siding and adjacent construction and fixtures.

1.3 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.

B. ASHRAE Std 90.1 I-P - Energy Standard for Buildings Except Low-Rise Residential Buildings; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

C. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.

D. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.

E. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.

F. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

G. ASTM D1781 - Standard Test Method for Climbing Drum Peel for Adhesives; 1998 (Reapproved 2021).

H. ASTM D1929 - Standard Test Method for Determining Ignition Temperature of Plastics; 2020.

I. ASTM D4145 - Standard Test Method for Coating Flexibility of Prepainted Sheet; 2010 (Reapproved 2022).

J. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023.

K. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components; 2023.

1.4 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data - MCM Sheets: Manufacturer's data sheets on each product to be used, including thickness, physical characteristics, and finish, and:
   1. Finish manufacturer's data sheet showing physical and performance characteristics.
   2. Storage and handling requirements and recommendations.
   3. Fabrication instructions and recommendations.
   4. Specimen warranty for finish, as specified herein.

C. Product Data - Wall System: Manufacturer's data sheets on each product to be used, including:
   1. Physical characteristics of components shown on shop drawings.
   2. Storage and handling requirements and recommendations.
   3. Installation instructions and recommendations.
   4. Specimen warranty for wall system, as specified herein.

D. Shop Drawings: Show layout and elevations, dimensions and thickness of panels, connections, details and location of joints, sealants and gaskets, method of anchorage, support clips, exposed fasteners, number of anchors, supports, reinforcement, trim, flashings, and accessories.
   1. Indicate panel numbering system.
   2. Differentiate between shop and field fabrication.
   3. Indicate substrates and adjacent work with which the wall system must be coordinated.
   4. Include large-scale details of anchorages and connecting elements.
   5. Include large-scale details or schematic, exploded or isometric diagrams to fully explain flashing at a scale of not less than 1-1/2 inches per 12 inches.
   6. Include design engineer's stamp or seal on shop drawings for attachments and anchors.

E. Selection Samples: For each finish product specified, submit at least three sample color chips representing manufacturer's standard range of available colors and patterns.
   1. Sealant Color: Color to match wall panels.

F. Certificate: Certify that the work results of this section meet or exceed specified requirements.

G. Design Data: Submit structural calculations stamped by design engineer, for Architect's information and project record.

H. Test Report: Submit report of full-size mock-up tests for air infiltration, water penetration, and wind performance.

I. Test Report: Submit test report verifying compliance with NFPA 285 for previously-tested exterior wall assembly.

J. Manufacturer's Field Reports: Provide within 48 hours of field review. State what was observed and what changes, if any, were requested or required.

K. Designer's qualification statement.

L. Installer's qualification statement.

M. Testing agency's qualification statement.

N. Maintenance Data: Care of finishes and warranty requirements.

1.5 QUALITY ASSURANCE

A. Field Measurements: Verify actual dimensions by field measurement before fabrication; show recorded measurements on shop drawings.

B. Design Engineer's Qualifications: Design structural supports and anchorages under direct supervision of a Structural Engineer experienced in design of this type of work and licensed in the State of New York.

C. Manufacturer Qualifications: Company specializing in manufacturing wall panel systems specified in this section.
   1. With not less than three years of documented experience.
   2. Approved by MCM sheet manufacturer.

D. Installer Qualifications: Company specializing in performing work of type specified in this section.
   1. With minimum three years of documented experience.

E. Testing Agency Qualifications: Independent agency experienced in testing assemblies of the type required for this project and having the necessary facilities for full-size mock-up testing of the type specified.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact.
   1. Protect finishes by applying heavy-duty removable plastic film during production.
   2. Package for protection against transportation damage.
   3. Provide markings to identify components consistently with drawings.
   4. Exercise care in unloading, storing, and installing panels to prevent bending, warping, twisting, and surface damage.

B. Store products protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
   1. Store in well-ventilated space out of direct sunlight.
   2. Protect from moisture and condensation with tarpaulins or other suitable weathertight covering installed to provide ventilation.
   3. Store at a slope to ensure positive drainage of accumulated water.
   4. Do not store in enclosed space where ambient temperature can exceed 120 degrees F.
   5. Avoid contact with other materials that might cause staining, denting, or other surface damage.

1.7 FIELD CONDITIONS

A. Do not install panels when air temperature or relative humidity are outside manufacturer's limits.

1.8 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

B. Special Warranty: Provide 2-year warranty covering water tightness and integrity of seals of wall panels. Complete forms in Owner's name and register with warrantor.

C. Finish Warranty: Provide 5-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Metal Composite Material (MCM) Sheet Manufacturers:
   1. ALUCOBOND by 3A Composites USA; ALUCOBOND PLUS: www.alucobondusa.com/#sle.
   2. Alcotex, Inc; Alcotex FR - Aluminum Composite Material (ACM): www.alcotex.com/#sle.
   3. Substitutions: See Section 01 60 00 - Product Requirements.

2.2 WALL PANEL SYSTEM

A. Wall Panel System: Metal panels, fasteners, and anchors designed to be supported by framing or other substrate provided by others; provide installed panel system capable of maintaining specified performance without defects, damage, or failure.
   1. Provide structural design by or under direct supervision of a Structural Engineer licensed in the State of New York.
   2. Provide panel jointing and weatherseal using a "wet", sealant-sealed system.
   3. Anchor panels to supporting framing without exposed fasteners.

B. PERFORMANCE REQUIREMENTS
   1. Thermal Movement: Provide for free and noiseless vertical and horizontal thermal movement due to expansion and contraction under material temperature range of minus 20 degrees F to 180 degrees F without buckling, opening of joints, undue stress on fasteners, or other detrimental effects; allow for ambient temperature at time of fabrication, assembly, and erection procedures.
   2. Fire Performance: Use test method complying with NFPA 285.
   3. Building Envelope Performance: Comply with ASHRAE Std 90.1 I-P when tested as part of building envelope assembly.

2.3 MATERIALS

A. Metal Composite Material (MCM) Sheet: Two sheets of aluminum sandwiching a core of extruded thermoplastic material; no foamed insulation material content.
   1. Overall Sheet Thickness: 0.118 inch, minimum.
   2. Face Sheet Thickness: 0.019 inch, minimum.
   3. Alloy: Manufacturer's standard, selected for best appearance and finish durability.
   4. Bond and Peel Strength: No adhesive failure of the bond between the core and the skin nor cohesive failure of the core itself below 22.4 inch-pound/inch with no degradation in bond performance, when tested in accordance with ASTM D1781, simulating resistance to panel delamination, after 8 hours of submersion in boiling water and after 21 days of immersion in water at 70 degrees F.
   5. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
   6. Flammability: Self-ignition temperature of 650 degrees F or greater when tested in accordance with ASTM D1929.

B. Metal Framing Members: Include sub-girts, zee-clips, base and sill angles and channels, hat-shaped and rigid channels, and furring channels required for complete installation.
   1. Provide material strength, dimensions, configuration as required to meet applied loads and in compliance with applicable building code.
   2. Aluminum Components: ASTM B209/B209M; or ASTM B221 (ASTM B221M).

2.4 FINISHES

A. Factory Finish: Two coat fluoropolymer resin coating, approved by coating manufacturer for length of warranty specified for project, and applied by coil manufacturing facility that specializes in coil applied finishes.
   1. Coating Flexibility: Pass ASTM D4145 minimum 1T Bend at time of manufacturing.
   2. Long-Term Performance: Not less than that specified under WARRANTY in PART 1.

B. Fluoropolymer Coil Coating System: Polyvinylidene fluoride (PVDF) multi-coat superior performing organic coatings system complying with AAMA 2605, including at least 70 percent PVDF resin, with at least 80 percent of coil coated metal surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss as selected by Architect from manufacturer’s standard line.

2.5 ACCESSORIES

A. Flashing: Sheet aluminum; 0.040 inch thick, minimum; finish and color to match MCM sheet; see Section 07 62 00 for additional requirements.

B. Support for Cladding and Continuous Insulation: Thermal clips.
   1. Thermally-broken clips that provide attachment support for girts, angles, channels, and other cladding support framing.
   2. Fasteners: As recommended by clip manufacturer.

C. Joint Sealer: Provide color to match wall panels silicone sealant of type approved by MCM sheet manufacturer, and in compliance with ASTM C920.
   1. See Section 07 92 00 for additional requirements.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine dimensions, tolerances, and interfaces with other work.

B. Examine substrate on-site to determine that conditions are acceptable for product installation in accordance with manufacturer's written instructions.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

D. Notify Architect in writing of conditions detrimental to proper and timely completion of work, and do not proceed with erection until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protect adjacent work areas and finish surfaces from damage during installation.

B. Provide anchorage items to be cast into concrete or built into masonry to appropriate installer(s) together with setting templates.
   1. See Section 03 30 00 for additional cast-in-place concrete requirements.
   2. See Section 04 20 00 for additional unit masonry requirements.

3.3 INSTALLATION

A. Do not install products that are defective, including warped, bowed, dented, and broken members, and members with damaged finishes.

B. Comply with instructions and recommendations of MCM sheet manufacturer and wall system manufacturer, as well as with approved shop drawings.

C. Install wall system securely allowing for necessary thermal and structural movement; comply with wall system manufacturer's instructions for installation of concealed fasteners.

D. Do not handle or tool products during erection in manner that damages finish, decreases strength, or results in visual imperfection or failure in performance. Return component parts that require alteration to shop for refabrication, if possible, or for replacement with new parts.

E. Do not form panels in field unless required by wall system manufacturer and approved by the Architect; comply with MCM sheet manufacturer's instructions and recommendations for field forming.

F. Separate dissimilar metals; use gasket fasteners, isolation shims, or isolation tape where needed to eliminate possibility of electrolytic action between metals.

G. Where joints are designed for field-applied sealant, seal joints completely with specified sealant.

H. Install flashings as indicated on shop drawings. At flashing butt joints, provide a lap strap under flashing and seal lapped surfaces with a full bed of non-hardening sealant.

I. Install square, plumb, straight, and true, accurately fitted, with tight joints and intersections maintaining the following installation tolerances:
   1. Variation From Plane or Location: 1/2 inch in 30 feet of length and up to 3/4 inch in 300 feet, maximum.
   2. Deviation of Vertical Member From True Line: 0.1 inch in 25 feet run, maximum.
   3. Deviation of Horizontal Member From True Line: 0.1 inch in 25 feet run, maximum.
   4. Offset From True Alignment Between Two Adjacent Members Abutting End To End, In Line: 0.03 inch, maximum.

J. Replace damaged products.
   1. Exception: Field repairs of minor damage to finishes are permitted.
   2. Field Repairs to Finishes: Using materials and methods sufficient that repairs are not discernible when viewed at distance of 10 feet under all typical light conditions experienced at the project.

3.4 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Wall System Manufacturer's Field Services: Provide field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with instructions.

3.5 CLEANING

A. Ensure weep holes and drainage channels are unobstructed and free of dirt and sealants.

B. Remove protective film after installation of joint sealers, after cleaning of adjacent materials, and immediately prior to completion of work.

C. Remove temporary coverings and protection of adjacent work areas.

D. Clean installed products in accordance with manufacturer's instructions.

3.6 PROTECTION

A. Protect installed panel system from damage until Date of Substantial Completion.

END OF SECTION

SECTION 087100

DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes:

1. Mechanical and electrified door hardware for:

a. Swinging doors.

2. Field verification, preparation and modification of existing doors and frames to receive new door hardware.

B. Exclusions: Unless specifically listed in hardware sets, hardware is not specified in this section for:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

C. Related Sections:

1. Division 01 Section “Alternates” for alternates affecting this section.
2. Division 07 Section “Joint Sealants” for sealant requirements applicable to threshold installation specified in this section.
3. Division 09 sections for touchup finishing or refinishing of existing openings modified by this section.
4. Division 26 sections for connections to electrical power system and for low-voltage wiring.
5. Division 28 sections for coordination with other components of electronic access control system.

1.3 REFERENCES

A. UL - Underwriters Laboratories

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Key Systems and Nomenclature

C. ANSI - American National Standards Institute

1. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties

1.4 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 requirements.
2. Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
3. Prior to forwarding submittal, comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, “EXAMINATION” article, herein.

B. Action Submittals:

1. Product Data: Product data including manufacturers’ technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:

a. Wiring Diagrams: For power, signal, and control wiring and including:
1) Details of interface of electrified door hardware and building safety and security systems.
2) Schematic diagram of systems that interface with electrified door hardware.
3) Point-to-point wiring.
4) Risers.

3. Samples for Verification: If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.

a. Samples will be returned to supplier in like-new condition. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.

4. Door Hardware Schedule: Submit schedule with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening, include:

a. Door Index; include door number, heading number, and Architects hardware set number.
b. Opening Lock Function Spreadsheet: List locking device and function for each opening.
c. Type, style, function, size, and finish of each hardware item.

d. Name and manufacturer of each item.
e. Fastenings and other pertinent information.
f. Location of each hardware set cross-referenced to indications on Drawings.
g. Explanation of all abbreviations, symbols, and codes contained in schedule.
h. Mounting locations for hardware.
i. Door and frame sizes and materials.
j. Name and phone number for local manufacturer's representative for each product.
k. Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and access control components). Operational description should include how door will operate on egress, ingress, and fire and smoke alarm connection.
    1) Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.

5. Key Schedule:

    a. After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used and door numbers controlled.
    b. Use ANSI/BHMA A156.28 “Recommended Practices for Keying Systems” as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
    c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
    d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
    e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.
        1) Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.

    f. Prepare key schedule by or under supervision of supplier, detailing Owner’s final keying instructions for locks.

6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory prepared for door hardware installation.

C. Informational Submittals:

1. Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.
2. Product Certificates for electrified door hardware, signed by manufacturer:

    a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.

3. Certificates of Compliance:

    a. Certificates of compliance for fire-rated hardware and installation instructions if requested by Architect or Authority Having Jurisdiction.
    b. Installer Training Meeting Certification: Letter of compliance, signed by Contractor, attesting to completion of installer training meeting specified in “QUALITY ASSURANCE” article, herein.

c. Electrified Hardware Coordination Conference Certification: Letter of compliance, signed by Contractor, attesting to completion of electrified hardware coordination conference, specified in “QUALITY ASSURANCE” article, herein.

4. Product Test Reports: For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by qualified testing agency, for door hardware on doors located in accessible routes.
5. Warranty: Special warranty specified in this Section.

D. Closeout Submittals:

1. Operations and Maintenance Data : Provide in accordance with Division 01 and include:

a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
b. Catalog pages for each product.
c. Name, address, and phone number of local representative for each manufacturer.
d. Parts list for each product.
e. Final approved hardware schedule, edited to reflect conditions as-installed.
f. Final keying schedule
g. Copies of floor plans with keying nomenclature
h. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
i. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

1.5 QUALITY ASSURANCE

A. Product Substitutions: Comply with product requirements stated in Division 01 and as specified herein.

1. Where specific manufacturer’s product is named and accompanied by “No Substitute,” including make or model number or other designation, provide product specified. (Note: Certain products have been selected for their unique characteristics and particular project suitability.)

a. Where no additional products or manufacturers are listed in product category, requirements for “No Substitute” govern product selection.

2. Where products indicate “acceptable manufacturers” or “acceptable manufacturers and products”, provide product from specified manufacturers, subject to compliance with specified requirements and “Single Source Responsibility” requirements stated herein.

B. Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.

1. Warehousing Facilities: In Project's vicinity.
2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

4. Coordination Responsibility: Coordinate installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.

    a. Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.

C. Installer Qualifications: Qualified tradesmen, skilled in application of commercial grade hardware with record of successful in-service performance for installing door hardware similar in quantity, type, and quality to that indicated for this Project.

D. Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:

1. For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).
2. Can provide installation and technical data to Architect and other related subcontractors.
3. Can inspect and verify components are in working order upon completion of installation.
4. Capable of producing wiring diagrams.
5. Capable of coordinating installation of electrified hardware with Architect and electrical engineers.

E. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated.
2. Manufacturers that perform electrical modifications and that are listed by testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

F. Fire-Rated Door Openings: Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and are identical to products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

G. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.

1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.

H. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

I. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release latch. Locks do not require use of key, tool, or special knowledge for operation.

J. Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in “REFERENCES” article, herein.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of wrist and that operate with force of not more than 5 lbf (22.2 N).
2. Maximum opening-force requirements:

a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

3. Bevel raised thresholds with slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
4. Adjust door closer sweep periods so that, from open position of 70 degrees, door will take at least 3 seconds to move to 3 inches (75 mm) from latch, measured to leading edge of door.

K. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01.

1. Attendees: Owner, Contractor, Architect, Installer, and Supplier's Architectural Hardware Consultant.
2. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:

a. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
b. Preliminary key system schematic diagram.
c. Requirements for key control system.
d. Requirements for access control.
e. Address for delivery of keys.

L. Pre-installation Conference: Conduct conference at Project site.

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Inspect and discuss preparatory work performed by other trades.
3. Inspect and discuss electrical roughing-in for electrified door hardware.
4. Review sequence of operation for each type of electrified door hardware.
5. Review required testing, inspecting, and certifying procedures.

M. Coordination Conferences:

1. Installation Coordination Conference: Prior to hardware installation, schedule and hold meeting to review questions or concerns related to proper installation and adjustment of door hardware.

a. Attendees: Door hardware supplier, door hardware installer, Contractor.
b. After meeting, provide letter of compliance to Architect, indicating when meeting was held and who was in attendance.

2. Electrified Hardware Coordination Conference: Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

a. Attendees: electrified door hardware supplier, doors and frames supplier, electrified door hardware installer, electrical subcontractor, Owner, Architect and Contractor.
b. After meeting, provide letter of compliance to Architect, indicating when coordination conference was held and who was in attendance.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.

B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

1. Deliver each article of hardware in manufacturer’s original packaging.

C. Project Conditions:

1. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
2. Provide secure lock-up for door hardware delivered to Project, but not yet installed. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

D. Protection and Damage:

1. Promptly replace products damaged during shipping.
2. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.
3. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

E. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

1.7 COORDINATION

A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Division 03.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

E. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

F. Direct shipments not permitted, unless approved by Contractor.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Years from date of Substantial Completion, for durations indicated.

a. Closers:
1) Mechanical: 25 years.

b. Automatic Operators: 2 year.

c. Exit Devices:
1) Mechanical: 3 years.
2) Electrified: 1 year.

d. Locksets:
1) Mechanical: 10 years.
2) Electrified: 1 year.

e. Continuous Hinges: Lifetime warranty.
f. Key Blanks: Lifetime

2. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.

1.9 MAINTENANCE

A. Maintenance Tools:

1. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Approval of manufacturers and/or products other than those listed as ”Scheduled Manufacturer ” or “Acceptable Manufacturers” in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.

B. Approval of products from manufacturers indicated in “Acceptable Manufacturers” is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer’s product.

C. Hand of Door: Drawings show direction of slide, swing, or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.

D. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.2 MATERIALS

A. Fasteners

1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
4. Install hardware with fasteners provided by hardware manufacturer.

B. Modification and Preparation of Existing Doors: Where existing door hardware is indicated to be removed and reinstalled.

1. Provide necessary fillers, Dutchmen, reinforcements, and fasteners, compatible with existing materials, as required for mounting new opening hardware and to cover existing door and frame preparations.
2. Use materials which match materials of adjacent modified areas.
3. When modifying existing fire-rated openings, provide materials permitted by NFPA 80 as required to maintain fire-rating.

C. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

D. Cable and Connectors: Hardwired Electronic Access Control Lockset and Exit Device Trim:

1. Where scheduled in the hardware sets, provide each item of electrified hardware and wire harnesses with sufficient number and wire gauge with standardized Molex plug connectors to accommodate electric function of specified hardware. Provide Molex connectors that plug directly into connectors from harnesses, electric locking and power transfer devices. Provide through-door wire harness for each electrified locking device installed in a door and wire harness for each electrified hinge, electrified continuous hinge, electrified pivot, and electric power transfer for connection to power supplies.

2.3 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Ives 5BB series
2. Acceptable Manufacturers and Products: Hager BB series, McKinney TA/T4A series, Stanley FBB Series

B. Requirements:

1. Provide five-knuckle, ball bearing hinges conforming to ANSI/BHMA A156.1.
2. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:

a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high

3. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:

a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
b. Interior: Heavy weight, steel, 5 inches (127 mm) high

4. 2 inches or thicker doors:

a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
b. Interior: Heavy weight, steel, 5 inches (127 mm) high

5. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
6. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
7. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

a. Steel Hinges: Steel pins
b. Non-Ferrous Hinges: Stainless steel pins
c. Out-Swinging Exterior Doors: Non-removable pins
d. Out-Swinging Interior Lockable Doors: Non-removable pins
e. Interior Non-lockable Doors: Non-rising pins

8. Width of hinges: 4-1/2 inches (114 mm) at 1-3/4 inch (44 mm) thick doors, and 5 inches (127 mm) at 2 inches (51 mm) or thicker doors. Adjust hinge width as required for door, frame, and wall conditions to allow proper degree of opening.
9. Doors 36 inches (914 mm) wide or less furnish hinges 4-1/2 inches (114 mm) high; doors greater than 36 inches (914 mm) wide furnish hinges 5 inches (127 mm) high, heavy weight or standard weight as specified.
10. Provide hinges with electrified options as scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component.
11. Provide mortar guard for each electrified hinge specified.
12. Provide spring hinges where specified. Provide two spring hinges and one bearing hinge per door leaf for doors 90 inches (2286 mm) or less in height. Provide one additional bearing hinge for each 30 inches (762 mm) of additional door height.

2.4 CONTINUOUS HINGES

A. Aluminum Geared

1. Manufacturers:

a. Scheduled Manufacturer: Ives.
b. Acceptable Manufacturers: Markar, Stanley.

2. Requirements:

a. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
b. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum, with 0.25-inch (6 mm) diameter Teflon coated stainless steel hinge pin.

c. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
d. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
e. On fire-rated doors, provide aluminum geared continuous hinges that are classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
f. Provide aluminum geared continuous hinges with electrified option scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware.
g. Install hinges with fasteners supplied by manufacturer.
h. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

2.5 ELECTRIC POWER TRANSFER

A. Manufacturers:

a. Scheduled Manufacturer: Von Duprin EPT-10
b. Acceptable Manufacturers: ABH PT1000, Securitron CEPT-10

B. Provide power transfer with electrified options as scheduled in the hardware sets. Provide with number and gage of wires sufficient to accommodate electric function of specified hardware.

C. Locate electric power transfer per manufacturer’s template and UL requirements, unless interference with operation of door or other hardware items.

2.6 CYLINDRICAL LOCKS – GRADE 1

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Schlage ND Series

B. Requirements:

1. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1. Cylinders: Refer to “KEYING” article, herein.
2. Provide cylindrical locks with classroom security function with an inside indicator that provides clear direction for users to safely and quickly secure the room.
3. Provide locksets able to withstand 1500 inch pounds of torque applied to locked outside lever without gaining access per ANSI/BHMA A156.2 Abusive Locked Lever Torque Test and cycle tested to 3 million cycles per ANSI/BHMA A156.2 Cycle Test.
4. Provide solid steel rotational stops to control excessive rotation of lever.
5. Provide lockset that allows lock function to be changed to over twenty other common functions by swapping easily accessible parts.
6. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2 inch latch throw. Provide proper latch throw for UL listing at pairs.
7. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
8. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
9. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
10. Provide electrified options as scheduled in the hardware sets.
11. Lever Trim: Solid cast levers without plastic inserts, and wrought roses on both sides.

a. Lever Design: Schlage Rhodes.
b. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

2.7 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Falcon DL-24/25 Series
2. Acceptable Manufacturers and Products: Precision Apex Series

B. Requirements:

1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1, and UL listed for Panic Exit or Fire Exit Hardware. Cylinders: Refer to “KEYING” article, herein.
2. Exit Devices: Touchpad type, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
3. Touchpad: Extend minimum of one half of door width. Match exit device finish or provide compatible finish. No plastic inserts are allowed in touchpads.
4. Provide devices with deadlatching feature for security and for future addition of alarm kits and other electrical requirements.
5. Provide flush end caps for exit devices.
6. Provide manufacturer's standard strikes.
7. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
8. Mount mechanism case flush on face of doors, or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
9. Provide cylinder dogging at non-fire-rated exit devices.
10. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
11. Where lever handles are specified as outside trim for exit devices, provide heavy-duty lever trims with forged or cast escutcheon plates. Provide vandal-resistant levers that will travel to 90-degree down position when more than 35 pounds of torque are applied, and which can easily be re-set.

    a. Lever Style: Match lever style of locksets.
    b. Tactile Warning (Knurling): Where required by authority having jurisdiction. Provide on levers on exterior (secure side) of doors serving rooms considered to be hazardous.

12. Provide UL labeled fire exit hardware for fire rated openings.
13. Field drill weep holes per manufacturer’s recommendation for exit devices used in full exterior application, highly corrosive areas, and where noted in the hardware sets.
14. Provide electrified options as scheduled in the hardware sets.

2.8 POWER SUPPLIES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Schlage or Von Duprin PS900 series
2. Acceptable Manufacturers and Products: Precision ELR series, Sargent 3500 series,

B. Requirements:

1. Provide power supplies, recommended and approved by manufacturer of electrified locking component, for operation of electrified locks, electrified exit devices, magnetic locks, electric strikes, and other components requiring power supply.
2. Provide appropriate quantity of power supplies necessary for proper operation of electrified locking components as recommended by manufacturer of electrified locking components with consideration for each electrified component using power supply, location of power supply, and approved wiring diagrams. Locate power supplies as directed by Architect.
3. Provide regulated and filtered 24 VDC power supply , and UL class 2 listed.
4. Options:

    a. Provide power supply, where specified, with internal capability of charging sealed backup batteries 24 VDC, in addition to operating DC load.
    b. Provide sealed batteries for battery back-up at each power supply where specified.
    c. Provide keyed power supply cabinet.

5. Provide power supply in an enclosure, complete, and requiring 120VAC to fused input.
6. Provide power supply with emergency release terminals, where specified, that allow release of all devices upon activation of fire alarm system complete with fire alarm input for initiating “no delay” exiting mode.

2.9 CYLINDERS

A. Manufacturer and Product:

1. Scheduled Manufacturer and Product: Schlage.

B. Requirements:

1. Provide cylinders/cores compliant with ANSI/BHMA A156.5; latest revision, Section 12, Grade 1; permanent cylinders; cylinder face finished to match lockset, manufacturer’s series as indicated. Refer to “KEYING” article, herein.
2. Provide cylinders in the following configuration, distributed throughout the Project as indicated.

    a. Conventional: Everest cylinder with interchangeable core with patented, restricted keyway.

3. Patent Protection: Cylinders/cores requiring use of restricted, patented keys, patent-protected until the year, 2029.
4. Primus Cylinders: Where indicated, provide “Primus” cylinders/cores with “dual-locking mechanism” with interlocking finger pin(s) to check for patented features on keys.
5. Nickel silver bottom pins.
6. Replaceable Construction Cores.

    a. Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
        1) 12 construction change (day) keys.

    b. Owner or Owner’s Representative will replace temporary construction cores with permanent cores.

2.10 KEYING

A. Incorporate locks and cylinders into the existing factory registered Schlage Lock Company keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Requirements:

1. Provide keying system capable of multiplex master keying.
2. Permanent cylinders/cores keyed by the manufacturer according to the following key system.

    a. Master Keying system as directed by the Owner.

3. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements shall be cause for replacement of cylinders/cores involved at no additional cost to Owner.
4. Provide keys with the following features:

    a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
    b. Patent Protection: Keys and blanks protected by one or more utility patent(s) until the year, 2029.

5. Identification:

    a. Mark permanent cylinders/cores and keys with applicable blind code per DHI publication “Keying Systems and Nomenclature” for identification. Blind code marks shall not include actual key cuts.
    b. Identification stamping provisions must be approved by the Architect and Owner.
    c. Stamp cylinders/cores and keys with Owner’s unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with “DO NOT DUPLICATE” along with the “PATENTED” or patent number to enforce the patent protection.
    d. Failure to comply with stamping requirements shall be cause for replacement of keys involved at no additional cost to Owner.
    e. Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.

6. Quantity: Furnish in the following quantities.

    a. Change (Day) Keys: 3 per cylinder/core.
    b. Permanent Control Keys: 3.
    c. Master Keys: 6.
    d. Unused balance of key blanks shall be furnished to Owner with the cut keys.
    e. Extra Keys:
        1) Construction Keys: 12

2.11 KEY CONTROL SYSTEM

A. Manufacturers:

1. Scheduled Manufacturer: Telkee
2. Acceptable Manufacturers: HPC, Lund

B. Requirements:

1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.

    a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
    b. Provide hinged-panel type cabinet for wall mounting.

2.12 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: LCN 4010/4110/4020 series
2. Acceptable Manufacturers and Products: Sargent 281/281P10 series factory assembled (without PRV)

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2 inch (38 mm) diameter, with 5/8 inch (16 mm) diameter double heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves with separate adjustment for latch speed, general speed, and backcheck.
7. Provide closers with a solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI/BHMA Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.13 ELECTRO-HYDRAULIC AUTOMATIC OPERATORS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
   a. LCN 4600 series

2. Acceptable Manufacturers and Products:
   a. No Substitute

B. Requirements:

1. Provide low energy automatic operator units with hydraulic closer complying with ANSI/BHMA A156.19.
2. Provide automatic operator units complying with 2022 California Building Code Section 11B-404.2.9, Exception 2.
3. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
4. Provide units with conventional door closer opening and closing forces unless power operator motor is activated. Provide door closer assembly with adjustable spring size, back-check, and opening and closing speed adjustment valves to control door
5. Provide units with on/off switch for manual operation, motor start up delay, vestibule interface delay, electric lock delay, and door hold open delay.
6. Provide drop plates, brackets, and adapters for arms as required for details.
7. Provide actuator switches and receivers for operation as specified.
8. Provide weather-resistant actuators at exterior applications.
9. Provide key switches with LED's, recommended and approved by manufacturer of automatic operator as required for function described in operation description of hardware group below. Cylinders: Refer to "KEYING" article, herein.
10. Provide complete assemblies of controls, switches, power supplies, relays, and parts/material recommended and approved by manufacturer of automatic operator for each individual leaf. Actuators control both doors simultaneously at pairs. Sequence operation of exterior and vestibule doors with automatic operators to allow ingress or egress through both sets of openings as directed by Architect. Locate actuators, key switches, and other controls as directed by Architect.
11. Provide units with vestibule inputs that allow sequencing operation of two units, and SPDT relay for interfacing with latching or locking devices.

2.14 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Burns, Rockwood

B. Requirements:

1. Provide push plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick and beveled 4 edges. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
2. Provide push bars of solid bar stock, diameter and length as scheduled. Provide push bars of sufficient length to span from center to center of each stile. Where required, mount back to back with pull.
3. Provide offset pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.

4. Provide flush pulls as scheduled. Where required, provide back-to-back mounted model.
5. Provide pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
6. Provide pull plates 4 inches (102 mm) wide by 16 inches (406 mm) high by 0.050 inch (1 mm) thick, beveled 4 edges, and prepped for pull. Where width of door stile prevents use of 4 inches (102 mm) wide plate, adjust width to fit.
7. Provide wire pulls of solid bar stock, diameter and length as scheduled.
8. Provide decorative pulls as scheduled. Where required, mount back to back with pull.

2.15 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Burns, Rockwood

B. Requirements:

1. Provide kick plates, mop plates, and armor plates minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes of plates:

    a. Kick Plates: 10 inches (254 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
    b. Mop Plates: 4 inches (102 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs
    c. Armor Plates: 36 inches (914 mm) high by 2 inches (51 mm) less width of door on single doors, 1 inch (25 mm) less width of door on pairs

2.16 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers: Glynn-Johnson
2. Acceptable Manufacturers: Rixson, Sargent

B. Requirements:

1. Provide heavy duty concealed mounted overhead stop or holder as specified for exterior and interior vestibule single acting doors.
2. Provide heavy duty concealed mounted overhead stop or holder as specified for double acting doors.
3. Provide heavy or medium duty and concealed or surface mounted overhead stop or holder for interior doors as specified. Provide medium duty surface mounted overhead stop for interior doors and at any door that swings more than 140 degrees before striking wall, open against equipment, casework, sidelights, and where conditions do not allow wall stop or floor stop presents tripping hazard.
4. Where overhead holders are specified provide friction type at doors without closer and positive type at doors with closer.

2.17 DOOR STOPS AND HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Burns, Rockwood

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide convex type where mortise type locks are used and concave type where cylindrical type locks are used.
2. Where a wall stop cannot be used, provide universal floor stops for low or high rise options.
3. Where wall or floor stop cannot be used, provide medium duty surface mounted overhead stop.

2.18 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

1. Scheduled Manufacturer: Zero International
2. Acceptable Manufacturers: National Guard, Reese

B. Requirements:

1. Provide thresholds, weather-stripping (including door sweeps, seals, and astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items.
2. Size of thresholds:

    a. Saddle Thresholds: 1/2 inch (13 mm) high by jamb width by door width
    b. Bumper Seal Thresholds: 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width

3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.

2.19 SILENCERS

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Burns, Rockwood

B. Requirements:

1. Provide "push-in" type silencers for hollow metal or wood frames.
2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
3. Omit where gasketing is specified.

2.20 MAGNETIC HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer: LCN
2. Acceptable Manufacturers: Rixson, Sargent

B. Requirements:

1. Provide wall or floor mounted electromagnetic door release as specified with minimum of 25 pounds of holding force. Coordinate projection of holder and armature with other hardware and wall conditions to ensure that door sits parallel to wall when fully open. Connect magnetic holders on fire-rated doors into the fire control panel for fail-safe operation.

2.21 FINSHES

A. Finish: BHMA 626/652 (US26D); except:

1. Continuous Hinges: BHMA 628 (US28)
2. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
3. Protection Plates: BHMA 630 (US32D)
4. Overhead Stops and Holders: BHMA 630 (US32D)
5. Door Closers: Powder Coat to Match
6. Wall Stops: BHMA 630 (US32D)
7. Weatherstripping: Clear Anodized Aluminum
8. Thresholds: Mill Finish Aluminum

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Existing Door and Frame Compatibility: Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.

C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Where on-site modification of doors and frames is required:

1. Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
2. Field modify and prepare existing door and frame for new hardware being installed.

3. When modifications are exposed to view, use concealed fasteners, when possible.
4. Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:

    a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
    b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
    c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

B. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

H. Lock Cylinders: Install construction cores to secure building and areas during construction period.

1. Replace construction cores with permanent cores as indicated in keying section.

I. Wiring: Coordinate with Division 26, ELECTRICAL sections for:

1. Conduit, junction boxes and wire pulls.
2. Connections to and from power supplies to electrified hardware.
3. Connections to fire/smoke alarm system and smoke evacuation system.
4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
5. Testing and labeling wires with Architect's opening number.

J. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.

K. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Closers shall not be visible in corridors, lobbies and other public spaces unless approved by Architect.

L. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

M. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.

1. Configuration: Provide one power supply for each door opening with electrified door hardware.

N. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

O. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

P. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

Q. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

R. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 FIELD QUALITY CONTROL

A. Architectural Hardware Consultant: Engage qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

1. Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

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

1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately three months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.7 DEMONSTRATION

A. Provide training for Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Division 01 Section "Demonstration and Training."

3.8 DOOR HARDWARE SCHEDULE

A. Locksets, exit devices, and other hardware items are referenced in the following hardware sets for series, type and function. Refer to the above-specifications for special features, options, cylinders/keying, and other requirements.

B. Hardware Sets:

Hardware Group No. 01

NOT BEING USED

Hardware Group No. 02

1	EA	CYLINDER	IC CYLINDER AS REQUIRED	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1			BALANCE OF HARDWARE BY DOOR SUPPLIER		

Hardware Group No. 03

1	EA	CONT. HINGE	112HD		628	IVE
1	EA	PANIC HARDWARE	CD-25-R-NL-OP		626	FAL
1	EA	RIM CYLINDER	20-057 ICX		626	SCH
1	EA	MORTISE CYLINDER	26-091 ICX		626	SCH
2	EA	FSIC CORE	23-030		626	SCH
1	EA	OH STOP	100S		630	GLY
1	EA	SURFACE CLOSER	4111 HEDA TBSRT		689	LCN
1	EA	MOUNTING PLATE	4110-18 SRT		689	LCN
1	EA	BLADE STOP SPACER	4110-61 SRT		689	LCN
1	EA	DOOR SWEEP	3452AV		AL	PEM
1	EA	THRESHOLD	273X3AFG		AL	PEM

PERIMETER GASKETING BY ALUMINUM FRAME SUPPLIER.

Hardware Group No. 04

2	EA	CONT. HINGE	112HD		628	IVE
2	EA	CONT. HINGE	112HD EPT		628	IVE
2	EA	POWER TRANSFER	EPT10	↯	689	VON
1	EA	ELEC PANIC HARDWARE	CD-RX-25-R-EO-CON	↯	626	FAL
1	EA	ELEC PANIC HARDWARE	LMRX-MEL-25-R-NL-OP 24 VDC	↯	626	FAL
2	EA	MORTISE CYLINDER	26-091 ICX		626	SCH
2	EA	FSIC CORE	23-030		626	SCH
2	EA	90 DEG OFFSET PULL	8190EZHD 12" STD		630-316	IVE
2	EA	OH STOP	100S		630	GLY
2	EA	SURFACE CLOSER	4111 HEDA TBSRT		689	LCN
2	EA	MOUNTING PLATE	4110-18 SRT		689	LCN
2	EA	BLADE STOP SPACER	4110-61 SRT		689	LCN
1	EA	GASKETING	5110BL120		BLK	PEM
1	EA	ASTRAGAL	18041CNB		AL	PEM
2	EA	DOOR SWEEP	3452AV		AL	PEM
1	EA	THRESHOLD	273X3AFG		AL	PEM
2	EA	DOOR CONTACT	679-05HM	↯	BLK	SCE
1	EA	POWER SUPPLY	PS902 BBK 900-2RS 120/240 VAC	↯	LGR	SCE
1			CARD READER - WORK OF DIVISION 28			
1	EA	NOTE	PROVIDE POINT TO POINT WIRING DIAGRAMS			
1	EA	NOTE	PROVIDE RISER WIRING DIAGRAMS			

PERIMETER GASKETING BY ALUMINUM FRAME SUPPLIER.

Hardware Group No. 05

1	EA	CONT. HINGE	224HD	628	IVE
1	EA	PUSH PLATE	8200 4" X 16"	630	IVE
1	EA	PULL PLATE	8302 10" 4" X 16"	630	IVE
1	EA	SURFACE CLOSER	4111 EDA SRI TBSRT	689	LCN
1	EA	WALL STOP	WS406/407CCV	630	IVE

Hardware Group No. 06

1	EA	CONT. HINGE	224HD	628	IVE
1	EA	ENTRANCE/OFFICE LOCK	ND50TD RHO	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	OH STOP	100S	630	GLY

Hardware Group No. 07

1	EA	CONT. HINGE	224HD	628	IVE
1	EA	PRIVACY LOCK W/ OUTSIDE INDICATOR	ND40S RHO OS-OCC	626	SCH
1	EA	OH STOP	100S	630	GLY

Hardware Group No. 08

1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
2	EA	SURFACE CLOSER	4011 TBSRT	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	630	IVE
1			BALANCE OF HARDWARE EXISTING		
1	EA	NOTE	REUSE BALANCE OF EXISTING HARDWARE		

VERIFY COMPATIBILITY OF NEW HARDWARE WITH EXISTING CONDITIONS

Hardware Group No. 09

3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM SECURITY W/ INSIDE INDICATOR	ND78TD RHO IS-CRS	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	SURFACE CLOSER	4011 TBSRT	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	ACOUSTIC SEAL SET	PEMKOSTCSET-1A	BLA	PEM

Hardware Group No. 10

3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CLASSROOM SECURITY W/ INSIDE INDICATOR	ND78TD RHO IS-CRS	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	SURFACE CLOSER	4011 TBSRT	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	SET	SEALS	S88D	DKB	PEM

Hardware Group No. 11

6	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	CONST LATCHING BOLT	FB51T	630	IVE
1	EA	CLASSROOM SECURITY W/ INSIDE INDICATOR	ND78TD RHO IS-CRS	626	SCH
2	EA	FSIC CORE	23-030	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4011 ST-1544 TBSRT	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	EA	ACOUSTIC SEAL SET	PEMKOSTCSET-1A	BLA	PEM
1	EA	ASTRAGAL	18041CNB	AL	PEM

Hardware Group No. 12

2	EA	CONT. HINGE	224HD	628	IVE
1	EA	FIRE EXIT HARDWARE	9827-L-F-2SI-LBR-06-499F	626	VON
1	EA	FIRE EXIT HARDWARE	9827-L-F-2SI-LBRAFL-06-499F	626	VON
2	EA	RIM CYLINDER	20-057 ICX	626	SCH
2	EA	MORTISE CYLINDER	26-091 ICX	626	SCH
4	EA	FSIC CORE	23-030	626	SCH
2	EA	SURFACE CLOSER	4111 EDA TBSRT	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	630	IVE
2	EA	WALL STOP	WS406/407CCV	630	IVE
1	SET	SEALS	S88D	DKB	PEM
2	EA	ASTRAGAL	18041CNB	AL	PEM

Hardware Group No. 13

2	EA	CONT. HINGE	224HD		628	IVE
1	EA	FIRE EXIT HARDWARE	F-25-V-EO-LBRAFL		626	FAL
1	EA	FIRE EXIT HARDWARE	F-25-V-L-LBRAFL-DANE-SHIMS		626	FAL
1	EA	MORTISE CYLINDER	26-091 ICX		626	SCH
1	EA	FSIC CORE	23-030		626	SCH
2	EA	SURFACE CLOSER	4111 EDA TBSRT		689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS		630	IVE
2	EA	WALL MAGNET	SEM7850 12V/24V/120V	↙	689	LCN
1	SET	SEALS	S88D		DKB	PEM
1	EA	ASTRAGAL	18041CNB		AL	PEM

Hardware Group No. 14

1	EA	CONT. HINGE	224HD		628	IVE
1	EA	FIRE EXIT HARDWARE	F-25-R-L-DANE-SHIMS		626	FAL
1	EA	MORTISE CYLINDER	26-091 ICX		626	SCH
1	EA	FSIC CORE	23-030		626	SCH
1	EA	SURFACE CLOSER	4111 EDA TBSRT		689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	SET	SEALS	S88D		DKB	PEM

Hardware Group No. 15

2	EA	CONT. HINGE	224HD		628	IVE
1	EA	FIRE EXIT HARDWARE	9827-L-F-2SI-LBR-06-499F		626	VON
1	EA	FIRE EXIT HARDWARE	9827-L-F-2SI-LBRAFL-06-499F		626	VON
2	EA	RIM CYLINDER	20-057 ICX		626	SCH
2	EA	MORTISE CYLINDER	26-091 ICX		626	SCH
4	EA	FSIC CORE	23-030		626	SCH
2	EA	SURFACE CLOSER	4111 SCUSH TBSRT		689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS		630	IVE
1	SET	SEALS	S88D		DKB	PEM
2	EA	ASTRAGAL	18041CNB		AL	PEM

Hardware Group No. 15A

2	EA	CONT. HINGE	224HD	628	IVE
1	EA	FIRE EXIT HARDWARE	9827-L-F-2SI-LBR-06-499F	626	VON
1	EA	FIRE EXIT HARDWARE	9827-L-F-2SI-LBRAFL-06-499F	626	VON
2	EA	RIM CYLINDER	20-057 ICX	626	SCH
2	EA	MORTISE CYLINDER	26-091 ICX	626	SCH
4	EA	FSIC CORE	23-030	626	SCH
2	EA	SURFACE CLOSER	4111 SCUSH SRI TBSRT	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	630	IVE
1	SET	SEALS	S88D	DKB	PEM
2	EA	ASTRAGAL	18041CNB	AL	PEM

Hardware Group No. 16

2	EA	CONT. HINGE	224HD	628	IVE
1	EA	FIRE EXIT HARDWARE	9827-L-F-2SI-LBR-06-499F	626	VON
1	EA	FIRE EXIT HARDWARE	9827-L-F-2SI-LBRAFL-06-499F	626	VON
2	EA	RIM CYLINDER	20-057 ICX	626	SCH
2	EA	MORTISE CYLINDER	26-091 ICX	626	SCH
4	EA	FSIC CORE	23-030	626	SCH
2	EA	SURFACE CLOSER	4111 EDA TBSRT	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	630	IVE
2	EA	WALL STOP	WS406/407CCV	630	IVE
1	SET	SEALS	S88D	DKB	PEM
2	EA	ASTRAGAL	18041CNB	AL	PEM

Hardware Group No. 17

3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	SURFACE CLOSER	4011 TBSRT	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	SET	SEALS	S88D	DKB	PEM

Hardware Group No. 17A

1	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	SURFACE CLOSER	4111 SCUSH TBSRT	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	SET	SEALS	S88D	DKB	PEM

Hardware Group No. 18

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	CONST LATCHING BOLT	FB51T	630	IVE
1	EA	ENTRANCE/OFFICE LOCK	ND50TD RHO	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	MOUNTING BRACKET	MB	689	IVE
2	EA	SURFACE CLOSER	4111 SCUSH TBSRT	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 19

6	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	CONST LATCHING BOLT	FB51T	630	IVE
1	EA	STOREROOM LOCK	ND80TD RHO	626	SCH
1	EA	FSIC CORE	23-030	626	SCH
1	EA	COORDINATOR	COR X FL	628	IVE
2	EA	MOUNTING BRACKET	MB	689	IVE
2	EA	SURFACE CLOSER	4111 SCUSH TBSRT	689	LCN
2	EA	KICK PLATE	8400 8" X 1" LDW B-CS	630	IVE
2	EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 21

3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK W/ OUTSIDE INDICATOR	ND40S RHO OS-OCC	626	SCH
1	EA	SURFACE CLOSER	4011 TBSRT	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	SET	SEALS	S88D	DKB	PEM

Hardware Group No. 21A

3	EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK W/ OUTSIDE INDICATOR	ND40S RHO OS-OCC	626	SCH
1	EA	SURFACE CLOSER	4111 EDA TBSRT	689	LCN
1	EA	KICK PLATE	8400 8" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	SET	SEALS	S88D	DKB	PEM

End Of Section

SECTION 22 51 00
SWIMMING POOL PLUMBING SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Swimming Pool Recirculation System.

B. Pipe and pipe fittings, valves, strainers.

C. Pool equipment.

1.2 RELATED REQUIREMENTS

A. Section 13 11 00 - Swimming Pool.

1.3 REFERENCE STANDARDS

A. APSP 16 - Standard Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs; 2011.

B. ASME A112.19.17 - Manufactured Safety vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems; 2010.

C. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2018.

D. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.

E. ASTM B32 - Standard Specification for Solder Metal; 2008 (Reapproved 2014).

F. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2016.

G. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2016.

H. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2015, with Editorial Revision (2018).

I. ASTM D2467 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80; 2015.

J. ASTM D2855 - Standard Practice for the Two-Step (Primer & Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets; 2015.

K. AWS A5.8M/A5.8 - Specification for Filler Metals for Brazing and Braze Welding; 2011 (Amended 2012).

L. NSF 50 - Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities; 2016a.

M. UL 1081 - Swimming Pool Pumps, Filters, and Chlorinators; Current Edition, Including All Revisions.

1.4 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data:

1. Include data on pipe materials, pipe fittings, valves and accessories.
2. Include component sizes, rough-in requirements, service sizes, and finishes.
3. Include product description, model, dimensions, component sizes, rough-in requirements, service sizes, and finishes.
4. Provide electrical characteristics and connection requirements.

C. Shop Drawings: Indicate detailed assembly of components of each system or sub-system.

D. Manufacturer's Instructions: Indicate installation details, components assembly, and start-up procedures.

E. Manufacturer's Field Reports: Indicate results of water treatment system set-up and testing.

F. Operation Data: Include installation instructions, lubrication instructions, and assembly views.

G. Maintenance Data: Include maintenance and inspection data, replacement part numbers and availability, and service depot location and telephone number.

H. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.5 QUALITY ASSURANCE

A. Standards: Comply with standards specified in this Section and as listed in Division 1.

B. Qualifications of Manufacturer: Products used in the work of this Section shall be produced by manufacturers regularly engaged in manufacture of similar items and with a history of successful production acceptable to the Architect.

C. Qualifications of General Contractor:
1. The general contractor must have had at least ten (10) years experience in the construction of the type of swimming pool herein specified and must list at least ten (10) pools of this type, each with a water surface area of not less than this pool which he has constructed and which, upon investigation, would be found to be completed in a satisfactory manner and in operation at least three (3) years.
2. The owner/architect reserves the right to reject any general contractor if in his opinion such contractor shall not be acceptable for this project.
3. The general contractor shall certify that the plans and specifications have been reviewed and that his bid will conform thereto.

D. Qualifications of Installers: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for performance of the work of this Section.

1.6 QUALITY OF MATERIALS:

A. Special attention is directed to the materials, products and equipment described in these specifications. They establish a standard of required function, dimension, appearance and quality.

B. Where only one manufacturer’s name is mentioned for a particular item of equipment or material the general contractor’s base bid shall be on that item.

C. The general contractor may, at his option, offer similar products or other manufacturers. In proposing a substitution, the general contractor is cautioned to refer to paragraph 2.02 and 2.03 of this section. No consideration will be given to substitutions after bid day.

D. It will be the obligation of the respective prime contractors to inform their subcontractors of this requirement as the respective prime contractors will be held responsible

to comply with all requirements set forth by the drawings, specifications and contract documents.

E. Where references are made to Federal Specifications, American society of Testing and Materials, American Standards Association, American Institute of Steel Construction, Steel Institute and similar associations, organizations and standards, it shall be construed to mean their current specifications and designations as amended as of the date of bid opening.

F. All work in this Section shall be according to applicable local, state and national codes and regulations.

1.7 SUBSTITUTIONS:

A. The swimming pool equipment has been specified with products manufactured by Paddock Pool Equipment Co., Rock Hill, SC to create a whole and complete system. The stainless steel recirculation system, filter system and other major components as produced by others will be reviewed for quality and performance. Provide sufficient data on the proposed systems, plus anything requested by the Owner and Architect in order to properly analyze their products.

B. The substitutes are more than switching one piece of equipment for a like piece of equipment. The substitution is an actual change in the design and operation of a system. Therefore, the Contractor requesting this change in system will be responsible for providing any additional components required for a complete system and for the coordination and to function properly. Examples would be, but are not limited to, changes in sizes of electrical wiring and breakers, additional surge tanks, piping changes and modifications, building design, etc. The Contractor will be responsible for the re-application for approvals from the State Health Department and associated State or local permit approvals and costs associated with them such as review fees, printing costs, etc. The impact of the changes must be addressed during the review process, prior to award.

C. All bidders must bid on the base bid products as specified. Substitute bids are at the option of the bidder.

1.8 REGULATORY REQUIREMENTS

A. Conform to applicable code for installation of swimming pool systems.

B. Perform work in accordance with local health department regulations.

C. Provide certificate of compliance from Authority Having Jurisdiction indicating approval of installation.

D. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.9 COORDINATION

A. All bidding contractors are cautioned to clearly understand the limits of responsibility of the general contractor as detailed in these specifications in preparing their bid. Prior to a work start by the general contractor, a meeting will be held at the job site to establish work limits, job schedule and liaison among contractors and the architect to ensure a coordinated construction process.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver and Storage: Deliver all materials to the job site in their original unopened containers with all labels intact and legible at time of use. Store in strict accordance with the manufacturer’s recommendations as approved by the Architect.

B. Protection: Use all means necessary to protect materials of this Section before, during and after installation and to protect installed work and materials of all other trades.

C. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to Owner.

1.11 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirement

B. Standard Warranty: a standard one year contractual warranty for the project shall apply to all work of this section.

PART 2 PRODUCTS

2.1 SWIMMING POOL RECIRCULATION SYSTEM

A. GENERAL:
1. It is the intent of the specifications that perimeter overflow system channel flow and surface cleaning be maintained under all conditions of normal operation and that no water be discharged to waste except when cleaning the filters or emptying the pool.
2. The system specified provides “in-pool” surge capacity of one gallon per square foot of pool surface area and quiescent surface cleaning by means of automatically operated integral surge weirs in a manner which permits water displaced by bathers and their dynamic surge to remain within the pool structure.
3. The system specified provides for automatic closing surge weirs for rim flow operation without raising the water level in the perimeter channel. This provides a minimum perimeter surge containment to prevent momentary surcharging of the channel and to provide capacity for wave entrapment and quelling during competition.
4. The method of water recirculation specified and shown on the drawings is intended as the basis for receiving bids. It is not the intention of the specifications to limit competition. The base proposal must be on furnishing the equipment as specified; however, any bidder may, at his option, offer a substitute for consideration. Refer to 1.04, D. of these specifications.
5. Any proposed substitution shall include a mechanical drawing incorporating all required changes in layout, piping and valves. The cost of such changes shall be included in the price of the substitute.
6. Any such proposed system must have prior approval of the State and Local Health Departments.

B. MANUFACTURER:
1. Supply and install around the entire pool, a perimeter overflow system consisting of an overflow channel, surge recovery channel and filtered water supply channel according to the details shown on the accompanying drawings. The entire system shall be fabricated of low carbon 316L stainless steel.
2. The system shall be the C300 Perimeter, Catalog No. 9620-ASR for the competition pool and as manufactured by Paddock Pool Equipment Co., Inc., Rock Hill, South Carolina or equal approved by the Architect prior to bid.
3. Substitutions: Gutter systems that meet the performance requirement of this specifications will be considered for approval through the submittal process.

C. INSTALLATION:
1. All work covered under this section shall be performed by an authorized licensee of the manufacturer or by the manufacturer acting as a subcontractor to the general contractor.

D. ANCHORAGE:
   1. The entire perimeter overflow system section shall be anchored to the pool structure with commercial quality U" bolts made from reinforcing steel and fastened to the pool structure thus forming a continuous perimeter section as shown on the drawings. These anchors shall be placed at corners and on maximum of a four (4) foot centers around the pool.

E. FILTERED WATER INLETS:
   1. The filtered water supply channel shall be fitted with nylon jet inlet nozzles not over thirty-six (36) inches on center around the entire pool perimeter except where inlets shall be expressly deleted at stairways or touch pads. The inlet jets shall be sized so they will not create a tube pressure in excess of twelve (12) pounds nor have an orifice opening exceeding 9/16" in diameter. The stream of water passing through the jet nozzle shall be on fixed 450 angle directed toward the bottom of the pool.
   2. The filtered water supply conduit shall be machine welded using the TIG process by the manufacturer in his plant and pressure tested prior to shipment.

F. OVERFLOW CHANNEL:
   1. The perimeter overflow channel shall be open. The convertor channel shall be fitted with jet flow nozzles located as shown on the drawings. They shall provide a constant stream of filtered, chlorinated water in the channel to prevent any stagnation or dirt built-up in the channel should the water level fall below a level which permits its entrance into the overflow channel.

G. GRATING:
   1. Perimeter systems to be covered by a protective grating machined from UV resistant High Density Polyethylene (HDPE) top grating for maximum efficiency in quelling waves. Top grating shall meet and/or exceed ASTM D2047 Slip Resistance (Wet) with a nominal value of 0.62 to create a non-skid surface. Open area of grating shall not be less than 32%. Grating shall be white or Gray.

H. THE AUXILIARY SURGE RECOVERY CHANNEL:
   1. The auxiliary surge recovery channel shall be formed of stainless steel and shall be welded to the bottom of the filtered water supply channel using a common bottom. The transverse weld joints between sections shall be fitted with a port for easy inspection.

I. INTEGRAL SURGE WEIRS:
   1. Metering surge weirs which have twenty (20) inch openings shall be installed in the perimeter overflow system at the pool corners and at other locations shown on the drawings. They shall provide a surface cleaning action when the pool water level is below the overflow lip during periods of non-use.
   2. The flow through each opening shall be designed to be fifty (50) gallons per minute.
   3. The metering surge weirs shall close automatically, responding only to the change in water level within the pool. They shall modulate to the closed position as the rising water level in the pool increases weir flow to the design rate of 50 GPM. This allows the pool to be operated at the rim level for competition without flooding the perimeter overflow system channel and losing all of its surge containment capability.
   4. Design of the metering weir shall be such as to present no bather hazard in the open or closed position.
   5. Weirs responsive only to changes in water level in the perimeter overflow channel shall not be acceptable.

J. CONVERTORS:
   1. Convertors shall be installed in the Perimeters where shown on the drawings. Piping, as shown, shall connect the convertor to the filter system. Material shall be as shown on the drawings. The special convertors which admit water to the suction tube shall be located

as shown on the drawings and each placed to permit visual inspection of the suction tube.

K. PADDOCK EVACUATOR SOURCE CAPTURE SYSTEM:
1. Paddock Evacuator system, as manufactured by Paddock Pool Equipment Company, Rock Hill S.C., has been integrally designed with specified gutter sustem. The Evacuator has been designed and sized by design team to collect and exhaust chloramines generated from swimming pool. The Evacuator exhaust volume has been accounted for in the overal existing air handling system.
2. General size and shape of Evacuator is shown on contract drawings. The general contractor will provide and install Gutter/Evacuator system and provide connecting flanges at back of Evacuator plenum for continuation by other trades.

L. UNIFORMITY OF WELDS:
1. Filler metal shall be used on all weld joints whether the sections butt together or not so as to result in a uniform appearing raised weld at each joint. Raised welds shall not be ground. After the weld is cooled a second pass may be made with the arc puddling and smoothing the original weld if required.

M. MATERIALS:
1. The exposed surfaces of the FILTERED WATER SUPPLY AND THE SUCTION TUBE which form the front lip of the gutter section shall be fabricated of twelve (12) gauge low carbon type 316L stainless steel. The finish shall be similar or equal to a #3 polished (100 mesh abrasive) finish. The ½" x 3/16" angle anchors and all stiffener brackets shall be stainless steel. The GUTTER CHANNEL SECTIONS shall be fabricated from fourteen (14) gauge, low carbon, Type 316L stainless steel with a finish similar or equal to a #3 polished (100 mesh abrasive) finish.

N. FINISH:
1. The low carbon stainless steel components shall be cleaned and polished as required to present a substantially uniform finish. Each weld seam as completed and after it cools to approximately 300 degrees, shall be vigorously brushed with a stainless steel brush. Blending of all surfaces shall be done with a Scotch Brite Flap Wheel. Those areas requiring blending which are inaccessible with the power brush, shall be hand blended with a 3M Scotch Brite Pad.
2. The strength of the raised weld shall not be reduced by grinding.
3. After all stainless steel welding, brushing, blending and testing, the welds on the stainless steel components must be cleaned with a one-to-one solution of muriatic acid (HCCL) and water. Swab the acid on the weld seams keeping them wet with acid for five to ten minutes. Thoroughly neutralize and rinse. Repeat swabbing the entire exposed surface of the stainless steel components with a 20% nitric acid solution. This nitric cleaning to be preformed when the pool is almost full of water.
4. An integral sandblasted non-skid strip shall be provided on the top surface of the overflow lip and gutter channel section.

O. GUARANTEE:
1. The equipment manufacturer shall guarantee in writing that if the system is operated in accordance with written instructions given to and accepted by the Owner it will perform in complete accord with the specifications.

P. INSTALLATION EXPERIENCE:
1. All installation is to be performed by a welder with at least five (5) years experience in the field of welding stainless steel recirculation systems. The contractor shall submit the installer's experience in writing to the architect for approval prior to ordering the recirculation system.
2. All work is to be performed in accordance with the manufacturer's technical bulletins. Should the requirements of these bulletins contradict this or any other section of the specifications, the procedures called for in the bulletin shall govern.

Q. GROUT AND CAULKING:
1. All grout and caulking between the 9620-ASR Perimeter and any concrete or grout surfaces required in the installation of the system shall be performed by the general contractor.
2. To provide an expansive grout with controlled setting time for pouring under and behind the pipeless perimeter, the following mix is recommended:
a. Use a 1 to 4 grout mix with 1% Sika Interplast-N.

R. ENGINEERING SERVICES:
1. The contractor shall supply the services of a competent and experienced field engineer for a period of at least three days to test and inspect the completed installation, place it in operation and give operating instructions relative to its care and use.

2.2 PIPE AND FITTINGS

A. Copper Tube: ASTM B88 (ASTM B88M), Type K (A), drawn.
1. Fittings: ASME B16.22, wrought copper.
2. Joints: ASTM B32, solder, Grade Sn95.

B. PVC Pipe: ASTM D1785, Schedule 80.
1. Fittings: ASTM D2467, PVC.
2. Joints: ASTM D2855, solvent weld.

C. Unions for Pipe Sizes 2 inches and Under: PVC for plastic piping; bronze unions for copper pipe, soldered joints.

D. Flanges for Pipe Sizes over 2 inches: PVC for plastic piping; bronze for copper piping.

E. Valves: PVC plastic body and ball, double lever handle, double union with socket ends, EPDM seals, teflon seats.

F. Butterfly Valves: Iron body, bronze disc, resilient replaceable seat for service to 180 degrees F (82 degrees C) wafer style, 10 position lever handle.

2.3 MISCELLANEOUS EQUIPMENT

A. Hydrostatic relief valve:
1. The body of the hydrostatic relief valve shall be high impact schedule 80 PVC pipe, perforated with 3/16” holes at intervals to automatically release hydrostatic pressure under the pool. At the top, there shall be installed a 2” check valve allowing water to enter from under the pool only. The valve shall be of a heavy PVC construction. Two (2) required. Paddock No. 8703.

2.4 SWIMMING POOL PIPING AND POOL FITTINGS

A. GENERAL:
1. The drawings indicate the general arrangement of the pool plumbing. Details of proposed departures due to actual field conditions or other Causes shall be submitted to the Architect for approval. The General Contractor shall carefully examine the drawings and shall be responsible for the proper fitting, materials and equipment as indicated without substantial alteration.
2. No installation shall be made that will provide a cross connection or inter-connection between a distributing supply for drinking purposes and the swimming pool that will permit a backflow of water into the pool water system.
3. Pipe openings shall be closed with caps or plugs during installation. Equipment and pool fittings shall be tightly covered and protected against dirt, water and chemicals or mechanical injury. At the completion of the work the fitting, materials and equipment shall be thoroughly cleaned and adjusted for proper operation.

B. SCOPE OF WORK - POOL PIPING:
   1. In general, the work covers but is not limited to the following and is the responsibility of the General Contractor:
      a. The General Contractor shall supply and install all piping, pipe fittings and valves from the pool fittings to the juncture or the filter equipment: all piping, pipe fittings and valves from the pool main outlet line: chlorinator hoses where indicated: all piping and pipe fittings within the filter room required and as shown on the drawings: all pipe hangers, rods and supports and other material to complete the intended scope of work.
      b. Any item of equipment or materials obviously a part of the filter and pool recirculation system and necessary to its operation but not specifically mentioned in the specifications or shown on the drawings shall be furnished and installed by this General Contractor as a part of his work at no extra cost.
      c. All pool piping to be color coded (fully painted) as per Health Department Requirements.

C. WORKMANSHIP:
   1. All materials to be used in this work shall be installed by workmen thoroughly skilled in their trade and all work shall present a neat and mechanical appearance when complete. The architect shall be the sole judge of whether work installed under this contract has met this requirement and the General Contractor, at no additional expense to the Owner, shall replace or correct any work not judged acceptable by the Architect.

D. PIPING MATERIALS:
   1. Underground piping - the main drain piping for the pool and all other underground (buried) supply and return piping shall be SCH 80 PVC pipe with similar fittings.
   2. Filter connection piping - the piping which connects the filter to the filter pump and to the recirculating piping, backwash piping and other drain piping shall be Schedule 80 PVC plastic pipe as shown on the drawings and with matching fittings.
   3. Chlorine solution lines - shall be of SCH 80 PVC.
   4. All connections between PVC and metal piping must be flanged, plastic flange to metal flange. DO NOT use threaded connection between plastic and metal piping.

E. VALVES:
   1. Valve Extension Stems and Keys - where required, the General Contractor shall furnish and install valve extension stems and keys as manufactured by Ludlow -Rensselaer Value Manufacturing Company or equal.
   2. Wafer Valves - valves as shown on the drawings shall be butterfly wafer valves equal to Bray Series A, Epoxy coated disc, Neehanite iron body, stainless steel stems, buna N seal gear or lever operated as shown.

F. INSTALLATION:
   1. Handling - pipe and accessories shall be handled in such a manner as to insure delivery to the trench in sound, undamaged condition.
   2. Cutting of Pipe - cutting shall be done in a neat and workmanlike manner without damage to the pipe and done with a mechanical cutter.
   3. Placing and Laying - before installation, pipe shall be inspected for defects. The interior of the pipe shall be thoroughly cleaned of foreign matter and shall be kept clean during the laying operation. Pipe shall not be laid in water or when trench or weather conditions are unsuitable for the work. Water shall be kept out of the trench until the pipe is installed. When work is not in progress open ends of pipe and fittings shall be securely closed so that no trench water, earth or other substance will enter the pipes or fittings.

G. JOINTS:
   1. Solvent - Welded Joints - shall be made in accordance with the manufacturer's recommendations. However, the following directions are considered minimum standards. All fittings shall fit easily on the pipe before applying cement. The outer

surface area of the pipe and the inner wall of fitting shall be clean and dry. Thinner is to be applied to the outer surface of the pipe and the inner surface of the fittings. Cement is to be applied to the outer surface of the pipe and inner wall of the fitting only. When the outside surface area of the pipe end is satisfactorily covered with cement, allow ten (10) seconds open time to elapse before inserting pipe into fittings. Turn fitting about the pipe end approximately 1/8 to 1/4 of a turn. Wipe off excess cement at the joint in a neat cover bead. Use only approved cement and thinner for making joints.

2. All joints shall remain completely undisturbed for a minimum of ten (10) minutes from the time of joining the pie and fittings. If necessary to apply pressure to a newly made joint, limit it to (10) percent of the maximum pressure.
3. Carefully handle all pipe and move as little as possible so that the cement seal shall not be broken before it is completely dry and for a time of at least twenty-four (24) hour period.
4. Full working pressure shall not be applied until the joints have set for a twenty-four (24) hour period.
5. Installation made during hot weather shall provide for expansion by snaking in ditch or running a line on open discharge until it contracts to operation length.
6. Protect plastic pipe from exposure to aromatic hydrocarbons, halogenated hydrocarbons and most of esters and ketones that attack the material. Protect all pipe from mechanical damage and long exposure to sunlight during storage.
7. Make threaded pipe joints with Permatex #2 compound or approved equal applied sparingly to the male threads only.
8. All connections between PVC and metal must be flanged, plastic flange to metal flange. DO NOT use threaded connections between plastic and metal pipe except where specifically noted otherwise and, in which case, the PVC pipe shall be Class 200 weight regardless of size.

H. FLUSHING:
1. All pipe lines leading to the pool shall be thoroughly flushed clean before the pool is filled and placed in use.

I. BOTTOM DRAIN FITTINGS:
1. Bottom drain boxes shall be constructed for the pool as indicated on the drawings; frames and grates shall be sized as indicated.
2. Drain boxes, grating and piping shall be sized to accommodate 100% of the total recirculation rate.
3. Velocity through the grating shall not exceed 1.5 FPS.
4. Gratings shall be 304L St. and openings shall be no larger than ½ inch. They shall not be removable without the use of tools.
5. Piping shall be designed for flow rates not exceeding 3 FPS under gravity or 6 FPS under direct suction and 10 FPS under pressure.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install equipment in accordance with manufacturer's instructions.

B. Install piping to conserve building space, not interfere with use of space and other work. Route piping in orderly manner, and maintain gradient. Group whenever practical at common elevations.

C. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Provide access to valves and fittings.

D. Pipe relief valve outlet and backwash to nearest floor drain.

E. Install unions downstream of valves and at equipment or apparatus connections.

3.2 INSPECTION

A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the work to approval of Engineer. Do not proceed until unsatisfactory conditions have been corrected.

3.3 COORDINATION

A. Use all means necessary to coordinate with other trades and to ensure that proper and adequate provision is make in the work of other sections to accommodate installation of the work of this Sections.

3.4 DISCREPANCIES:

A. In the event of discrepancy, immediately notify the Engineer. Do not proceed with installation in areas of discrepancy until all such discrepancies have been totally resolved.

3.5 INSTALLATION:

A. Final installation and location of all equipment and accessories shall be in accordance with manufacturer's instructions and be coordinated with all other trades that interface with the work required under this Section to ensure proper and adequate provisions in the work.

3.6 SYSTEM STARTUP

A. Provide start-up supervision upon project's completion.

B. A qualified representative of the General Contractor shall place the recirculating system including chemical feeders and controls in operation and shall fully instruct representatives designated by the Owner in the proper care and usage of all items in this section. A minimum of 2 full 8 hours days required.

3.7 OPERATORS MANUALS:

A. Three instruction booklets shall be delivered to the Owner containing operation and maintenance procedures required for the pool. The booklet shall contain manufacturers manuals on all major items and shall be supplemented with full operational sequences of all items in the system working together.

3.8 GUARANTEES:

A. This Contractor shall guarantee in writing all work under this section for a period of one (1) year form the date of Final Completion, which shall guarantee against all defects in material, workmanship or installation developed within this period. This Contractor agrees promptly to make all necessary repairs and replacements to the satisfaction of the Owner and without additional cost the Owner, upon written notice thereof ten (10) days of evidence of said defect. Said written guarantee shall further stipulate that the Contractor shall remedy and correct any damage to his work caused by making such necessary repairs and replacements and shall be in accordance with the requirements of Article 13.2 of the AIA.
   1. The above guarantee shall be submitted to the Owner before final payment.

3.9 MAINTENANCE

A. See Section 01 70 00 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.

B. Provide service and maintenance of water treatment systems for one year year from Date of Substantial Completion.

END OF SECTION

SECTION 27 05 33.13
CONDUIT FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Aluminum electrical metallic tubing (EMT).

B. Rigid polyvinyl chloride (PVC) conduit.

1.2 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping.

B. Section 27 10 05 - Communications Copper Cabling.

1.3 REFERENCE STANDARDS

A. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S); 2020.

B. ASTM F512 - Standard Specification for Smooth-Wall Poly(Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation; 2019.

C. BICSI ITSIMM - Information Technology Systems Installation Methods Manual (ITSIMM), 8th Edition; 2022.

D. BICSI N1 - Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure, 1st Edition; 2019.

E. BICSI TDMM - Telecommunications Distribution Methods Manual, 14th Edition; 2020.

F. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2015.

G. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC); 2017.

H. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.

I. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit; 2020.

J. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; 2021.

K. NEMA TC 6&8 - Polyvinyl Chloride (PVC) Plastic Utilities Duct for Underground Installations; 2020.

L. NEMA TC 7 - Solid-Wall Coilable and Straight Electrical Polyethylene Conduit; 2021.

M. NEMA TC 9 - Fittings for Polyvinyl Chloride (PVC) Plastic Utilities Duct for Underground Installation; 2020.

N. NEMA TC 13 - Electrical Nonmetallic Tubing (ENT); 2014 (Reaffirmed 2019).

O. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

P. TIA-568.0 - Generic Telecommunications Cabling for Customer Premises; 2020e.

Q. TIA-569 - Telecommunications Pathways and Spaces; 2019e.

R. UL 514B - Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.

S. UL 651 - Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.

T. UL 651A - Schedule 40 and 80 High Density Polyethylene (HDPE) Conduit; Current Edition, Including All Revisions.

U. UL 797A - Electrical Metallic Tubing - Aluminum and Stainless Steel; Current Edition, Including All Revisions.

1.4 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate minimum sizes of conduits with actual type and quantity of cables to be installed.
2. Coordinate arrangement of conduits with structural members, ductwork, piping, equipment and other potential conflicts.
3. Verify exact conduit termination locations required for boxes, enclosures, and equipment.
4. Coordinate work to provide roof penetrations that preserve integrity of roofing system and do not void roof warranty.
5. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:
1. Do not begin installation of communications cables until installation of conduit between termination points is complete.

1.5 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittals procedures.

B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.

C. Shop Drawings:
1. Indicate proposed arrangement for conduits to be installed within structural concrete slabs, where permitted.

D. Project Record Documents: Record actual routing for conduits installed underground, conduits embedded within concrete slabs, and conduits 2-inch (53 mm) trade size and larger.

1.6 QUALITY ASSURANCE

A. Documents at Project Site: Maintain at project site one copy of manufacturer's instructions and shop drawings.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 CONDUIT APPLICATIONS

A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70, TIA-569, BICSI ITSIMM, BICSI TDMM, manufacturers' instructions, and product listing.

B. Unless otherwise indicated and where not otherwise restricted, use conduit types indicated for specified applications. Where more than one listed application applies, comply with most restrictive requirements. Where conduit type for particular application is not specified, use galvanized steel rigid metal conduit.

C. Underground:
   1. Under Slab on Grade: Use rigid PVC conduit.

D. Embedded Within Concrete:
   1. Within Slab on Grade: Use rigid PVC conduit. Embed within structural slabs only where approved by Structural Engineer.
   2. Within Slab Above Ground: Use rigid PVC conduit. Embed within structural slabs only where approved by Structural Engineer.
   3. Within Concrete Walls Above Ground: Use rigid PVC conduit.

E. Concealed Within Masonry Walls: Use stainless steel electrical metallic tubing (EMT).

F. Concealed Within Hollow Stud Walls: Use stainless steel electrical metallic tubing (EMT).

G. Concealed Above Accessible Ceilings: Use stainless steel electrical metallic tubing (EMT).

H. Interior, Damp or Wet Locations: Use stainless steel electrical metallic tubing (EMT).

I. Exposed, Interior, Not Subject to Physical Damage: Use stainless steel electrical metallic tubing (EMT).

J. Corrosive Locations Above Ground: Use stainless steel electrical metallic tubing (EMT).
   1. Corrosive locations include, but are not limited to:
      a. Swimming pools and associated equipment areas.
      b. Chemical storage areas.

2.2 CONDUIT - GENERAL REQUIREMENTS

A. Comply with NFPA 70 and TIA-569.

B. Provide conduit, fittings, supports, and accessories required for complete communications pathway.

C. Provide products listed, classified, and labeled as suitable for purpose intended.

D. Where conduit size is not indicated, size to comply with NFPA 70, TIA-569, and BICSI TDMM, but not less than applicable minimum size requirements specified. Where specified standards differ, comply with most stringent.

2.3 ALUMINUM ELECTRICAL METALLIC TUBING (EMT)

A. Description: NFPA 70, Type EMT aluminum electrical metallic tubing listed and labeled as complying with UL 797A.

B. Fittings:
   1. Manufacturers:

a. Arlington Industries: www.aifittings.com/#sle.
b. Bridgeport Fittings, LLC: www.bptfittings.com/#sle.
c. Substitutions: See Section 01 60 00 - Product Requirements.
2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B; listed for use with aluminum EMT.
3. Material: Use aluminum.
4. Connectors and Couplings: Use compression/gland or set-screw type.
a. Do not use indenter type connectors and couplings.
b. Do not use set-screw type connectors and couplings.
5. Damp or Wet Locations, Where Permitted: Use fittings listed for use in wet locations.
6. Embedded Within Concrete, Where Permitted: Use fittings listed as concrete-tight. Fittings that require taping to be concrete-tight are acceptable.
7. Conduit Bodies: Use only conduit bodies specifically designed for communications cabling. Standard conduit bodies designed for electrical raceways are not permitted.
a. Manufacturers:
1) Madison Electric Products, a division of Southwire Company: www.meproducts.net/#sle.
2) Substitutions: See Section 01 60 00 - Product Requirements.
b. Comply with TIA-568.0 minimum bend radius requirements for fiber optic cables.

2.4 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

A. Manufacturers:
1. ABB; Carlon: www.electrification.us.abb.com/#sle.
2. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.us/#sle.
3. Cantex Inc: www.cantexinc.com/#sle.
4. Heritage Plastics, a division of Atkore International: www.heritageplastics.com/#sle.
5. JM Eagle: www.jmeagle.com/#sle.
6. Substitutions: See Section 01 60 00 - Product Requirements.

B. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage.

C. Fittings:
1. Manufacturer: Same as manufacturer of conduit to be connected.
2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.
3. Conduit Bodies: Use only conduit bodies specifically designed for communications cabling. Standard conduit bodies designed for electrical raceways are not permitted.
a. Manufacturers:
1) Madison Electric Products, a division of Southwire Company: www.meproducts.net/#sle.
2) Substitutions: See Section 01 60 00 - Product Requirements.
b. Comply with TIA-568.0 minimum bend radius requirements for fiber optic cables.

2.5 UNDERGROUND MARKING

A. Underground markings shall comply with AWPA Uniform Color Code.

B. Tracer Wire: Continuous 12 AWG, Solid, Copper clad high strength steel, with minimum 30 mil HDPE insulation, orange in color, suitable for direct burial.

C. Warning Tape:
1. Detectable Warning Tape: Magnetic detectable warning tape, 6 inches wide, 5 mil thick tape with aluminum backing, clear plastic covering, imprinted with "Buried Communications Line" in large black letters on orange background.

2.6 ACCESSORIES

A. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.

B. Pull Strings: Use nylon or polyester tape with average breaking strength of not less than 1,250 lbf.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that mounting surfaces are ready to receive conduits.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install conduit in accordance with NECA 1, BICSI ITSIMM, and BICSI N1.

C. Rigid Polyvinyl Chloride (PVC) Conduit: Install in accordance with NECA 111.

D. Conduit Routing:
1. Unless dimensioned, conduit routing indicated is diagrammatic.
2. When conduit destination is indicated without specific routing, determine exact routing required.
3. Conceal conduits unless specifically indicated to be exposed.
4. Conduits in the following areas may be exposed, unless otherwise indicated:
   a. Electrical rooms.
   b. Communications rooms.
   c. Mechanical equipment rooms.
   d. Within joists in areas with no ceiling.
5. Unless otherwise approved, do not route exposed conduits:
   a. Across floors.
   b. Across roofs.
   c. Across top of parapet walls.
   d. Across building exterior surfaces.
6. Arrange conduit to maintain adequate headroom, clearances, and access.
7. Arrange conduit to provide no more than equivalent of two 90-degree bend(s) between pull points.
   a. The equivalent of three 90-degree bends between pull points is permitted only under conditions described in BICSI TDMM.
8. Arrange conduit to provide no more than 100 feet between pull points.
9. Arrange conduit to provide minimum bend radii in accordance with BICSI TDMM.
10. Route conduits above water and drain piping where possible.
11. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
12. Maintain recommended separation from sources of EMI greater than 5 kVA in accordance with BICSI ITSIMM and BICSI TDMM.

E. Conduit Support:

1. Secure and support conduits in accordance with NFPA 70 using suitable supports and methods approved by authorities having jurisdiction.
2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.

F. Connections and Terminations:
1. Use suitable adapters where required to transition from one type of conduit to another.
2. Provide insulating bushings, insulated throats, or listed metal fittings with smooth, rounded edges at conduit terminations to protect cables.
3. Secure joints and connections to provide mechanical strength and electrical continuity.

G. Penetrations:
1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
2. Make penetrations perpendicular to surfaces unless otherwise indicated.
3. Provide sleeves and/or slots for penetrations as indicated or as required to facilitate installation.
4. Conceal bends for conduit risers emerging above ground.
5. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
6. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty.
7. Install firestopping to preserve fire resistance rating of partitions and other elements; see Section 07 84 00.

H. Underground Installation:
1. Minimum Cover, Unless Otherwise Indicated or Required:
a. Under Slab on Grade: 12 inches to bottom of slab.

I. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed cables or connected equipment. This includes, but is not limited to:
1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
2. Where calculated in accordance with NFPA 70 for rigid polyvinyl chloride (PVC) conduit installed above ground to compensate for thermal expansion and contraction.
3. Where conduits are subject to earth movement by settlement or frost.

J. Provide grounding and bonding.

K. Identify conduits.

3.3 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Correct deficiencies and replace damaged or defective conduits.

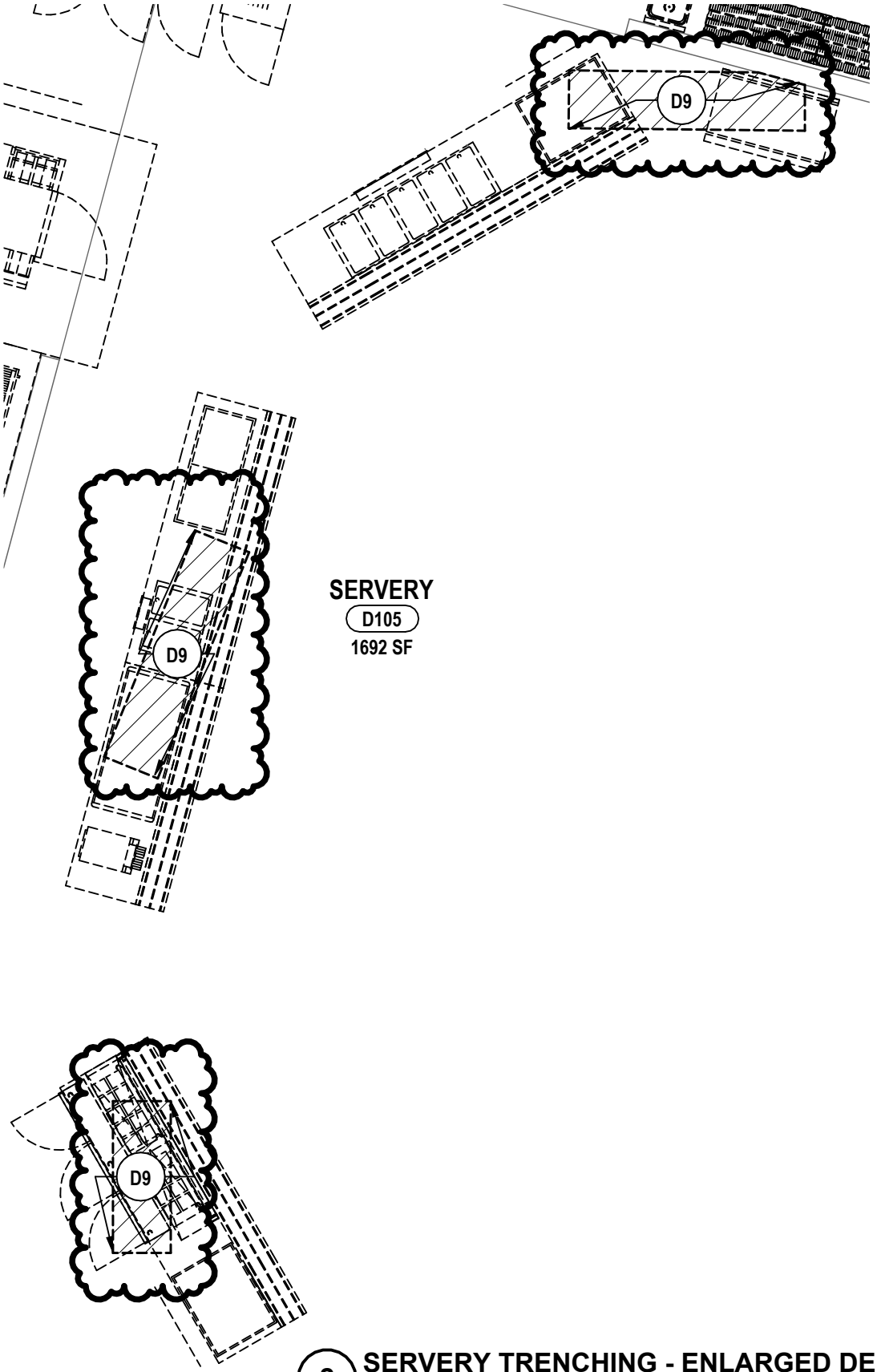
3.4 CLEANING

A. Clean interior of conduits to remove moisture and foreign matter.

3.5 PROTECTION

A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of cables.

END OF SECTION



2 SERVERY TRENCHING - ENLARGED DEMOLITION PLAN

3/16" = 1'-0"

SERVERY TRENCHING

2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT

CORNING-PAINTED POST ASD

35 VICTORY HIGHWAY, PAINTED POST, NY 14870

HUNT ENGINEERS | ARCHITECTS | SURVEYORS

AD2-A1

DATE: 11/07/25

PROJECT NO: 2649-153

DOOR SCHEDULE

#	TYPE	DOOR						GLAZING	ASSEMBLY LABEL	HDWR SET	FRAME			DETAIL			NOTES
		LOCATION	WIDTH	HEIGHT	THICK.	MATL.	FINISH	MATL.			TYPE	MATL.	FINISH	HEAD	JAMB	SILL	
C106-2	D	LIBRARY	6' - 2"	7' - 0"	1 3/4"	WD	STN-1	FRG-2	20	15.0	1	HM	PNT	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	NEW DOOR & FRAME ASSEMBLY IN EXISTING OPENING. V.I.F. OPENING SIZE
C110-1	C	CORRIDOR	6' - 0"	7' - 0"	1 3/4"	WD	STN-1	FRG-2	20	11.0	2	HM	PNT	1/MS-A6.1	2/MS-A6.1	6/MS-A6.1	NEW DOOR IN EXG. MASONRY WALL OPENING
C111A-1	A	BOYS ADA SHOWER	3' - 0"	7' - 0"	1 3/4"	FRP	FRP	--	--	7.0	1	FRP	FRP	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	NEW DOOR IN NEW STUD WALL ASSEMBLY
C111B-1	A	BOYS SHOWER	3' - 0"	7' - 0"	1 3/4"	FRP	FRP	--	--	5.0	1	FRP	FRP	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	NEW DOOR IN NEW STUD WALL ASSEMBLY
C112-1	C	CORRIDOR	3' - 0"	7' - 0"	1 3/4"	WD	STN-1	FRG-2	20	10.0	2	HM	PNT	1/MS-A6.1	2/MS-A6.1	6/MS-A6.1	NEW DOOR IN EXISTING CMU OPENING
C113A-1	A	GIRLS ADA SHOWER	3' - 0"	7' - 0"	1 3/4"	WD	STN	--	--	7.0	1	HM	PNT	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	NEW DOOR IN NEW STUD WALL ASSEMBLY
C113B-1	A	GIRLS SHOWER	3' - 0"	7' - 0"	1 3/4"	FRP	FRP	--	--	5.0	1	FRP	FRP	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	NEW DOOR IN NEW STUD WALL ASSEMBLY
C114-1	C	TV STUDIO	3' - 0"	7' - 0"	1 3/4"	WD	STN-1	FRG-2	20	9.0	2	HM	PNT	1/MS-A6.1	2/MS-A6.1	6/MS-A6.1	NEW DOOR IN EXISTING CMU OPENING
C114-2	B	CORRIDOR	7' - 4"	7' - 0"	1 3/4"	WD	STN-1	FRG-2	45	13.0	1	HM	PNT	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	NEW DOOR IN EXG STUD ASSEMBLY
C115-1	A	POOL	3' - 0"	7' - 0"	1 3/4"	FRP	FRP	--	--	3.0	2	AL	ANOD	1/MS-A6.1	2/MS-A6.1	5/MS-A6.1	NEW DOOR IN NEW STOREFRONT SYSTEM IN EXG. OPENING
C115-2	A	POOL	3' - 0"	7' - 0"	1 3/4"	FRP	FRP	--	--	3.0	2	AL	ANOD	1/MS-A6.1	2/MS-A6.1	5/MS-A6.1	NEW DOOR IN NEW STOREFRONT SYSTEM IN EXG. OPENING
C115-3	A	POOL	3' - 0"	7' - 0"	1 3/4"	FRP	FRP	--	--	3.0	2	AL	ANOD	1/MS-A6.1	2/MS-A6.1	5/MS-A6.1	NEW DOOR IN NEW STOREFRONT SYSTEM IN EXG. OPENING
C115-4	A	POOL	3' - 0"	7' - 0"	1 3/4"	FRP	FRP	--	--	3.0	2	AL	ANOD	1/MS-A6.1	2/MS-A6.1	5/MS-A6.1	NEW DOOR IN STOREFRONT SYSTEM IN EXG. OPENING
C115-5	A	POOL	6' - 0"	7' - 0"	1 3/4"	FRP	FRP	--	20	15.0A	2	FRP	FRP	1/MS-A6.1	2/MS-A6.1	6/MS-A6.1	NEW DOOR IN EXG. CMU WALL OPENING
C115A-1	D	PASSAGE	3' - 0"	7' - 0"	1 3/4"	FRP	FRP	G-1	--	8.0	7	HM	PNT	3/MS-A6.1	4/MS-A6.1	5/MS-A6.1	NEW DOOR IN STOREFRONT SYSTEM IN NEW STUD WALL ASSEMBLY. PROVIDE WINDOW SHADE AND PROVIDE SOLID SURFACE AT SIDELITE SILL.
C123-1	A	CORRIDOR	6' - 0"	7' - 0"	1 3/4"	--	--	--	45	8.0							EXISTING DOOR & FRAME WITH NEW ADA COMPLIANT HARDWARE
D102A-1	E	GYMNASIUM STORAGE	5' - 0"	6' - 6"	1 1/2"	STL	--	--	--	2.0				9/MS-A6.1	8/MS-A6.1		PROVIDE NEW OVERHEAD DOOR IN EXG. OPENING.
D102A-2	E	GYMNASIUM STORAGE	5' - 0"	6' - 6"	1 1/2"	STL	--	--	--	2.0				9/MS-A6.1	8/MS-A6.1		PROVIDE NEW OVERHEAD DOOR IN EXG. OPENING.
D111-1	A	GYMNASIUM OFFICE	6' - 0"	7' - 0"	1 3/4"	WD	STN-1	--	--	18.0	2	HM	PNT	1/MS-A6.1	2/MS-A6.1	6/MS-A6.1	NEW DOOR IN EXG. CMU WALL OPENING
D111-4	A	GYMNASIUM STORAGE	6' - 0"	7' - 0"	1 3/4"	WD	STN-1	--	--	19.0	2	HM	PNT	1/MS-A6.1	2/MS-A6.1	6/MS-A6.1	NEW DOOR IN EXG. CMU WALL OPENING
D111-5	C	AUXILIARY GYMNASIUM	6' - 0"	7' - 0"	1 3/4"	WD	STN-1	FRG-2	20	15.0	6	HM	PNT	1/MS-A6.1	2/MS-A6.1	6/MS-A6.1	NEW DOOR IN EXG. CMU WALL OPENING
D111-6	C	AUXILIARY GYMNASIUM	6' - 0"	7' - 0"	1 3/4"	WD	STN-1	FRG-2	20	15.0	5	HM	PNT	1/MS-A6.1	2/MS-A6.1	6/MS-A6.1	NEW DOOR IN EXG. CMU WALL OPENING
D126-1	A	STOR.	3' - 0"	7' - 0"	1 3/4"	WD	STN-1	--	20	17.0A	1	HM	PNT	1/MS-A6.1	2/MS-A6.1	5/MS-A6.1	NEW DOOR IN EXG OPENING, V.I.F.WALL CONSTRUCTION
D126A-1	A	TOILET RM	3' - 0"	7' - 0"	1 3/4"	WD	STN-1		20	21.0	1	HM	PNT	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	NEW DOOR IN NEW STUD WALL ASSEMBLY
D126B-1	A	TOILET RM	3' - 0"	7' - 0"	1 3/4"	WD	STN-1	--	20	21.0	1	HM	PNT	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	OWNER FURNISHED. GC INSTALLED DOOR AND HARDWARE IN NEW STUD WALL ASSEMBLY
D126C-1	A	CUST.	2' - 8"	7' - 0"	1 3/4"	WD	STN-1	--	20	17.0	1	HM	PNT	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	NEW DOOR IN NEW STUD WALL ASSEMBLY
D126D-1	A	TOILET RM	3' - 0"	7' - 0"	1 3/4"	WD	STN-1	--	20	21.0	1	HM	PNT	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	NEW DOOR IN NEW STUD WALL ASSEMBLY
D126E-1	A	TOILET RM	3' - 0"	7' - 0"	1 3/4"	WD	STN-1	--	20	21.0	1	HM	PNT	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	NEW DOOR IN NEW STUD WALL ASSEMBLY
D126F-1	A	TOILET RM	3' - 0"	7' - 0"	1 3/4"	WD	STN-1	--	20	21.0A	1	HM	PNT	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	OWNER FURNISHED. GC INSTALLED DOOR AND HARDWARE IN NEW STUD WALL ASSEMBLY
D126G-1	A	TOILET RM	3' - 0"	7' - 0"	1 3/4"	WD	STN-1		20	21.0	1	HM	PNT	3/MS-A6.1	4/MS-A6.1	6/MS-A6.1	NEW DOOR IN NEW STUD WALL ASSEMBLY
DX103-1	C	CORRIDOR	7' - 4"	7' - 2"	1 3/4"	WD	STN-1	FRG-2	45	13.0	3	HM	PNT	1/MS-A6.1	2/MS-A6.1	6/MS-A6.1	NEW DOOR WITH TRANSOM IN EXISTING WALL OPENING, V.I.F. CONSTRUCTION; SEE 7/MS-A6.1. ADJUST HOLD OPENS AS REQUIRED.
DX103-2	B	CORRIDOR	6' - 0"	7' - 0"	1 3/4"	AL	ANOD.	IG	--	4.0	4	AL	ANOD	1/MS-A6.1	2/MS-A6.1	6/MS-A6.1	NEW DOOR IN EXG OPENING, V.I.F.WALL CONSTRUCTION. PROVIDE ACCESS CONTROL
DX103-3	A	AUXILIARY GYMNASIUM	6' - 0"	7' - 0"	1 3/4"	WD	STN-1	--	20	16.0	2	HM	PNT	1/MS-A6.1	2/MS-A6.1		NEW DOOR IN EXG. CMU WALL OPENING WITH METAL THRESHOLD
DX103-4	B	CORRIDOR	6' - 0"	7' - 0"	1 3/4"	AL	ANOD.	IG	--	4.0	4	AL	ANOD				NEW DOOR IN EXG OPENING, V.I.F.WALL CONSTRUCTION. PROVIDE ACCESS CONTROL, MULLION TO BE REMOVABLE WITH ELECTRIC STRIKE. PROVIDE ACCESS CONTROL.
E113-1	C	INSTRUMENTAL MUSIC ROOM	5' - 8"	7' - 0"	1 3/4"	WD	STN-1	FRG-2	20	12.0	1	HM	PNT	1/MS-A6.1	2/MS-A6.1	6/MS-A6.1	NEW DOOR IN EXG. OPENING, V.I.F. WALL CONSTRCTION
S105-1	C	STAIR	3' - 0"	7' - 0"	1 3/4"	WD	STN-1	FRG-2	45	14.0	8	HM	PNT	1/MS-A6.1	2/MS-A6.1	6/MS-A6.1	NEW DOOR IN EXG. CMU WALL OPENING

DRAWN BY: MBH
CHECKED BY: SZ
DATE: 11/12/25

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ALBANY, NY 607 - 798 - 8081 WWW.HUNT-EAS.COM
NY CERTIFICATE NO. 0018220 PA CERTIFICATE NO. TSC2203131464-1

REVISED DOOR HARDWARE

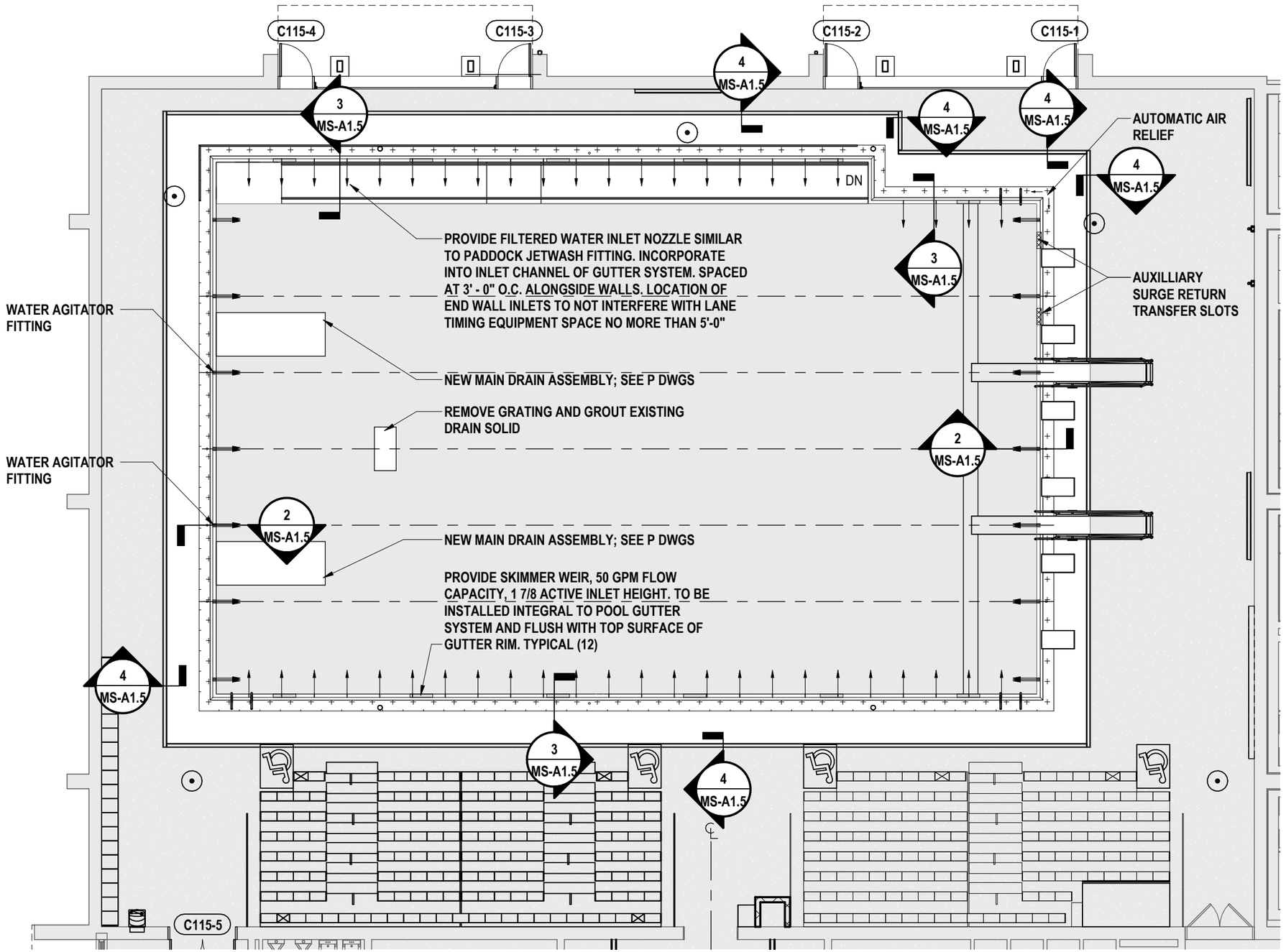
2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD

35 VICTORY HIGHWAY, PAINTED POST, NY 14870

57-10-00-01-0-024-044 - MIDDLE SCHOOL

AD2-A2

PROJECT NO: 2649-153



5 FIRST FLOOR - AREA F - POOL PLAN

1" = 10'-0"

DRAWN BY:	MBH
CHECKED BY:	SZ
DATE:	11/12/25

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ENLARGED POOL PLAN

2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT

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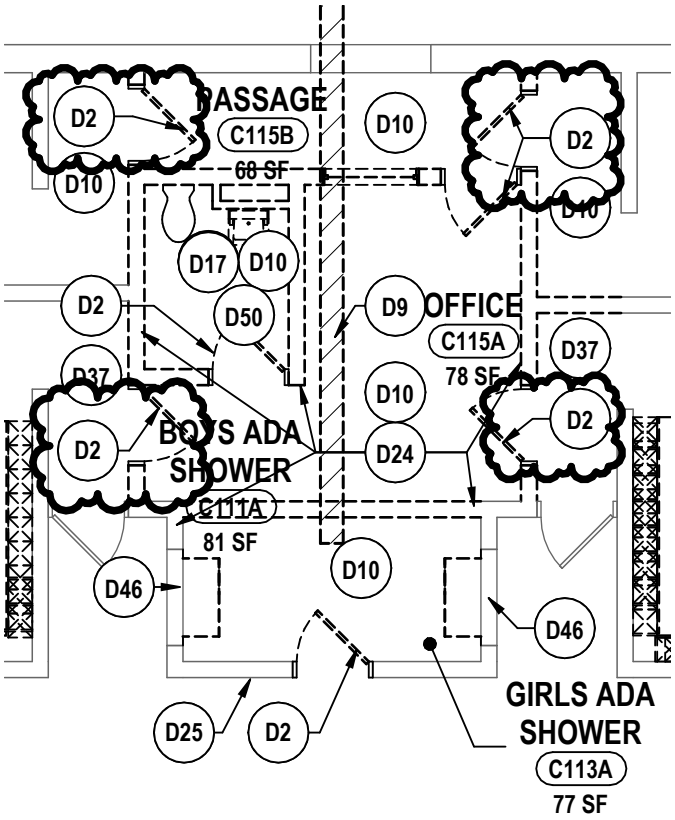
35 VICTORY HIGHWAY, PAINTED POST, NY 14870

57-10-00-01-0-024-044 - MIDDLE SCHOOL

AD2-A3

PROJECT NO: 2649-153



2 FIRST FLOOR DEMO PLAN - AREA C - ENLARGED OFFICE/SHOWER RMS PLAN

1/8" = 1'-0"

DOOR DEMOLITION NOTES

2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT

CORNING-PAINTED POST ASD

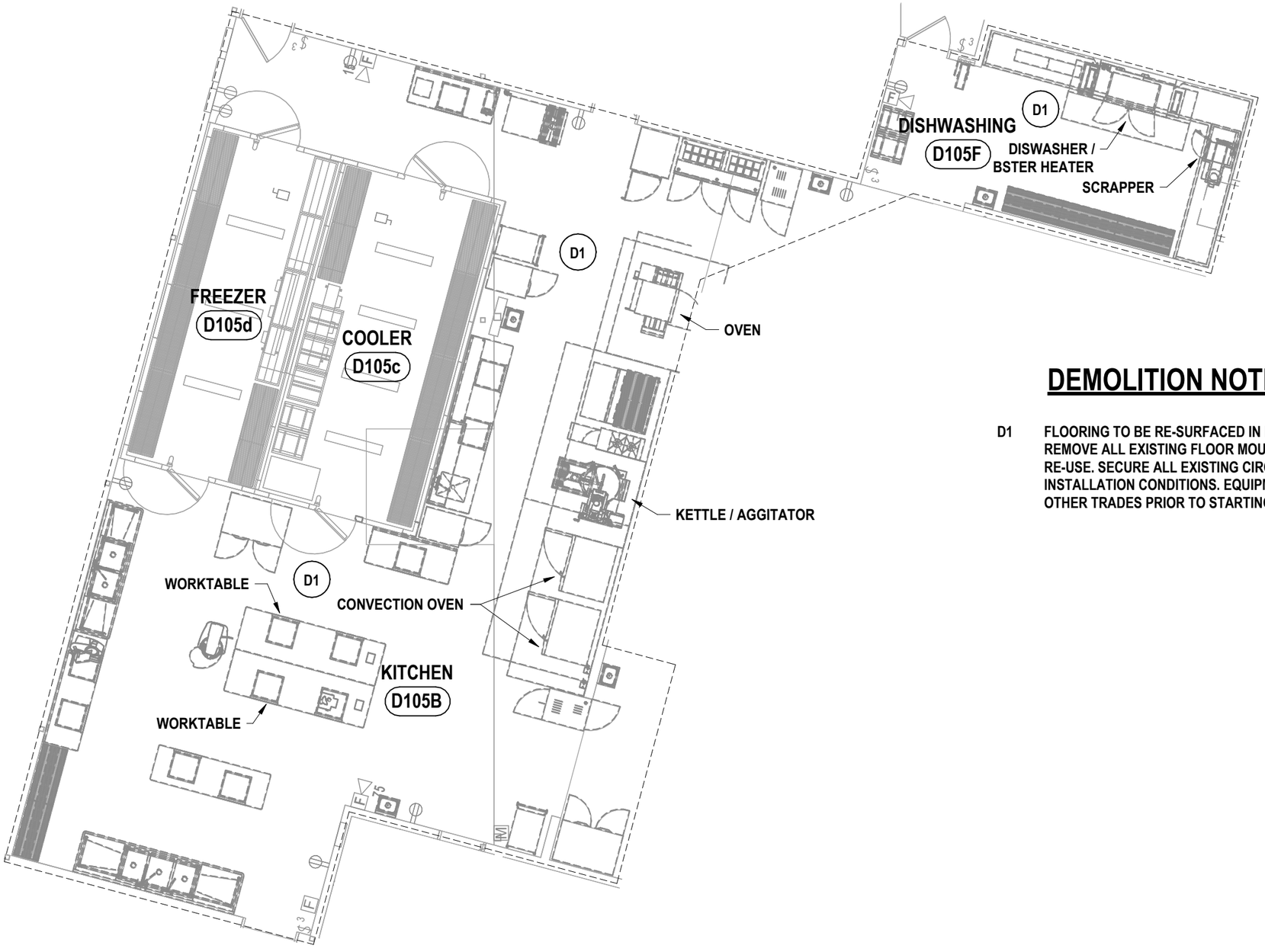
35 VICTORY HIGHWAY, PAINTED POST, NY 14870

HUNT ENGINEERS | ARCHITECTS | SURVEYORS

AD2-A4

DATE: 11/13/25

PROJECT NO: 2649-153



1 **KITCHEN/DISHWASHING ELECTRICAL DEMOLITION PLAN**
1/8" = 1'-0"

DEMOLITION NOTES - ELECTRICAL

D1 FLOORING TO BE RE-SURFACED IN KITCHEN D105B AND DISHWASHING D105F. DISCONNECT AND REMOVE ALL EXISTING FLOOR MOUNTED POWERED KITCHEN EQUIPMENT. SECURE ALL EQUIPMENT FOR RE-USE. SECURE ALL EXISTING CIRCUITRY FOR RE-USE. NOTE ALL EXISTING LOCATIONS / OTHER INSTALLATION CONDITIONS. EQUIPMENT CALLED OUT ON PLAN ARE HARD-WIRED. COORDINATE WITH OTHER TRADES PRIOR TO STARTING WORK.

DRAWN BY: MDB
CHECKED BY: TAWC
DATE: 11/12/2025

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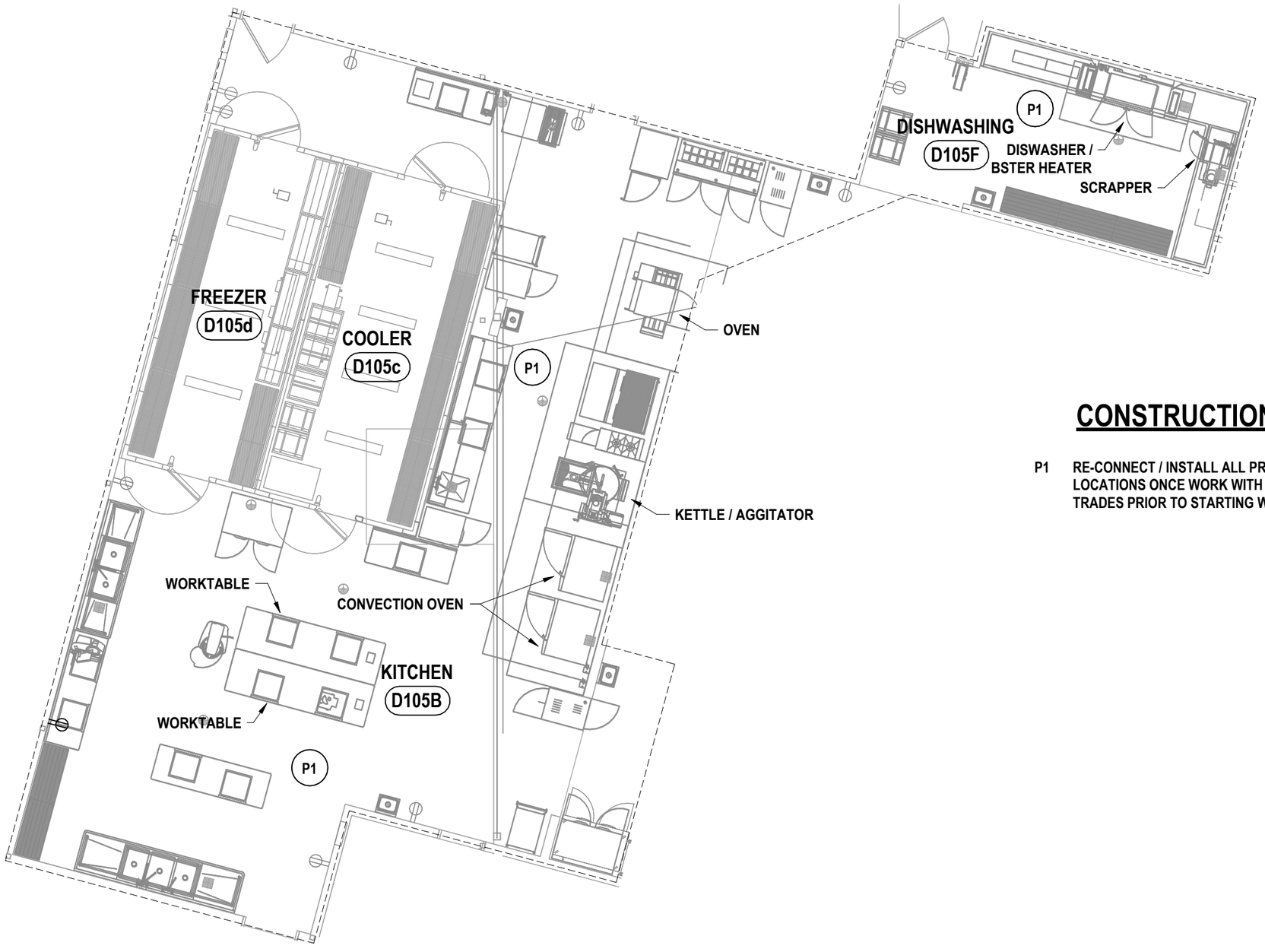
KITCHEN/DISHWASHING DEMOLITION
2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD
35 VICTORY HIGHWAY, PAINTED POST, NY 14870

SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

AD2-E1

PROJECT NO: 2649-153



1 **KITCHEN/DISHWASHING ELECTRICAL DEMOLITION PLAN**
1/8" = 1'-0"

CONSTRUCTION NOTES - POWER

P1 RE-CONNECT / INSTALL ALL PREVIOUSLY REMOVED KITCHEN EQUIPMENT IN THEIR EXISTING LOCATIONS ONCE WORK WITH OTHER TRADES IS COMPLETE. COORDINATE WITH OTHER TRADES PRIOR TO STARTING WORK.

DRAWN BY:	MDB
CHECKED BY:	TAWC
DATE:	11/12/2025

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NY CERTIFICATE NO. 0018220 PA CERTIFICATE NO. TSC2203131464-1

KITCHEN/DISHWASHING NEW WORK
2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD
35 VICTORY HIGHWAY, PAINTED POST, NY 14870

SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

AD2-E2

PROJECT NO: 2649-153

MECHANICAL EQUIPMENT CONNECTION AND CONTROL SCHEDULE

EQUIPMENT						SUPPLY				CONTROL DEVICES MOUNTED IN ROOMS AS SCHEDULED AND AS SHOWN ON PLANS (AU = AT UNIT)																	
IDENTIFICATION / TAG	DESCRIPTION	LOCATION (ROOM #)	HORSEPOWER / KILOWATTS / FLA / MCA	PHASE	VOLTAGE	PANEL OR CONTROL CENTER	CIRCUIT BREAKER	WIRE SIZE	REFERENCE NOTES	DISCONNECT SWITCH (FURNISHED & INSTALLED BY E.C.)	DISCONNECT SWITCH (FURNISHED BY H.C. & INSTALLED BY E.C.)	PRE-WIRED FACTORY MOUNTED DISCONNECT SWITCH (BY MNFTR.)	MANUAL MOTOR STARTER (FURNISHED & INSTALLED BY E.C.)	MAGNETIC STARTER (FURNISHED & INSTALLED BY E.C.)	COMBINATION STARTER (FURNISHED & INSTALLED BY E.C.)	VARIABLE SPEED DRIVE (FURNISHED & INSTALLED BY E.C.)	VFD PACKAGE (FURNISHED & INSTALLED BY H.C. CONNECTED BY E.C.)	VFD WITH CHOKE (FURNISHED BY H.C.& INSTALLED BY E.C.)	PACKAGED CONTROL UNIT	SINGLE POINT CONNECTION	FAN SHUTDOWN UPON FACP ACTIVATION (X>1000CFM)	DUCT SMOKE DETECTOR IN RETURN DUCT (X>2000CFM)	BOILER SHUTDOWN SAFETY SWITCH	LINE VOLTAGE THERMOSTAT (FURNISHED BY H.C. & INSTALLED BY E.C.)	FACTORY MOUNTED STARTER & DISCONNECT (BY MFR.)	F/A CONNECTION FOR SPARK DETECTOR	PROVIDE 20AMP, 120V GFCI RECEPTACLE IN WEATHERPROOF ENCLOSURE AT UNIT
DC-1	OUSIDE DUST COLLECTOR	TECH. E111	10 HP	3	208V	PD4B	80A/3P	(3)-#8 , (1)-#8G IN 1"C			X															
CUH-1	CABINET UNIT HEATER	CR. CX104	2.75 MCA	1	115V	PC7B/52	20A/1P	(2)-#12, (1)-#12G IN 3/4"C	A			X														
CUH-2	CABINET UNIT HEATER	CR. CX104	2.75 MCA	1	115V	PC7B/54	20A/1P	(2)-#12, (1)-#12G IN 3/4"C	A			X														
EF-1	EXHAUST FAN	OFF. B121	0.1 HP	1	115V	PC7B/77	20A/1P	(2)-#12, (1)-#12G IN 3/4"C	A			X														
ACCU-1	AIR COOLED CONDENSING UNIT	ROOF	16 MCA	1	208V	PC9A/B	25A/2P	(2)-#10, (1)-#10G IN 3/4"C	B		X									X						
EV-1	EVAPORATOR	OFF. B121	0.05 KW	1	208V	PC7B/82	20A/2P	(2)-#12, (1)-#12G IN 3/4"C				X														
P-1,2A+B	PUMP	MECH. A201F	10 HP	3	208V	MDP-3	80A/3P	(3)-#8, (1)-#8G IN 1"C			X								X							
UV-1	UNIT VENTILATOR	A207	21 MCA	1	120V	PA13	25A/1P	(2)-#12, (1)-#12G IN 3/4"C				X														
UV-2	UNIT VENTILATOR	C112	12 MCA	1	120V	PC7B/84	20A/1P	(2)-#12, (1)-#12G IN 3/4"C				X														
RTU-1	ROOF TOP UNIT	ROOF	127 MCA	3	208V	MDP-3	225A/3P	(3)#250, (1)-#4G IN 3"C	D		X									2	X	2				
EV-2	EVAPORATOR	A213	.72 MCA	1	208V	PA4	15A/2P	(2)-#12, (1)-#12G IN 3/4"C				X														
EV-3	EVAPORATOR	A213A	.72 MCA	1	208V	PA3	15A/2P	(2)-#12, (1)-#12G IN 3/4"C				X														
ACCU-2	AIR COOLED CONDENSING UNIT	ROOF	40 MCA	3	208V	PA5	60A/3P	(3)-#4, (1)-#10G IN 1 1/4"C			X									X						

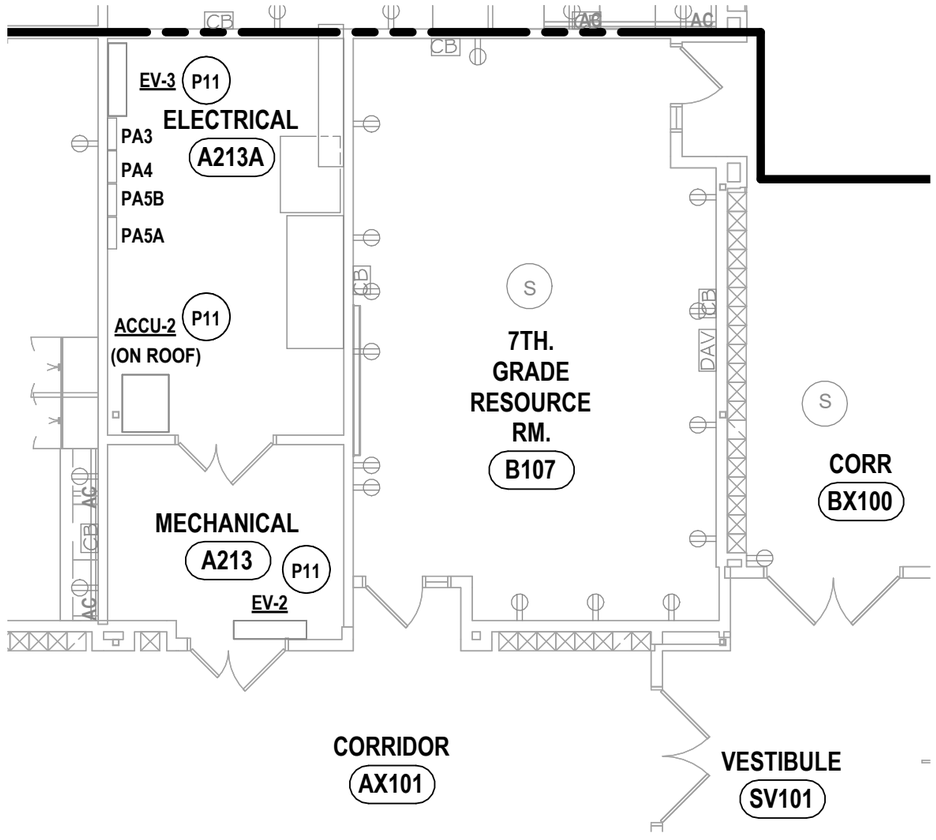
NOTE: ALL DEVICES / EQUIPMENT / HARDWARE SHALL BE SUITABLE FOR USE IN THE ENVIRONMENT INDICATED. SEE SPECIFICATIONS FOR FURTHER INFORMATION.

MECHANICAL EQUIPMENT CONNECTION AND CONTROL SCHEDULE REFERENCE NOTES:

A. SPARE 20A/1P BREAKERS ALREADY EXIST IN PANEL SPACE.

B. PC9A/B LOCATED IN STORAGE B221 ON SECOND FLOOR AREA C.

C. ALL ASSOCIATED WORK BY ALTERNATE #5.



1 **FIRST FLOOR ELECTRICAL PLAN - AREA A - A213A**
1/8" = 1'-0"

DRAWN BY: MDB
CHECKED BY: TAWC
DATE: 11/12/2025

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NY CERTIFICATE NO. 0018220 PA CERTIFICATE NO. TSC2203131464-1

ELECTRICAL POWER PLAN - ELEC. RM. A213A
2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD
35 VICTORY HIGHWAY, PAINTED POST, NY 14870

SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

AD2-E3

PROJECT NO: 2649-153

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	SIZE	MOUNTING	VOLTAGE	LUMENS	LED COLOR TEMP	LOAD EA. (WATTS)	MANUFACTURER/CATALOG NO.	FINISH	REMARKS	NOTES
A	RECESSED TROFFER	2X4	RECESSED	UNIV	4581	3000-5000K CCT	34W	ILP #VOLA24-49L-U-40-SR	-	-	1
B	RECESSED FLAT PANEL	2X2	RECESSED	UNIV	3000	3500-5000K CCT	32W	SIGNIFY #2FPZ30L840-2-DS-UNV-DIM	-	-	-
C	EXTERIOR RECESSED CAN	8"	RECESSED	UNIV	2500	2700-5000K CCT	33W	LITELINE #RA56-33-P-W-WH-WH-NC	-	SET TO 4000K	-
D	EXTERIOR LINEAR	3"	SURFACE	UNIV	975	4000K	33W	PRUDENTIAL #WETBPRO3-LIN-FLSH-LED4-SO-4-WETTMW-BTW-SC-UNV-WMU-SUR-DM01	-	-	2
E	RECESSED TROFFER	2X2	RECESSED	UNIV	4581	3000-5000K CCT	34W	ILP #VOLA22-49L-U-40-SR	-	-	-
F	PENDANT UP/DOWN LIGHT	2'	SURFACE	UNIV	64000	5000K	435W	LUX #WAVEP-2-850-U10-WSA2-DEF2-3/10-2P10B-WIRELESSCONTROLS-NAT	-	-	-

LIGHT FIXTURE SCHEDULE NOTES:

1. SET DEFAULT SETTINGS TO MATCH EXISTING
2. PROVIDE PHOTOCELL CONTROL

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CHECKED BY: TAWC
DATE: 11/12/2025

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UPDATED LIGHT FIXTURE SCHEDULE

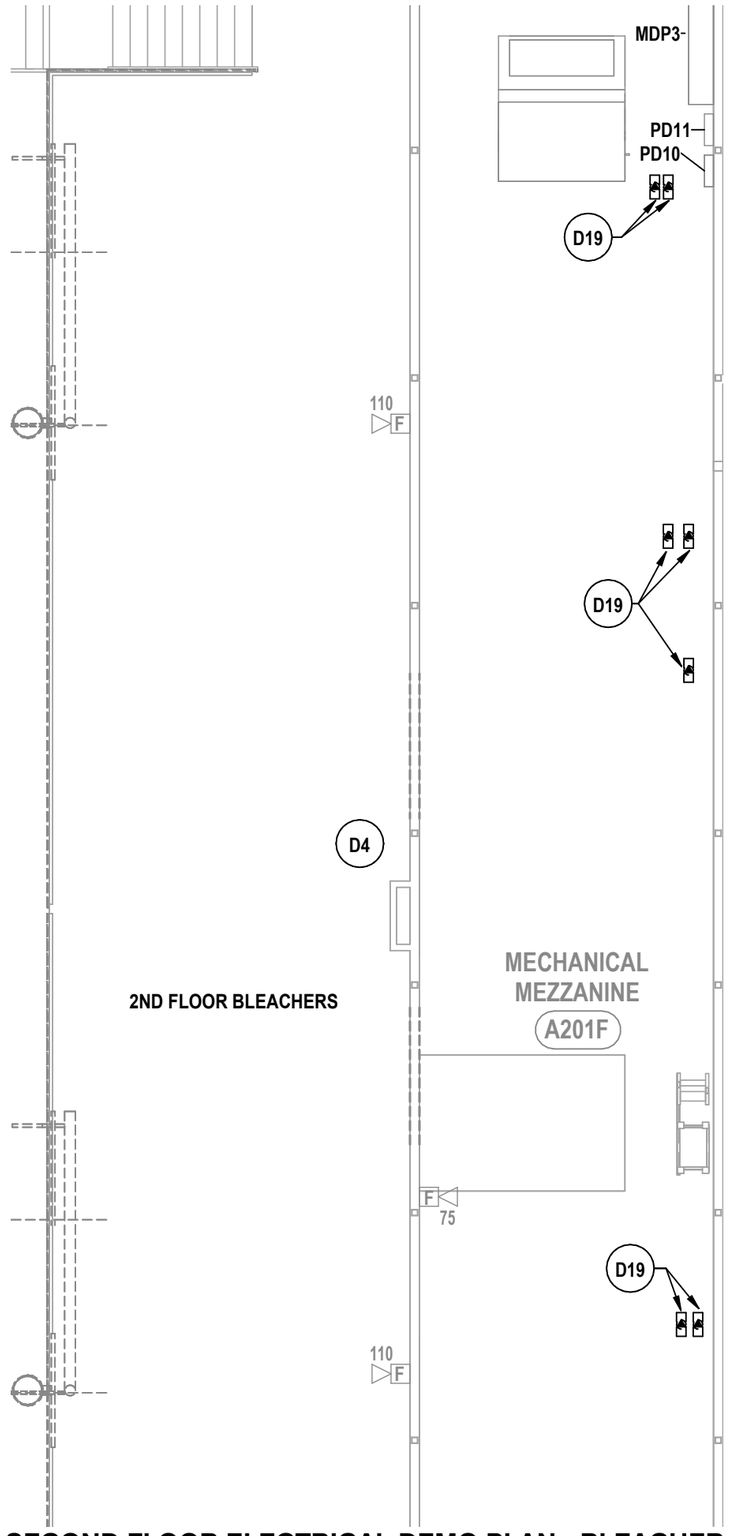
2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD

35 VICTORY HIGHWAY, PAINTED POST, NY 14870

SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

AD2-E4

PROJECT NO: 2649-153



1 **SECOND FLOOR ELECTRICAL DEMO PLAN - BLEACHER / MEZZ.**
1/8" = 1'-0"

DRAWN BY:	MDB
CHECKED BY:	TAWC
DATE:	11/12/2025

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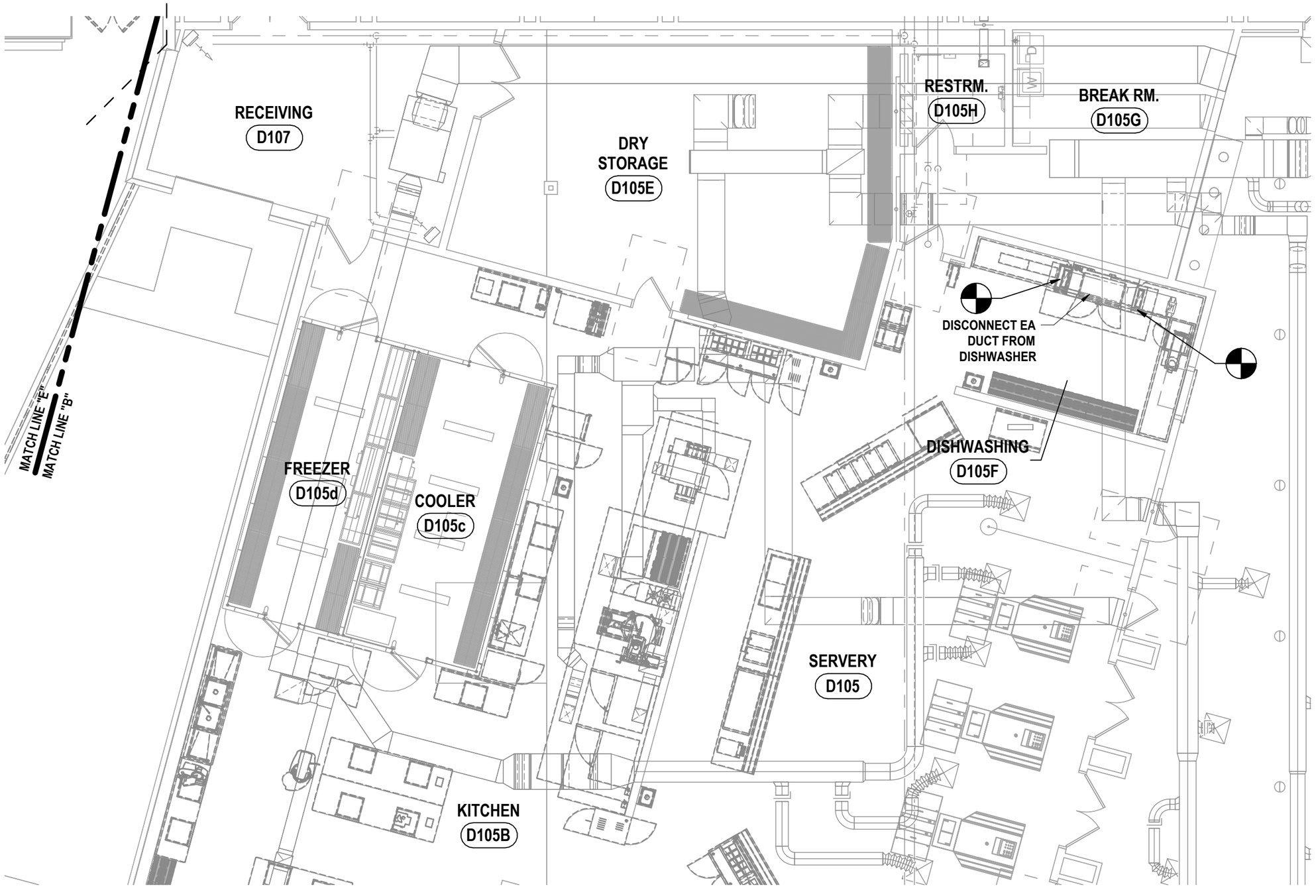
SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

MEZZANINE ELECTRICAL DEMOLITION

2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD
35 VICTORY HIGHWAY, PAINTED POST, NY 14870

AD2-E5

PROJECT NO: 2649-153



2 FIRST FLOOR HVAC DEMOLITION PLAN - AREA B

1/8" = 1'-0"

DRAWN BY:	KMM
CHECKED BY:	ENS
DATE:	11/12/2025

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FIRST FLOOR HVAC DEMOLITION PLAN - AREA B

2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT

CORNING-PAINTED POST ASD

35 VICTORY HIGHWAY, PAINTED POST, NY 14870

SED #: 57-10-06-01-0-024-044 - MIDDLE SCHOOL

AD2-H1

PROJECT NO: 2649-153

MINI-SPLIT INDOOR UNIT SCHEDULE

UNIT NUMBER	MANUFACTURER/MODEL NO.	LOCATION	HEATING CAPACITY MBH	COOLING CAPACITY MBH	REFRIGERANT TYPE	SERVED BY	ELECTRICAL DATA			NOTES
							VOLTS	PHASE	MOTOR (W)	
EV-1	TRANE PLA-AE18NL	MS-H1.3	8,800	18,000	R454B	ACCU-1	208	1	50	1,2,3
EV-2	TRANE / TPKFYP030KM1M0A	MS-H1.1	34,000	30,000	R454B	ACCU-2	208	1	80	1,2,4
EV-3	TRANE / TPKFYP030KM1M0A	MS-H1.1	34,000	30,000	R454B	ACCU-2	208	1	80	1,2,4

NOTES:

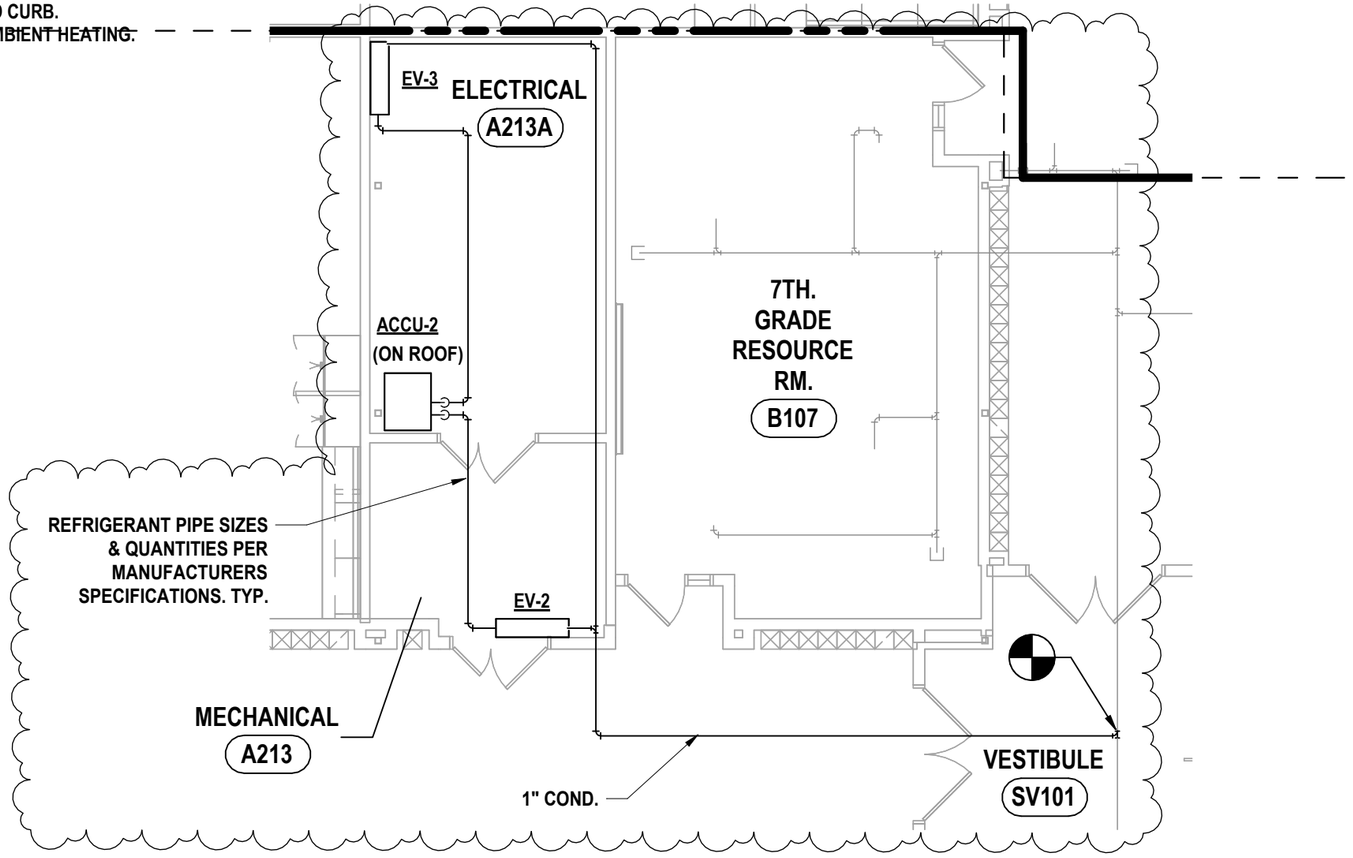
1. PROVIDE WIRED AND MOUNTED DISCONNECT
2. PROVIDE UL LISTED OVERFLOW SENSOR TIED TO UNIT POWER FOR SHUT DOWN.
3. HEATING CAPACITY GIVEN IS AT -4F OA.
4. PROVIDE CONDESATE LIFTING DEVICE.

AIR COOLED CONDENSING UNIT SCHEDULE

UNIT NUMBER	MANUFACTURER/MODEL NO.	LOCATION	AIR SIDE UNIT NO.	MBH CAP. COOLING	MBH CAP. HEATING	AMBIENT TEMP (F) SUMMER/ WINTER	ELECTRICAL				NOTES
							VOLTS	PHASE	MOP	MCA	
ACCU-1	TRANE PUZ-AK18NL	MS-H1.6	EV-1	18,000	8,800	95/-4	208	1	27	16	1,2,3,4,5
ACCU-2	TRANE / TUHYE0723AMM0AN	MSH1.1	EV-2, 3	72,000	80,000	95/0	208	3	60	40	1,2,3,4,5

NOTES:

1. UNIT SHALL BE SINGLE POINT POWER SUPPLY.
2. FURNISH DISCONNECT SWITCH TO BE WIRED BY OTHERS.
3. PROVIDE FACTORY CONTROL PANEL WITH TOUCH SCREEN INTERFACE AND BACNET CONNECTION. COORDINATE PANEL LOCATIONS WITH OWNER. SPACES TO BE CONTROLLED BY REMOTE ROOM SENSOR.
4. PROVIDE 18" PREFABRICATED WIND RATED CURB.
5. PROVIDE SNOW/HAIL GUARDS FOR LOW AMBIENT HEATING.



1 FIRST FLOOR HVAC PLAN - AREA A MODIFICATIONS
1/8" = 1'-0"

DRAWN BY: KMM
CHECKED BY: ENS
DATE: 11/12/2025

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FIRST FLOOR HVAC PLAN - AREA A MODIFICATIONS
2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD
35 VICTORY HIGHWAY, PAINTED POST, NY 14870

SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

AD2-H2

PROJECT NO: 2649-153

STOR.
D110

CUST.
D108

BREAK RM.
D105G

REBALANCE EXISTING ROOFTOP UNIT TO
8775 SA AND 3715 OA.

CORRIDOR
DX102

RESTRM.
D105H

RECEIVING
D107

DRY
STORAGE
D105E

D-1
315

8"x6"
VD

EXG 22"X14"
OVAL DUCT

RECONECT
EA DUCT TO
DISHWASHER

DISHWASHING
D105F

FREEZER
D105d

COOLER
D105c

KITCHEN
D105B

SERVERY
D105

1 FIRST FLOOR HVAC PLAN - AREA B MODIFICATIONS
1/8" = 1'-0"

DRAWN BY:	KMM
CHECKED BY:	ENS
DATE:	11/12/2025

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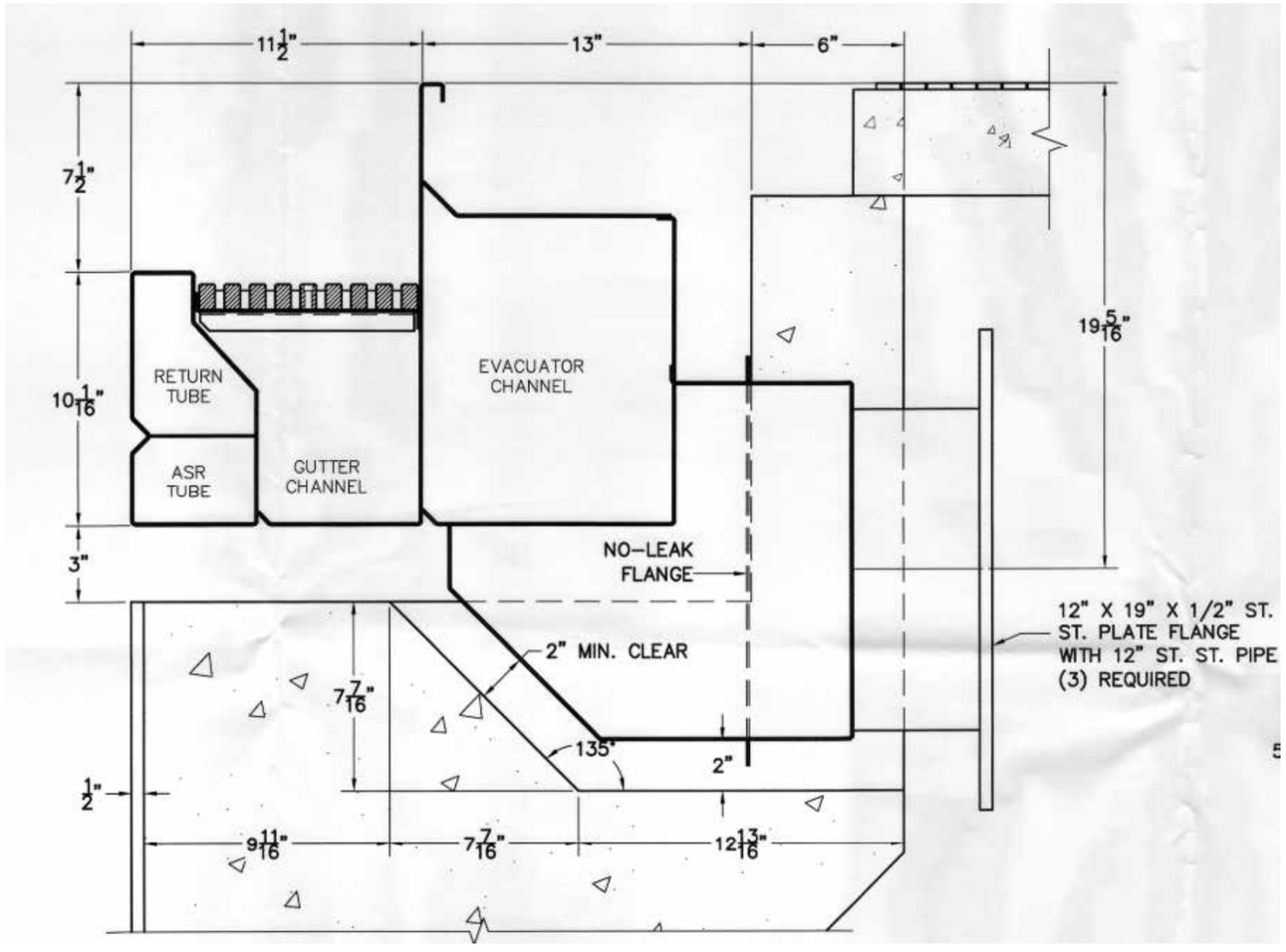
FIRST FLOOR HVAC PLAN - AREA B MODIFICATIONS
2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD
35 VICTORY HIGHWAY, PAINTED POST, NY 14870

SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

AD2-H3

PROJECT NO: 2649-153



4 DUCT CONNECTION TO POOL GUTTER DETAIL

N. T. S.

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DATE:	11/12/2025

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POOL HVAC DETAIL

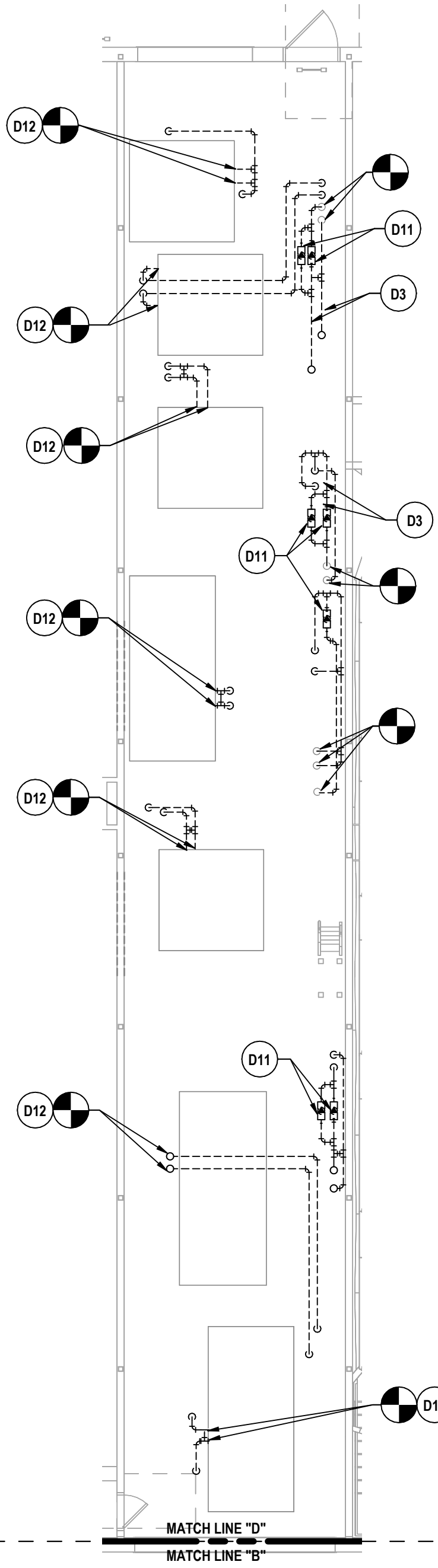
2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD

35 VICTORY HIGHWAY, PAINTED POST, NY 14870

SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

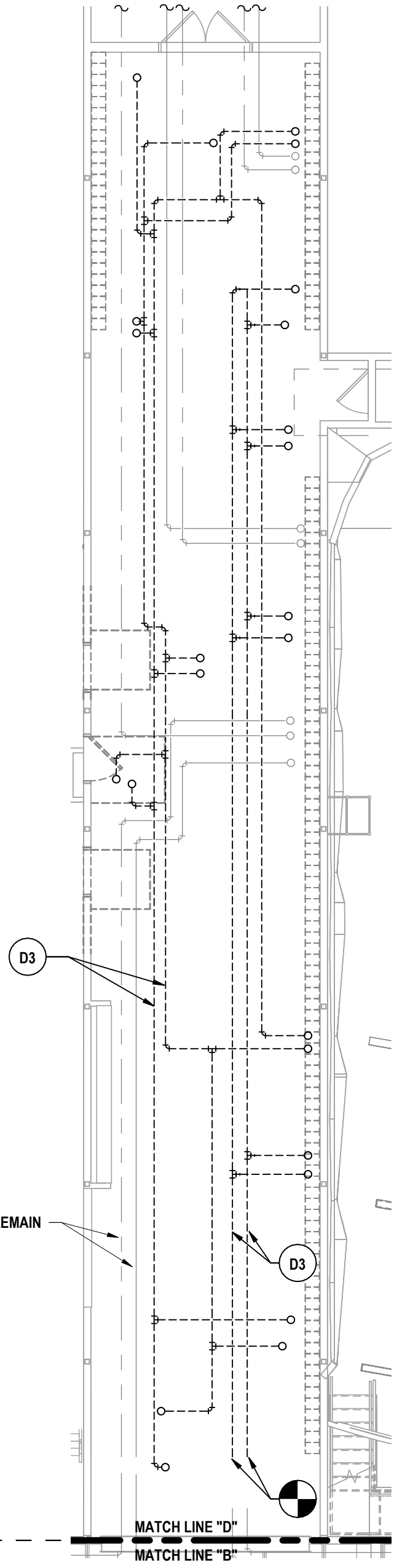
AD2-H4

PROJECT NO: 2649-153



2 PARTIAL 2ND FLOOR HVAC DEMO PLAN - AREA D

1/8" = 1'-0"



1 PARTIAL 1ST FLOOR HVAC DEMO PLAN - AREA D

1/8" = 1'-0"

SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

PROJECT NO: 2649-153

AD2-H5

PARTIAL DEMOLITION PLANS - AREA D

2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD

35 VICTORY HIGHWAY, PAINTED POST, NY 14870

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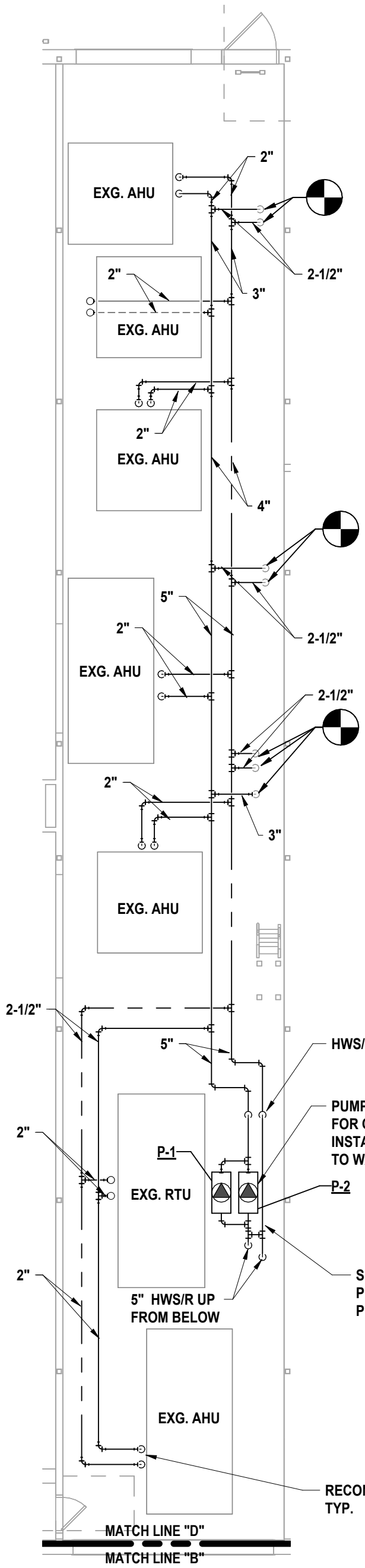
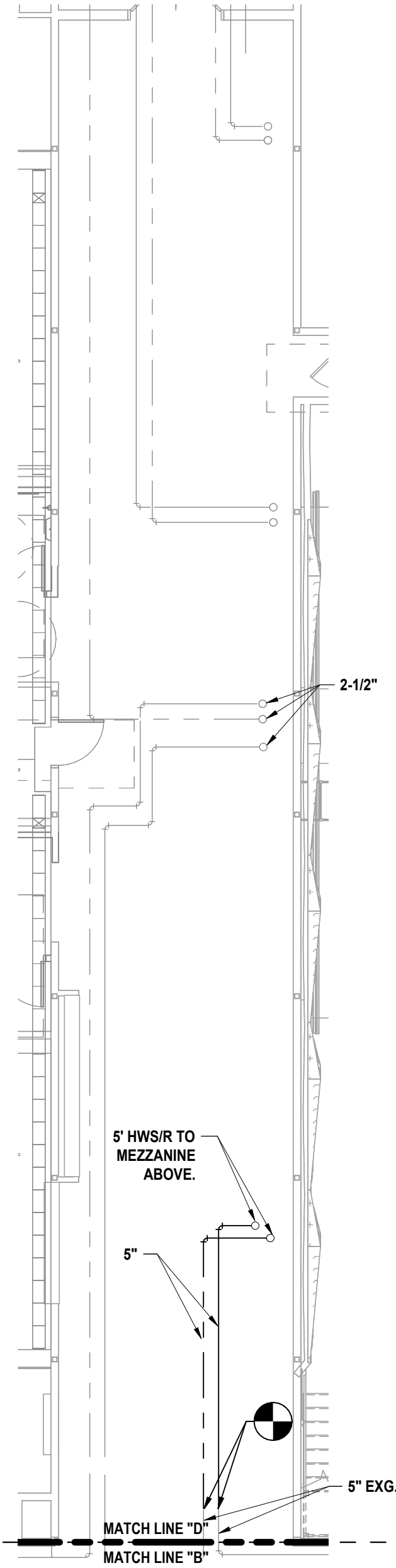
DATE: 11/12/2025



4 PARTIAL 2ND FLOOR PIPING PLAN - AREA D

1/8" = 1'-0"



3 PARTIAL 1ST FLOOR PIPING PLAN - AREA D

1/8" = 1'-0"

SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

PROJECT NO: 2649-153

AD2-H6

PARTIAL PIPING PLANS - AREA D

2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD

35 VICTORY HIGHWAY, PAINTED POST, NY 14870

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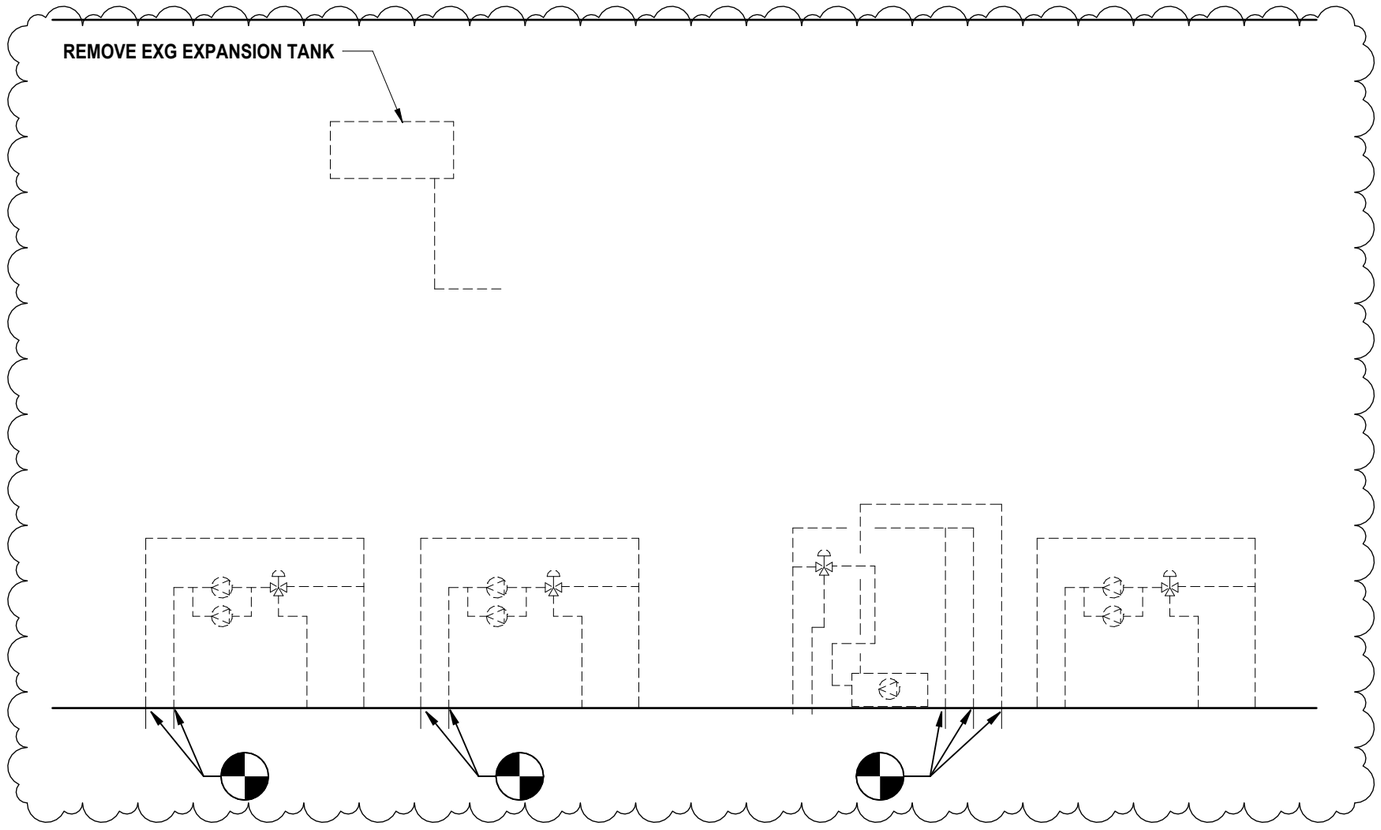
DATE: 11/12/2025



5 **MECHANICAL ELEVATION DEMOLITION MODIFIED**
N. T. S.

DRAWN BY:	KMM
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DATE:	11/12/2025

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MECHANICAL ELEVATION DEMO DETAIL MODIFICATIONS

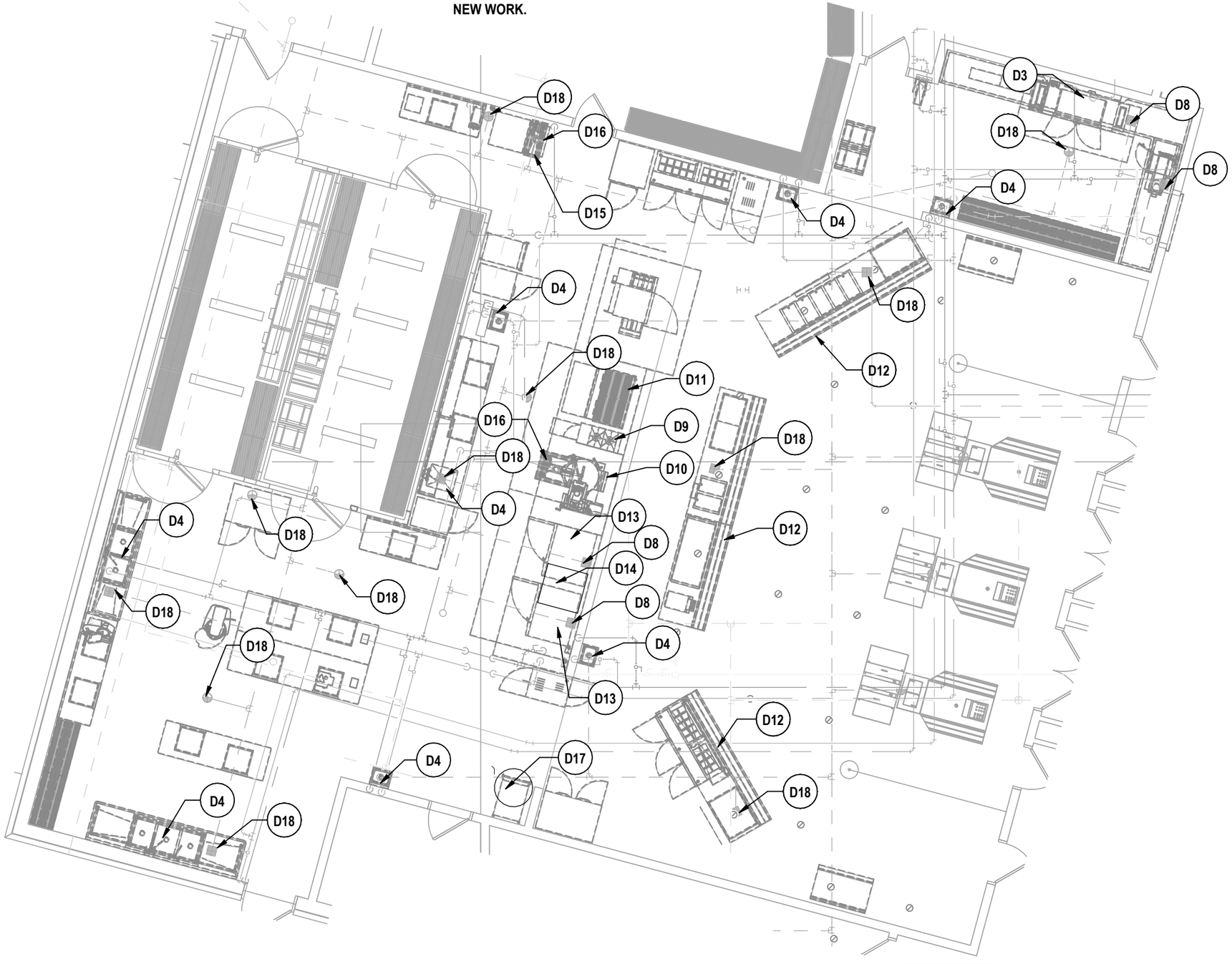
2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD
35 VICTORY HIGHWAY, PAINTED POST, NY 14870

SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

AD2-H7

PROJECT NO: 2649-153

NOTE: ALL EQUIPMENT IN THIS AREA TO BE TURNED OVER TO OWNER FOR REINSTALLATION IN NEW WORK.



1 **KITCHEN DEMOLITION PLAN**
1/8" = 1'-0"

DRAWN BY: CJH
CHECKED BY: JDG
DATE: 11/10/25
Copyright: 2025

"IT IS A VIOLATION OF THE LAW FOR ANY PERSON TO MAKE UNAUTHORIZED ALTERATIONS OR ADDITIONS TO PLANS BEARING A LICENSED ENGINEER'S, ARCHITECT'S OR SURVEYOR'S SEAL."

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KITCHEN DEMOLITION PLAN
2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD
35 VICTORY HIGHWAY, PAINTED POST, NY 14870

SED #: 57-10-00-01-0-024-444 - MIDDLE SCHOOL

AD2-P1

PROJECT NO: 2649-153

DEMOLITION NOTES - PLUMBING

D1 DISCONNECT AND REMOVE WATER CLOSET AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT AND REMOVE COLD WATER, SANITARY AND VENT PIPING AND ALL ASSOCIATED ACCESSORIES. PREPARE FOR RECONNECTION IN NEW WORK.

D2 DISCONNECT AND REMOVE LAVATORY AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT AND REMOVE COLD WATER, HOT WATER, SANITARY AND VENT PIPING AND ALL ASSOCIATED ACCESSORIES. PREPARE FOR RECONNECTION IN NEW WORK

D3 DISCONNECT AND REMOVE DISHWASHER AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT AND REMOVE COLD WATER, HOT WATER, SANITARY AND VENT PIPING AND ALL ASSOCIATED ACCESSORIES. PREPARE FOR RECONNECTION IN NEW WORK

D4 DISCONNECT AND REMOVE SINK AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT AND REMOVE COLD WATER, HOT WATER, SANITARY AND VENT PIPING AND ALL ASSOCIATED ACCESSORIES. PREPARE FOR RECONNECTION IN NEW WORK

D5 DISCONNECT AND REMOVE DRINKING FOUNTAIN AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT AND REMOVE COLD WATER, SANITARY AND VENT PIPING AND ALL ASSOCIATED ACCESSORIES. PREPARE FOR RECONNECTION IN NEW WORK

D6 DISCONNECT AND REMOVE URINAL AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT AND REMOVE COLD WATER, SANITARY AND VENT PIPING AND ALL ASSOCIATED ACCESSORIES. PREPARE FOR RECONNECTION IN NEW WORK.

D7 DISCONNECT AND REMOVE (3) URINALS AND CARRIERS AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. RETAIN FOR RECONNECTION IN NEW WORK.

D8 DISCONNECT AND REMOVE FLOOR DRAIN / FLOOR SINK AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY BACK TO POINT INDICATED. DISCONNECT AND REMOVE SANITARY PIPING AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. PREPARE FOR RECONNECTION IN NEW WORK.

D9 DISCONNECT AND REMOVE RANGE AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT GAS PIPING AND PREPARE FOR RECONNECTION IN NEW WORK.

D10 DISCONNECT AND REMOVE TILTING KETTLE AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT COLD WATER AND GAS PIPING AND PREPARE FOR RECONNECTION IN NEW WORK.

D11 DISCONNECT AND REMOVE GRIDDLE AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT GAS PIPING AND PREPARE FOR RECONNECTION IN NEW WORK.

D12 DISCONNECT AND REMOVE STEAMER TABLE AND ALL ASSOCIATED ACCESSORIES. DISCONNECT DRAIN. PREPARE FOR RECONNECTION IN NEW WORK.

D13 DISCONNECT AND REMOVE CONVECTION OVEN AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT GAS PIPING AND PREPARE FOR RECONNECTION IN NEW WORK.

D14 DISCONNECT AND REMOVE COMBINATION OVEN AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT GAS PIPING AND PREPARE FOR RECONNECTION IN NEW WORK.

D15 DISCONNECT AND REMOVE ICE MAKER AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT COLD WATER PIPING. PREPARE FOR RECONNECTION IN NEW WORK.

D16 DISCONNECT AND REMOVE TROUGH TOP. PREPARE FOR RECONNECTION IN NEW WORK.

D17 DISCONNECT AND REMOVE WATER SOFTENER AND ALL ASSOCIATED ACCESSORIES IN ITS ENTIRETY. DISCONNECT COLD WATER PIPING. PREPARE FOR RECONNECTION IN NEW WORK.

D18 DISCONNECT AND REMOVE FLOOR DRAIN / FLOOR SINK BODY. PREPARE FOR RECONNECTION IN NEW WORK.

DRAWN BY: CJH
CHECKED BY: JDG
DATE: 11/3/2025

HUNT ENGINEERS | ARCHITECTS | SURVEYORS
HORSEHEADS, NY 607 - 358 - 1000 ROCHESTER, NY 585 - 327 - 7950
TOWANDA, PA 570 - 265 - 4888 BINGHAMTON, NY 607 - 798 - 8081
ALBANY, NY 607 - 798 - 8081 WWW.HUNT-EAS.COM
NY CERTIFICATE NO. 0018220 PA CERTIFICATE NO. TSC2203131464-1

DEMOLITION NOTES- PLUMBING

2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT
CORNING-PAINTED POST ASD
35 VICTORY HIGHWAY, PAINTED POST, NY 14870

SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

AD2-P2

PROJECT NO: 2649-153

1 KITCHEN EQUIPMENT PLAN
1/8" = 1'-0"

CONSTRUCTION NOTES - PLUMBING

1 REINSTALL SINK AND ALL ASSOCIATED ACCESSORIES IN PREVIOUS LOCATION. RECONNECT EXISTING COLD WATER, HOT WATER, SANITARY AND VENT PIPING.

2 REINSTALL DISHWASHER AND ALL ASSOCIATED ACCESSORIES IN PREVIOUS LOCATION. RECONNECT EXISTING COLD WATER, HOT WATER, SANITARY AND VENT PIPING.

3 REINSTALL RANGE AND ALL ASSOCIATED ACCESSORIES IN PREVIOUS LOCATION. RECONNECT EXISTING GAS PIPING.

4 REINSTALL TILTING KETTLE AND ALL ASSOCIATED ACCESSORIES IN PREVIOUS LOCATION. RECONNECT EXISTING COLD WATER AND GAS PIPING.

5 REINSTALL GRIDDLE AND ALL ASSOCIATED ACCESSORIES IN PREVIOUS LOCATION. RECONNECT EXISTING GAS PIPING.

6 NOT USED.

7 REINSTALL CONVECTION OVEN AND ALL ASSOCIATED ACCESSORIES IN PREVIOUS LOCATION. RECONNECT EXISTING GAS PIPING.

8 REINSTALL COMBINATION OVEN AND ALL ASSOCIATED ACCESSORIES IN PREVIOUS LOCATION. RECONNECT EXISTING GAS PIPING.

9 REINSTALL ICE MAKER AND ALL ASSOCIATED ACCESSORIES IN PREVIOUS LOCATION. RECONNECT EXISTING COLD WATER PIPING.

10 REINSTALL EXISTING TROUGH TOP.

11 REINSTALL WATER SOFTENER AND ALL ASSOCIATED ACCESSORIES IN PREVIOUS LOCATION. RECONNECT EXISTING COLD WATER PIPING.

12 REINSTALL EXISTING FLOOR DRAIN / FLOOR SINK.

DRAWN BY:	CJH
CHECKED BY:	JDG
DATE:	11/11/25

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KITCHEN EQUIPMENT PLAN

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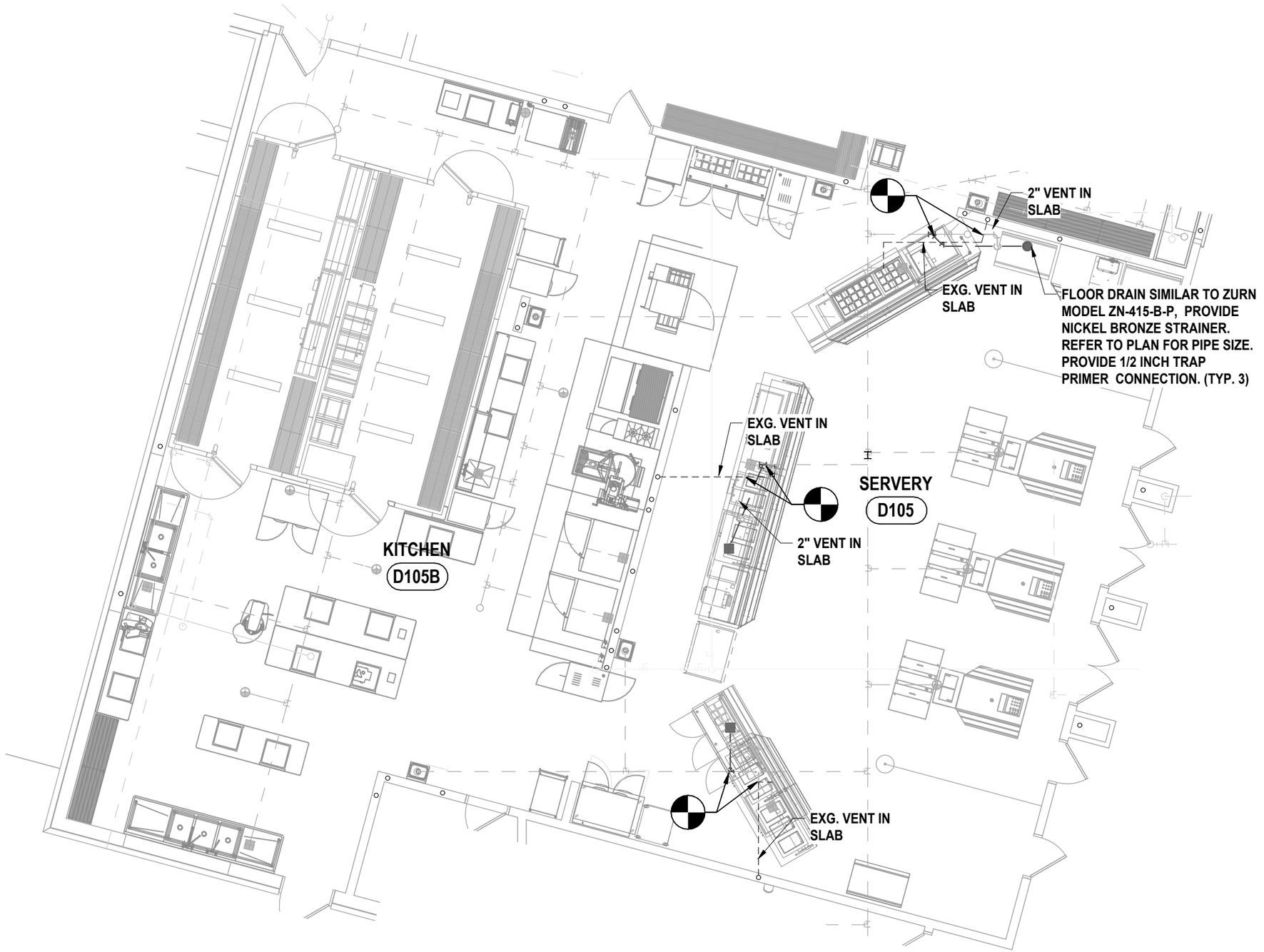
SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

AD2-P3

PROJECT NO: 2649-153



1 **FIRST FLOOR SANITARY PLAN - AREA B**
1/8" = 1'-0"

DRAWN BY:	Author
CHECKED BY:	Checker
DATE:	11/03/25

HUNT ENGINEERS | ARCHITECTS | SURVEYORS
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KITCHEN SANITARY PLAN

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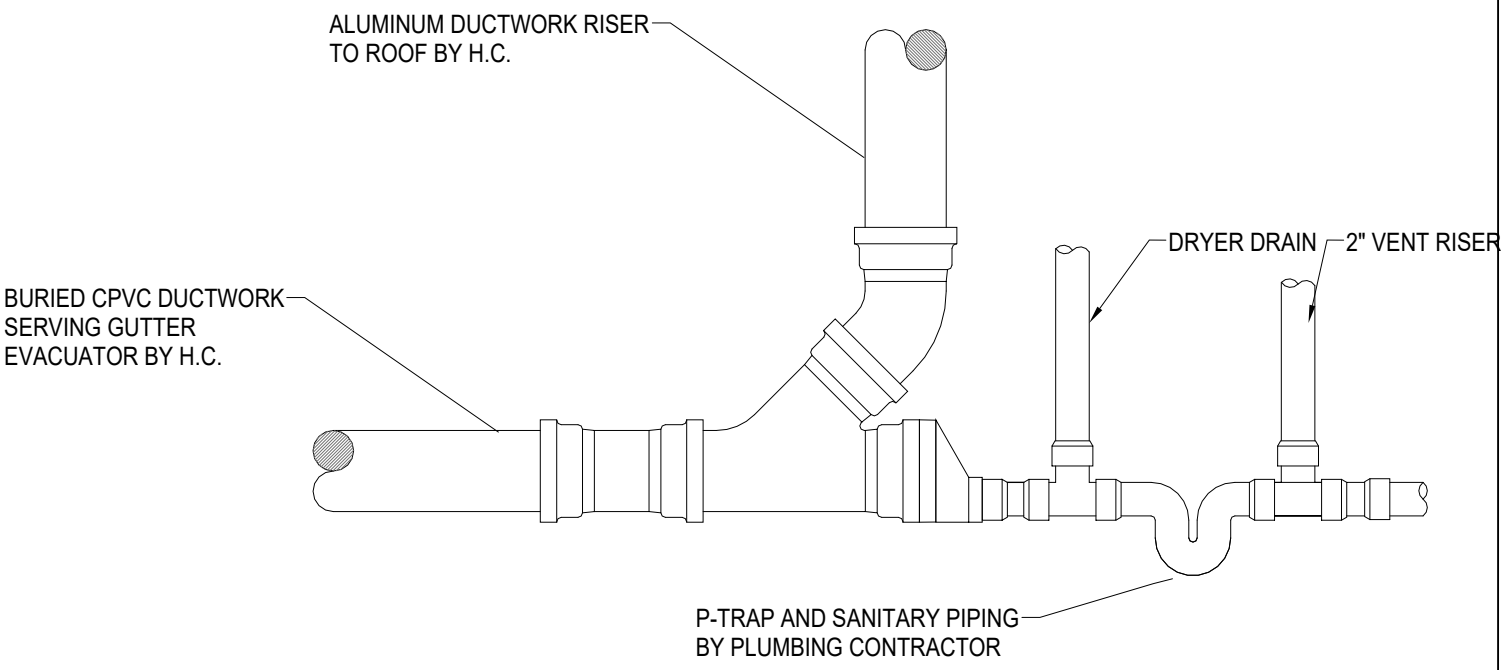
SED #: 57-10-00-01-0-024-044 - MIDDLE SCHOOL

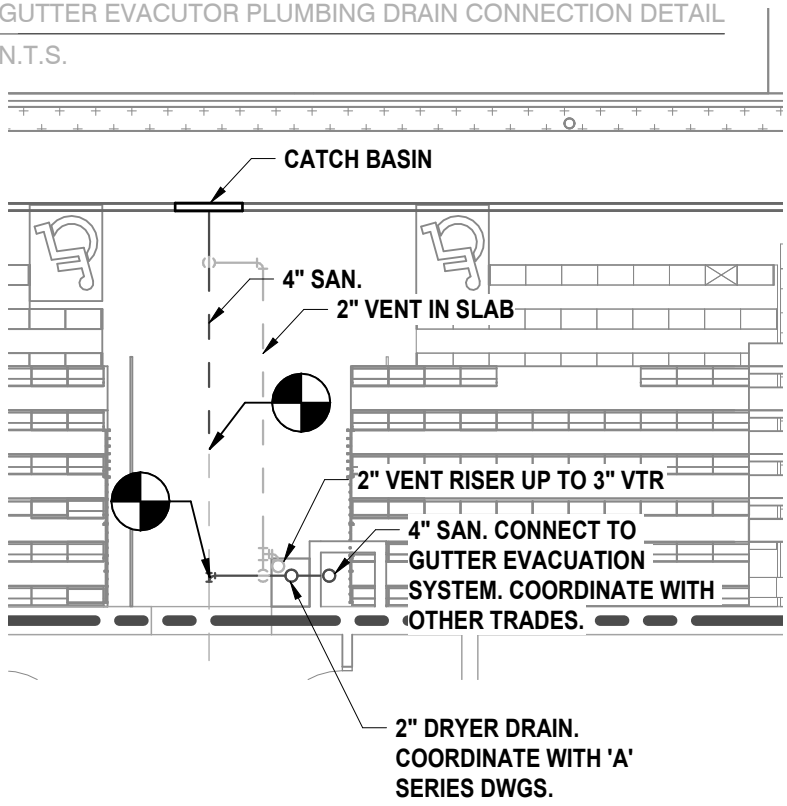
AD2-P4

PROJECT NO: 2649-153



2 GUTTER EVACUTOR PLUMBING DRAIN CONNECTION DETAIL

N.T.S.



1 REVISED POOL SANITARY PLAN

1/8" = 1'-0"

REVISED POOL SANITARY PLAN

2025 MIDDLE SCHOOL PHASE III ALTERATIONS PROJECT

CORNING-PAINTED POST ASD

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AD2-P5

DATE: 11/12/25

PROJECT NO: 2649-153