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December 15, 2022

BID ADDENDUM No. 4

Re: Bond Improvements Phase 2
Briarcliff Manor Union Free School District
SED No. 66-14-02-02-0-004-023 (HSMS)
SED No. 66-14-02-02-0-002-021 (ES)
BBS File No 21-274C, 21-274D

This addendum contains changes to the requirements of the contract drawings and/or project manual. Such changes shall be incorporated into the contract documents and shall apply to the work with the same meaning and force as if they had been included in the original documents. Wherever this addendum modifies a portion of a paragraph of project manual or any portion of the drawing, the remainder of the paragraph or drawing affected shall remain in force.
The conditions of the basic project manual shall govern all work described in this addendum. Wherever the conditions of work and the quality or quantity of materials or workmanship are not fully described in this addendum, the conditions of work, etc. included in the basic project manual for similar items of work shall apply to the work described in this addendum.
The "Conditions of the Contract" apply to all work described in this addendum.
The following changes shall be and are hereby made:

PROJECT MANUAL MODIFICATIONS

1. Specification Section 08410 – Aluminum Entrances Storefronts
    a. The attached section shall be added to the bid documents.

2. Specification Section 08520 – Aluminum Windows (Insulated Glass)
    a. The attached section shall be added to the bid documents.

3. Specification Section 09500 – Interactive Acoustical Panel System
    a. The attached section shall be replaced in the bid documents.

4. Specification Section 15609 – Gas Risk Management System
    a. The attached section shall be added to the bid documents.

3. Specification Section 15903 – Automatic Temperature Control Systems
    a. The attached section shall be added to the bid documents.

CONSTRUCTION DRAWING MODIFICATIONS
MIDDLE SCHOOL/HIGH SCHOOL

ARCHITECTURAL

1. Drawing A1.01 DEMOLITION FIRST FLOOR PLAN – AREA A & C
    a. Construction Drawing is hereby deleted and replaced with the attached.

2. Drawing A2.01 PROPOSED FIRST FLOOR PLAN – AREA D
    a. Construction Drawing is hereby deleted and replaced with the attached.

3. Drawing A5.01 BUILDING SECTIONS
    a. Construction Drawing is hereby deleted and replaced with the attached.

4. Drawing A8.01 DOOR SCHEDULE AND DETAILS
    a. Construction Drawing is hereby deleted and replaced with the attached.

5. Drawing A8.03 STOREFRONT PLANS AND ELEVATIONS
    a. Construction Drawing is hereby deleted and replaced with the attached.

6. Drawing A9.01 FINISH SCHEDULE
    a. Construction Drawing is hereby deleted and replaced with the attached.

7. Drawing A9.02 FINISH FLOOR PLAN
    a. Construction Drawing is hereby deleted and replaced with the attached.

8. Drawing 11.04 ENLARGED EQUIPMENT PLANS & DETAILS
    a. Construction Drawing is hereby deleted and replaced with the attached.

MECHANICAL

1. Drawing M2.01 PROPOSED HVAC PLAN – AREA A & C
    a. Construction Drawing is hereby deleted and replaced with the attached.

PLUMBING

1. Drawing P2.02 PLUMBING FIRST FLOOR PROPOSED WORK CONTINUED
    a. Construction Drawing is hereby deleted and replaced with the attached.

TODD ELEMENTARY SCHOOL

ARCHITECTURAL

1. Drawing A1.00 ABATEMENT PLANS
    a. Construction Drawing is hereby deleted and replaced with the attached.

2. Drawing A4.01 MASONRY RECONSTRUCTION
    a. Construction Drawing is hereby deleted and replaced with the attached.

Response to Contractors Written RFI's

1. **Question:** Drawing M0.01 states contractor is to provide and install all wiring and devices as required to control the boiler room equipment as described in the sequence of operations listed in the spec, section 15903. Section 15903 appears to be missing from the manual. Please advise.

   BBS Response: Refer to specification 15903 included in this addendum.

2. **Question:** The drawings call for the plumber to provide and install natural gas lead detection system and carbon monoxide detectors in the boiler room. There is no mention of the make/model for either system. Please also confirm the PC is to provide and install these systems.

   BBS Response: Refer to revised drawings P2.02 and M2.01 for revised work scope.

2. **Question:** Can you please clarify if the Briarcliff Manor UFSD Phase 2 project's HVAC system has a BMS system or a vendor specified to it

   BBS Response: Refer to specification 15903 included in this addendum which includes districts vendor

3. **Question:** P2.02 Acid Neutralization pit, P.C. is being instructed to work on existing Acid Neutralization tank. The note refers to manufacturers maintenance specs for more information. Where does this information appear? Can you provide specs on the existing tank. Please advise.

   BBS Response: The existing tank is 72" H x 39" diameter. And holds 1,500 pounds of limestone.

4. **Question:** Drawing E4.01, Stage 311A, has two (2) panels to be replaced as part of Alternate #1. The bid proposal does not have an alternate for this scope of work.

   BBS Response: Refer to revised bid proposal form include in this addendum for alternate #4 to Base Bid GC-2. Refer to revised drawing E4.02 for Todd Elementary included in this addendum.

4. Question: Drawing M6.03 states that equipment tag AC-236 is part of Alternate #4, but plans show this to be a part of alternate #3. Please clarify.

   BBS Response: AC-236 shall be part of Add Alternate #3 to Base bid MC-1. Refer to revised drawing M6.03 included in this addendum.

5. Question: Locker LF-1 are new or relocated existing lockers. There is no locker spec. Please advise.

   BBS Response: Existing Lockers are to be relocated.

6. Question: TES Abatement drawing A1.00 shows white material at the window sills but the asbestos report discusses a lot of other asbestos material on the job. Which predominates the spec or the drawings?

   BBS Response: Refer to revised drawing A1.00 included in this addendum for scope revisions.

7. Question: Who is the existing PA contract for the High School

   BBS Response: Open Systems, 258 Rouse 117 By Pass Rd. Bedford Hills, NY 10507 (914)-640-9314.

8. Question: SF-03 is not listed as Genius Architectural Wall however it looks identical to SF-01 and SF-02. Please confirm if SF-03 is a Genius Wall.

   BBS Response: SF-03 is a Genius Architectural wall type. Refer to revised drawing A8.03 included in this addendum.

9. Question: Door Tag # 500 and # 501 is scheduled to be a new hollow metal door and hollow metal frame with HW Set # 8. HW Set # 8 reads as if the doors/frames are rated aluminum by TGP. Please clarify HW for these door tags

   BBS Response: Refer to revised Door schedule A8.01 included in this addendum for revised hardware sets for doors 500 & 501.

10. Question: Tag # 100A -- Plans show a single swing door. Head detail assigned indicates double egress. Please clarify what is desired here.

    BBS Response: Refer to revised Door schedule A8.01 included in this addendum. Door 100a is revised to a standard door frame.

11. Question: Frame type F1 and F2 indicate 4" head. Head Detail H4 shows a 2" head. Please clarify which is correct.

    BBS Response: Provide 2” frames. Refer to revised drawing A8.01 included in this addendum.

12. Question: Hollow Metal Spec 08110 does not call for welded frames, however the head detail shows a reinforced channel. Please clarify if KD framing is acceptable or if the intent is the hollow metal frames are to be fully welded?

    BBS Response: Provide fully welded hollow metal door frames. Typical for all.

13. Question: There is no specification for dimensional letters, please provide. Also please provide dimensions and sizes of letters at Amphitheatre, drawing A9.02 Detail 6A

BBS Response: Refer to revised drawing A9.02 for clarifications.

END of Addendum #4

BBS Architects, Landscape Architects and Engineers, P.C.

DIVISION 8 - DOORS AND WINDOWS

SECTION 08410 – ALUMINUM STOREFRONTS

PART 1 - GENERAL

1.01 DESCRIPTION:

A. The extent of aluminum storefront is shown on the drawings **Storefront Type SF-29.**

B. The types of aluminum storefronts include the following:

1. Aluminum storefront assemblies.

C. Related Documents: Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

Related work specified elsewhere:
1. Section 07900 - Caulking and Sealants.
2. Section 08710 - Finish Hardware.
3. Section 08800 - Glass and Glazing.
4. Section 08520 - Aluminum Windows

1.02 PEFORMANCE REQUIREMETNS:

A. System Description – General: Provide aluminum storefront systems capable of withstanding loads and thermal and structural movement requirements indicated without failure, based on testing manufacturer's standard units in assemblies similar to those indicated for this Project. Failure includes the following:

1. Air infiltration and water penetration exceeding specified limits.

2. Framing members transferring stresses, including those caused by thermal and structural movement, to glazing units.

B. Glazing: Physically and thermally isolate glazing from framing members.

C. Structural Silicone-Sealant Joints: Provide systems with structural silicone-sealant joints complying with the following requirements:

1. Tensile or shear stress in joints is less than 20 psi.

2. Structural sealant withstands tensile and shear stresses imposed by storefront systems without failing adhesively or cohesively. When tested for adhesive compatibility with each substrate and condition required, provide sealant that fails cohesively before it fails adhesively. Adhesive and cohesive

failure are defined as follows:

Adhesive failure occurs when sealant pulls away from a substrate cleanly, leaving no sealant material behind.

Cohesive failure occurs when sealant breaks or tears within a joint but does not separate from each substrate because sealant-to-substrate bond strength exceeds sealant's internal strength.

D. Wind Loads: Provide entrance and storefront systems, including anchorage, capable of withstanding wind-load design pressures calculated according to requirements of the 2020 International Building Code or the American Society of Civil Engineers' ASCE 7, "Minimum Design Loads for Buildings and Other Structures," 6.4.2, "Analytical Procedure," whichever are more stringent. Refer to drawings for Wind Design Data.

E. Deflection of framing members in a direction normal to wall plane is limited to 1/175 of clear span or 3/4 inch, whichever is smaller, unless otherwise indicated.

F. Static-Pressure Test Performance: Provide entrance and storefront systems that do not evidence material failures, structural distress, failure of operating components to function normally, or permanent deformation of main framing members exceeding 0.2 percent of clear span when tested according to ASTM E 330.

G. Test Pressure: 150 percent of inward and outward wind-load design pressures.

H. Duration: As required by design wind velocity; fastest 1 mile of wind for relevant exposure category.

I. Seismic Loads: Provide entrance and storefront systems, including anchorage, capable of withstanding the effects of earthquake motions calculated according to requirements of authorities having jurisdiction or ASCE 7, "Minimum Design Loads for Buildings and Other Structures," Section 9, "Earthquake Loads," whichever are more stringent.

J. Dead Loads: Provide entrance- and storefront-system members that do not deflect an amount which will reduce glazing bite below 75 percent of design dimension when carrying full dead load.

K. Provide a minimum 1/8-inch clearance between members and top of glazing or other fixed part immediately below.

L. Live Loads: Provide entrance and storefront systems, including anchorage, that accommodate the supporting structures' deflection from uniformly distributed and concentrated live loads indicated without failure of materials or permanent deformation.

M. Air Infiltration: For single acting offset pivot or butt hung entrances in the closed and locked position, the test specimen shall be tested in accordance with AAMA/WDMA/CSA101/I.S.2/A440 or NFRC 400 entrance frame shall not exceed 0.20 cfm per square foot per Table C402.5.2 of the 2020 Energy Conservation Code.

N. Water Penetration: Provide entrance and storefront systems that do not evidence water leakage through fixed glazing and frame areas when tested according to ASTM E 331 at minimum differential pressure of 20% of inward-acting wind-load design pressure as defined by ASCE 7, "Minimum Design Loads for Buildings and Other Structures," but not less than 6.24 lbf/sq. ft. Water leakage is defined as follows:

> Uncontrolled water infiltrating systems or appearing on systems' normally exposed interior surfaces from sources other than condensation. Water controlled by flashing and gutters that is drained back to the exterior and cannot damage adjacent materials or finishes is not water leakage.

O. Thermal Movements: Provide entrance and storefront systems, including anchorage, that accommodate thermal movements of systems and supporting elements resulting from the following maximum change (range) in ambient and surface temperatures without buckling, damaging stresses on glazing, failure of joint sealants, damaging loads on fasteners.

P. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

Q. Structural-Support Movement: Provide entrance and storefront systems that accommodate structural movements including, but not limited to, sway and deflection.

Structural: Corner strength shall be tested per Kawneer's dual moment load test procedure and certified by an independent testing laboratory to ensure weld compliance and corner integrity [Testing procedure and certified test results available upon request].

R. Condensation Resistance Factor (CRF): When tested to AAMA Specification 1503.1, the condensation resistance factor shall not be less than 52.

T. Aluminum-framed storefront system Thermal Transmittance (U-factor): When tested to AAMA Specification 1503, the thermal transmittance (U-factor) shall not be more than:
1. Glass to Exterior – 0.38 (low-e) BTU/hr/ft2/°F.
2. Glass to Center – 0.38 (low-e) BTU/hr/ft2/°F.
3. Glass to Interior – 0.38 (low-e) BTU/hr/ft2/°F.

U. Solar Heat Gain Coefficient (SHGC): The glazing solar heat gain coefficient (SHGC) shall not be more than 0.36.

V. Surface Burning Characteristics, FRP Panels, ASTM E 84:
   1. Flame Spread: Maximum of 200, Class C.
   2. Smoke Developed: Maximum of 450, Class C.

W. Surface Burning Characteristics, Class A Option On Interior Faces of FRP Exterior Panels and Both Faces of FRP Interior Panels, ASTM E 84:
   1. Flame Spread: Maximum of 25.
   2. Smoke Developed: Maximum of 450.

X. Impact Strength, FRP Panels, Nominal Value, ASTM D 256: 14.0 foot-pounds per inch of notch.

Y. Tensile Strength, FRP Panels, Nominal Value, ASTM D 638: 13,000 psi.

Z. Flexural Strength, FRP Panels, Nominal Value, ASTM D 790: 21,000 psi.

AA. Water Absorption, FRP Panels, Nominal Value, ASTM D 570: 0.20 percent after 24 hours.

BB. Indentation Hardness, FRP Panels, Nominal Value, ASTM D 2583: 55.

CC. Gardner Impact Strength, FRP Panels, Nominal Value, ASTM D 5420: 120 in-lb.

DD. Abrasion Resistance, Face Sheet, Taber Abrasion Test, 25 Cycles at 1,000 Gram Weight with CS-17 Wheel: Maximum of 0.029 average weight loss percentage.

EE. Stain Resistance, ASTM D 1308: Face sheet unaffected after exposure to red cabbage, tea, and tomato acid. Stain removed easily with mild abrasive or FRP cleaner when exposed to crayon and crankcase oil.

FF. Chemical Resistance, ASTM D 543. Excellent rating.
   1. Acetic acid, Concentrated.
   2. Ammonium Hydroxide, Concentrated.
   3. Citric Acid, 10%.
   4. Formaldehyde.
   5. Hydrochloric Acid, 10%
   6. Sodium hypochlorite, 4 to 6 percent solution.

GG. Compressive Strength, Foam Core, Nominal Value, ASTM D 1621: 79.9 psi.

HH. Compressive Modulus, Foam Core, Nominal Value, ASTM D 1621: 370 psi.

II. Tensile Adhesion, Foam Core, Nominal Value, ASTM D 1623: 45.3 psi.

JJ. Thermal and Humid Aging, Foam Core, Nominal Value, 158 Degrees F and 100 Percent Humidity for 14 Days, ASTM D 2126: Minus 5.14 percent volume change.

1.02 QUALITY ASSURANCE:

A. The aluminum frames, and associated work shall be done by a single firm specializing in the type of work required, so that there will be undivided responsibility for the specified performance of all component parts, including the following:

1. Glazing of aluminum frames.

2. Installation of all hardware.

B. Details shown are based upon standard details by one manufacturer. It is intended that similar details by other manufacturers will be acceptable, provided they comply with the size requirements, with minimum/maximum profile requirements as shown, and with the specified structural and performance requirements.

C. Installer Qualifications: Engage an experienced installer to assume engineering responsibility and perform work of this Section who has specialized in installing entrance and storefront systems similar to those required for this Project and who is acceptable to manufacturer.

D. Manufacturer Qualifications: Manufacturer capable of providing field service representation during construction, approving acceptable installer and approving application method.

E. Engineering Responsibility: Prepare data for storefront systems, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

F. Source Limitations: Obtain each type of storefront system through one source from a single manufacturer.

G. Product Options: Drawings indicate size, profiles, and dimensional requirements of storefront systems and are based on the specific systems indicated. Other manufacturers' systems with equal performance characteristics may be considered. Refer to Division 1 Section "Substitutions."

H. Do not modify intended aesthetic effect, as judged solely by Architect, except with Architect's approval and only to the extent needed to comply with performance requirements. Where modifications are proposed, submit comprehensive explanatory data to Architect for review.

I. Preconstruction Sealant Testing: Perform sealant manufacturers' standard tests for compatibility and adhesion of sealants with each material that will come in contact with sealants and each

condition required by system.

J. Test a minimum of 8 samples of each metal, glazing, and other material.

K. Prepare samples using techniques and primers required for installed systems.

L. Perform tests under environmental conditions that duplicate those under which systems will be installed. For materials that fail tests, determine corrective measures required to prepare each material to ensure compatibility with and adhesion of sealants, including, but not limited to, specially formulated primers. After performing these corrective measures on the minimum number of samples required for each material, retest materials.

M. Welding Standards: Comply with applicable provisions of AWS D1.2, "Structural Welding Code--Aluminum."

1.03 SUBMISSIONS:

A. Submissions shall be in accordance with Section 01300: Submissions and as modified below.

B. Product Data:

1. Submit manufacturer's specifications, standard details, and installation recommendations for components of aluminum frame assemblies required for the project.

2. Maintenance Manual: Submit three copies of bound maintenance manual for aluminum frame assemblies, including manufacturer's product literature on all components and manufacturer's instructions for cleaning, repair, and general maintenance of all components.

C. Shop Drawings:

1. Submit shop drawings for the fabrication and installation of aluminum entrance assemblies and associated components of the work. Include plans, elevations, sections, details of components, provisions for expansion and contraction, and attachments to other work. Show anchors, hardware, operators, and other components not included in manufacturer's standard data, including glazing details. Include hardware schedule and indicate operating hardware types, quantities, and locations.

D. Samples:

1. Submit three samples of each required aluminum finish on 12" long extrusions or 6" square sheets of the alloys to be used for the work. Where normal color and texture variations are to be expected, include two or more units in each samples to

show the range of such variations. Samples will be reviewed by the Architect for color and texture only. Compliance with other requirements is the exclusive responsibility of the Contractor.

E. Installer Certificates: Submit installer certificates signed by manufacturer, certifying that installers comply with specified requirements.

F. Product Test Reports: Based on evaluation of tests performed by manufacturer and witnessed by a qualified independent testing agency, indicate compliance of storefront systems with requirements based on comprehensive testing of current systems. Submit certified test reports showing compliance with specified performance characteristics for framing components.

1.04 GUARANTEE:

A. Submit two copies of written guarantee signed by the manufacturer, installer, and contractor, agreeing to replace aluminum entrance assemblies, window units, and components which fail in materials or workmanship within three years of date of acceptance. Failure of materials or workmanship shall include (but not be limited to) excessive leakage or air infiltration, excessive deflections, delamination of panels, deterioration of finish or metal in excess of normal weathering, and defects in accessories, weatherstripping, and other components of the work.

1.05 PROJECT CONDITIONS:

A. Field Measurements: Verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.06 DELIVERY, STORAGE AND HANDLING:

A. Ordering: Comply with the manufacturer’s ordering instructions and lead-time requirements to avoid construction delays.

B. Packing, Shipping, Handling and Unloading: Deliver materials in manufacturer’s original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful weather conditions. Handle entrance components to avoid damage. Protect entrance components against damage from elements, construction activities, and other hazards before, during and after entrance installation.

1.07 CLEANING AND PROTECTION:

A. The Contractor shall maintain frames, and side light components in a reasonably clean condition throughout the construction period, so that it will be without any evidence of deterioration or damage (other than the effects of normal weathering) at the time of final

acceptance. Select methods of cleaning which will promote the achievement of uniform appearance and stabilized colors and textures for materials that weather or age with exposure.

B. The installer shall advise the General Contractor to proper and adequate means for protecting portions of the work, which are exposed to likely sources of damage during the remainder of the construction period, including the probable areas of glass breakage.

C. Immediately before the time of final acceptance, the Contractor shall clean the framing thoroughly, inside and out. Demonstrate proper cleaning methods to the Owner's maintenance personnel during this final cleaning. Prepare a "Cleaning and Maintenance Manual" listing the types of cleaning compounds, cleaning methods, and the types of sealants and glazing materials to be used for cleaning, repair, and maintenance of the work.

1.07 WARRANTY:

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

B. Special Warranty: Submit a written warranty executed by the manufacturer agreeing to repair or replace components of entrance and storefront systems that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, the following:

1. Structural failures including, but not limited to, excessive deflection.

2. Adhesive sealant failures.

3. Failure of system to meet performance requirements.

4. Deterioration of metals, metal finishes, and other materials beyond normal weathering.

5. Failure of operating components to function normally.

6. Water leakage through fixed glazing and frame areas.

Warranty Period: 2 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 MANUFACTURERS:

A. As Basis-of-Design, details and specifications have been based on the following products by Kawneer Company, Inc. 555 Guthridge Court, Technology Park / Atlanta, Norcross, GA 30092 (tel) 770-449-5555; (fax) 770-734-1560:

1. Framing: ***Kawneer TriFab VG 451T*** framing system.

B. References to named manufacturers shall be construed only as establishing the quality of materials and workmanship to be used under this section, as shall not, in any way, be construed as limiting competition. Products used shall be those upon which the design is based, or shall be equal products approved in advance by the Architect. Requests for substitutions will be considered in accordance with provisions of the General Conditions. All permitted equals must be approved in writing by the Architect or Engineer-or-Record. All applications for substitution must include samples and technical data.

C. Substitution Documentation:

a. Product Literature and Drawings: Submit product literature and drawings modified to suit specific project requirements and job conditions.

b. Certificates: Submit certificate(s) certifying substitute manufacturer (1) attesting to adherence to specification requirements for entrance system performance criteria, and (2) has been engaged in the design, manufacturer and fabrication of aluminum entrances for a period of not less than ten (10) years.

C. Test Reports: Submit test reports verifying compliance with each test requirement required by the project.

D. Product Sample and Finish: Submit product sample, with specified finish and color.

E. Substitution Acceptance: Acceptance will be in written form, either as an addendum or modification, and documented by a formal change order signed by the Owner and Contractor.

2.02 ALUMINUM ENTRANCE ASSEMBLIES:

A. General: Provide complete aluminum vestibule assemblies, including frames, glass, and related accessories. Fabricate components that, when assembled, will have accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings. Fabricate components for shear-block frame construction.

1. Forming: Form shapes with sharp profiles, straight and free

of defects or deformations, before finishing.

2. Prepare components to receive concealed fasteners and anchor and connection devices.

3. Fabricate components to drain water passing joints and condensation and moisture occurring or migrating within the system to the exterior.

4. Welding: Weld components to comply with referenced AWS standard. Weld before finishing components to greatest extent possible. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

5. Glazing Channels: Provide minimum clearances for thickness and type of glass indicated according to FGMA's "Glazing Manual."

6. Metal Protection: Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

7. Storefront: Fabricate framing in profiles indicated for flush glazing (without projecting stops). Provide subframes and reinforcing of types indicated or, if not indicated, as required for a complete system. Factory assemble components to greatest extent possible. Disassemble components only as necessary for shipment and installation.

B. Framing:

1. Materials:

a. Framing members, transition members, mullions, adapters, and mountings: Extruded aluminum with alloy and temper as recommended by manufacturer to comply with strength and finish requirements, and temper recommended by manufacturer for type of use and finish indicated, complying with the requirements of standards indicated below.

1. Sheet and Plate: ASTM B 209.

2. Extruded Bars, Rods, Shapes, and Tubes: ASTM B 221.

3. Extruded Structural Pipe and Tubes: ASTM B 429.

4. Bars, Rods, and Wire: ASTM B 211.

5. Welding Rods and Bare Electrodes: AWS A5.10.

6. Steel Reinforcement: Complying with ASTM A 36 for structural shapes, plates, and bars; ASTM A 611 for cold-rolled sheet and strip; or ASTM A 570 for hot-rolled sheet and strip.

7. Glazing as specified in Division 8 Section *"Glazing".*

b. Screws, miscellaneous fastening devices, and internal components: Stainless steel or plated or corrosion resistant materials of sufficient strength to perform the functions for which they are used.

c. Spacers, Setting Blocks, Gaskets, and Bond Breakers: Manufacturer's standard permanent, non-migrating types in hardness recommended by manufacturer, compatible with sealants, and suitable for system performance requirements. Glazing gaskets shall be either EPDM elastomeric extrusions or a thermoplastic elastomer.

d. Structural Silicone Sealant: Type recommended by sealant and system manufacturers that complies with ASTM C 1184 requirements, is compatible with system components with which it comes in contact, and is specifically formulated and tested for use as a structural sealant. Color as selected by the Architect from manufacturer's full range of colors. Tensile Strength: 100 psi minimum. Provide sealant with modulus of elasticity that will not allow movement of more than 25% of joint width, unless less movement is required by structural-sealant-glazed systems' design. Use neutral-cure silicone sealant with insulating-glass units.

e. Secondary Sealant: For use as weatherseal, compatible with structural silicone sealant and other system components with which it comes in contact, and that accommodates a 50 percent increase or decrease in joint width at the time of application when measured according to ASTM C 719. Color as selected by the Architect from manufacturer's full range of colors. Use neutral-cure silicone sealant with insulating-glass units. Framing system gaskets, sealants, and joint fillers as recommended by manufacturer for joint type.

f. Bituminous Paint: Cold-applied asphalt-mastic paint complying with SSPC-Paint 12 requirements, except containing no asbestos, formulated for 30-mil thickness per coat.

2. Entrance System Fabrication:

a. Full tubular sections, 2” x 4 ½” nominal dimension; front, center or back fabrication as show in Construction Document details with the following wall thicknesses:

1. Exposed faces and sides: 3/16" minimum.

2. Recessed sidewalls receiving mortised or concealed hardware: 1/4" minimum.

3. Flush glazing pockets: 1/8" minimum.

b. Not used

c. Provide fully resilient glass settings with moldings and trim inserts not less than 1/16" thick.

d. Fasteners: Where exposed, shall be aluminum, stainless steel or plated steel.

e. Perimeter Anchors: Aluminum. When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.

4. Glazing: Provide 1” Insulated Glass for exterior applications and 1/4” Tempered Glass for interior applications unless otherwise noted - Refer to Section 08800 for glass types as indicated on drawings.

2.04 ALUMINUM FINISHES:

A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

B. Finish designations prefixed by AA conform to the system established by the Aluminum Association for designating aluminum finishes.

1. Apply the specified finish to visible aluminum surfaces of all aluminum entrance assemblies. Apply a compatible and durable matching finish to visible fasteners or hardware.

2. Prepare the surfaces for finishing in accordance with

recommendations of the aluminum producer and the finisher or processor for the specified finish.

3. Three coat process finish on frames. Class I, Color Kynar Finish: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA2605. Color as selected by Architect from the full range of industry colors and color densities.

   a. Primer coat: Kynar.

   b. Kynar finish color coat:

      1. Provide Fluoropolymer finish (Kynar 500) based laminated coating similar to "Duranar" (70% PVDF) by PPG Industries.

      2. Color as indicated on the drawings or as selected and approved by Architect.

   c. Clear coat: One (1) coat clear Kynar protective finish over all painted frames.

2. Contractor to provide and utilize "Air Dry" paint provided by Kawneer to touch up all frames, and ancillary hardware by spray on method.

2.05 SOURCE QUALITY CONTROL

A. Source Quality: Provide aluminum entrances specified herein from a single source of supply.

   1. Building Enclosure System: When aluminum entrances are a part of a building enclosure system, including entrances, framing, windows, curtain wall system and related products. Provide building enclosure system products from a single source manufacturer.

B. Fabrication Tolerances: fabricate aluminum entrances in accordance with entrance manufacturer’s prescribed tolerances.

2.06 STEEL PRIMING:

A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying primer.

B. Surface Preparation: Perform manufacturer's standard cleaning operations to remove dirt, oil, grease, or other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel.

C. Priming: Apply manufacturer's standard corrosion-resistant primer immediately after surface preparation and pretreatment.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of entrance and storefront systems. Do not proceed with installation until unsatisfactory conditions have been corrected.

B. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions. Verify openings are sized to receive entrance system and sill is level in accordance with manufacturer's acceptable tolerances.

C. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

3.02 INSTALLATION:

A. Pre-Installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements.

B. Comply with the manufacturer's written specifications and recommendations for protecting, handling, assembly and installation of entrance assemblies and other components of the work. Do not install damaged components. Fit frame joints to produce hairline joints free of burrs and distortion. Rigidly secure nonmovement joints. Seal joints watertight.

C. Metal Protection: Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

D. General: Install entrance system in accordance with manufacturer's instructions and AAMA storefront and entrance guide specifications manual.

E. Set units plumb, level, and true to line, in alignment with established lines and grades, without warp or rack of frames. Attach to structure to permit sufficient adjustment to

accommodate construction tolerances and other irregularities. Provide alignment attachments and shims to permanently fasten system to the building structure. Anchor securely in place. Separate aluminum and other corrodible metal surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

f. Make suitable provision for thermal expansion in assembly of groups of units. Install components to drain water passing joints and condensation and moisture occurring or migrating within the system to the exterior.

G. Set sill member, thresholds, and other members in a full bed of sealant compound as shown or with joint fillers or gaskets as shown to provide weathertight construction, and secure. Comply with requirements of Division 7 Section "Joint Sealants."

H. Provide suitable gaskets or coatings where dissimilar metals are in contact. Lubricate operating hardware and other moving parts according to hardware manufacturers' written instructions.

J. Clean aluminum surfaces promptly after installation of units. Remove excess glazing and sealant compounds, dirt, and other substances. Lubricate hardware and other moving parts.

K. Where protective coating has been damaged, remove coating completely as soon as the completion of construction activities no longer requires its retention.

L. Install glazing to comply with requirements of Division 8 Section "Glazing," unless otherwise indicated.

M. Prepare surfaces that will contact structural sealant according to sealant manufacturer’s written instructions to ensure compatibility and adhesion.

N. Preparation includes, but is not limited to, cleaning and priming surfaces.

O. Install structural silicone sealant according to sealant manufacturer's written instructions.

P. Mechanically fasten glazing in place until structural sealant is cured. Remove excess sealant from component surfaces before sealant has cured.

Q. Install secondary-sealant weatherseal according to sealant manufacturer's written instructions to provide weatherproof joints. Install joint fillers behind sealant as recommended by sealant manufacturer.

R. Erection Tolerances: Install entrance and storefront systems to comply with the following maximum tolerances:

1. Variation from Plane: Limit variation from plane or location shown to 1/8 inch in 12 feet; 1/4 inch over total length.

2. Alignment: Where surfaces abut in line, limit offset from true alignment to 1/16 inch. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch.

3. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch.

3.03 FIELD QUALITY CONTROL:

A. Water Spray Test: After completing the installation of test areas indicated, test storefront system for water penetration according to AAMA 501.2 requirements.

B. Repair or remove and replace Work that does not meet requirements or that is damaged by testing; replace to conform to specified requirements.

3.04 ADJUSTING AND CLEANING:

A. Remove excess sealant and glazing compounds, and dirt from surfaces.

3.05 CLEANING AND PROTECTION:

A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with the manufacturer's instructions prior to Owner's acceptance. Remove construction debris from the project site and legally dispose of all debris.

B. Protection: Provide final protection and maintain conditions, in a manner acceptable to the manufacturer and installer, that ensure entrance and storefront systems are without damage or deterioration at the time of Substantial Completion. Protect installed product's finish surfaces from damage during construction. Protect aluminum entrances from damage from grinding and polishing compounds, plaster, lime, acid, cement, or other harmful contaminants. Remove and replace damaged aluminum entrances at no extra cost.

END OF SECTION

DIVISION 8 - DOORS AND WINDOWS

SECTION 08520 - ALUMINUM WINDOWS (INSULATED GLASS)

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work included: **Window Type 01 -** Furnish labor, materials, tools, and equipment necessary or required to perform and complete the installation of aluminum windows as indicated on the drawings and specified herein. Window shapes and accessories as specified and detailed shall establish the type of units and materials to be used to provide the functional performance and aesthetic requirements desired. Details indicate the required depth and profile. Work shall include, but not necessarily be limited to, the following:

1. Preparation of all rough openings as required to permit proper installation of new aluminum windows and panel systems as shown on drawings and described in the specifications. Note: Remove all sash intact and complete.

2. Removal of existing sash or other existing materials or portions thereof which are required to be removed or altered to permit proper installation of new aluminum windows and panel systems as shown on drawings and described in the specifications.

3. Furnish and install new factory glazed, thermally broken aluminum windows and panels as specified herein, together with all necessary mullion covers, mullions, receptors, filler plates, panning, trim, sheet or plate extrusions for trim, muntins, operating hardware, screens and all other accessories specified herein and/or shown or noted on the drawings, or as required, including anchors, clips, shims, fasteners, drilling, taping and all other activities necessary for the proper installation of the work of this section.

4. Provide .063 extruded aluminum exterior window sills (finish to match window frame specified herein) for all new aluminum windows, except as noted otherwise on the drawings.

5. All window hardware including balances, locks, keepers, poles, hangers, etc.

6. Insulated metal panels and frames as required, or where indicated on drawings.

7. Insulation against contact of aluminum surfaces with dissimilar metals.

8. Finish on all exposed aluminum surfaces.

9. Installation of new windows, panels, etc. including anchors,

clips, shims, blocking, fasteners, drilling, tapping, and all other things necessary for the proper installation of work under this section.

10. Glass and glazing. (Provide insulated glass or insulated panel at all assemblies as indicated on drawings.)

11. Installation of treated wood blocking, fillers and nailers as required for complete and secure installations.

12. Caulking and sealing of all metal to metal and metal to masonry.

13. Adjustment and servicing of window sash and hardware and replacement of broken or defective parts.

14. Cleaning of aluminum and glazing surfaces.

15. Maintenance, operation and protection.

16. Extra materials as specified or required.

17. Adjustment and servicing of window sash and hardware and replacement of broken or defective parts.

18. Verification of all openings and conditions.

19. Supply and loading of all required containers for storage of all materials and debris, and the legal disposal of all such materials.

B. Related Work Described Elsewhere:

1. Rough Carpentry: Section 06100
2. Finish Carpentry: Section 06200
3. Joint Sealers: Section 07900
4. Glass and Glazing: Section 08800
5. Roller Shades/Blinds: Section 12530

C. Related Documents: Drawings and General Provisions of Contract, including, General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.02 QUALITY ASSURANCE:

A. Standards: Comply with the provisions of the standards listed below and the applicable standards listed in Section 01085 (including all revisions of contract to date):

1. Performance class designations according to American Architectural Manufacturers Association (AAMA)Window & Door Manufactures Association(WDMA)and the Canadian Standards Association(CSA) AAMA/WDMA/CSA 101/I.S.2/A440-08.

a. AW: Architectural

2. Performance grade number according to AAMA/WDMA/CSA 101/I.S.2/A440-08.

    a. Design pressure number in pounds force per square foot (pascals) used to determine the structural test pressure and water test pressure.

3. American Society for Testing and Materials (ASTM):

    a. E283: Test for rate of air leakage through exterior windows, curtain walls, and doors.

    b. E330: Test for structural performance of exterior windows, curtain walls, and doors by Uniform State Air Pressure Difference.

    c. E331: Test for water penetration of exterior windows, curtain walls, and doors by Uniform Static Air Pressure Difference.

    d. E547: Test for water penetration of exterior windows, curtain walls, and doors by Cyclic Static Air Pressure Differential.

    e. E1996: Glazed opening protection for wind-borne debris shall meet the requirements of the Large Missile Test of ASTM E1996 and ASTM E 1886. Provide glazed windows capable of resisting the large missile impact from windborne debris, based upon pass/fail criteria as determined by testing glazed windows identical to those sizes specified. (Note: This is required ONLY for new construction projects whose locations (as indicated) fall within one mile of the coastal mean high water line - any water area experiencing tidal change.)

4. Provide Test Reports from an AAMA approved test laboratory certifying the performance as specified herein. Test reports shall be no more than 4 years old. Test reports based on downsized test units will not be accepted.

5. Test reports shall be accompanied by an AAMA Notice of Product Certification stating that the tested window meets or exceeds the referenced criteria for the AAMA/WDMA/CSA 101/I.S.2/A440-08.

6. Wind Loads: Provide windows, including anchorage, capable of withstanding wind-load design pressures calculated according to requirements of the 2015 International Building Code or the American Society of Civil Engineers' ASCE 7, "Minimum Design Loads for Buildings and Other Structures," 6.4.2, "Analytical Procedure," whichever are more stringent. Refer to drawings for Wind Design Data.

7. Flat Glass Marketing Association (FGMA): “Glazing Manual”.

9. Glazing Publications: Comply with published recommendations of

glass manufacturers and with GANA's "Glazing Manual" unless more stringent requirements are indicated.

B. Qualifications of Manufacturer: Provide aluminum windows produced by a single manufacturer regularly engaged in the manufacture of units similar to those required and with a history of successful production acceptable to the Architect.

C. 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 of the manufacturer's recommended methods of installation needed for proper performance of the work of this section.

D. Manufacturer's Certification: Prior to start of installation of the work of this section, secure visits to the job site by a representative of the manufacturer who shall inspect and certify that:

1. The openings in which the work of this section will be installed are all in condition suitable for installation.

2. The materials to be installed comply in all respects with the requirements of this section of these specifications.

3. The materials will be installed in complete accordance with the manufacturer's specifications.

1.03 SYSTEM DESCRIPTION:

A. Design Requirements: Aluminum window assemblies include the following components which may be specified in other sections:

1. Projected sash windows. (Test size 60” x 144”)

2. Fixed sash windows. (Test size 60” x 99”)

3. Fixed insulating panels.

4. Glass and glazing of aluminum windows; refer to Item 2.02E herein and Specification Section 08800.

5. Caulking between aluminum windows and other materials (interior and exterior).

B. Performance Requirements:

1. Meet or exceed performance characteristics for specified window classification as described in AAMA/WDMA/CSA 101/I.S.2/A440-08 unless otherwise specified.

a. Window Classifications: Minimum Frame Depth: 3-3/4 inches.

2. Fixed windows: AAMA AW-PG150
3. Casement windows: AAMA AW-PG150

b. Air Infiltration (AAMA/WDMA/CSA 101/I.S.2/A440-08) with sash closed and locked:

1. Horizontal Sliding, Dual Operating Insulated Glazed Windows: Not more than 0.30 cfm per foot of perimeter crack length area at an inward test pressure of 6.24 psf (With both the primary and secondary sash in the closed and locked position).

a. Air infiltration on windows shall not exceed .30 cfm per square foot of frame when tested at static air pressure difference 6.24 psf (equivalent to 50 mph wind velocity - After Life cycling).

2. Fixed Insulated Glazed Windows: Not more than 0.30 cfm per square foot of fenestration when tested at static air pressure difference of 6.24 psf.

3. Casement Insulated Glazed Windows: Not more than .30 cfm per square foot of fenestration when tested at static air pressure difference of 6.24 psf.

c. Water Resistance (ASTM E331): No controlled water leakage with sash closed and locked and tested at:

1. Fixed Insulated Glazed Windows: Static air pressure difference of 15.00 psf positive and negative.

2. Casement Insulated Glazed Windows: Static air pressure difference of 15.00 psf.

d. Uniform Load Structural Test (ASTM E330). No glass breakage, permanent damage to fasteners, hardware parts, support arms, or actuating mechanisms, nor damage rendering window inoperable when tested with sash closed and locked at:

1. Fixed Insulated Glazed Windows: Static air pressure difference of 150 psf positive and negative.

2. Casement Insulated Glazed Windows: Static air pressure difference of 135 psf positive and negative.

e. Condensation Resistance Factor (AAMA 1503) with sash and ventilators closed and locked:

1. Fixed Insulated Glazed Windows: Not less than 52 CRF.

2. Casement Insulated Glazed Windows: Not less than 50 CRF.

f. Solar heat Gain Coefficient (SHGC) for window fenestration:
1. Where PF<0.2: SHGC = 0.36 min.
2. Where 0.2≤PF<0.5: SHGC = 0.43 min.
3. Where PF≥0.5: SHGC = 0.58 min.

g. Thermal Transmittance / Performance ("U" Value) (AAMA 1503.1) with sash closed and locked:

1. Fixed Insulated Glazed Windows: Conductive thermal transmittance (U-value) not more than 0.38 BTU/hr/s.f./deg.F.

2. Casement Insulated Glazed Windows: Conductive thermal transmittance (U-value) not more than 0.45/BTU/hr/sf/deg.F.

Note: The thermal resistance ("U") factor for all insulated glazed window units shall meet or exceed the U values for window units as mandated by the latest version of International Energy Conservation Code adopted by New York State.

2. All test reports shall be furnished showing compliance to the above performance specifications. Test reports shall not be older than 4 years.

1.04 PROJECT CONDITIONS:

A. Field Measurements: Check actual window openings in construction work by accurate field measurement before fabrication of custom window units. Show recorded measurements on final shop drawings.

1. Established Dimensions: Where field measurements cannot be made without delaying the work, establish opening dimensions and proceed with fabricating aluminum windows without field measurements. General Contractor shall coordinate wall construction to ensure that actual opening dimensions correspond to established dimensions.

2. Coordinate fabrication with construction progress to avoid delay.

1.05 SUBMISSIONS:

A. General: Before proceeding with the manufacture of windows, the Contractor shall submit complete shop drawings with installation details for the Architect's review and approval. These drawings shall

also show window elevations, details of window sections, collateral materials, details of anchorage and associated hardware. Submissions shall be in accordance with Section 01300 - Submissions, and as modified below.

B. Product Data:

1. Submit manufacturer's product data, specifications, standard details, and installation recommendations for components of aluminum windows required for the project.

2. Maintenance Manual: Submit three copies of bound maintenance manual for aluminum windows, including manufacturer's product literature on all components and manufacturer's instructions for cleaning, repair, and general maintenance of all components.

C. Shop Drawings: Submit shop drawings for the assembly and erection of the entire window system. Coordinate the submittal of shop drawings for component parts (as specified in other sections) with this transmittal. Show anchorages and alignments not shown on shop drawings of the components. Clearly indicate on all shop drawings all deviations from the Architect's drawings. Include structural calculations required to show compliance with wind pressure loading requirements, deflection requirements, and movements in the work.

D. Samples:

1. Submit three (3) samples of each required aluminum finish on 12-inch long extrusions or 6-inch square sheets. Where normal color and texture variations are to be expected, include two (2) or more units in each sample to shown the range of such variations. Samples will be reviewed by Architect for color and texture only. Compliance with other requirements is the exclusive responsibility of the Contractor.
2. Submit three (3) insulated panel samples comprised and labeled of the specified components and thickness.

3. Submit three (3) insulated glass samples comprised and labeled of the specified components and thickness.

4. Additional samples, if and as directed by the Architect, to show fabrication techniques, workmanship of component parts and design hardware, and other exposed auxiliary items.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING:

A. Windows and accessories shall be handled in compliance with AAMA Curtain Wall Manual No. 10, *"Care and Handling of Architectural Aluminum from Shop to Site."*

B. The Contractor shall be responsible for protecting the windows and their finish from damage by the elements, construction activities, and other hazards before, during, and after installation.

1.07 GUARANTEE:

A. Submit three (3) copies of written guarantee, signed by the Contractor and Manufacturer, agreeing to replace window work which fails in manufacturing, materials or workmanship within ten (10) years of the date of acceptance. Failure of materials or workmanship shall include, but not be limited to: excessive air infiltration, excessive deflections, delamination of panels, deterioration of finish or metal in excess of normal weathering, and defects in accessories, weatherstripping, and other components of the work. If a defect is found and brought to the attention of the manufacturer, the defect will be corrected at no cost to the Owner. A copy of the manufacturer's warranty shall be provided as a submittal document. Warranty shall not be pro-rated, and the manufacturer shall certify further that replacement parts shall be available for the life of the warranty.

B. Pigmented Organic Coating Warranty: The successful bidder shall certify in writing that the pigmented organic coating on all windows and systems furnished meet the requirements of AAMA 2605 specification for Kynar-based pigmented organic coating and the coating is fully warranted against chipping, peeling, cracking, or blistering for a period of twenty (20) years and five (5) years for AAMA 2603 from date of installation.

C. Insulated Glass shall be guaranteed against failure for a period of 10 Years from the date of installation.

D. Insulated metal panel shall be warranted by the panel manufacturer for a period of twenty-five (25) years. Panel Finish (Kynar resin-based) shall be guaranteed for a period of twenty (20) years.

PART 2 - PRODUCTS

2.01 GENERAL:

A. Design is based on use of aluminum window products as manufactured by Architectural Window Manufacturing Corp. 359 Veterans Boulevard, Rutherford, New Jersey, 07070, and the terminology used may include reference to that manufacturer's specific products. Such references shall be construed only as establishing the performance rating, quality of materials and workmanship to be used under this Section and shall not, in any way, be construed as limiting competition. *Bidder's Note: Proprietary assemblies or system components which are the exclusive product or patent of one particular company will not exclude a bidder from proposing alternate products, assemblies or system components, provided that all required parameters and submissions required of this specification are met and/or exceeded. Operation of units shall not be altered from that as described. Determination of equality shall be the sole decision of the Architect, whose determination shall be deemed final.* Manufacturer will have been engaged in aluminum window manufacturing for a minimum of fifteen (15) years.

Similar manufacturers include, but are not limited to:

1. **Traco Window Corp., a division of the Kawneer Company, Inc. 71 Progress Avenue, Cranberry Township, PA, 16066, ph. (800) 837-7002.**

B. Products used shall be those upon which design is based or shall be equal products approved in advance by the Architect.

C. Window Types:

1. Fixed Thermally Broken Window: Architectural Window Corp Series 7090i Fixed Window. TRACO/Kawneer 8410TL Fixed Impact Thermal Aluminum Window

2. Projected Thermally Broken Window: Architectural Window Corp Series 2542i Projected/Casement Window; TRACO/Kawneer INX3500 Projected Thermally Broken Project-Out Aluminum Window

D. All windows within this project are to be built and supplied by a single manufacturer.

E. Products used shall be those upon which design is based or shall be equal products approved in advance by the Architect. Subject to compliance with all material, construction and performance requirements outlined in these specifications. Proof of equivalency is the responsibility of the contractor.

F. Substitutions: Requests for substitutions must demonstrate that the product seeking approval meets or exceeds the design and performance specifications of the named products.

2.02 MATERIALS: All window components shall be AAMA certified materials.

A. Aluminum Extrusions:

1. All frame and sash sections shall be accurately extruded aluminum shapes produced from commercial alloy 6063-T6 and shall be free from defects impairing strength and/or durability.

2. Thermal break: Provide window units with an integrally concealed low conductance structural and mechanical thermal barrier, located between exterior materials and window members exposed on the exterior in a manner that eliminates direct metal to metal contact. The thermal barrier shall be INSULBAR or equal, and consist of two glass reinforced polyamide nylon 6/6 struts mechanically crimped in raceways extruded in the exterior and interior extrusions.

3. Frame, sash, mullion, and sill members shall be of such design and structural strength to satisfy the intended purpose and to meet the applicable AAMA performance requirements. Sill frame shall be constructed of tubular shapes formed from single and

continuous extrusions and shall include an aluminum closed weep system to prevent accumulation of water in sill.

4. Gaskets: All corner joints of the master frame shall have neoprene compression gaskets to ensure a weather-tight seal.

5. No extruded plastics shall be allowed in the frame or sash members.

6. Exterior and interior frame sill shall have a minimum slope of five (5) degrees.

7. Muntins: Unless otherwise indicated, all muntins for all operational and fixed window units shall be 3/8" deep extruded profile aluminum, frame-mounted and applied to the unit exterior. Muntin colors shall be homogeneous. *Pressure-applied muntins shall not be permitted.*

B. Fasteners:

1. All screws, nuts, washers, bolts, rivets, and other fastening devices incorporated in the product shall be of sufficient strength and quality to perform their designated function.

2. Fasteners shall be made from aluminum, non-magnetic stainless steel, or other materials warranted by the manufacturer to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors, and other components of window units.

3. Locate all fasteners so as not to disturb the thermal break construction of windows.

C. Hardware:

1. Hardware shall be of aluminum, stainless steel, or other corrosion resistant materials compatible with aluminum.

2. Provide one (1) aluminum window operating pole for <u>each room</u> where new double-hung and/or project-in windows are installed.

3. Operating sash to have anti-take out (dormitory type) hardware for sash removal by authorized personnel only.

D. Weather Strip:

1. All sash shall be double weatherstripped using silicone-treated pile with a polypropylene center fin conforming to AAMA 701.2. Provide compressible weather stripping designed for permanently resilient sealing between adjoining window frames and/or perimeter sub-frame conditions. Weather stripping will be completely sealed when aluminum window is closed and installation is complete.

2. Provide woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric. Comply with AAMA 702/702. All weather-strips and weather seal shall be held in extruded ports and secured to prevent loss when operating sash.

E. Glass and Glazing:

1. All lites to be an "insulated glass" system, factory-glazed consisting of:

   a. **Standard Glazing**:
      Outboard Pane = 1/4" tinted tempered glass and 1/2" desicant-filled aluminum spacer, with Argon filled void. Inboard Pane = 1/4" tinted tempered glazing with PPG Solarban 70 Coating on #2 surface, unless otherwise noted within the documents. (Provide obscure glazing at inboard pane at all toilet rooms, locker rooms and where indicated on drawings) Total Thickness: 1"

2. All windows shall be factory glazed with hermetically sealed insulating glass units with a dual seal of polyisobutylene and silicone. Glass is to be separated by a desicant - filled aluminum spacer with the void containing Argon Gas. Glass must be set into a continuous bed of silicone sealant and held in place with removable extruded aluminum snap-in beads. Wrap around (marine) glazing, which requires the removal and disassembling of the sash for re-glazing will not be acceptable. Units must be IGCC certified for a CBA rating level.

3. All glass is to be set on 1/4"-inch setting blocks.

4. All glass or panels glazed into fixed framing to receive a perimeter cap bead of silicone sealant between the glazing leg and glass or panel surface. Sealant shall be factory applied.

5. All glass or panels glazed into sliding windows are to receive a perimeter cap bead of silicone sealant between the glazing leg and glass surface. Sealant shall be factory applied.

F. Screens:

1. Screens are to be provided at kitchen areas (food preparation areas), at all administrative areas, at all classroom and instructional locations (excluding rescue windows), and all other operable window locations.

2. Screens shall be provided of manufacturer's standard approved design. Screens are intended to provide reasonable insect control and are not for the purpose to provide security or for the retention of objects or persons from the interior. Screen frame shall match adjacent window frame color and finish.

3. Screening shall be of material compatible with aluminum and conform to USDC CS 138-55, GSA FS RR-W-365, USDC CS 248-64, or GSA FS L-S-125B.

4. Full screens shall consist of 18 x 16 charcoal anodized aluminum mesh secured by vinyl spline to a nominal 5/16" x 1 1/4" x .050 extruded tubular aluminum frame. Frame color and finish to match window system exterior.

5. Screens shall be remeshable, removable from the interior, and held in place with spring-loaded plungers.

G. Other Materials:

1. Metal Insulated Panels: Insulated metal panels with window frames shall be fabricated with an outer and inner .032 thick, smooth aluminum skin, the outer skin laminated to asbestos-free mineral fiber reinforced cement board, minimum 3/16" thick, and the inner skin laminated to 1/2" thick Type 'C' Firecode Gypsum Board to provide a 15 minute interior flame spread rating in accordance with ASTM E-119 and ASTM E-84. The inner core shall be rigid isocyanurate. (Insulation must have a flame spread rating of 0.25 in accordance with ASTM E-84, fuel contribution of less than 100, and smoke developed less than 450.) Total panel thickness shall be 2" or thickness as shown on drawings. Panels shall be manufactured by 'Mapes Industries', or as approved equal by the Architect. Aluminum skins shall receive a fluorpon finish (Kynar 500), both exterior and interior faces in colors as selected by the Architect.

2. Sealant: Unless otherwise indicated for sealants required within fabricated window units, provide elastomeric type as recommended by the window manufacturer for joint size and movement, to remain permanently elastic, non-shrinking and non-migrating. Provide sealant complying with AAMA 800-92.

3. Access Panels: Frames for access panels to be hollow extruded sections, with minimum wall thickness of 0.062 inches, and shall be miter-cut and assembled with stainless steel screws for ease of repair. Tamper-resistant security fastening shall be installed at the bottom of each panel to securely attach panels to sash. For safety purposes, access panels shall be encased within channels at the top and bottom to prevent the panel from falling out, even if the security fastening is removed.

4. Rescue Labels: Windows designated on drawings as *"Rescue"* or *"Egress"* windows shall meet all applicable codes and shall include a conforming label. Refer to Contract Drawings for additional information.

2.03 MANUFACTURED UNITS:

A. Horizontal Sliding (XX Configuration) Windows:

1. Dimensions: Minimum .080" wall thickness in all frame, head, and sash extrusions; sill shall be .125” minimum wall thickness high performance sill; not less than 4-1/4" frame and sash depth; unit height and width as shown on drawings. Sill frame to incorporate a closed weep flap system to allow water out, but prevent air from infiltrating in.

2. Frame Components mechanically fastened. Sash vertical members shall telescope into the sash horizontals and be mechanically fastened. Tubular sash extrusions shall have each corner mitered, reinforced with extruded aluminum corner key, hydraulically crimped, and “cold-welded” with epoxy adhesive.
   a. Mechanical fasteners, welded components, and hardware items shall be located so as to not disturb or bridge the thermal break construction of windows. Thermal barriers shall align at all frame and sash corners. All screws, nuts, washers, bolts, rivets and other fastening devices incorporated in the product shall be of sufficient strength and quality to perform their designated function. Fasteners shall be made from aluminum, non-magnetic stainless steel, or other materials warranted by the manufacturer to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors and other components of window units.

3. Glazing: “Wet glazed” with a silicone back bead compound to be GE SCS-2511 or equal. All lites (both sash and fixed) of the horizontal slider shall be inside glazed and weeped to the exterior. Refer to Item 2.02E herein and specification 08800.

5. Compression-Type Weather Stripping: Provide compressible weather stripping designed for permanently resilient sealing between adjoining window frames and/or perimeter subframe conditions. Weather stripping will be completely concealed when aluminum window is closed and installation is complete.

   a. Weather-stripping Material: Manufacturer’s standard system and materials complying with AAMA/WDMA/CSA 101/I.S.2/440-11, similar or equal to *Schlegel “Q-Lon”.*

5. Hardware for Windows: Provide the following operating hardware:

A. Fixed Windows:

1. Dimensions: Minimum .080" wall thickness in all main frame head and jambs; sill shall be .080" minimum wall thickness; sash extrusions to have minimum wall thickness of .080”; not less than 4-1/4" frame and sash depth; unit height and width as shown on drawings.

2. Frame Components mechanically fastened. Sash vertical members shall telescope into the sash horizontals and be mechanically fastened.

   a. Mechanical fasteners, welded components, and hardware items

shall not bridge thermal barriers. Thermal barriers shall align at all frame and sash corners.

3. Glazing: "Wet glazed" with snap-in aluminum extruded glazing bead and PVC bulb; glass set in continuous bead of silicone back bead compound. Refer to Item 2.02E herein and specification 08800.

4. Provide *Schlegel "Fin seal"* or equal.

5. Water control, sill with weep slots and hinged covers to allow water to drain by gravity and resist wind-driven water.

B. Casement Windows:

1. Dimensions: Minimum 0.125" wall thickness in all frame head and sash extrusions and not less than 4-1/4" frame and sash depth; unit height and width as shown on drawings.

2. Frame Components shall be mortised and tendon. Tubular sash extrusions with each corner mitered, reinforced with extruded aluminum corner key, hydraulically crimped, and "cold-welded" with epoxy adhesive.

   a. Mechanical fasteners, welded components, and hardware items designed to avoid bridging thermal barriers. Thermal barriers shall align at all frame and sash corners.

   b. Neoprene weather-stripping, minimum two rows, installed in dovetail grooves in sash extrusion of each sash.

3. Glazing: "Wet glazed" with snap in aluminum extruded glazing bead and PVC bulb interior side. Exterior glass set in continuous bead of silicone backbed compound, GE SCS-2511 or equal. Refer to Item 2.02E herein and specification 08800.

4. Hardware for Casement Windows:

   a. Locking handles: Cam-type, white bronze with US25D brushed finish.

   b. Operating arm/hinge: 4-bar stainless steel arm and friction hinge, similar to *"Anderberg Series 301"*.

5. Weatherstrip: All primary weatherstrip shall be *Schlegel "Finseal"* or equal.

6. In each room where new double hung windows are installed, provide and install one (1) 7/8" burnished aluminum window operating pole with light grey rubber tip cemented to bottom and pole hook receptor, as manufactured by *"H.B. Ives"* or approved equal. Pole shall be of suitable length to accommodate window operating height.

7. Water control, frame and sill with two weep slots to allow water

to drain by gravity and resist wind-driven water, sash weep holes at bottom of both sash for drainage.

F. Typical for All Windows: Thermal break thermal barriers shall provide a continuous, uninterrupted thermal break around the entire perimeter of the sash and frame, regardless of the operation type.

2.04 FABRICATION:

A. General: Provide manufacturer's standard fabrication and accessories which comply with indicated standards and produces units which are reglazable without dismantling of sash framing, except to extent more specific or more stringent requirements are indicated. Include complete system for assembly of components and anchorage of window units and prepare complete preglazing at factory.

B. Sizes and Profiles: Approximate sizes for window units and profile requirements are indicated on the drawings. All sharp milled edges shall be deburred and made smooth prior to finishing. All corner joints shall be joined neatly and sealed with neoprene die-cut compression gaskets in a manner to provide a weathertight connection.

C. Thermally Improved Construction: Fabricate aluminum windows with an integral concealed low thermal barrier (products with exposed thermal barriers will not be acceptable).

1. All exterior aluminum shall be separated from interior aluminum by a rigid, structural thermal barrier. For purposes of this specification, a structural thermal barrier is defined as a system that shall transfer shear during bending and, therefore, promote composite action between the exterior and interior extrusions.
2. No thermal short circuits shall occur between the exterior and interior.
3. The thermal barrier shall be Insulbar® or equal, and shall consist of two (2) glass reinforced polyamid nylon 6/6 struts mechanically crimped in raceways extruded in the exterior and interior extrusions.
4. Poured and debridged urethane thermal barriers shall not be permitted.

D. All frame and sash members are to be continuous extrusions. The window head is to be miter cut and fastened to jambs with 1/8" thick corner keys and 4 cadmium plated or stainless steel screws into integral screw ports. Frame jambs are to be angle cut to match the sill slope and fastened with 4 cadmium plated or stainless steel screws into integral screw ports.

E. The frame sill shall slope 10 degrees to the exterior and contain integral offset weep holes that allow gravity water drainage and resistance to wind driven water and/or air. Provide high performance sill as needed to meet window performance requirements.

F. Each operating sash shall be removable from the interior for cleaning

by raising the sash 1” and pulling lower portion to the exterior.

G. All frame joints shall be hairline and be factory sealed with a sealant conforming to AAMA 800-07.

H. Mullions or Other Structural Members: When units occur that are joined by integral mullions, independent mullions, or by a combination of frame members, the resulting members shall be capable of withstanding the design pressure. Evidence of compliance may be by mathematical calculations.

I. Finish:

1. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

a. The exterior finish shall be: Superior Performance Organic Finish AA-C12C40R1x. Prepare, pretreat and apply coating to exposed metal surfaces to comply with AAMA 2605 and with coating and resin manufacturers written instructions. Fluoropolymer Two-Coat System: Manufacturers standard two-coat thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70% polyvinylidene fluoride resin by weight; complying with AAMA 2605.

c. The interior finish shall be: Baked Enamel Finish AA-C12C42R1x. Apply baked enamel complying with paint manufacturers written instructions for cleaning, conversion coating and painting. Organic Coating: Thermosetting, modified-acrylic enamel primer/topcoat system complying with AAMA 2603.

d. Colors: As selected by Architect from manufacturers standard colors. Exterior color may be different from interior color.

2.05 ACCESSORIES:

A. Casing (Panning):

1. Provide 0.08 inch minimum wall thickness extruded aluminum to cover exterior casings. Aluminum sections shall be of one piece design to lock around the entire window frame for a water-tight connection. Contoured profiles of casing covers shall be as shown on the drawings.
2. The casing covers shall be assembled using stainless steel screws into integral screw ports, with joints back-sealed.
3. Flanged frame, brake metal, exposed fastenings and other alternatives will not be acceptable as a substitution for the

specified casing cover system.

B. Exterior Mullion Covers: Exterior mullion covers shall be extruded aluminum shapes. The wall thickness shall be no less than 0.062 inches.

C. Receptors and Sub-Sills:

1. Where indicated on the drawings, extruded aluminum receptors with a minimum wall thickness of 0.94 inches shall be provided at all heads and jambs of the window openings. The base section of the receptor must be secured to the surrounding conditions. The snap-in portion of the receptor must be designed to not require any fastenings.
2. Where indicated on the drawings, extruded aluminum subsills with minimum wall thickness of 0.094 inches shall be provided. Subsills must be designed to able to drain any water that enters the window system by way of weep slots with hinged covers. All subsills are required to have end damns and must be sealed watertight.

D. Interior Trim: Interior trim, closures and angles shall be as shown on the drawings and of aluminum extruded shapes. Minimum thickness for all interior trim is .062 inches.

PART 3 - EXECUTION

3.01 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. Do not proceed until unsatisfactory conditions have been corrected.

B. Openings shall be verified by Contractor and/or General Contractor to be within allowable tolerances, plumb, level, clean, providing a solid anchoring surface, and in accordance with approved shop drawings. Unsatisfactory conditions shall be corrected prior to installation.

D. For window replacement projects, existing windows shall not be removed until the new replacement windows are available and ready for immediate installation. Openings shall not be left uncovered at the end of the working day, during wind driven precipitation, or very cold weather. Existing window removal and replacement with new windows for any individual room shall be done within the same day.

E. Perform all other operations that are necessary to prepare openings for proper installation and operation of new window sills.

F. For projects which contain hazardous window materials identified by the pre-construction test results: Contractor shall note well that this contract calls for the complete removal of all existing window sashes in a complete and intact condition. Should any existing sash fragment or break prior to disposal, the Contractor shall immediately stop all work and contact the Owner’s on-call Project Manager for

review and direction.

3.02 INSTALLATION:

A. Install the work of this section in strict accordance with the manufacturer's recommendations, approved shop drawings, and all pertinent regulations and codes.

B. All window and related window components shall be installed in accordance with the requirements of the Owner and the approved shop drawings of the manufacturer. All installations shall be by the window manufacturer, or their approved representative, using mechanics skilled and experienced in the erection of aluminum window units.

C. Set units plumb, level, and true to line, (relative to building structure) without warp or rack of frames, sash, or panels. Anchor securely in place to prevent distortion or misalignment. The maximum variation from plumb and level shall not exceed 1/8” (plus or minus) in ten (10) feet.

D. Fiberglass insulation shall be compressed between new window frame and existing construction or between frame and new blocking as applicable. Approved insulation materials (R-19 or better) shall be installed in the frame cavity on the interior portion of the window frame. Area adjacent to the exterior of the window frame shall remain un-insulated. The window installer shall use caution in the insulation operation to avoid overlapping insulation materials across the thermal break connector, thus bridging the two separated frame members.

E. Aluminum shall be insulated from direct contact with steel, masonry, concrete, or non-compatible materials by bituminous paint, zinc chromate primer, or other suitable insulating material.

F. Exterior joints between windows and surrounding construction shall be sealed per specifications and approved shop drawings.

G. Joint Sealant Application:

1. Joints and surfaces to receive sealants shall be dry, clean, and free from loose material, efflorescence, or mortar leaching. Sealants shall not be applied when temperature is below sealant manufacturer’s recommendations.

2. A Grade “A” type caulking compound from *Pecora, Tremco, Vulkem* or equal, as approved by the Architect, shall be applied per the installation drawings and details at all points where the aluminum master frame and/or panning intersects the masonry or other exterior wall finish. The caulking material shall be applied in a manner which insures a continuous air and water tight perimeter seal. Color to match the color of the aluminum windows, unless specified otherwise by the Architect.

H. Exposed Fastener Concealment: Note: No exposed fasteners shall be

allowed at any aluminum assemblies. The Contractor shall supply and install all concealment panning as required to fully enclose any exposed fasteners which may be a result of the system installations. The panning enclosures shall be of identical material in both composition and appearance, as the aluminum systems specified herein, in order to provide a seamless, and professional installation.

3.03 DISPOSAL AND CARTING:

A. Existing windows and all other materials removed as a part of the requirements of this Contract shall be removed from the site and become the property of the Contractor upon their removals. The Contractor shall promptly remove and legally dispose of said materials at no additional cost to the Owner.

B. Comply with all applicable laws, rules and regulations as they pertain to the legal disposal of waste materials of the type produced by the work of this Section.

3.04 FIELD TESTS:

A. Air infiltration tests conducted per ASTM E 783-81, and water resistance test conducted per AAMA 501.3, shall be performed to AAMA standards. Field test shall be performed by an AAMA-accredited, certified architectural testing laboratory in accordance with AAMA 502-90 standards, and conducted with the window manufacturer representative present. The Architect shall randomly select one pair of adjacent windows to be tested. The cost for only the initial test to be borne by the Owner; any additional testing required or corrective measures for non-conforming work shall be the responsibility of the window Contractor.

B. If a test specimen should fail any aspect of the field test, the test specimen shall be repaired or replaced and re-tested. At the Architect’s discretion, up to three (3) additional windows may be tested. Subsequent to testing, all window units shall be repaired or replaced in the same manner as the test specimen(s) to assure compliance with project performance specifications.

C. The cost of re-testing and all subsequent repairs shall be borne by the window manufacturer and the window Contractor.

3.05 ADJUSTING AND CLEANING:

A. After installation, the erector shall remove all sealants, caulking and other misplaced materials from all surfaces, including adjacent work. The window frame and glass shall be cleaned thoroughly with materials and methods recommended by the window and glass manufacturers, and shall not cause any defacement of the work. All hardware and moving parts shall be completely lubricated.

B. Frames and balances shall be adjusted, if necessary, after installation to insure smooth and weather-tight operation.

C. Lubricate hardware and moving parts.

D. Clean aluminum surfaces and remove excess sealant.

E. Remove all debris caused by the work of this section.

F. Upon completion of cleaning efforts, leave windows in closed position.

3.06 ADDITIONAL REPLACEMENT SASH

A. As a part of each Base Bid, the Contractor shall supply to the Owner 5% additional replacement sash for each window type as shown on the Contract Documents. No less than one (1)

B. The Contractor shall purchase and have all replacement sash delivered on-site at the time of main delivery of the primary window units. The Contractor shall deliver the replacement sash to a location as designated by the Owner's Representative. He shall have the delivery signed for and authorized by the Owner's Representative as received. Said manifest/delivery ticket shall be submitted to the Owner's Representative with associated pay requisitions as substantiation and proof of delivery.

3.07 MAINTENANCE AND OPERATION INSTRUCTIONS:

A. The Contractor shall instruct the Owner's maintenance staff on the care, maintenance, and operation of the installed window system including, but not limited to: cleaning and replacement of glazing, periodic lubrication of hardware, and balance adjustment.

END OF SECTION

DIVISION 9 - FINISHES

SECTION 09500 - INTERACTIVE ACOUSTICAL PANEL SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION

A. Provide all labor, materials, equipment and services and perform all operations required to complete the installation of all work of this section and related work as indicated on the drawings as specified herein, including, but not limited to, the following:

1. New sound-absorbing acoustical panels of size and shape shown on the drawings and/or specified herein.

1.02 REFERENCES

A. American Society of Testing and Materials:

1. ASTM C423 – Standard Test Method of Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
2. ASTM E90 – Standard Method of Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
3. ASTM E413 – Classification for Determination of Sound Transmission Class.
4. ASTM E795 – Standard Practices for Mounting Test Specimens During Sound Absorption Tests.
5. ASTM E84 – Test of Surface Burning Characteristics.

B. National Fire Protection Association:

1. NFPA 101 – Life Safety Code Requirements for Interior Finish.

1.03 SYSTEM DESCRIPTION

A. Furnish a system of sound-absorbing panels for reducing sound energy levels and improving the hearing environment.

B. Absorber Panels: Wall and ceiling mounted impact resistant polyhedrons; sound absorbing throughout audio spectrum; fabric wrapped.

C. Mounting Hardware:

1. Wall mounting (absorbers and diffusers): Four corner support, designed to allow panels of same size to be interchanged. NOTE: 2″ clearance above top of absorbers and diffusers needed for proper mounting.

D. Acoustical Performance Requirements:

1. Sound absorption coefficients, measured with a Type A and Type E-400 mounting, according to ASTM E795 (if applicable) or according to application mounting method, determined by ASTM C423:

Mounting Type	Absorption Coefficient One-Third Octave Band Center Frequency(Hz) 125	250	500	1,000	2,000	4,000	Sabines/Unit One-Third Octave Band Center Frequency (Hz) 125	250	500	1,000	2,000	4,000
	Wall & Ceiling Absorbers (4'x4')						Wall & Ceiling Absorbers (4'x4')					
A[1]	0.36	0.99	1.23	1.55	1.22	1.06	5.5	15.1	18.8	17.6	17.1	16.2
	Convex Ceiling Diffusers (4'x4')						Convex Ceiling Diffusers (4'x4')					
A	.49	.16	.10	.04	.03	.05	7.8	2.6	1.5	0.7	0.5	0.8
E-400	.21	.16	.16	.15	.14	.26	3.3	2.6	2.6	2.3	2.2	4.2
	Pyramidal Ceiling Diffusers (4'x4')						Pyramidal Ceiling Diffusers (4'x4')					
A	.27	.18	.09	.06	.03	.00	4.3	2.9	1.4	1.0	0.5	0.0
E-400	.21	.14	.13	.13	.18	.27	3.4	2.2	2.1	2.1	2.9	4.3
	Type I Convex Wall Diffusers (4'x4')						Type I Convex Wall Diffusers (4'x4')					
A	.18	.18	.13	.10	.12	.16	2.9	2.9	2.1	1.6	1.9	2.6
E-9/32"[1]	.25	.14	.11	.10	.13	.16	4.0	2.3	1.8	1.7	2.0	2.6
	Type I Pyramidal Wall Diffuser (4'x4')						Type I Pyramidal Wall Diffuser (4'x4')					
A	.23	.18	.13	.12	.14	.11	3.7	2.9	2.1	1.9	2.2	1.8
E-9/32"	.22	.18	.12	.12	.17	.20	3.5	2.9	1.9	1.9	2.7	3.2
	Type II Wall Diffusers (4'x8')						Type II Wall Diffusers (4'x8')					
A	.34	.27	.14	.11	.11	.19	10.8	8.6	4.6	3.4	3.6	6.1
E-9/32"[1]	.28	.29	.19	.13	.13	.20	9.1	9.4	6.0	4.1	4.1	6.4

[1]Mounted 9/32" air space to simulate actual installation practice.
A Mounting – 0" air space
E-400 Mounting – 16" air space

2. Sound Transmission Class (STC), determined according to ASTM E90 and ASTM E413: Type I convex ceiling diffuser panel, 4' x 4'; STC 23; Type I pyramidal ceiling diffuser panel, 4' x 4'; STC 22.

1.04 SUBMITTALS

A. Shall comply with the requirements of Section 01300 and with the requirements listed below.

B. Product Data: Submit applicable reference standards and application recommendations and limitations.

C. Shop Drawings:

1. Shop drawings shall show a working layout of proposed panel installation, including, but not limited to, individual panel dimensions and detailed method of fastening and other pertinent details.
2. Shop Drawings: Submit design and installation drawings showing product components in assembly with adjacent materials and products.
3. No panels shall be installed before approvals have been received.

D. Samples:

1. Acoustical Wall Panel: 12" x 12" sample.
2. Mounting hardware, including fasteners.

E. Quality Control Submittals:

1. Manufacturer's Installation Instructions.

F. Contract Closeout Submittals:

1. Maintenance Recommendations.
2. Warranty.

1.05 DELIVERY, STORAGE AND HANDLING

A. Pack and ship to avoid damage according to manufacturer's recommendations:

1. Factory finish and assemble all components before shipment.
2. Ship components in sealed, labeled cartons.

B. Do not accept damaged products at the site.

C. All materials shall be stored under cover in a clean, dry, well ventilated space immediately after delivery to the job. Any material which becomes damaged or soiled and, in the option of the Owner, cannot be repaired, will be replaced with new, specified material at no additional cost to the Owner.

1.06 PROJECT CONDITIONS

A. Field Measurements: Obtain from Contractor and indicted on Shop Drawings.

B. Environmental Requirements: Install panels after all mortar, wet and dust producing trades have completed their work and wall and ceiling surfaces have been finished.

1.07 WARRANTY

A. Provide manufacturer's written warranty that products not in accordance with requirements of Contract Documents within three years after date of commencement of warranties shall be corrected promptly after receipt of written notice from Owner.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Wenger Corporation, 555 Park Drive, Owatonna, MN 55060, (507) 455-4100.

2.02 SUBSTITUTIONS

A. The materials and products of the manufacturer listed above are approved as base bid for this project. All bids shall be submitted on the base bid products and materials. Proposed "write in" or voluntary alternates will not be considered in determining the low bid or the award of the contract.

B. The burden of demonstrating the merit of the proposed substitute is on the proposer. The proposer shall be prepared to supply the specified material or products from the specified supplier if the proposed substitute is not accepted.

C. Bidders wishing to submit substitutes shall make written request to the specifying authority at least ten (10) days prior to bid opening. Such requests must include adequate information to demonstrate precise functional equivalence to the base bid products and materials.

D. Final approval of the substitute shall be determined at the time of job completion. Failure to provide precise functional equivalence may result in removal of the substitute and installation of approved

product at contractor's expense.

E. If the specifying authority approves the proposed substitute prior to bid opening, approval will be set forth in an addendum. Bidders shall not rely upon approvals made in another manner. Bid prices based upon substitute products shall be identified separately.

F. The materials, products and equipment in the bidding documents establish the required standard of function, dimension, appearance and quality to be met by any proposed substitute.

G. Bidders requesting approval of a substitute must provide proof of an acoustical evaluation completed for the space where the panels are specified. The acoustical evaluation must show the acoustical effects of both sound absorbing panels and sound diffusing panels.

H. Bidders requesting approval of a substitute must include test reports from an accredited independent laboratory showing one-third octave band sound absorption coefficients of the production run of panels tested with specified mountings, Type A, Type E-400, whichever is applicable. Noise reduction coefficient (NRC) data alone are not acceptable. Octave band TL data are not acceptable.

2.03 MANUFACTURED UNITS

A. Absorber Panels: Manufacturer's standard construction of **3" thick** or as specified on drawings, 6lb./cu.ft. glass fiber board with foil backing, metal edged frames, covered with Class A rated fabric according to ASTM E-84. Corner brackets are integrated into the metal edged frame and receive mounting hardware.

B. Finishes:

1. Wall-mounted panels: Manufacturer's standard woven plain weave 100% polyester 20 ply fabric wrapping entire core and frame and glued to back of frame, color selected from manufacture's 2155 series palette.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Wall panel installation, using metal "Z" clip fasteners. Spacing and quantity shall be in accordance with the manufacturer's recommendations.

B. Upon completion of the installation, the Contractor shall remove and vacuum clean all debris.

3.02 DESCRIPTION AND LAYOUT

A. Refer to floor plans, elevations and reflected within specifications for each allocated space.

END OF SECTION

Division 15 - Mechanical

Section 15609 - Gas Risk Management System

1. General

1.1. Contractor will furnish, install and place in operating condition a gas monitoring system suitable for detection of combustible gas and carbon monoxide (CO). The system shall be installed in accordance with the drawings and as specified herein complete with all accessories necessary for proper operation.

1.2. The system shall be designed to minimize the risk to personnel and facilities of exposure to dangerously high concentrations of combustible and CO gases. Inherent in the system design will be the ability to help manage the gas exposure risk via a central gas controller where the user can view system configuration, gas concentration an alarm history. Also inherent in the system design will be internal continuous self-diagnostics to insure the system is operating correctly.

1.3. Products used in the work of this Section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of satisfactory production acceptable to the Engineer. The manufacturer shall have an ISO 9001:2000 Registered Quality Control System in place and approved.

1.4. The controller shall be RKI Beacon approved model 410A or 800. Combustible gas sensor modules shall be Model 61-0140RK. Carbon Monoxide gas sensor modules shall be Model 65-2496RK.

1.5. The gas detection system shall be interfaced with the boilers, water heater and building alarm system to shut down and alarm on elevated gas conditions and the FACP as directed by the design drawings. The signal to the FACP shall provide separate notification for combustible gas and carbon monoxide.

2. System Description

2.1. There shall be a high and low level alarm and a trouble alarm for each sensor, annunciated on the controller display panel with an alarm LED. Relays for high alarm, low alarm and trouble will activate circuitry for remote alarm indication and action including burner shut-down and notification to the building FACP.

2.2. Communication between the controller and the remote sensors shall be via a 2-way digital communication connection enabling a multiplex sensor interface concept.

2.3. Calibration shall be single-person, auto-adjusting without any manual adjustments required and without exposing circuit electronics to potentially hazardous atmosphere.

2.4. The system shall include the following sensors, interlocks and alarm devices:

2.4.1. carbon monoxide sensors – 0-300 PPM range, 35 second response time. See drawing for placement and quantity.

2.4.2. combustible gas sensors – catalytic bead type, 0-100% LEL range less than 60 seconds response time. See drawing for placement and quantity

2.4.3. (1) PLC based digital programmable controller, with display, alarms, (4) or (8) channel interface, relay output panel, wall mount NEMA 4 enclosure.

2.4.4. Audio / visual alarms with horn and strobe lamp with wall mount enclosures.. Lamps to be amber in color. See drawing for placement and quantity.

2.5. The controller must provide extensive diagnostic information including low sensor sensitivity, calibration due, disconnected/disabled sensors, low sensor voltage, calibration error, clock error and sensor output voltage.

2.6. Controller must have capability to test and reset alarms, alphanumeric module tags, alphanumeric gas tags, and digital display of the sensor output, diagnostic information and menu-driven instructions.

2.7. Provide manufacturers start up and commissioning calibration with complete test report.

Division 15 - Mechanical

Section 15903 - AUTOMATIC TEMPERATURE CONTROL SYSTEMS

PART 1 - GENERAL

1.01 GENERAL

A. Furnish and install all temperature controls including all devices and accessories required for the installation / modification to an "Andover" (Schneider Electric Global) energy management and control system.

B. There are existing Andover DDC front-end systems at these buildings. All new controls shall be Schneider Electric Global DDC, as a seamless extension of the existing BMS. The controls contractor will provide all network wiring between the existing BMS and the new controls, and will provide all graphics, front-end programming to map up the new controls. The contractor will include all licenses as necessary to accommodate the new controls.

C. All new controls shall be of the DDC type unless specified otherwise. All DDC controls shall be manufactured by Schneider Electric Global Inc. The design make for the web-based front-end controller and all local DDC controllers is Schneider Electric Global Inc.

D. The ATC contractor shall be authorized by the system manufacturer and shall submit training certificates and current proof that the contractor is a *certified Schneider Electric Global Inc. installer / integrator*.

E. Under no circumstances, will the Owner accept bids for DDC systems that are proprietary in nature. If the bidding contractor is including a DDC system other than Schneider Electric, it must meet all the requirements of this specification and the contractor must list the DDC system in a substitutions list and include the following information with his bid:
   a. The name and address of the proposed ATC subcontractor and DDC system they are proposing.
   b. A list of at least two additional sources for the installation, service and purchase of repair parts within a 50-mile radius of the School District. These sources must be completely independent from the proposed ATC subcontractor. The intent is to assure the District that they are not entering into a proprietary arrangement.
   c. Written assurance that the proposed substitute DDC system meets all the requirements of this specification.

F. Control systems shall be complete in all respects, including all labor, materials, equipment and service necessary. The controls shall be of the DDC type unless otherwise specified.

G. Systems shall include, but not be limited to, all application specific controllers, transducers, transformers, cabinets, valves and operators, dampers and operators, relays, sensors, switches, wiring and terminals.

H. Systems shall be installed by competent mechanics regularly employed by a company whose primary business is the installation of automatic temperature control systems. The company must employ at least two control specialists who have successfully completed at least one Schneider

Electric factory-authorized 5-day training program on the controls specified for this project. The ATC contractor will be required to submit proof of such training in the form of a Schneider Electric Global Certificate.

I. Installation shall include all control components, installation of all control wiring and pneumatic tubing. All wiring required for interlocking and interfacing controls with the equipment to be controlled, whether low voltage or line voltage; calibration and adjustment of all controls, dampers, linkages, etc. is part of this contract.

J. All control wiring concealed in walls or run in open areas of machine rooms shall be in conduit. In other locations, plenum rated cable shall be used.

K. The ATC Contractor shall provide PDF submittal showing how he proposes to complete the work specified herein. In this book, the ATC Contractor shall submit description of operation and schematic drawings, produced in AutoCAD, showing the wiring and pneumatic tubing of the entire control system to the District for review before starting any work. Bulletins describing each item of control equipment or component shall be included.

L. Upon completion of his work, the ATC Contractor shall provide PDF Operation & Maintenance Manuals showing exactly how each component of the system was installed, specifically noting any changes from the submittal book, and who authorized the change. Schematic drawings, sequences of operation and technical literature must be provided for all components of the system.

M. All automatic temperature control work completed under this Contract shall be covered under a one (1) year warranty and service contract effective on date of acceptance. Scheduled maintenance service shall be provided to attend to the normal maintenance required for proper system operation in the building.

N. It is the Contractor's responsibility to inspect the buildings, their existing systems and the project drawings to verify exact quantities of devices and controls required for the systems specified. No allowance will be made if the Contractor fails to make such an examination.

O. Provide nameplates on all devices, whether mounted on the face of the central and local control panels. In occupied areas, nameplates shall be concealed beneath covers of room type instruments, to describe functions.

P. All control panels shall include wire markers for each wire, with an identifying wiring diagram.

Q. The Control Contractor shall provide a minimum of two (2) one-hour training classes on the system operation and maintenance. This is to include both classroom and on-site training to ensure that the District’s custodial and maintenance personnel have adequate knowledge of the control system’s features as well as operation and maintenance requirements. The Contractor will provide printed documentation to all persons attending the training sessions.

1.02. **CONTROLLERS**

1. All room thermostats shall have covers with programmable +/- adjustment range. Thermostat or sensor locations not shown on the drawings shall be subject to approval of the Architect. A thermostat shall be included for each new piece of equipment, whether specifically shown on the drawings or not. All thermostats or sensors sensing temperature within ductwork or at coils are to be provided with elements of sufficient length to measure average temperature across the duct cross section or coil face. DDC space sensors shall have no local setpoint adjustment or override capability. It is the intent to make all adjustments from the front-end, with the exception of the programmed thermostat +/- range.

1.03. **VALVES**

1. All automatic control valves shall be fully proportioning unless otherwise specified, quiet in operation, and shall be arranged to fail-safe in either a normally open or normally closed position in the event of power failure. The open or closed position shall be as specified or as required to suit job conditions. Valves shall be capable of operating at varying rates of speed to correspond to the exact dictates of the controller and variable load requirements. Provisions shall be made for valves operating in sequence with other valves or damper operators to have adjustable operating ranges and starting points to provide flexibility of adjustment, sequencing and throttling range.

2. Valves shall be sized by the ATC Contractor and guaranteed to meet the heating or cooling requirements as specified, and as indicated on the drawings. Unless otherwise specified, control valves shall have 125 psig cast iron bodies with flanged connections on valves 2 1/2" or larger. Unless otherwise specified, valve bodies shall have the same pressure characteristics as the piping in which they are installed.

3. No single valve, except zone valves, shall be larger than 2" in size. Where the capacity of equipment to be controlled requires a valve larger than 2", two (2) valves shall be installed in parallel with the smaller valve sized for a maximum of 1/3 of the total capacity.

4. All control valves, unless otherwise noted, shall be of the globe valve type.

5. Actuators shall be electronic. They shall be mechanically fail-safe. **Capacitor-based fail-safe actuators are not acceptable.**

1.04. **AUTOMATIC DAMPERS**

1. Automatic dampers shall be supplied and sized by the ATC Contractor or the equipment manufacturer to properly control the flow of air using methods similar to control valve sizing. The Sheet Metal Subcontractor shall provide required safing to fit the damper into the duct work. The dampers shall be constructed with galvanized blades and frames. Blades shall not exceed 6" in width and shall be provided with special replaceable rubber seals on the blade edges and sides. Blades shall be formed from two spot-welded sheets for extra strength. Frames shall be channel shaped for strength, and to enclose linkage thus keeping linkage out of air stream.

2. The entire construction shall be such that leakage does not exceed 4 cfm per square foot with 1" of static pressure across the damper, as tested in accordance with the AMCA 500D standard.

3. Dampers shall have opposed, or parallel blades as required by the application. The proper linkage shall be furnished to provide equal percentage or linear characteristics as required by the application.

1.05. **CONTROL PANELS**

1. All control panels for this project will meet the following requirements **as a minimum**:

    1. The control panel shall be a fully enclosed cabinet, of baked enamel, steel or aluminum material construction and shall meet the requirements of NEMA 1 enclosures.
    2. The panel will have a hinged door with a locking latch.
    3. Each component on the front panel shall have an appropriate engraved nameplate fabricated from .062" or .125" thick phenolic material, with engraved permanent lettering. **Stick-on labels are not acceptable.**

1.06. **DDC SYSTEM WIRING**

A. All conduit, wiring, accessories and wiring connections required for the installation of the Building Automation System, as herein specified, shall be provided by the Controls Contractor unless specifically shown on the Electrical Drawings under Division 16 Electrical. The contractor shall provide, install and wire all repeaters, terminators as recommended by the BMS manufacturer.

B. All wiring shall comply with the requirements of applicable portions of Division 16 and all local and national electric codes, unless specified otherwise in this section.

C. All control wiring materials and installation methods shall comply with DDC system manufacturer's recommendations.

D. The sizing, type and provision of cable, conduit, cable trays, and raceways shall be the design responsibility of the Controls Contractor. If complications arise, however, due to the incorrect selection of cable, cable trays, raceways and/or conduit by the Controls Contractor, the Contractor shall be responsible for all costs incurred in replacing the selected components.

1.07. **QUALITY ASSURANCE**

A. There is an extensive installation of Schneider Electric DDC controls in the District and in this building. The District must have assurance that the ATC sub-contractor has full-time employees that are certified in the specified product line and has the resources within the ATC sub-contractor's company to meet the requirements of this project, as well as interface with the existing Andover DDC systems without voiding any current project warranties as a result of this project.

A. The ATC sub-contractor shall be an independent contractor whose primary business is the engineering, programming, installation/wiring and service of total integrated building management systems.

Section 2 -Sequences of Operation.

A. **Schneider Electric DDC Front-end**

a. Furnish and install all temperature controls including all devices and accessories required for the installation of a complete Schneider Electric web-based energy management and control system. The contractor shall network and map up all new DDC controls to the existing Andover Controls BMS system. The contractor will expand the existing system as necessary, including all hardware, software, licenses, and additional controllers/servers as necessary to provide the sequences and points lists specified.

b. This contractor will furnish and install as many master controllers as required to accommodate all new equipment, and maintain a free space of at least 10MB, with 25% spare capacity for future expansion. If the controller cannot accommodate the new controls while still maintaining 10% expansion capability and at least 10MB free space, an additional controller and dedicated Server with Server PC shall be provided at no additional cost to the owner. Graphic interface shall appear in the same manner as the current graphic screens. ***The contractor will be required to demonstrate this front-end capacity during training and in the O&M documentation.***

c. The existing front-end is networked to a districtwide energy monitoring Server. The Controls Contract will ensure that all new controls added to this project, including any master controllers, will be compatible with the existing Server and all new trends added to this project will be mapped up to the existing Server to match existing trend recording cycles.

d. The Controls Contractor will provide schedules for all equipment, zoned by different areas of the building as designated by the Owner. Providing a separate dedicated schedule for each piece of equipment is not acceptable unless specifically directed by the Owner.

e. This contractor will modify the BMS floor plan of the entire building, with links to all DDC controlled equipment. Upon completion of this project, all DDC controlled equipment will be one seamless DDC front-end with graphical interface for each piece of equipment. Simply putting hyperlinks or data tables to represent the new controls is not acceptable. Graphics shall match existing graphics in all respects.

f. The controls subcontractor will provide all network wiring and will provide all graphics, front-end programming to map up the new controls. The contractor will include all additional licenses as necessary to accommodate the new controls.

g. Override and offline Indication: All overridden points/setpoints will be displayed on the graphic in the same color background as the existing graphics, with text to match the existing graphics. All points operating under normal control logic will be in colors to match existing. All points that are offline will be indicated similar to existing.

h. Alarm Indication: Alarms shall be programmed to display on a customized graphical alarm screen indicating when any unit's supply fan command does not match the supply fan status. Low discharge temperature alarms shall also be indicated on the alarm screen if the discharge temperature of any unit drops below 45°F. An Alarm notification image will indicate on the home page and on every graphical page indicating an unacknowledged alarm condition. The flashing alarm notification will disappear once the user has acknowledged the alarm, but the alarm will remain in the alarm history database.

i. All DDC points indicated in the points list to be trended will be recorded at 1-hour intervals (or change of value).

j. Optimal Start: An adaptive optimal start algorithm shall be used to enable the new equipment with the outside air damper closed and heating valve open to warm-up the space prior to occupancy time, necessary to achieve zone occupied temperature setpoints by the start of scheduled occupied period. The learning adaptive algorithm shall compare the zone temperature to its setpoint at beginning of scheduled occupied period and shall automatically adapt the heating response time for the next unoccupied period. The maximum warm-up start time will be adjustable at the DDC front-end. At no later than the scheduled occupancy time, the units will transition to occupied mode sequence as indicated below, with the outside air damper modulating open to minimum position to provide minimum required volumetric flow of outside air (adjustable). When the unit comes on during optimal start and/or warm-up mode, the central plant will be indexed to day mode settings to ensure the pumps, control valves are in day mode to allow optimal start/warm-up sequence to occur.

B. Software

a. All controllers shall be programmed using licensed original software. Supervisory controllers shall be programmed using manufacturer's software, and controllers shall be programmed with manufacturer's software. All software shall be at current versions compatible with the hardware, including all patches and updates.

C. Rooftop Units / Air Handling Units / Existing H&V Units / Unit Ventilators, DX, Dehumidification, with CO2 based DCV)

a. The units shall be controlled by Schneider Electric room mounted sensors to maintain occupied and unoccupied space temperature set points and relative humidity. The sensor will have no adjustment – all setpoint adjustments will be made at the DDC front-end. A discharge air sensor (8' averaging capillary), mixed air temperature sensor and controller are to be installed for each unit. A Schneider Electric Advanced application controller shall be provided for control of these units.

b. The DDC front-end will index the unit between occupied and unoccupied cycles. Whenever the unit's supply fan is off, the outside air damper shall be fully closed.

c. The units shall be tied into the building's DDC control system for occupied/unoccupied cycle operation. All setpoints will be adjustable from the front-end.

d. Optimal Start: An adaptive optimal start algorithm shall be used to enable the unit with the outside air damper closed and heating enabled to warm-up the space prior to occupancy time, necessary to achieve zone occupied temperature setpoints by the start of scheduled occupied period. The learning adaptive algorithm shall compare the zone temperature to its setpoint at beginning of scheduled occupied period and shall automatically adapt the heating response time for the next unoccupied period. The maximum warm-up start time will be adjustable at the DDC front-end. At no later than the scheduled occupancy time, the unit will transition to occupied mode sequence as indicated below, with the outside air damper modulating open to minimum position to provide minimum required volumetric flow of outside air (adjustable).

e. Pre-Occupancy Purge: Thirty minutes prior to the scheduled occupancy time of the unit, the unit will be indexed to a pre-occupancy cycle. This cycle shall run the unit supply / exhaust fans for 30 minutes with the outdoor air / return air / spill air dampers positioned as required to allow for the code required ventilation rate at maximum occupancy. Once the fan is proven running, the outdoor air damper will modulate open, the heating valve will be under the control of the low limit discharge sensor, maintaining discharge air at 60 deg. (adjustable).

f. Post Occupancy Purge: When the unit is indexed into the unoccupied mode as dictated by the occupancy schedule programmed into the BMS, the unit will run in a post occupancy flush cycle. The outdoor air, return air & exhaust / spill air dampers shall be positioned to provide 100% quantity of outdoor air required for full occupancy of the space, with all fans running until the space CO2 levels reach outdoor air ambient conditions. When indoor air CO2 levels are equal to outdoor air CO2 levels, the unit will shut down, entering the unoccupied cycle.

g. Freezestat: A freezestat shall be provided, draped across the full face of the coils in order to detect a freezing condition. Upon an initial trip at T1 = 40 deg. F., the heating valve will open fully & the outdoor air damper will close. An alarm will be sent to the BMS front end. This action will automatically reset once the internal unit temperature has risen. Upon a hard trip at T2 = 38 deg. F., the unit fans will be shut down, the heating valve will open fully and the outdoor air damper will close. This will be a manual reset condition. An alarm will be sent to the BMS front end.

h. Damper Control: The unit economizer dampers will be controlled to maintain CO2 levels based upon demand controlled ventilation CO2 setpoint. Once the supply fan has been proven running, the outdoor air damper will move to it's minimum position (20% of code required minimum ventilation). When the space CO2 levels approach 500 ppm above an outdoor ambient level of 450 ppm, the outdoor air dampers will modulate open as required to maintain that setpoint. The outdoor air damper will be allowed to modulate open beyond that

required for demand controlled ventilation if free cooling is available, and required to maintain indoor temperature setpoint.

i. Occupied Period: During the occupied period, the supply fan will run continuously and indicate to the DDC controller via a current relay wired to a binary input of the controller that the fan is running. Once the fan is proven running, the outside air damper shall start at 20% of code required ventilation, and will modulate further open if required to maintain CO2 setpoint. Whenever the space temperature is below the space set point of 68˚F (adjustable), the heating valve(s) will be cycled to maintain the discharge air temperature at the discharge heating setpoint. The discharge air setpoint shall reset automatically between the discharge high limit of 100˚F (adjustable) and low limit of 60˚F (adjustable) reset based on deviation of the space temperature from the space heating setpoint. As the space temperature rises above the space set point (adjustable), the outside air damper shall modulate open beyond their minimum position, up to 100% to maintain the cooling space setpoint. The controller's program will maintain a minimum discharge and mixed air temperature of 60˚F (adjustable) by enabling the heating and modulating the outside air damper, beyond the minimum position, in sequence without overlap).

j. Occupied Period – Cooling Mode: The front-end will determine the heating and cooling modes of the unit based on the outdoor air temperature/free cooling availability. If the space is on a call for cooling and there is no free cooling available and the supply fan is proven running, the outdoor air damper will move to its minimum open position (as described above, adjustable from the front-end) and the DDC controller will cycle the stages of DX cooling to maintain the space cooling set point. If the economizer dampers fail to satisfy the cooling demand and the space temperature is above setpoint, the economizer dampers will modulate as required to maintain CO2 setpoint and the stages of mechanical cooling will be enabled to maintain cooling temperature setpoint.

k. Occupied Period – Dehumidification (Rooftop Units Only): When the fan is proven running and the space relative humidity is above the space humidity setpoint (adjustable), the DDC controller will enable the dehumidification and the hot gas reheat command at the Rooftop Unit. Damper control will be as described under the "damper control" section.

l. During the unoccupied cycle, the unit's supply fan shall be cycled to maintain space setback temperature set point of 55 deg. F. (adjustable). The heating valve will be modulated to maintain the night heating setpoint. The outside air dampers shall be closed.

m. All outside air dampers shall fail in the closed position.

n. Pressure Control, Occupied Mode: Heating, ventilating & air conditioning equipment shall be interlocked with new (& existing where applicable) variable speed depressurization fans as required to maintain 10% negative air pressure within the Cafeterias. Provide position sensor on outdoor air dampers as required to send a speed control signal to the exhaust fan speed controller (ECM motor controller or variable frequency drive).

D. New MultiZone Unit

1. All operating controls for the unit will be provided by the ATC contractor. All field wiring, terminations, programming etc. will be provided by the ATC contractor.

2. The unit shall be controlled by Andover room mounted sensors to maintain occupied and unoccupied space temperature set points. The sensor will have no adjustment – all setpoint adjustments will be made at the DDC front-end.

3. Andover temperature sensors (8' averaging capillary) will be installed for the mixed air, hot deck, cold temp, return air and each zone's discharge air. An Andover controller shall be provided for control of the unit. Dirty filter status will be monitored and alarmed at the BMS front-end.

4. The units shall be tied into the building's Andover DDC control system for occupied/unoccupied cycle operation. All setpoints will be adjustable from the front-end. Whenever the unit's supply fan is off, the outside air damper shall be fully closed.

5. The ATC contractor will provide and install a freeze-stat, wired to shut of the supply fan in all positions of the H-O-A switch. Freezestat status will be provided at the BMS front-end. Manual reset of the freezestat is required. As an added feature, the DDC controller will use the discharge air sensor to detect a potential freezing condition. The set point will be 5° higher than the set point of the freeze-stat. If such a condition occurs, the outside air damper shall close, the fans will shut down, the heating valve shall open, and an alarm generated at the DDC front-end.

6. Optimal Start: An adaptive optimal start algorithm shall be used to enable the unit with the outside air damper closed and heating enabled to warm-up the space prior to occupancy time, necessary to achieve zone occupied temperature setpoints by the start of scheduled occupied period. The learning adaptive algorithm shall compare the zone temperature to its setpoint at beginning of scheduled occupied period and shall automatically adapt the heating response time for the next unoccupied period. The maximum warm-up start time will be adjustable at the DDC front-end. At no later than the scheduled occupancy time, the unit will transition to occupied mode sequence as indicated below, with the outside air damper modulating open to minimum position to provide minimum required volumetric flow of outside air (adjustable).

7. Occupied Mode – Fan Control: The DDC front-end will index the unit between occupied and unoccupied cycles. Whenever the unit's supply fan is off, the outside air damper shall be fully closed. Whenever the supply fan is commanded to run, the return fan will be commanded to run.

8. Economizer (Outside, Return & Exhaust Dampers):

i. Whenever the unit is in occupied mode, the outside air damper will be open to its minimum open position (adjustable). Once any zone rises above its heating setpoint, the economizer dampers will modulate to maintain a mixed air temperature of 55°F (adjustable).

ii. The outdoor and return air damper actuators will be electric and will fail closed.

iii. Whenever the supply fan is off, the outside and exhaust dampers will be closed, and the return damper will be open.

9. Heating Coil / Hot Deck:

i. The heating coil will be controlled by a modulating valve, provided by the ATC contractor and mounted by the ATC contractor.

ii. A call for heating will be initiated when any one zone is fully open to the hot deck and the temperature falls below the heating set point of the zone's temperature control. The call for heating will continue until all zones are satisfied.

iii. The hot deck discharge air setpoint shall reset automatically between the discharge high limit of 120˚F (adjustable) and low limit of 60˚F (adjustable) reset based on deviation of the zone space heating demand. The controller's program will maintain a minimum discharge air temperature of 60˚F (adjustable).

10. Chilled Water Coil / Cold Deck:

i. The chilled water coil will be controlled by a modulating valve, provided by the ATC contractor and mounted by the ATC contractor.

ii. Whenever free cooling is not available (as determined by the BMS front-end based on OA temp lockout, adjustable), the outdoor air damper will be at its minimum open position and the DDC controller will modulate the chilled water valve to maintain the cold deck setpoint of 55˚F (adjustable).

11. Zone Control: The DDC controller will modulate the respective zone damper to maintain the respective occupied space heating/cooling setpoints (adjustable).

12. Unoccupied Mode: The supply air blower and return air blower shall be de-energized. The outdoor air damper will be fully closed, and the return air damper will be fully open. If any zone has a heat demand at its unoccupied heating setpoint, the unit's supply fan shall be cycled on, and the heating valve will be modulated open. The zone damper for zone(s) calling for heat will be fully open. The outside air dampers shall be closed, and cooling shall be disabled.

Dynamic Color Graphics Requirements

a. The color graphics that the user will see to operate the system shall be resident in the FX web-based front-end. The main graphic shall be a three-dimensional floor plan of the building with links to each room and its HVAC system. The display will provide links to all DDC equipment in the building. Links to data trends and schedules shall be located on each system's graphic screen.

b. The minimum point information that is to be mapped to the front-end panel and shown in the color graphic screens is as follows:

MultiZone Unit				
Description	**Point**	**History**	**Alarm**	**Totalize**
Return Air Temperature	AI	X	X	
Hot Deck Temperature	AI	X	X	
Cold Deck Temperature	AI	X	X	
Mixed Air Temperature	AI	X	X	
Discharge Air Temperature (Per Zone)	AI	X	X	
Space Temperature (Per Zone)	AI	X	X	
Outside Air Temperature	AV	X		
Occupied Space Temperature Set Point (Per Zone)	AV	X		
Unoccupied Space Temperature Set Point (Per Zone)	AV	X		
Mixed Air Low Limit Set Point	AV	X		
Discharge Air Low Limit Set Point	AV	X		
Heating Valve Command	AO	X		
Chilled Water Valve Command	AO	X		
Economizer Damper Command	AO	X		
Economizer Damper Min OA Position	AV	X		
Zone Damper Command (Per Zone)	AO	X		
Supply Fan Status	BI	X	X	X
Supply Fan Command	BO	X	X	
Return Fan Status	BI	X	X	X
Return Fan Command	BO	X	X	
Freezestat Status	BI	X	X	X
Filter Status	BI	X	X	X
Occupied Command	BV			
Occupied Status	BV	X		
Status of DDC controller	BV		X	

E. Unit Ventilators (Occupancy based DCV)

a. The units shall be controlled by Schneider Electric room mounted sensors to maintain occupied and unoccupied space temperature set points. The sensor will have no adjustment – all setpoint adjustments will be made at the DDC front-end. A discharge air sensor (8’ averaging capillary), mixed air temperature sensor and controller are to be installed for each unit. A Schneider Electric Advanced application controller shall be provided for control of these units.

b. The DDC front-end will index the unit between occupied and unoccupied cycles. Whenever the unit’s supply fan is off, the outside air damper shall be fully closed.

c. The units shall be tied into the building's DDC control system for occupied/unoccupied cycle operation. All setpoints will be adjustable from the front-end.

d. Optimal Start: An adaptive optimal start algorithm shall be used to enable the unit with the outside air damper closed and heating enabled to warm-up the space prior to occupancy time, necessary to achieve zone occupied temperature setpoints by the start of scheduled occupied period. The learning adaptive algorithm shall compare the zone temperature to its setpoint at beginning of scheduled occupied period and shall automatically adapt the heating response time for the next unoccupied period. The maximum warm-up start time will be adjustable at the DDC front-end. At no later than the scheduled occupancy time, the unit will transition to occupied mode sequence as indicated below, with the outside air damper modulating open to 20% of minimum code required ventilation position to provide minimum required DCV volumetric flow of outside air (adjustable).

e. Pre-Occupancy Purge: Thirty minutes prior to the scheduled occupancy time of the unit, the unit will be indexed to a pre-occupancy cycle. This cycle shall run the unit supply / exhaust fans for 30 minutes with the outdoor air / return air / spill air dampers positioned as required to allow for the code required ventilation rate at maximum occupancy. Once the fan is proven running, the outdoor air damper will modulate open, the heating valve will be under the control of the low limit discharge sensor, maintaining discharge air at 60 deg. (adjustable).

f. Post Occupancy Purge: When the unit is indexed into the unoccupied mode as dictated by the occupancy schedule programmed into the BMS, the unit will run in a post occupancy flush cycle. The outdoor air, return air & exhaust / spill air dampers shall be positioned to provide 100% quantity of outdoor air required for full occupancy of the space, with all fans running until the space CO2 levels reach outdoor air ambient conditions. When indoor air CO2 levels are equal to outdoor air CO2 levels, the unit will shut down, entering the unoccupied cycle.

g. Freezestat: A freezestat shall be provided, draped across the full face of the coils in order to detect a freezing condition. Upon an initial trip at T1 = 40 deg. F., the heating valve will open fully & the outdoor air damper will close. An alarm will be sent to the BMS front end. This action will automatically reset once the internal unit temperature has risen. Upon a hard trip at T2 = 38 deg. F., the unit fans will be shut down, the heating valve will open fully and the outdoor air damper will close. This will be a manual reset condition. An alarm will be sent to the BMS front end.

h. Damper Control: The unit economizer dampers will be controlled to maintain CO2 levels based upon a room occupancy sensor for demand controlled ventilation. Once the supply fan has been proven running, the outdoor air damper will move to 20% of the minimum code required ventilation rate. When the space occupancy sensor detects room occupancy, the unit ventilator outdoor air damper will open to at least the minimum code required ventilation position. The outdoor air damper will be allowed

to modulate open beyond that required for demand controlled ventilation if free cooling is available, and required to maintain indoor temperature setpoint.

i. Occupied Period: During the occupied period, the supply fan will run continuously and indicate to the DDC controller via a current relay wired to a binary input of the controller that the fan is running. Once the fan is proven running, the outside air damper shall modulate to 20% of minimum code required ventilation rate. Whenever occupancy is sensed, outdoor air damper will modulate to the full minimum code required ventilation rate / damper position. Whenever the space temperature is below the space set point of 68˚F (adjustable), the heating valve(s) will be cycled to maintain the discharge air temperature at the discharge heating setpoint. The discharge air setpoint shall reset automatically between the discharge high limit of 100˚F (adjustable) and low limit of 60˚F (adjustable) reset based on deviation of the space temperature from the space heating setpoint. As the space temperature rises above the space set point (adjustable), the outside air damper shall modulate open beyond their minimum position, up to 100% to maintain the cooling space setpoint. The controller's program will maintain a minimum discharge and mixed air temperature of 60˚F (adjustable) by enabling the heating and modulating the outside air damper, beyond the minimum position, in sequence without overlap).

j. Occupied Period – Cooling Mode: The front-end will determine the heating and cooling modes of the unit based on the outdoor air temperature/free cooling availability. If the space is on a call for cooling and there is no free cooling available and the supply fan is proven running, the outdoor air damper will move to 20% of the minimum open position (no occupancy) or the minimum outdoor air position (occupancy, adjustable from the front-end) and the DDC controller will cycle the stages of DX cooling / cycle the chilled water valve to maintain the space cooling set point. If the economizer dampers fail to satisfy the cooling demand and the space temperature is above setpoint, the economizer dampers will modulate to minimum position as previously described and the stages of mechanical cooling / cycling of chilled water valve will be enabled to maintain cooling temperature setpoint.

l. During the unoccupied cycle, the unit's supply fan shall be cycled to maintain space setback temperature set point of 55 deg. F. (adjustable). The heating valve will be modulated to maintain the night heating setpoint. The outside air dampers shall be closed.

m. All outside air dampers shall fail in the closed position.

F. <u>New Face & Bypass Unit Ventilators, Hot Water / Chilled Water</u>

a. The units shall be controlled by Andover room mounted sensors to maintain occupied and unoccupied space temperature set points. A discharge air sensor (8' averaging capillary), space temperature sensor and unitary controller are to be installed for each unit.

b. The units will be provided with a factory installed freeze-stat. This is to be left in place to shut the fan off when a freezing condition occurs. Whenever the fan is off, the outside air damper will be closed. As an added feature, the DDC controller will use the discharge air sensor to detect a potential freezing condition. The set point will be 5˚ higher than the set point of the factory freeze-stat. If such a condition occurs, the outside air damper will close, the fan

will shut off and an alarm will be displayed on the front-end and an email will be sent from the DDC front-end system to those recipients designated by the District. The alarm and email messages will indicate which unit caused the alarm and be stamped with the date and time that the alarm occurred.

c. The units shall be tied into the building's Andover DDC control system for occupied/unoccupied cycle operation. All setpoints will be adjustable from the front-end.

d. Occupied Period: During the occupied period, the supply fan will run continuously and indicate to the DDC controller via a current relay wired to a binary input of the controller that the fan is running. Once the fan is proven running, the outside air damper shall modulate open to minimum position (adjustable), to provide the minimum required volumetric flow rate of outside air. Whenever the space temperature is below the space set point of 68˚F (adjustable), the face & bypass damper will be fully open to the heating coil to maintain the discharge air temperature at the discharge heating setpoint. The discharge air setpoint shall reset automatically between the discharge high limit of 120˚F (adjustable) and low limit of 60˚F (adjustable) reset based on deviation of the space temperature from the space heating setpoint. As the space temperature rises above the space set point (adjustable), the face & bypass damper will fully face the bypass and the outside air damper shall modulate open beyond their minimum position to maintain the cooling space setpoint. The controller's program will maintain a minimum discharge temperature of 60˚F (adjustable) by modulating the F&B damper and modulating the outside air damper, beyond the minimum position required volumetric flow rate of outside air, in sequence without overlap.

e. Occupied Period – Cooling Mode (For units with CHW cooling): The FX front-end will determine the heating and cooling modes of the unit based on the outdoor air temperature/free cooling availability. When indexed into mechanical cooling mode, the supply fan will run and indicate to the DDC controller via a current relay wired to a binary input of the controller that the fan is running. The outdoor air damper will be at its minimum position (adjustable from the front-end). The DDC controller will modulate the face/bypass damper to maintain the space cooling set point.

f. During the unoccupied cycle the unit's supply fan shall be cycled to maintain space setback temperature set point. The face/bypass damper will fully face the coil. The outside air damper shall be closed. There will be no cooling operation during the unoccupied mode.

g. The outside air damper shall fail in the closed position.

h. For any new units that have existing, or new auxiliary finned tube radiation as shown on the plans, a dedicated control signal from the DDC controller will cycle a new auxiliary radiation control valve (provided by ATC contractor and installed by Mechanical Contractor) to maintain the space setpoint. A lower setpoint will be maintained during the unoccupied cycle. For hot water applications, the ftr control valve will be 2-position. For steam applications, the ftr control valve will be modulating control, temperature rated for steam.

Dynamic Color Graphics Requirements

a. The color graphics that the user will see to operate the system shall be resident in the front-end. The main graphic shall be a three-dimensional floor plan of the building with links to each room and its HVAC system. The display will provide links to all DDC equipment in the building. Links to data trends and schedules shall be located on each system's graphic screen.

b. The minimum point information that is to be mapped to the front-end panel and shown in the color graphic screens is as follows:

Unit Ventilators				
Description	**Point**	**History**	**Alarm**	**Totalize**
Damper Command	AO	X		
Discharge Air Temperature	AI	X	X	
Discharge Low Limit Set Point	AV	X		
F&B damper	AO	X		
Minimum Outdoor Air Damper Position (adjustable)	AV	X		
Occupied Command	BV			
Occupied Space Set Point	AV	X		
Occupied Status	BV	X		
Outside Air Temperature	AI	X		
Space Temperature	AI	X	X	
Status of DDC controller	BV		X	
Supply Fan Command	BO	X	X	
Supply Fan Status	BI	X	X	X
Unoccupied Space Set Point	AV	X		
Working Setpoint	AV	X		

G. Split AC Units (VRF Systems)

a. The VRF systems will operate under standalone factory controls.

b. The ATC contractor will install and wire the factory furnished wall thermostat and will provide the low voltage interlock control wiring to the condensing unit.

c. Provide an interlock between the new VRF cooling equipment & the existing heating & ventilating equipment (where applicable) such that there can be no simultaneous heating & cooling operation and that during winter heating, only economizer cooling can be used in the event that the space exceeds it's heating setpoint. Heating and cooling setpoints shall maintain a 5 deg. F. minimum offset.

d. Provide interface to the Andover BMS and provide graphics to show each space, with all setpoints, H&V unit status, VRF indoor unit status, outdoor VRF unit status, & status of interlocks.

e. For the heating & ventilating equipment feeding areas with new VRF equipment, a classroom occupancy sensor shall be installed for the purposes of controlling demand controlled ventilation. When the room occupancy sensor sees occupancy, the H&V equipment will operate

under it's normal ventilating sequence of operations, admitting at least code required minimum ventilation at all times during the occupied mode. When the occupancy sensor does not see occupancy, the H&V equipment outdoor air damper shall modulate to 5% O.A. until occupancy is sensed. Timing for no occupancy shall have a 1-60 minute delay (adjustable) prior to initiating a reduction in ventilation damper position. There shall be no time delay to reinstate ventilation upon sensing occupancy.

a. Additionally, the Split AC units will be provided with factory provided BACnet communication cards and/or gateway controllers. Programming and startup of the Split AC unit BACnet cards/gateway controllers will be provided by the Split AC Unit manufacturer. The ATC contractor will provide the communication wiring between these units and the front-end. All DDC points on these BACnet cards will be seamlessly mapped to the DDC front-end, with setpoints adjustable from the BMS front-end. The ATC contractor will include all BACnet licenses, hardware, programming, software necessary for the expanded front-end to accomplish this.

b. An individual graphic shall be provided for each unit. For multiple Splits units serving a common space, a common graphic will be provided controlling the equipment in the room with common sequenced heating and cooling setpoints. Additional graphics will be provided for each individual unit.

c. The VRF condensing unit will be networked to the BMS front-end via a factory BACnet MSTP card. The ATC contractor will include the wiring, addressing and integration of the VRF BACnet points to the BMS front-end.

Dynamic Color Graphics Requirements

c. The color graphics that the user will see to operate the system shall be resident in the Andover front-end. The main graphic shall be a three-dimensional floor plan of the building with links to each room and its HVAC system. The display will provide links to all DDC equipment in the building. Links to data trends and schedules shall be located on each system's graphic screen.

d. The minimum point information that is to be mapped to the front-end panel and shown in the color graphic screens is as follows:

Split AC Units				
Description	**Point**	**History**	**Alarm**	**Totalize**
Integrated DDC Points		X	X	X
Occupied Command	BV	X		
Status of DDC controller	BV		X	

VRF Condensing Unit				
Description	**Point**	**History**	**Alarm**	**Totalize**
Integrated points of factory VRF controller (BACnet)	AV/BV	X	X	
Status of DDC controller	BV		X	

H. Exhaust Fans

a. The ATC contractor shall supply and install all required DDC controllers, controls and required hardware to allow the following sequences of operation to occur.

b. The exhaust fan will run continuously during the occupied mode and be off during the unoccupied mode based on schedule resident in the BMS front-end. Fan status will be monitored at the BMS.

Section 3 – Dynamic Color Graphics Requirements

The color graphics that the user will see to operate the system shall be resident in the Andover web-based front-end controller. PC-based systems are not acceptable. The main graphic shall be a three-dimensional floor plan of the building with links to each room and its HVAC system. The display will provide links to all DDC equipment in the building. Links to data trends and schedules shall be located on each system's graphic screen. The minimum point information that is to be mapped to the front-end panel and shown in the color graphic screens is as follows:

Rooftop Unit / H&V Units / Air Handling Units / Unit Ventilators				
Description	**Point**	**History**	**Alarm**	**Totalize**
Discharge Air Temperature	AI	X	X	
Mixed Air Temperature	AI	X	X	
Space CO2	AI	X	X	
Space CO2 setpoint	AV	X		
Pre-Occupancy Purge Command	AV	X		
Pre-Occupancy Purge Max Runtime Allowed	AV	X		
Post-Flush Command	AV	X		
Post-Flush Max Runtime Allowed	AV	X		
Space Temperature	AI	X	X	
Space Relative Humidity	AI	X	X	
Outside Air Temperature	AV	X		
Occupied Space Temperature Heating Set Point	AV	X		
Occupied Space Temperature Cooling Set Point	AV	X		
Occupied Space Relative Humidity Set Point	AV	X		
Unoccupied Space Temperature Heating Set Point	AV	X		
Unoccupied Space Temperature Cooling Set Point	AV	X		
Active Temperature Setpoint	AV	X		
Active Relative Humidity Setpoint	AV	X		
Mixed Air Low Limit Set Point	AV	X		
Discharge Air Low Limit Set Point	AV	X		
Heating Command	AO	X		
Cooling Command	BO	X		
Outside Air Damper Command	AO	X		

Exhaust Air Damper Command	AO	X		
Return Air Damper Command	AO	X		
Dehumidification/Hot Gas Reheat Command	AO	X		
Supply Fan Status	BI	X	X	X
Supply Fan Command	BO	X	X	
Exhaust Fan Status	BI	X	X	X
Exhaust Fan Command	BO	X	X	
Occupied Command	BV			
Occupied Status	BV	X		
Status of DDC controller	BV		X	

Exhaust Fans				
Description	**Point**	**History**	**Alarm**	**Totalize**
Fan Command	BO	X	X	
Fan Status	BI	X		
Occupied Command	BV			
Occupied Status	BV	X		
Status of DDC controller	BV		X	

VRF Equipment: Show all space setpoints, H&V unit status, valve positions, damper positions, VRF interlock status, VRF indoor unit status, VRF unit mode.

Section 4 – Historical Data Trending Requirements

All the points listed will be trended in the FX front-end to record historical data for a period of 7 days, trended once per hour, and archived at the FX Server daily. The District intends to track these data for improving efficiency and occupancy conditions.

Section 5 – Hardware requirements:

A. General Description:

1. The Building Automation System (BAS) shall use an open architecture and where applicable support a multi-vendor environment. To accomplish this effectively, the BAS shall not be limited to a single open communication protocol standard, but to also integrate third-party devices and applications via additional protocol and through the latest software standards. The system configuration shall be available for use on the Internet, or intranets using off the shelf, industry standard technology compatible with other owner provided networks.
2. The Building Automation System shall consist of the following:
    a. DDC Controllers (HVAC, etc.)
    b. Input, Output Modules
    c. Local Display Devices
    d. Portable Operator's Terminals – Portable PC's
    e. Distributed User Interfaces
    f. Network processing, data storage and communications equipment
    g. Other components required for a complete and working BAS.

3. The system shall be modular in nature and shall permit expansion of both capacity and functionality through the addition of sensors, actuators, controllers and operator devices, while re-using existing controls equipment.
4. The system architectural design shall eliminate dependence upon any single device for alarm generation and control execution. The failure of any single component or network connection shall not interrupt the execution of control strategies at other operational devices.
5. Acceptable Systems

   Continuum by Schneider Electric Global
   Others per addendum

B. BAS Architecture – Automation Network

1. The automation network shall be configured as a Client/Server network with a web server operating on the Client's LAN/WAN. The web browser interface is extended over the LAN/WAN. Monitoring and control of the BAS is available using the web browser interface.
2. The automation network shall include the option of a PC industry standard of Ethernet TCP/IP. Where used, LAN controller cards shall be standard "off the shelf" products available through normal PC vendor channels.
3. The BAS shall network multiple user interface clients, system controllers and systems supervisors as required for systems operation.
4. The automation network option shall be capable of operating at a communication speed of 100 Mbps.
5. The automation network option will be compatible with other enterprise-wide networks. Where indicated, the automation network shall be connected to the enterprise network and share resources with it by way of standard networking devices and practices.

C. BAS Architecture – Control Network

1. Network Automation Controllers, (NAC) shall provide management over the control network(s) and shall support the following communications protocols:

   BACnet® Standard (ANSI/ASHRAE Standard 135-) MS/TP master.
   LonWorks® enabled devices using the free topology transceiver (FTT-1x).
   Modbus RTU and Modbus TCP.
2. The NAC shall be BTL (BACnet Testing Laboratories) listed as B-BC (BACnet Building Controller) and support the following data link options:

   BACnet Internet Protocol (IP) (Annex J).
   BACnet IP (Annex J) Foreign.
   ISO 8802-3, Ethernet (Clause 7).
3. Control networks shall provide either "Peer-to-Peer," Master-Slave, or Supervised Token Passing communications, and shall operate at a minimum communication speed of 9600 baud.
4. Digital Controllers shall reside on the control network.
5. A BACnet Protocol Implementation Conformance Statement (PICS) shall be provided for each controller device (master or slave) that will communicate on the BACnet MS/TP Bus.
6. The PICS shall be submitted 10 days prior to bidding.

D. User Interface – Browser Based Interface

1. The system shall be capable of supporting an unlimited number of clients using standard Web browser such as Internet Explorer™ or Mozilla Firefox™. Systems requiring additional software (to enable a standard Web browser) to be resident on the client machine, or manufacture-specific browsers shall not be acceptable.
2. The Web browser software shall run on any operating system and system configuration that is supported by the Web browser. Systems that require specific machine requirements in terms of processor speed, memory, etc., in order to allow the Web browser to function with the Building Automation System (BAS), shall not be acceptable.
3. The Web browser client shall support at a minimum, the following functions:
    a. User log-on identification and password shall be required. If an unauthorized user attempts access, notice of access failure shall be displayed. Security using authentication and encryption techniques to prevent unauthorized access shall be implemented.
    b. HTML programming shall not be required to display system graphics or data on a Web page. HTML editing of the Web page shall be allowed if the user desires a specific look or format.
    c. Storage of the graphical screens shall be in the Network Automation Controller (NAC) or the server, without requiring any graphics to be stored on the client machine. Systems that require graphics storage on each client are not acceptable.
    d. Real-time values displayed on a Web page shall update automatically without requiring a manual “refresh” of the Web page.
    e. Users shall have administrator-defined access privileges. Depending on the access privileges assigned, the user shall be able to perform the following:
    f. Modify common application objects, such as schedules and setpoints in a graphical manner.
    g. Commands binary objects to start and stop.
    h. View logs and charts.
    i. View alarms.
4. Graphic screens on the Web Browser client shall support hypertext links to other locations on the Internet or on Intranet sites, by specifying the Uniform Resource Locator (URL) for the desired link.

E. User Interface – Alarms

1. Alarm feature shall allow user configuration of criteria to create, route, and manage alarms and events. It shall be possible for specific alarms from specific points to be routed to specific alarm recipients. The alarm management portion of the user interface shall, at the minimum, provide the following functions:
    a. Allow configuration to generate alarms on any numeric, binary, or data point in the system.
    b. Generate alarm records that contain a minimum of a timestamp, original state, acknowledged state, alarm class and priority.
    c. Allow the establishment of alarm classes that provide the routing of alarms with similar characteristics to common recipients.
    d. Allow a user, with the appropriate security level, to manage alarms - including sorting, acknowledging, and tagging alarms.

F. User Interface – Reports and Summaries

1. Reports and Summaries shall be generated and directed to the user interface displays, with subsequent assignment to printers, or disk. As a minimum, the system shall provide the following reports:
   a. All points in the BAS
   b. All points in each BAS application
   c. All points in a specific controller
   d. All points in a user-defined group of points
   e. All points currently in alarm
   f. All BAS schedules
   g. All user defined and adjustable variables, schedules, interlocks and the like.
2. Reports shall be exportable to .pdf, .txt, or .csv formats.
3. The system shall allow for the creation of custom reports and queries.

G. User Interface – Schedules

1. A graphical display for time-of-day scheduling and override scheduling of building operations shall be provided. At a minimum, the following functions shall be provided:
   a. Regular schedules
   b. Repeating schedules
   c. Exception Schedules
2. Weekly schedules shall be provided for each group of equipment with a specific time use schedule.
3. It shall be possible to define one or more exception schedules for each schedule including references to calendars.
4. Monthly calendars shall be provided that allow for simplified scheduling of holidays and special days. Holidays and special days shall be user-selected with the pointing device or keyboard.

H. User Interface - Passwords

1. Multiple-level password access protection shall be provided to allow the system manager to assign user interface control, display, and database manipulation capabilities deemed appropriate for each user based on an assigned password.
2. Each user shall have the following: a username, a password, and access levels.
3. The system shall provide the capability to require a password of minimum length and require a combination of characters and numerical or special characters.
4. When entering or editing passwords, the system shall not echo the actual characters for display on the monitor.
5. The system shall provide unlimited flexibility with access rights. A minimum of four levels of access shall be provided along with the ability to customize the system to provide additional levels.
6. A minimum of 100 unique passwords shall be supported.
7. Operators shall be able to perform only those commands available for their respective passwords. Display of menu selections shall be limited to only those items defined for the access level of the password used to log-on.
8. The system shall automatically generate a report of log-on/log-off and system activity for each user.
9. All log data shall be available in .pdf, .txt, and .csv formats.

I. User Interface – Dynamic Color Graphics

1. The graphics application program shall be supplied as an integral part of the User Interface.
2. The graphics applications shall include a create/edit function and a runtime function. The system architecture shall support an unlimited number of graphics documents (graphic definition files) to be generated and executed.
3. The graphics shall be able to display real-time data that is acquired, derived, or entered.
4. Graphics runtime functions –Each graphic application shall be capable of the following functions:
5. All graphics shall be fully scalable.
6. The graphics shall support a maintained aspect ratio.
7. Multiple fonts shall be supported.
8. Unique background shall be assignable on a per graphic basis.
9. Operation from graphics – It shall be possible to change values (setpoints) and states in systems-controlled equipment within the Web browser interface.
10. Graphic editing tool – A graphic editing tool shall be provided that allows for the creation and editing of graphic files. The graphic editor shall be capable of performing/defining all runtime binding.

J. Historical Data Collection

1. All numeric, binary or data points in the system database shall allow their values to be logged over time (trend log). Each historical record shall include the point's name, a time stamp including time zone, and the point's value.
2. The configuration of the historical data collection shall allow for recording data based on change of value or on a user-defined time interval.
3. The configuration of the historical data collection shall allow for the collection process to stop or rollover when capacity has been reached.
4. A historical data viewing utility shall be provided with access to all history records. This utility shall allow historical data to be viewed in a table or chart format.
5. The history data table view shall allow the user to hide/show columns and to filter data based on time and date. The history data table shall allow exporting to .txt, .csv, or .pdf file formats.
6. The historical data chart view shall allow different point histories to be displayed simultaneously and provide panning and zooming capabilities.

K. Audit Log

1. For each log entry, provide the following data:
    a. Time and date
    b. User ID
    c. Change or activity: i.e., Change setpoint, add or delete objects, commands, etc.

L. Network Automation Controller (NAC)

The NAC must provide the following hardware features as a minimum:

1. Communications
    a. Two 10/100 Mb Ethernet Port – RJ-45 connections

b. One RS-485 port (up to 57,600 baud)
c. Expandable communications ports including LON, RS485, Modem, Wireless Terminal Equipment Control
d. All required protocol drivers as required by the sequence of operation.

2. Battery Backup
   a. Battery backup provided for all on board functions including I/O
   b. Battery is monitored and trickle charged
   c. Battery maintains processor operation through power failures for a pre-determined interval, and then writes all data to flash memory, shuts the processor down, and maintains the clock for three months.
3. Environment
   a. Must be capable of operation over a temperature range of 0 °C to 50 °C (32 °F to 122 °F).
   b. Must be capable of withstanding storage temperatures of between 0 °C and 60 °C (32 °F to 140 °F).
   c. Must be capable of operation over a humidity range of 5% to 95% RH, non-condensing.

4. The Network Automation Controller (NAC) shall be a fully user-programmable device capable of providing all the capability described in Section 2.3 Part A.
5. Automation network – The Network Automation Controller (NAC) shall reside on the automation network. Each NAC shall support one or more sub-networks of controllers.
6. The Network Automation Controller shall have the capability to communicate directly with Modbus without the use of an additional gateway.
7. The Network Automation Controller shall have the capability to provide secure communications via SSL (Secure Socket Layer).
8. User Interface – Each Network Automation Controller (NAC) shall have the ability to deliver a web-based user interface as previously described. All computers connected physically or virtually to the automation network shall have access to the web-based UI.
9. Power Failure – In the event of the loss of normal power, The Network Automation Controller (NAC) shall continue to operate for a defined period after which there shall be an orderly shutdown of all programs to prevent the loss of database or operating system software. Flash memory shall be incorporated for all critical controller configuration data.
10. During a loss of normal power, the control sequences shall go to the normal system shutdown conditions.
11. Upon restoration of normal power and after a minimum off-time delay, the controller shall automatically resume full operation without manual intervention through a normal soft-start sequence.
12. Certification – All controllers shall be listed by Underwriters Laboratories (UL).

M. Input Device Characteristics

a. General Requirements: Installation, testing, and calibration of all sensors, transmitters, and other input devices shall be provided to meet the system requirements.
b. Temperature Sensors: Sensors and transmitters shall be provided, as outlined in the input/output summary and sequence of operations. The temperature sensor shall be of the resistance type and shall be either two-wire 1000-ohm nickel RTD, or two-wire 1000-ohm platinum RTD.
c. Room Temperature Sensors: Room sensors shall be constructed for either surface or wall box mounting.
d. Thermo wells: When thermo wells are required, the sensor and well shall be supplied as a complete assembly, including wellhead and Greenfield fitting. Thermo wells shall be pressure rated and constructed in accordance with the system working pressure. Thermo wells and sensors shall be mounted in a threadolet or ½-inch NFT saddle and allow easy access to the sensor for repair or replacement. Thermo wells shall be constructed of 316 stainless steel.
e. Outside Air Sensors: Outside air sensors shall be designed to withstand the environmental conditions to which they will be exposed. They shall also be provided with a solar shield. Sensors exposed to wind velocity pressures shall be shielded by a perforated plate that surrounds the sensor element. Temperature transmitters shall be of NEMA 3R construction and rated for ambient temperatures.
f. Control Relays: Control pilot relays shall be of a modular plug-in design with retaining springs or clips. Mounting bases shall be snap-mount. DPDT, 3PDT, or 4PDT relays shall be provided as appropriate for application. Contacts shall be rated for 10 amps at 120 VAC. Relays shall have an integral indicator light and check button. Acceptable manufacturers: Idec, Functional Devices
g. Electronic/Pneumatic Transducers: Electronic to Pneumatic transducers shall provide: Output: 3-15 psig,
h. Input: 4-20 mA or 0-10 VDC, manual output adjustment, pressure gauge external replaceable supply air filter. Acceptable manufacturers: Schneider Electric, Mamac

N. APPLICATION SPECIFIC CONTROLLERS

1. General Purpose Programmable Controllers (PCG)

a) The General-Purpose Programmable Controller shall be a fully user-programmable, digital controller that communicates via BACnet MS/TP protocol.
b) Controller shall support BACnet Standard MS/TP Bus Protocol ASHRAE SSPC-135, Clause 9 on the controller network.
c) A BACnet Protocol Implementation Conformance Statement shall be provided for the controller.
d) The Conformance Statement shall be submitted 10 days prior to bidding.
e) The controller shall employ a finite state control engine to eliminate unnecessary conflicts between control functions at crossover points in their operational sequences. Suppliers using non-state based DDC shall provide separate control strategy diagrams for all controlled functions in their submittals.
f) The controller shall be factory programmed with a continuous adaptive tuning algorithm that senses changes in the physical environment and continually adjusts loop tuning parameters appropriately. Controllers that require manual tuning of loops or perform automatic tuning on command only shall not be acceptable.

g) The controller shall be assembled in a plenum-rated plastic housing with flammability rated to UL94-5VB.
h) The controller shall include a removable base to allow pre-wiring without the controller.
i) The controller shall include troubleshooting LED indicators to identify the following conditions:
    i. Power On
    ii. Power Off
    iii. Download or Startup in progress, not ready for normal operation
    iv. No Faults
    v. Device Fault
    vi. Field Controller Bus - Normal Data Transmission
    vii. Field Controller Bus - No Data Transmission
    viii. Field Controller Bus - No Communication
    ix. Sensor-Actuator Bus - Normal Data Transmission
    x. Sensor-Actuator Bus - No Data Transmission
    xi. Sensor-Actuator Bus - No Communication
j) The controller shall accommodate the direct wiring of analog and binary I/O field points.
k) The controller shall support the following types of inputs and outputs:
l) Universal Inputs - shall be configured to monitor any of the following:
    i. Analog Input, Voltage Mode
    ii. Analog Input, Current Mode
    iii. Analog Input, Resistive Mode
    iv. Binary Input, Dry Contact Maintained Mode
m) Binary Inputs - shall be configured to monitor either of the following:
    i. Dry Contact Maintained Mode
    ii. Pulse Counter Mode
n) Analog Outputs - shall be configured to output either of the following:
    i. Analog Output, Voltage Mode
o) Analog Output, current Mode
p) Binary Outputs - shall output the following:
    i. 24 VAC Triac
q) Configurable Outputs - shall be capable of the following:
    i. Analog Output, Voltage Mode
    ii. Binary Output Mode
r) The controller shall have the ability to reside on a Field Controller Bus (FC Bus).
    i. The FC Bus shall be a Master-Slave/Token-Passing (MS/TP) Bus supporting BACnet Standard protocol SSPC-135, Clause 9.
    ii. The FC Bus shall support communications between the controllers and the Supervisory Controller.
    iii. The FC Bus shall also support Expansion I/O (PCX) communications with the field controllers and with the Supervisory Controller.
s) The FC Bus shall operate at a maximum distance of 15,000 Ft. between the field controllers and the furthest connected device.
t) The field controllers shall have the ability to monitor and control a network of sensors and actuators over a Sensor-Actuator Bus (SA Bus).
    a) The SA Bus shall be a Master-Slave/Token-Passing (MS/TP) Bus supporting BACnet Standard Protocol SSPC-135, Clause 9.
    b) The SA Bus shall support up to 10 devices per trunk.
    c) The SA Bus shall operate at a maximum distance of 1,200 Ft. between the PCG and the furthest connected device.
u) The field controllers shall have the capability to execute complex control sequences involving direct wired I/O points as well as input and output devices communicating over the FC Bus or the SA Bus.

2. The field controllers shall support, but not be limited to, the following:

a) Chilled water/central plant automation applications including but not limited to:
   i) the selection and sequencing of up to 8 chillers of different sizes
   ii) the selection and sequencing of up to 8 (each) primary and secondary chilled water pumps of varying pump capacities
   iii) the selection and sequencing of up to 8 condenser water pumps
   iv) the selection and sequencing of cooling towers and bypass valve, including single speed, multi-speed, and Vernier control.
   v) a proven and documented central cooling plant optimization program that incorporates custom equipment efficiency profiles, without rewriting software code, in order to meet the building load using the least amount of energy as calculated.
   vi) the use of advanced control algorithms that apply equipment specific parameters, including operational limits and efficiency profiles, in order to determine equipment, start and runtime preferences.
   vii) the identification of the most efficient equipment combination and automatic control of state and speed of all necessary equipment to balance runtime, optimize timing and sequencing and ensure the efficiency and stability of the central cooling plant.
   viii) the control definition for the chiller plant in a single controller, as supported by available memory and point Input/Output (I/O), or capable of being split across multiple controllers.
      a) Heating central plant applications
      b) Built-up air handling units for special applications
1. Terminal and packaged units
2. Special programs as required for systems control.

2. Programmable Controller Expansion I/O Modules

a) The Programmable Controller Expansion I/O Module provides additional inputs and outputs for use in the field controllers.
b) The I/O module shall communicate with the field controllers over the FC Bus or the SA Bus.
c) The I/O module shall support BACnet Standard MS/TP Bus Protocol ASHRAE SSPC-135, Clause 9 on the controller network.
d) A BACnet Protocol Implementation Conformance Statement shall be provided for the field controllers.
e) The Conformance Statement shall be submitted 10 days prior to bidding.
f) The I/O module shall be assembled in a plenum-rated plastic housing with flammability rated to UL94-5VB.
g) The I/O module shall have a minimum of 4 points to a maximum of 17 points.
h) The I/O module shall support the following types of inputs and outputs:
   i. Universal Inputs - shall be configured to monitor any of the following:
      (i) Analog Input, Voltage Mode
      (ii) Analog Input, Current Mode
   ii. Analog Input, Resistive Mode
   iii. Binary Input, Dry Contact Maintained Mode
   iv. Binary Inputs - shall be configured to monitor either of the following:
      (i) Dry Contact Maintained Mode
      (ii) Pulse Counter Mode
   v. Analog Outputs - shall be configured to output either of the following:

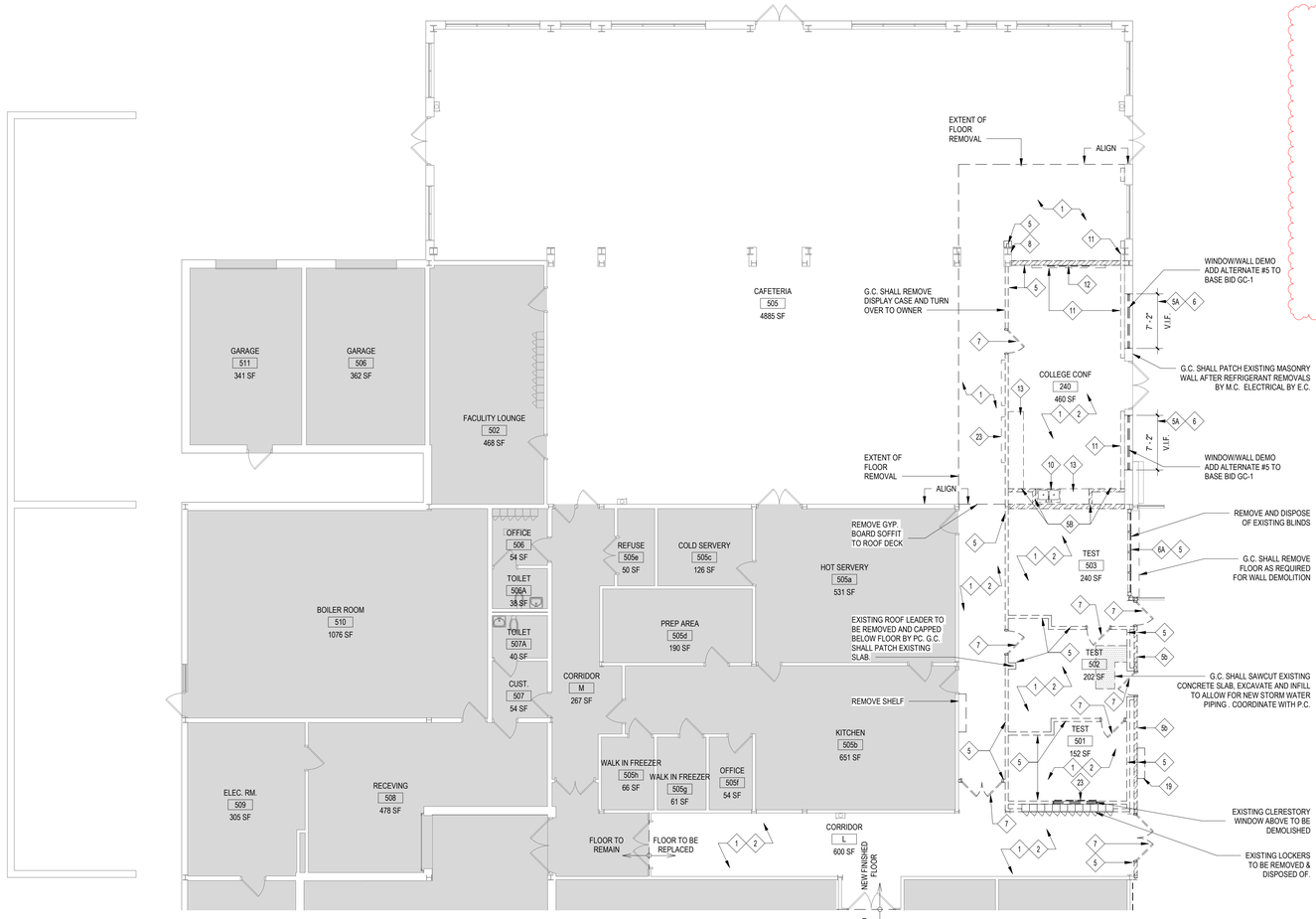
(i) Analog Output, Voltage Mode
(ii) Analog Output, current Mode

vi. Binary Outputs - shall output the following:
(i) 24 VAC Triac

vii. Configurable Outputs - shall be capable of the following:
(i) Analog Output, Voltage Mode
(ii) Binary Output Mode

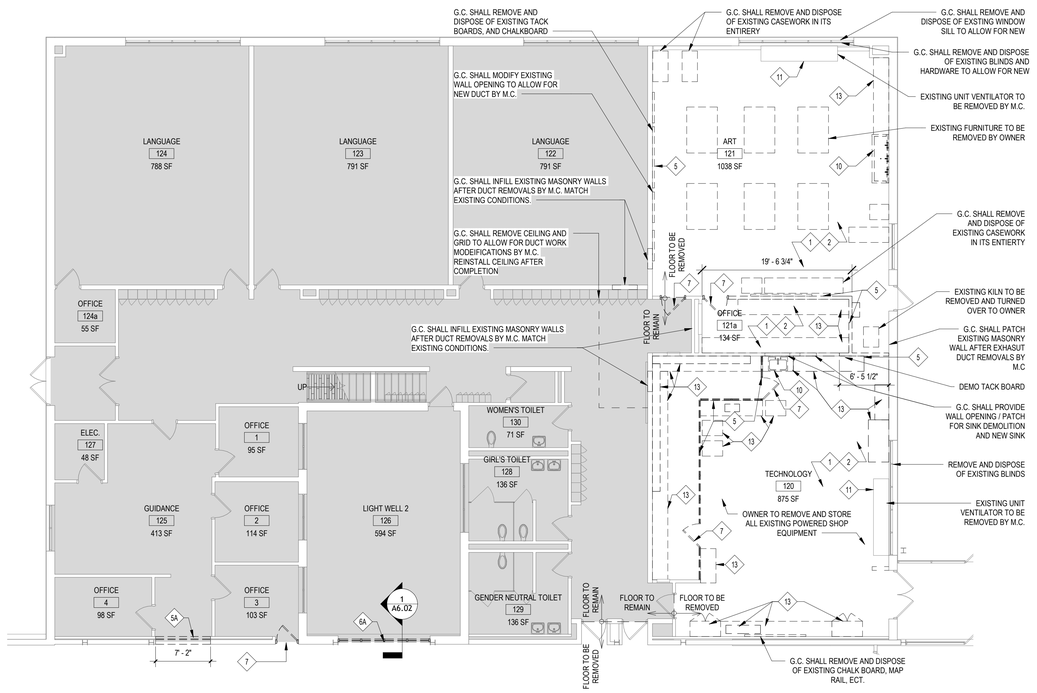
3. The I/O module shall include troubleshooting LED indicators to identify the following conditions:
(i) Power On
(ii) Power Off
(iii) Download or Startup in progress, not ready for normal operation.
(iv) No Faults
(v) Device Fault
(vi) Normal Data Transmission
(vii) No Data Transmission
(viii) No Communication

(END OF SECTION)



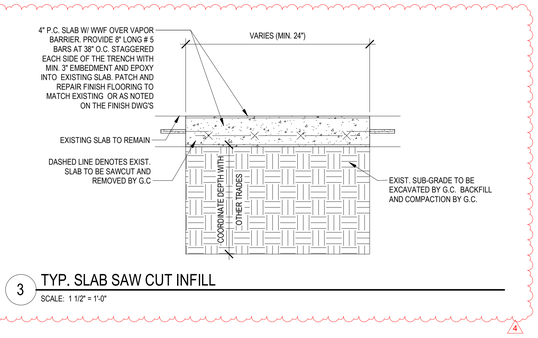
1 FIRST FLOOR DEMOLITION PLAN - AREA A

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



2 FIRST FLOOR DEMOLITION PLAN - AREA C

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



3 TYP. SLAB SAW CUT INFILL

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

GENERAL REMOVAL NOTES:

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL DEMOLITION AND REMOVAL, UNLESS NOTED OTHERWISE. MECHANICAL, PLUMBING AND ELECTRICAL CONTRACTORS SHALL BE RESPONSIBLE FOR ALL DISCONNECTS. G.C. TO COORDINATE DEMOLITION WITH M.C., P.C. AND E.C. REFER TO M.E.P. SERIES DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION AND DEMOLITION SCOPE BY GENERAL CONTRACTOR NOT SHOWN THIS DWG. TYPICAL FOR ALL AREAS OF INTERIOR DEMOLITION AND/OR RECONSTRUCTION.
2. IT SHALL BE NOTED THAT G.C. SHALL BE RESPONSIBLE TO OPEN UP ALL WALLS (CMU OR FRAME) AND ALL FLOORS (CONCRETE) AS MAY BE REQUIRED FOR THE P.C. TO PERFORM THEIR WORK. THE G.C. SHALL BE RESPONSIBLE TO TEMPORARILY SHORE-UP THE WALLS AND CLOSE UP ALL WALLS AND FLOORS IN SIZE/COURSE THICKNESS AND TYPES TO MATCH EXIST. ADJACENT.
3. NOTED CASEWORK AND FURNITURE REMOVALS MAY BE BASE CABINETS, COUNTERS, WALL CABINETS, SHELVING, BUILT IN CASEWORK, INSTRUMENT STORAGE CABINETS OR APPLIANCES. OWNER TO REMOVE ALL LOOSE FURNISHINGS AND STORED MATERIALS PRIOR TO START OF WORK.
4. G.C. SHALL REMOVE ALL V.A.T., MASTIC AND WALL BASE, AND/OR LEAD CONTAINING CONSTRUCTION MATERIALS. REFER TO ASBESTOS/LEAD ABATEMENT PLAN AND INSPECTION/TEST RESULTS FOR ADDITIONAL INFORMATION.
5. ALL REMOVALS OF EXISTING FIXTURES WHICH ARE AFFIXED TO V.A.T. SHALL BE TREATED AS AN ASBESTOS ABATEMENT ITEM AND SHALL CONFORM TO REMOVAL PROCEDURES AND REQUIREMENTS.
6. G.C. SHALL SAWCUT WALLS, FLOORS, ROOF, ETC. UNLESS OTHERWISE NOTED. REFER TO M.E.P. DRAWINGS FOR LOCATIONS, DESCRIPTIONS AND RESPONSIBILITIES.
7. G.C. SHALL PATCH, REPLACE, OR REPAIR DAMAGE CAUSED TO EXIST. FLOOR, WALLS, ROOF, ETC. SHOWN TO REMAIN AS A RESULT OF DEMOLITION TO PRIOR CONDITION OR MATCH ADJACENT NEW CONSTRUCTION.
8. G.C. SHALL VERIFY ALL REMOVALS W/ OWNERS REPRESENTATIVE/OWNER, AND M.C., P.C., OR E.C. PRIOR TO COMMENCEMENT.
9. NOTED FLOORING REMOVALS MAY BE V.C.T., CARPET OR TERRAZZO. NOTED CEILING REMOVALS MAY BE CONCEALED SPLINE SYSTEM, ACOUSTICAL TILE/GRID SYSTEM, SOFFITS AND FRAMING, OR PLASTER W/ SUPPORT FRAMING. NOTED WALL REMOVALS MAY BE GYP. BD. W/ FRAMING, CMU, CMU W/ APPLIED FINISHES, BRICK, OPERABLE PARTITIONS W/ TRACK/ SUPPORTS AND SHALL INCLUDE ALL DOORS AND FRAMES WHERE SHOWN. UNLESS OTHERWISE NOTED, ALL EXISTING WALL MOUNTED CHALK BD., WHITE BD. OR TACK BD. AND MASTIC/ADHESIVE SHALL BE REMOVED.
10. IN ALL AREAS OF FLOORING REMOVALS - THE G.C. SHALL BE RESPONSIBLE TO COMPLETELY FLASH PATCH THE ENTIRE FLOOR SURFACE. IN PREPARATION OF INSTALLATION OF NEW FINISHED FLOORING. G.C. SHALL FLASH PATCH THE SURFACE WITH "ARDEX" SD-F FEATHER FINISH OR APPROVED EQUAL. FLOOR SURFACES SHALL BE SMOOTH, FREE OF DEPRESSION, BUMPS, UNEVENNESS - LEVEL TO A TOLERANCE OF A MINIMUM OF +/- 1/8" AND OR AS SPECIFIED BY THE FLOORING MANUFACTURERS FLOORING INSTALLATION SPECIFICATIONS. THE G.C. SHALL BE RESPONSIBLE TO MAKE ANY NECESSARY CORRECTIONS TO THE FLOOR SUBSTRATE AS MAY BE DEEMED NECESSARY BY THE ARCHITECT, AT NO ADDITIONAL COST TO THE OWNER.

DEMOLITION LEGEND:

EXISTING CONSTRUCTION TO BE REMOVED (PATCH ALL SURFACES)

ROOM 222 — ROOM NAME AND NUMBER

DEMOLITION KEY NOTES:

(COORDINATE WITH ASBESTOS, LEAD AND PCB ABATEMENT TESTING REPORTS, ATTACHED TO THE PROJECT MANUAL, PRIOR TO COMMENCE ANY REMOVALS)

DEMO FLOOR - G.C SHALL SAWCUT FLOOR TO ALLOW FOR NEW PLUMBING ELECTRICAL WORK. G.C. TO EXCAVATE, BACKFILL AND PROVIDE NEW SLAB AS NEEDED - CODD. WORK BY P.C. AND E.C. COORDINATE WITH PROPOSED PLUMBING & ELECTRICAL PLANS. SEE DETAIL 3/A1.01

1. REMOVE EXISTING FLOOR/BASE SYSTEMS IN THEIR ENTIRETY - PREP SUBFLOOR/WALL TO ACCEPT NEW FINISHES.
1A. REMOVE EXISTING TILE FLOOR AND ASSOCIATED TILE BASE IN THEIR ENTIRETY - PREP SUBFLOOR/WALL TO ACCEPT NEW FINISHES.
2. REMOVE EXISTING CEILING SYSTEMS, FRAMING, GYPSUM BOARD, IN THEIR ENTIRETY - COORDINATE DISCONNECTS W/MEP CONTRACTORS.
2A. REMOVE EXISTING PORTION OF CEILING SYSTEMS AS REQUIRED FOR NEW WORK - COORDINATE DISCONNECTS AND EXACT LOCATIONS W/MEP CONTRACTORS.
2B. REMOVE EXISTING CEILING FRAMING, GYPSUM BOARD, AND PLYWOOD COVER IN ITS ENTIRETY ABOVE TOILET ROOM - COORDINATE DISCONNECTS W/MEP CONTRACTORS.
3. REMOVE EXISTING ROOF SYSTEM AND STRUCTURAL SUPPORTS IN THEIR ENTIRETY - COORDINATE DISCONNECTS W/MEP CONTRACTORS.
4. REMOVE EXISTING CONCRETE SLAB AND FOUNDATION BELOW.
5. REMOVE EXISTING SELECTED WALL IN THEIR ENTIRETY - PATCH/REPAIR/RESTORE REMAINING WALL TO ACCEPT NEW FINISHES - COORDINATE W/MEP CONTRACTORS FOR DISCONNECTS. REMOVAL SHALL INCLUDE ANY AND ALL EXISTING TOP PARTITION ANCHORS AT EXISTING STEEL BEAMS.
5A. REMOVE EXISTING PORTION OF SELECTED WALL AS REQUIRED FOR NEW DOOR WINDOW MECHANICAL PENETRATION AND APPLICABLE FRAME SYSTEM - PATCH/REPAIR/RESTORE REMAINING WALL TO ACCEPT NEW FINISHES - COORDINATE W/MEP CONTRACTORS FOR DISCONNECTS AND WALL PENETRATION SIZES.
5B. REMOVE EXISTING SELECTED CMU/ MASONRY WALL IN THEIR ENTIRETY - PATCH/REPAIR/RESTORE REMAINING WALL TO ACCEPT NEW FINISHES - COORDINATE W/MEP CONTRACTORS FOR DISCONNECTS AND WALL PENETRATION SIZES. REMOVAL SHALL INCLUDE ANY AND ALL EXISTING TOP PARTITION ANCHORS AT EXISTING STEEL BEAMS.
6. REMOVE EXISTING WINDOW & FRAMES IN THEIR ENTIRETY - PATCH/REPAIR/RESTORE WALL TO ACCEPT NEW FINISHES.
6A. REMOVE EXISTING STOREFRONT/ CURTAINWALL SYSTEM IN THEIR ENTIRETY - PATCH/REPAIR/RESTORE WALL TO ACCEPT NEW FINISHES.
7. REMOVE EXISTING DOOR & FRAME IN THEIR ENTIRETY - PATCH/REPAIR/RESTORE WALL TO ACCEPT NEW FINISHES.
7A. REMOVE EXISTING DOOR, "HIDDEN" SIDELITE & FRAME IN THEIR ENTIRETY - PATCH/REPAIR/RESTORE WALL TO ACCEPT NEW FINISHES
8. REMOVE EXISTING COLUMN ENCLOSURE & FRAMING IN ITS ENTIRITY.
9. REMOVE EXISTING LOCKERS AND ASSOCIATED BLOCKING. LOOKERS TO BE STORED AND REINSTALLED IN NEW LOCATION. REMOVE AND DISPOSE OF RUBBER BASE. REFER TO THE PROPOSED DRAWINGS FOR NEW LOCATIONS.
10. EXISTING PLUMBING FIXTURE TO BE REMOVED BY P.C. - G.C. SHALL COORDINATE DISCONNECTS W/ P.C.. G.C. TO REMOVE COUNTERTOP & BASE CABINETS.
11. EXISTING MECH EQUIPMENT TO BE REMOVED AND DISPOSED OF BY M.C.
12. EXISTING SMART BOARD TO BE REMOVED AND TURNED OVER TO OWNER.
13. REMOVE EXISTING CASEWORK, SHELVING BASE UNITS AND ASSOCIATED BLOCKING.
14. EXISTING ELECTRICAL PANEL TO BE RELOCATED
15. G.C. SHALL REMOVE AND DISPOSE OF ALL EXISTING VEGETATION, STONE, LARGE BOLDERS, PLANTER BOXES, TABLES, BENCHES, ADN SUBGRADE AS REQ'D FOR NEW SUBBASE AND CONCRETE SLAB ON GRADE.
16. EXISTING EXPOSED DECK AND BEAMS TO BE CLEANED, SCRAPED, AND PREPPED FOR NEW FINISH.
17. REMOVE AND DISPOSE OF FIRE EXTINGUISHER CABINET. TURN FIRE EXT. OVER TO OWNER.
18. EXISTING VENDING MACHINES TO BE MOVED BY OWNER.
19. REMOVE AND DISPOSE OF EXISTING DISPLAY CASE. COORD. WITH OWNER PRIOR TO REMOVAL.
20. REMOVE AND DISPOSE OF EXISTING TOILET PARTITIONS IN ITS ENTIRITY THROUGHOUT TOILET ROOM. REMOVE ALL ACCESSORIES MOUNTED TO PARTITIONS.
21. EXISTING COPIER TO BE REMOVED AND TEMPORARILY RELOCATED BY OWNER.
22. REMOVE AND TURN OWVER TO OWNER ALL EXISTING WALL HUNG PLAQUES.
23. REMOVE AND DISPOSE OF EXISTING WHITE BOARD / CHALK BOARD.
24. REMOVE AND TURN OVER TO OWNER EXISTING LCD TV DISPLAY.
25. G.C. TO DEMO EXISTING RAILING. PATCH AND REPAIR WALL AS NEED TO RECEIVE RELOCATED LOCKERS
26. EXISTING RECESSED DRINKING FOUNTAIN TO BE REMOVED BY P.C. - G.C. SHALL COORDINATE DISCONNECTS W/ P.C.
27. EXISTING WOOD HANDRAIL TO BE DEMOLISHED. EXISTING GUARDRAIL TO REMAIN. PATCH ANY HOLES LEFT IN EXISTING WALL AND GUARDRAIL
28. G.C. TO REMOVE ALL EXISTING FIXED AMPHITHEATER CHAIR
29. G.C. TO OPEN AND PATCH WALL TO ALLOW FOR NEW OUTLETS ON EXISTING WALL PARTITIONS TO REMAIN, COORDINATE WITH ELECTRICAL PLANS & E.C.

FLOOR PLAN LEGEND

AREA NOT IN CONTRACT U.O.N.

REV.	DATE	ITEM
4	12/15/2022	BID ADDENDUM #4

NOTICE

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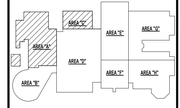

KEY PLAN

NO SCALE

BRIARCLIFF MANOR U.F.S.D.
PHASE 2 BOND IMPROVEMENTS
BRIARCLIFF MANOR MIDDLE / HIGH SCHOOL
444 PLEASANTVILLE RD, BRIARCLIFF MANOR, NY 10510

PROJECT

DEMOLITION FIRST FLOOR PLAN - AREA A & C

DWG/TITLE

DRWG. BY: C.M.

CHK. BY: G.E.O.

BBS
ARCHITECTS
LANDSCAPE ARCHITECTS
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SED No. 66-14-02-02-0-004-023

DISTRICT BRIARCLIFF MANOR U.F.S.D.

PROJECT PHASE 2 BOND IMPROVEMENTS

DWG TITLE DEMOLITION FIRST FLOOR PLAN - AREA A & C

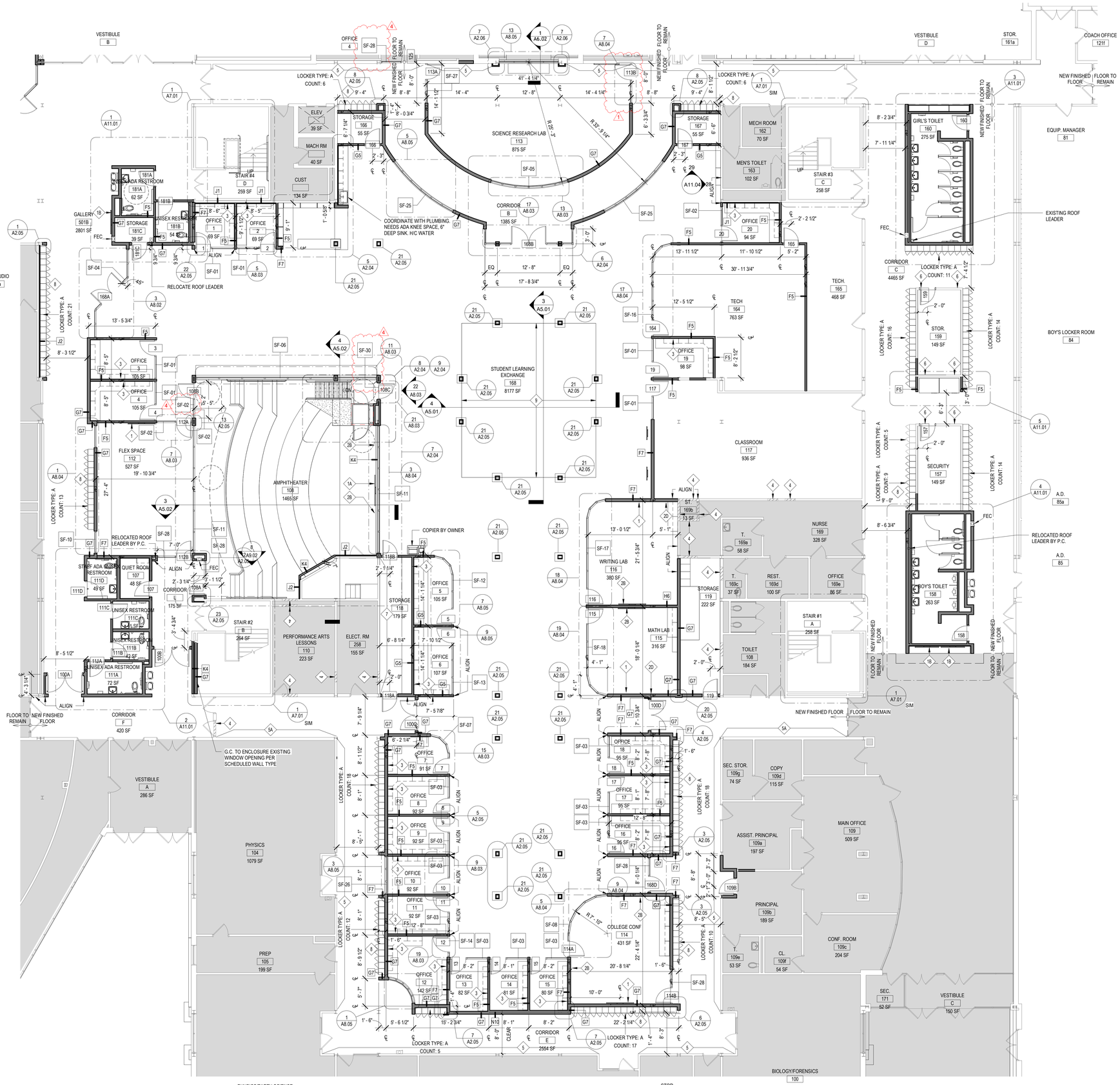
SCALE: AS NOTED

DATE: -

BID P/U DATE: 11/14/2022

FILE NO. 21-274C

A1.01 HSMS



1 FIRST FLOOR PROPOSED PLAN - AREA D

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

ARCHITECTURAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
X	KEY NOTE
XXX	DOOR NUMBER
WX	WINDOW DESIGNATION
XXXX / XX / XXX SF	ROOM TAG: ROOM NAME, ROOM NUMBER, ROOM AREA
	ELEVATION DATUM
XX / XX.XX	DETAIL TAG: DETAIL NUMBER, DRAWING NUMBER
XX / XX.XX	SECTION / ELEVATION TAG: DETAIL NUMBER, DRAWING NUMBER
XX	DENOTES INTERIOR PARTITION TYPE - REFER TO PARTITION TYPES FOR ADDITIONAL INFORMATION.
F.E.	DENOTES LOCATION OF RECESSED FIRE EXTINGUISHER WITH FIRE RATED CABINET.
D.F.	DENOTES LOCATION OF DRINKING FOUNTAIN.
E.J.	DENOTES LOCATION OF FLEL BUILDING EXPANSION JOINT. PROVIDE APPROPRIATE INTERIOR FLOOR, WALL AND CEILING EXPANSION JOINT COVERS, WHERE APPLICABLE. PROVIDE VERTICAL JOINT BY 'EMSEAL' OR EQUAL AT EXTERIOR, WHERE APPLICABLE.
M.C.J.	DENOTES LOCATION OF 1/2" MASONRY CONTROL JOINT WITH CONTINUOUS BACKER ROD AND SEALANT.
C.S.	DENOTES LOCATION OF NEW CAST STONE DATE STONE.
D.P.	DENOTES LOCATION OF NEW DEDICATION PLAQUE.
S.D.	DENOTES LOCATION OF SMOKE DOOR.
XX'-XX" / XXX.XX'	DENOTES FINISH FLOOR ELEVATION REFERENCED FROM 0'-0". WHERE ENGINEERING ELEVATIONS ARE REFERENCED (000.00'), REFER TO CIVIL-SERIES DRAWINGS FOR ADDITIONAL DATUM INFORMATION.
LL.VX	DENOTES LOCATION AND DESIGNATION OF NEW LINTEL.
R.W.	DENOTES LOCATION OF NEW/EXISTING RESCUE WINDOW.
I.D.	DENOTES LOCATION OF TRUSS / JOIST IDENTIFICATION SIGN.
A.E.D.	DENOTES LOCATION OF AUTOMATED EXTERNAL DEFIBRILLATOR.
M.O.S.	DENOTES LOCATION OF ASSEMBLY SPACE MAXIMUM OCCUPANCY SIGN.
A.O.R.	DENOTES LOCATION OF AREA OF REFUGE WITH TWO-WAY COMMUNICATION DEVICE. REFER TO E-SERIES DRAWINGS FOR ADDITIONAL INFORMATION.
XXX	DENOTES MAXIMUM DOOR / STAIR EXITING CAPACITY.
X.X	DENOTES R.E.U. FOR ASSEMBLY SPACES
M	DENOTES DOOR ON MAGNETIC AUTOMATIC HOLD OPEN DEVICE, CONNECTED TO FIRE ALARM SYSTEM.
M.O.L. XX / P.S. XX	MAX. OCCUPANCY LOAD (PER N.Y.S. CODE) / PUPIL STATION COUNT
	DENOTES ACCESSIBLE ENTRANCE/EXIT, FIXTURE, ACCESSORY, DEVICE, OR PARTICIPATION AREA.
1	REVISION CLOUD AND KEYED DESIGNATION. REFER TO DRAWING TITLEBLOCK FOR ADDITIONAL INFORMATION.

ARCHITECTURAL KEY NOTES

1. 75" DIAG SMART BOARD BY OWNER. MOUNTING BLOCKING BY G.C. POWER BY E.C. REFER TO MOUNTING DETAIL 1/A2.06 FOR INFO.
1A. 85" DIAG SMART BOARD BY OWNER. MOUNTING BLOCKING BY G.C. POWER BY E.C. REFER TO MOUNTING DETAIL 1/A2.06 FOR INFO.
1B. 65" DIAG SMART BOARD BY OWNER. MOUNTING BLOCKING BY G.C. POWER BY E.C. REFER TO MOUNTING DETAIL 1/A2.06 FOR INFO.
2A. 16' MARKER BOARD BY G.C.
2B. 8' MARKER BOARD BY G.C.
2C. 6' MARKER BOARD BY G.C.
2D. 4' MARKER BOARD BY G.C.
3. HOMASOTE TACK BOARD WRAPPED W/ FABRIC. CUT TO ALIGN WITH ALL WALL CABINETS ABOVE AND COUNTERTOP BELOW REFER TO FINISH SCHEDULE.
4. G.C. SHALL INFILL EXISTING GYP. BOARD WALL OPENING ABOVE CEILING AND OR INFILL TO NEW SIZED OPENING AFTER DUCT REMOVAL/INSTALL BY M.C. MATCH EXISTING ADJACENT CONDITIONS. TAPE/SPACKLE AND FIRE STOPE OPENINGS. (TYP.)
5. G.C. SHALL PATCH/REPAIN EXISTING GYP. BOARD WALL AFTER REMOVAL OF EXISTING WALL MOUNTED LIGHTING BY E.C. PAINT. (TYPICAL ENTIRE LENGTH OF CORRIDOR)
5A. G.C. SHALL PATCH/REPAIR EXISTING MASONRY WALL AFTER REMOVAL OF EXISTING WALL MOUNTED LIGHTING BY E.C. PAINT. PATCH EXISTING FASTENER HOLES. (TYPICAL ENTIRE LENGTH OF CORRIDOR.)
6. G.C. SHALL PATCH/REPAIR EXISTING GYP. BOARD WALL AFTER REMOVAL OF EXISTING LIGHTING FIXTURE BY E.C. PAINT. (TYP.)
7. G.C. SHALL PATCH/REPAIR EXISTING GYP. BOARD WALL AFTER REMOCAL/INSTAL OF ELECTRICAL PANELS BY E.C. PAINT. (TYP.)
8. G.C. SHALL REINSTALL EXISTING LOCKERS AND BASES. PROVIDE NEW CONTINUOUS SLOPE TOP TO MATCH EXISTING COLOR. PROVIDE NEW RUBBER BASE AT LOCKER. (TYP.)
9. G.C. SHALL PROVIDE AND INSTALL NEW SLAB ON GRADE. REFER TO STRUCTURAL DRAWING'S AND ELECTRICAL DRAWINGS FOR UNDERSLAB ELECTRICAL.
10. G.C. SHALL INSTALL NEW PHENOLIC RESIN SILL
11. G.C. SHALL PROVIDE AND INSTALL NEW 9'X3'X4" THICK CONCRETE PAD CENTERED ON NEW LOUVER. PROVIDE 6X6 4.0X4.0WWF REINF. WITH 8" THICK HAUNCH AT PERIMETER. PROVIDE BROOM FINISH.

GENERAL CONSTRUCTION NOTES

1. GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING AND PROCEEDING WITH WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES IN WRITING PRIOR TO START OF WORK.
2. IN ACCORDANCE WITH STATE AND LOCAL CODES, THE REQUIRED EXITS IN THE EXISTING BUILDING MUST BE KEPT CLEAR, MAINTAINED AND PROTECTED DURING THE CONSTRUCTION PERIOD.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS REQUIRED FOR ESTIMATING.
4. ALL WORK AND MATERIAL OF THIS PROJECT AND ADJACENT SURFACES SHALL BE PROTECTED FROM DAMAGE. IN THE EVENT OF DAMAGE, THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REPAIRS AND REPLACEMENT NECESSARY TO THE APPROVAL OF THE ARCHITECT AND OWNER AND AT NO ADDITIONAL COST TO OWNER.
5. CONTRACTOR SHALL PROTECT ALL AREAS OF WORK FROM INCLEMENT WEATHER DURING AND AT THE END OF DAILY WORK OPERATIONS.
6. ALL PROJECT WASTE MATERIAL AND RUBBISH SHALL BE DISPOSED IN CONTAINERS PROVIDED BY THE CONTRACTOR FOR SUBSEQUENT LEGAL OFF-SITE DISPOSAL. CONTAINER LOCATION TO BE COORDINATED WITH THE OWNER & CONSTRUCTION MANAGER. OFF-SITE DISPOSAL TO BE ON A REGULAR BASIS.
7. ALL INTERIOR SURFACES DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED AND/OR REPLACED TO MATCH EXISTING CONDITIONS TO THE APPROVAL OF THE ARCHITECT AND OWNER.
8. ALL DEBRIS, DUST AND DIRT CAUSED BY WORK OF THIS CONTRACT SHALL BE REMOVED FROM SITE BY APPROPRIATE MEANS. RESTORE ALL CONDITIONS TO THE STATE OF CLEANLINESS THAT EXISTED PRIOR TO COMMENCEMENT OF WORK.
9. ALL DEMOLITION AND CONSTRUCTION WORK TO BE PERFORMED MUST NOT PROCEED UNTIL WRITTEN APPROVAL HAS BEEN OBTAINED FROM OWNER.
10. ALL CONTRACTORS ARE TO COORDINATE INSTALLATION OF THEIR WORK WITH EACH OTHER AND WITH THE WORK BEING PERFORMED UNDER SEPARATE CONTRACTS BY OTHERS AND WORK PERFORMED BY THE OWNER'S VENDOR(S).
11. REFER TO CONSTRUCTION IMPLEMENTATION PLANS AND CONSTRUCTION SPECIAL PROVISIONS (PREPARED BY OTHERS, IF APPLICABLE) FOR ALL REQUIREMENTS FOR TEMPORARY CONSTRUCTION.

MATERIAL LEGEND

HATCH	MATERIAL	HATCH	MATERIAL
	CMU WALL CONSTRUCTION		EARTH
	2-HOUR FIREWALL CONSTRUCTION		GRAVEL
	BRICK VENEER CONSTRUCTION		RIGID INSULATION
	GYPSUM AND METAL STUD WALL CONSTRUCTION		BATT INSULATION
	GYPSUM BOARD; PLASTER; MORTAR; SAND		PLYWOOD
	CONCRETE		INTERMEDIATE BLOCKING CONTINUOUS BLOCKING
	STEEL		FINISH WOOD

FLOOR PLAN LEGEND

	AREA NOT IN CONTRACT U.O.N.

REV.	DATE	ITEM
1	11/25/2022	BID ADDENDUM #1
4	12/15/2022	BID ADDENDUM #4

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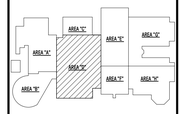

KEY PLAN

NO SCALE

BRIARCLIFF MANOR U.F.S.D.
PHASE 2 BOND IMPROVEMENTS
BRIARCLIFF MANOR MIDDLE / HIGH SCHOOL
444 PLEASANTVILLE RD, BRIARCLIFF MANOR, NY 10510

PROJECT

PROPOSED FIRST FLOOR PLAN - AREA D

DWG TITLE

DRWG. BY: C.M.

CHK. BY: G.E.O.

BBS
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LANDSCAPE ARCHITECTS
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SED No. 66-14-02-02-0-004-023

DISTRICT BRIARCLIFF MANOR U.F.S.D.

PROJECT PHASE 2 BOND IMPROVEMENTS

DWG TITLE PROPOSED FIRST FLOOR PLAN - AREA D

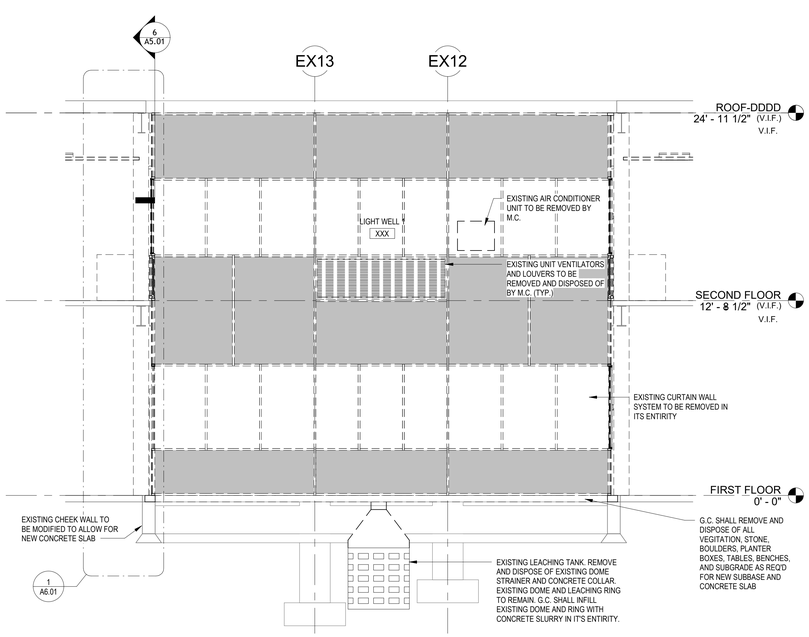
SCALE: AS NOTED

DATE: -

BID P/U DATE: 11/14/2022

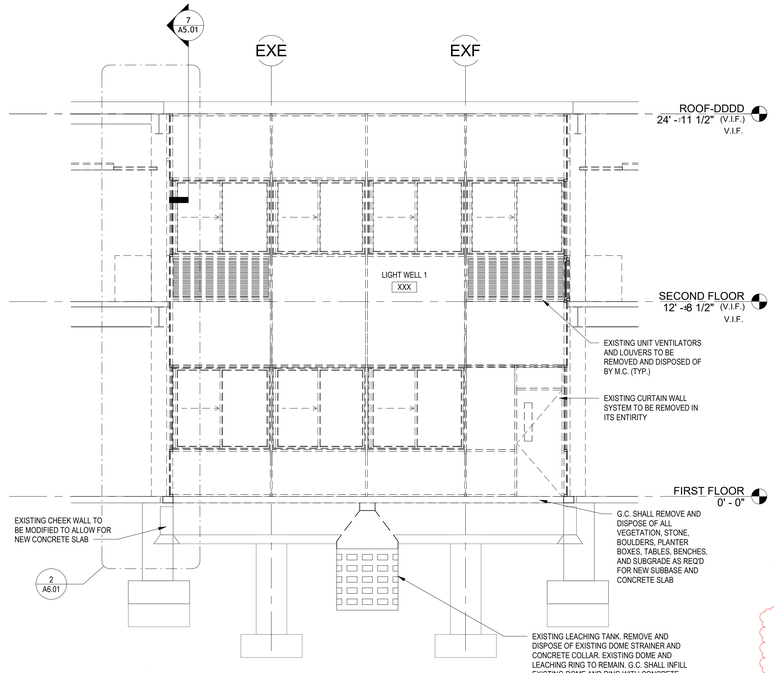
FILE NO. 21-274C

A2.02 HSMS



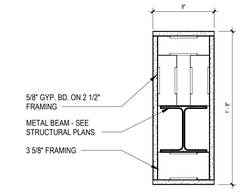
1 LIGHT WELL DEMOLITION SECTION

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



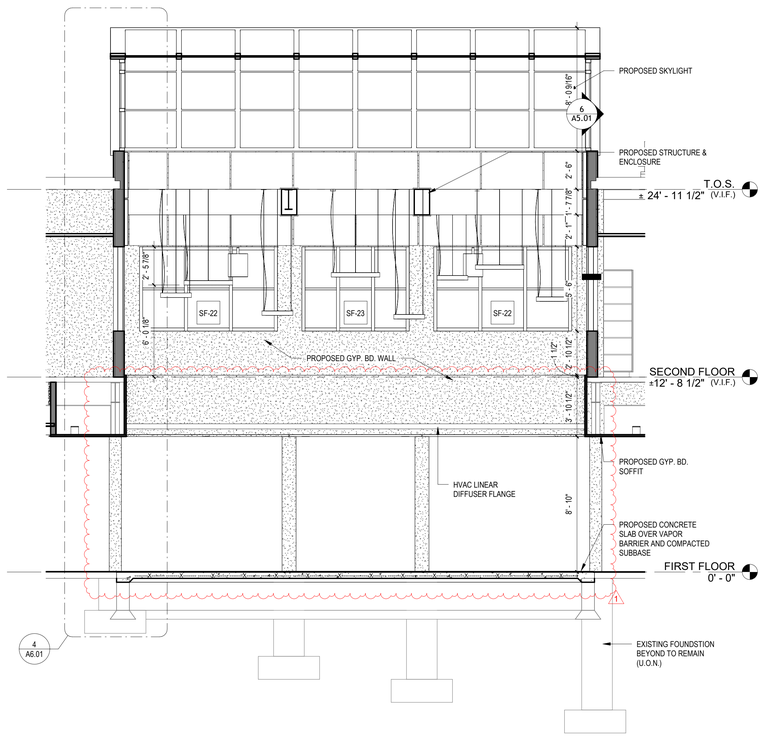
2 LIGHT WELL DEMOLITION SECTION

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



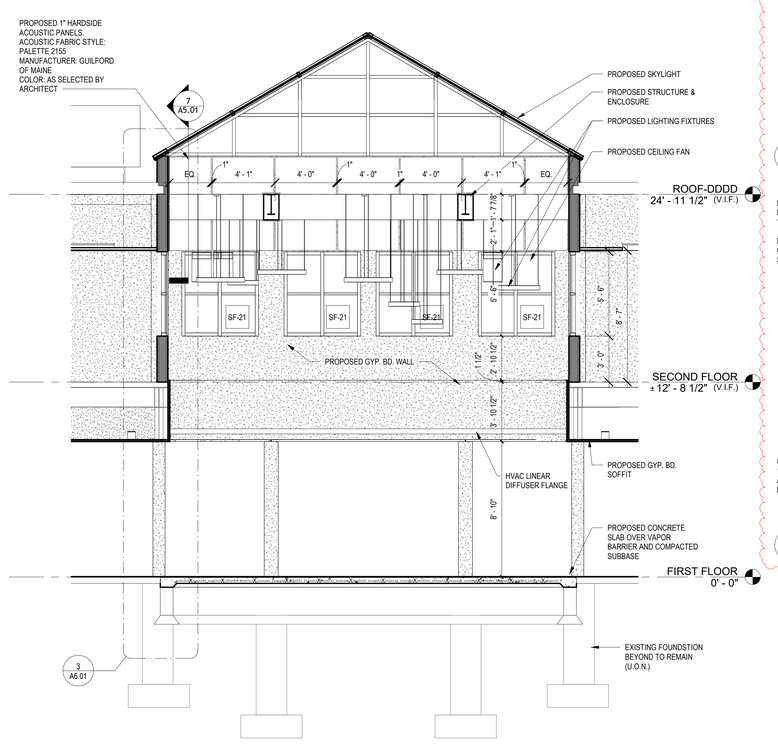
5 8"X1'-8" FAUX BEAM

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



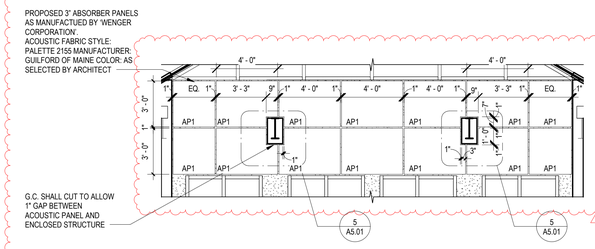
3 PROPOSED LIGHT WELL SECTION

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



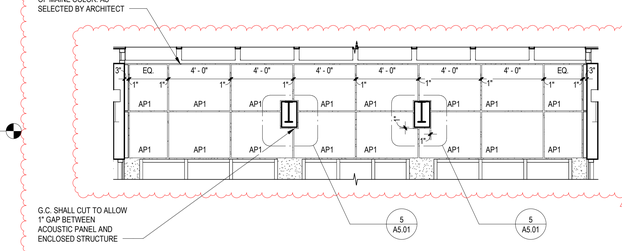
4 PROPOSED LIGHT WELL SECTION

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



6 ACOUSTIC PANEL INTERIOR ELEVATION A - (TYPICAL 2 ELEVATIONS)

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



7 ACOUSTIC PANEL INTERIOR ELEVATION B - (TYPICAL 2 ELEVATIONS)

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

REV.	DATE	ITEM
1	11/25/2022	BID ADDENDUM #1
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PROJECT

BRIARCLIFF MANOR U.F.S.D.
PHASE 2 BOND IMPROVEMENTS
BRIARCLIFF MANOR MIDDLE / HIGH SCHOOL
444 PLEASANTVILLE RD, BRIARCLIFF MANOR, NY 10510

DWGTITLE

BUILDING SECTIONS

DRWG. BY: J.N.
CHK. BY: G.E.O.

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SED No. 66-14-02-02-0-004-023
DISTRICT BRIARCLIFF MANOR U.F.S.D.
PROJECT PHASE 2 BOND IMPROVEMENTS
DWG TITLE BUILDING SECTIONS

SCALE: AS NOTED
DATE: -
BID P/U DATE: 11/14/2022
FILE NO. 21-274C

A5.01 HSMS

DOOR SCHEDULE - BRIARCLIFF MANOR HIGH SCHOOL

	LOCATION		SIGNAGE	DOOR							FRAME			HARDWARE	DETAILS				FIRE RATING	REMARKS	DOOR NO.
	FROM ROOM	TO ROOM		LEAF	WIDTH	HEIGHT	THICKNESS	TYPE	MATERIAL	GLAZING	TYPE	MATERIAL	GLAZING		HEAD	JAMB	SILL	T'HOLD			
1	STUDENT LEARNING EXCHANGE (168)	OFFICE (1)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-01	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		1
2	OFFICE (2)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-01	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		2
3	OFFICE (3)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-01	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		3
4	STUDENT LEARNING EXCHANGE (168)	OFFICE (4)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-01	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		4
5	STUDENT LEARNING EXCHANGE (168)	OFFICE (5)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-12	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		5
6	OFFICE (6)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-13	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		6
7	STUDENT LEARNING EXCHANGE (168)	OFFICE (7)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-07	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		7
8	STUDENT LEARNING EXCHANGE (168)	OFFICE (8)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-03	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		8
9	OFFICE (9)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-03	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		9
10	STUDENT LEARNING EXCHANGE (168)	OFFICE (10)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-03	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		10
11	OFFICE (11)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-03	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		11
12	OFFICE (12)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-14	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		12
13	OFFICE (13)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-03	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		13
14	OFFICE (14)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-03	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		14
15	OFFICE (15)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-03	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		15
16	OFFICE (16)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-03	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		16
17	STUDENT LEARNING EXCHANGE (168)	OFFICE (17)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-03	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		17
18	OFFICE (18)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-03	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		18
19	OFFICE (19)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-01	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		19
20	OFFICE (20)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-01	ALUM	GL-1	01	E/ A8.02	I & J/ A8.02	-	- - -	- - -		20
100A	GALLERY (501B)	CORRIDOR (F)	B	2	3' - 6"	7' - 0"	1 3/4"	D4	M.C.O.V.	F.L.P.	F2	HM	- - -	10A	H4	J4	-	T4	45 MIN.	ELECTROMAGNETIC HOLDER	100A
100B	CORRIDOR (L)	CORRIDOR (F)	B	2	3' - 6"	7' - 0"	1 3/4"	D4	M.C.O.V.	F.L.P.	F2	HM	- - -	10	H4	J4	-	T4	45 MIN.	ELECTROMAGNETIC HOLDER	100B
100C	STUDENT LEARNING EXCHANGE (168)	CORRIDOR (E)	B	2	3' - 0"	7' - 0"	1 3/4"	D4	M.C.O.V.	F.L.P.	F2	HM	- - -	10	H4	J4	-	T1	45 MIN.	ELECTROMAGNETIC HOLDER	100C
100D	CORRIDOR (E)	STUDENT LEARNING EXCHANGE (168)	B	2	3' - 0"	7' - 0"	1 3/4"	D4	M.C.O.V.	F.L.P.	F2	HM	- - -	10	H4	J4	-	T1	45 MIN.	ELECTROMAGNETIC HOLDER	100D
107	QUIET ROOM (107)	CORRIDOR (L)	B	1	3' - 0"	7' - 0"	1 3/4"	D1	HM	- - -	F1	HM	- - -	06	H4	J4	-	T2	20 MIN.	PROVIDE GASKET AROUND DOOR	107
108A	CORRIDOR (L)	AMPHITHEATER (108)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	TEMP	SF-28	F.R.A.F.	GL-2	08A	E/ A8.02	I & J/ A8.02	-	- - -	60 MIN.		108A
108B	STUDENT LEARNING EXCHANGE (168)	AMPHITHEATER (108)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-02	ALUM	GL-1	01B	E/ A8.02	I & J/ A8.02	-	- - -	- - -		108B
108C	AMPHITHEATER (108)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-30	ALUM	GL-1	05	E/ A8.02	I & J/ A8.02	-	- - -	- - -		108C
109B	PRINCIPAL (109b)	CORRIDOR (E)	B	1	3' - 0"	7' - 0"	1 3/4"	D2	M.C.O.V.	F.L.P.	F1	HM	- - -	03	H4	J4	-	T4	60 MIN.		109B
111A	GALLERY (501B)	UNISEX ADA RESTROOM (111A)	D1	1	3' - 0"	7' - 0"	1 3/4"	D1	HM	- - -	F1	HM	- - -	02	H4	J4	-	T2	20 MIN.		111A
111B	GALLERY (501B)	UNISEX RESTROOM (111B)	D2	1	3' - 0"	7' - 0"	1 3/4"	D1	HM	- - -	F1	HM	- - -	02	H4	J4	-	T2	20 MIN.		111B
111C	GALLERY (501B)	UNISEX RESTROOM (111C)	D2	1	3' - 0"	7' - 0"	1 3/4"	D1	HM	- - -	F1	HM	- - -	02	H4	J4	-	T2	20 MIN.		111C
111D	GALLERY (501B)	STAFF ADA UNISEX RESTROOM (111D)	D1	1	3' - 0"	7' - 0"	1 3/4"	D1	HM	- - -	F1	HM	- - -	02	H4	J4	-	T2	20 MIN.		111D
112A	STUDENT LEARNING EXCHANGE (168)	FLEX SPACE (112)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-02	ALUM	GL-1	08	E/ A8.02	I & J/ A8.02	-	T1	- - -		112A
112B	FLEX SPACE (112)	CORRIDOR (L)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-2	SF-28	F.R.A.F.	GL-2	08	E/ A8.02	I & J/ A8.02	-	- - -	60 MIN.		112B
113A	CORRIDOR (B)	SCIENCE RESEARCH LAB (113)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-2	SF-27	F.R.A.F.	GL-2	08	E/ A8.02	I & J/ A8.02	-	- - -	60 MIN.		113A
113B	SCIENCE RESEARCH LAB (113)	CORRIDOR (B)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-2	SF-27	F.R.A.F.	GL-2	08	E/ A8.02	I & J/ A8.02	-	- - -	60 MIN.		113B
114A	COLLEGE CONF (114)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-08	ALUM	GL-1	01A	E/ A8.02	I & J/ A8.02	-	- - -	- - -		114A
114B	CORRIDOR (E)	COLLEGE CONF (114)	B	1	3' - 0"	7' - 0"	1 3/4"	D4	ALUM	GL-2	SF-28	F.R.A.F.	GL-2	08	E/ A8.02	I & J/ A8.02	-	T1	60 MIN.		114B
115	STUDENT LEARNING EXCHANGE (168)	MATH LAB (115)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-18	ALUM	GL-1	01A	E/ A8.02	I & J/ A8.02	-	T1	- - -		115
116	WRITING LAB (116)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-17	ALUM	GL-1	01A	E/ A8.02	I & J/ A8.02	-	T1	- - -		116
117	STUDENT LEARNING EXCHANGE (168)	CLASSROOM (117)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-01	ALUM	GL-1	01A	E/ A8.02	I & J/ A8.02	-	- - -	- - -		117
118A	CORRIDOR (E)	STORAGE (118)	B	1	3' - 0"	7' - 0"	1 3/4"	D1	HM	- - -	F1	HM	- - -	07C	H4	J4	-	T4	60 MIN.		118A
118B	STUDENT LEARNING EXCHANGE (168)	STORAGE (118)	B	1	3' - 0"	7' - 0"	1 3/4"	D1	HM	- - -	F1	HM	- - -	07C	H4	J4	-	T4	60 MIN.		118B
119	STORAGE (119)	CORRIDOR (E)	B	1	3' - 0"	7' - 0"	1 3/4"	D1	HM	- - -	F1	HM	- - -	07B	H4	J4	-	T4	60 MIN.		119
120	ROBOTICS/ ENGINEERING (121)	FAB LAB/ PHOTOGRAPHY (120)	B	1	3' - 0"	7' - 0"	1 3/4"	D6	M.C.O.V.	F.L.P.	F1	HM	- - -	03	H4	J4	-	T4	90 MIN.		120
120A	FAB LAB/ PHOTOGRAPHY (120)	STORAGE (120A)	B	1	3' - 0"	7' - 0"	1 3/4"	D1	M.C.O.V.	- - -	F1	HM	- - -	07B	H4	J4	-	T4	45 MIN.		120A
121	ROBOTICS/ ENGINEERING (121)	CORRIDOR (D)	B	1	3' - 0"	7' - 0"	1 3/4"	D6	M.C.O.V.	F.L.P.	EXIST	EXIST	- - -	03	H2	J2	-	T4	90 MIN.		121
121A	ROBOTICS/ ENGINEERING (121)	STORAGE (121A)	B	1	3' - 0"	7' - 0"	1 3/4"	D1	M.C.O.V.	- - -	F1	HM	- - -	07B	H4	J4	-	T4	90 MIN.		121A
125	GUIDANCE (125)	CORRIDOR (B)	B	1	3' - 0"	7' - 0"	1 3/4"	D4	ALUM	GL-2	SF-28	F.R.A.F.	GL-2	08	E/ A8.02	I & J/ A8.02	-	- - -	60 MIN.		125
157	CORRIDOR (C)	SECURITY (157)	B	1	3' - 0"	7' - 0"	1 3/4"	D4	HM	F.L.P.	F1	HM	- - -	03A	H2	J2	-	T4	20 MIN.		157
158	BOY'S TOILET (158)	CORRIDOR (C)	C2	1	3' - 0"	7' - 0"	1 3/4"	D5	HM	- - -	F1	HM	- - -	03B	H4	J4	-	T2	20 MIN.		158
159	CORRIDOR (C)	STOR. (159)	B	1	3' - 0"	7' - 0"	1 3/4"	D3	HM	F.L.P.	F1	HM	- - -	07B	H2	J2	-	T4	20 MIN.		159
160	CORRIDOR (C)	GIRL'S TOILET (160)	C2	1	3' - 0"	7' - 0"	1 3/4"	D5	HM	- - -	F1	HM	- - -	03B	H4	J4	-	T2	20 MIN.		160
164	TECH (164)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-1	SF-16	ALUM	GL-1	01A	E/ A8.02	I & J/ A8.02	-	T1	- - -		164
165	TECH (164)	TECH. (165)	B	1	3' - 0"	7' - 0"	1 3/4"	D1	HM	- - -	F1	HM	- - -	04	H4	J4	-	T4	- - -		165
166	STUDENT LEARNING EXCHANGE (168)	STORAGE (166)	B	1	3' - 0"	7' - 0"	1 3/4"	D1	S.C.L.C.O.V.	- - -	F1	HM	- - -	07A	H4	J4	-	T1	- - -		166
167	STUDENT LEARNING EXCHANGE (168)	STORAGE (167)	B	1	3' - 0"	7' - 0"	1 3/4"	D1	S.C.L.C.O.V.	- - -	F1	HM	- - -	07A	H4	J4	-	T1	- - -		167
168A	STUDENT LEARNING EXCHANGE (168)	GALLERY (501B)	B	2	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-2	SF-04	F.R.A.F.	GL-2	09A	E/ A8.02	I & J/ A8.02	-	T1	60 MIN.		168A
168B	STUDENT LEARNING EXCHANGE (168)	CORRIDOR (B)	B	2	3' - 6"	8' - 0"	1 3/4"	D4	ALUM	GL-2	SF-09	F.R.A.F.	GL-2	09A	E/ A8.02	I & J/ A8.02	-	T1	60 MIN.		168B
168D	CORRIDOR (E)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	8' - 0"	1 3/4"	D4	ALUM	GL-2	SF-28	F.R.A.F.	GL-2	09A	E/ A8.02	I & J/ A8.02	-	T1	60 MIN.		168D
181A	GALLERY (501B)	UNISEX ADA RESTROOM (181A)	D2	1	3' - 0"	7' - 0"	1 3/4"	D1	HM	- - -	F1	HM	- - -	02	H4	J4	-	T2	20 MIN.		181A
181B	UNISEX RESTROOM (181B)	GALLERY (501B)	D2	1	3' - 0"	7' - 0"	1 3/4"	D1	HM	- - -	F1	HM	- - -	02	H4	J4	-	T2	20 MIN.		181B
181C	STORAGE (181C)	STUDENT LEARNING EXCHANGE (168)	B	1	3' - 0"	7' - 0"	1 3/4"	D1	HM	- - -	F1	HM	- - -	07	H4	J4	-	T1	- - -		181C
500	CAFETERIA (505)	BREAKOUT (500)	B	1	3' - 0"	7' - 0"	1 3/4"	D4	HM	TEMP	F1	HM	-	08	H4	J4	-	- - -	- - -	ADD ALTERNATE 1 TO BASE BID GC-1	500
501	CAFETERIA (505)	BREAKOUT (501)	B	1	3' - 0"	7' - 0"	1 3/4"	D4	HM	TEMP	F1	HM	-	08	H4	J4	-	- - -	- - -	ADD ALTERNATE 1 TO BASE BID GC-1	501
505A	GALLERY (501B)	CAFETERIA (505)	B	2	3' - 6"	7' - 0"	1 3/4"	D4	ALUM	GL-2	SF-15	F.R.A.F.	GL-2	09	E/ A8.02	J/ A8.02	-	- - -	60 MIN.		505A
505B	GALLERY (501B)	CAFETERIA (505)	-	2	3' - 6"	7' - 0"	1 3/4"	D4	ALUM	GL-2	SF-15	F.R.A.F.	GL-2	09	E/ A8.02	J/ A8.02	-	- - -	60 MIN.		505B

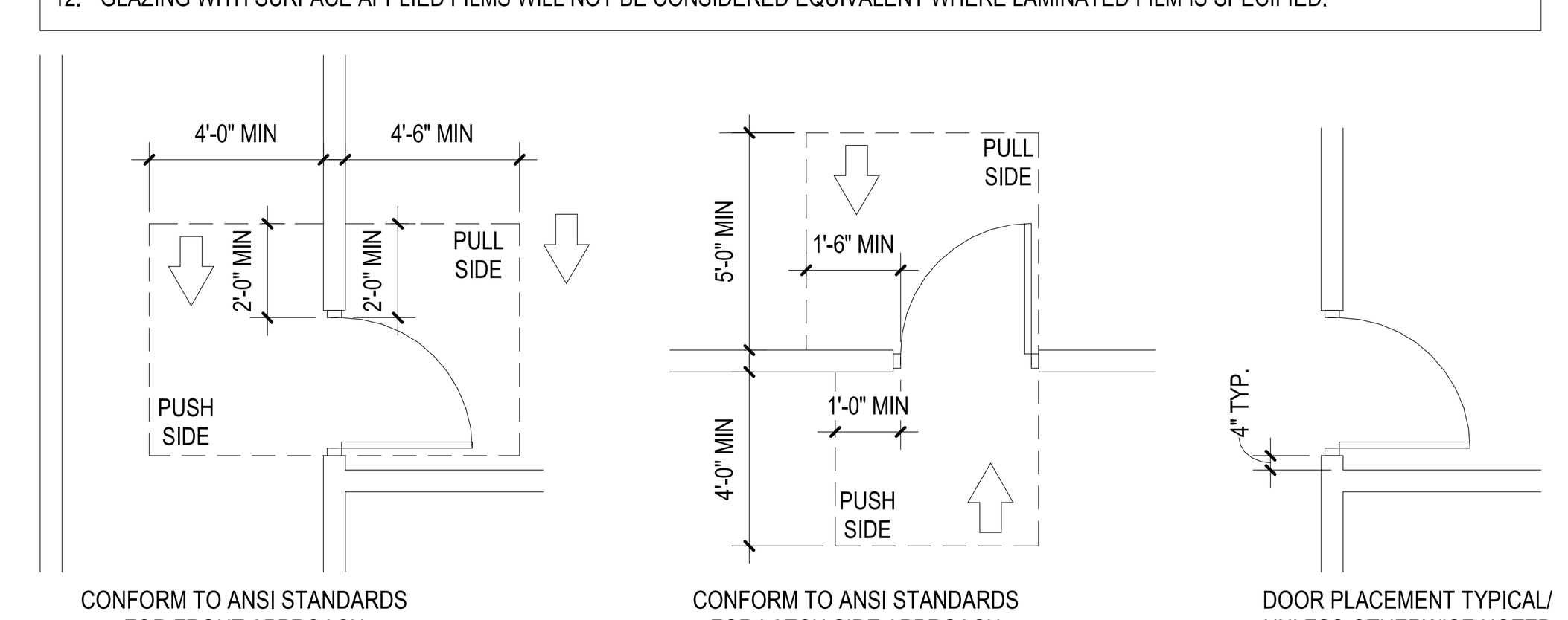
ABBREVIATIONS

ALUM.	ALUMINUM	M.C.M.V.	MINERAL CORE MAPLE VENEER
F.R.A.F.	FIRE RATED ALUMINUM FRAME	M.C.O.V.	MINERAL CORE OAK VENEER
F.G.	1/4" FIREGLASS 20	S.C.L.C.M.V.	SOLID COMPOSITE LUMBER CORE MAPLE VENEER
F.L.P.	5/16" FIRE-LITE PLUS	S.C.L.C.O.V.	SOLID COMPOSITE LUMBER CORE OAK VENEER
F.R.P.	FIBERGLASS REINFORCED POLYESTER	GL-1	1/2" TEMPERED LAMINATED SAFETY GLASS
H.M.	HOLLOW METAL	GL-2	7/8" PYROSTOP 60 MIN. GLAZING
INSUL.	1" INSULATED GLASS	OBSC.	OBSCURE GLASS

NOTES:

1. ALL DOORS, FRAMES AND HARDWARE SHALL BE PROVIDED AND INSTALLED BY GENERAL CONTRACTOR UNLESS OTHERWISE NOTED.
2. GENERAL CONTRACTOR SHALL COORDINATE ALL KEYING WITH OWNER.
3. ALL FIRE RATED WOOD DOORS SHALL HAVE SOLID MINERAL CORE, ALL OTHER WOOD DOORS SHALL HAVE SOLID COMPOSITE LUMBER CORE.
4. FLUSH WOOD DOORS SHALL BE 5 PLY LAMINATED FACE SHEETS WITH 2 PLY FINISH VENEER OVER SPECIFIED CORE. AT FIRE RATED DOORS, TOP AND BOTTOM RAILS AND STILES SHALL BE FIRE RESISTANT COMPOSITION MATERIAL BONDED TO CORE. REFER TO SPECIFICATION SECTION 08211 FOR ADDITIONAL INFORMATION.
5. ALL GLAZING IN DOORS SHALL BE INSTALLED IN METAL VISION KIT TO MATCH FIRE LABEL. VISION KIT COLOR SHALL BE AS SELECTED BY ARCHITECT.
6. ALL NEW H.M. FRAMES SHALL BE WRAP AROUND TYPE (UNLESS OTHERWISE NOTED OR DETAILED). THROATS SHALL BE SIZED ACCORDING TO WALL THICKNESS AND FINISH, REFER TO FLOOR PLAN AND ENLARGED DETAILS FOR ADDITIONAL INFORMATION.
7. GENERAL CONTRACTOR SHALL MODIFY AND PATCH EXISTING WOOD OR H.M. DOOR FRAMES (DESIGNATED TO REMAIN) TO ACCOMMODATE NEW DOOR OPERATOR, LOCKSET LATCH, HINGES, DOOR SWING AND/OR CLOSER, ETC. AS REQUIRED FOR COMPLETE AND FUNCTIONAL OPERATION.
8. GENERAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING HEIGHT AND WIDTH OF PROPOSED DOORS TO BE INSTALLED IN EXISTING FRAMES (PRIOR TO SHOP DRAWING SUBMITTAL) TO ENSURE PROPER FIT AND DOOR FUNCTION.
9. ALL NEW HOLLOW METAL FRAMES AND HOLLOW METAL DOORS SHALL BE FINISH PAINTED. COLOR AS SELECTED BY ARCHITECT.
10. GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL A.D.A. ACCESSIBLE SIGNAGE AT ALL DOORS (WHERE SPECIFIED IN DOOR SCHEDULE AND/OR SHOWN ON FLOOR PLANS) AND INSTALLED IN CONFORMANCE WITH ALL A.D.A. REQUIREMENTS.
    - ▼A. WHERE DENOTED IN SCHEDULE, PROVIDE 4"x4" SIGNAGE WITH BRAILLE INDICATING ROOM NUMBER (COORD. WITH OWNER), MODEL E-BTCUST.
    - ▼B. WHERE DENOTED IN SCHEDULE, PROVIDE 4"x12" SIGNAGE WITH BRAILLE INDICATING ROOM NAME AND NUMBER (COORD. WITH OWNER), MODEL E-BTCUST.
    - ▼C. WHERE DENOTED IN SCHEDULE, PROVIDE 8"x8" SIGNAGE WITH BRAILLE INDICATING GENDER AND WHEELCHAIR PICTOGRAMS AND ROOM NAME AT MULTI-USE TOILET ROOMS.
      - AT MULTI-USE TOILET ROOMS, PROVIDE AND INSTALL MODEL No. X-5687 (WOMEN), X-5672 (MEN), X-7095 (BOYS), X-7096 (GIRLS)
      - AT MULTI-USE ACCESSIBLE TOILET ROOMS, PROVIDE AND INSTALL MODEL No. X-5688 (WOMEN), X-5671 (MEN), X-7108 (BOYS), X-7107 (GIRLS)
    - ▼D. WHERE DENOTED IN SCHEDULE, PROVIDE 6"x9" SIGNAGE WITH BRAILLE INDICATING GENDER AND WHEELCHAIR PICTOGRAMS AND ROOM NAME AT SINGLE-USE TOILET ROOMS.
      - AT SINGLE-USE TOILET ROOMS, PROVIDE AND INSTALL MODEL No. E-BTCUST. SIGN SHALL SPECIFY STAFF OR STUDENT USE, IF REQUIRED.
      - AT SINGLE-USE ACCESSIBLE TOILET ROOMS, PROVIDE AND INSTALL MODEL No. E-BTCUST. SIGN SHALL SPECIFY STAFF OR STUDENT USE, IF REQUIRED

    MANUFACTURER: "ALLSTATE SIGN AND PLAQUE" (REFER TO DOOR SCHEDULE AND FLOOR PLANS FOR SIGN TYPE AND LOCATION). ALL SIGNAGE SHALL BE SUBMITTED TO ARCHITECT FOR REVIEW AND APPROVAL.
11. ALL REMOVABLE MULLIONS ARE TO BE KEYED ALIKE AND TO MATCH EXISTING BUILDING SYSTEM.
12. GLAZING WITH SURFACE APPLIED FILMS WILL NOT BE CONSIDERED EQUIVALENT WHERE LAMINATED FILM IS SPECIFIED.



CONFORM TO ANSI STANDARDS FOR FRONT APPROACH
A DOOR PLAN/DETAIL
NOT TO SCALE

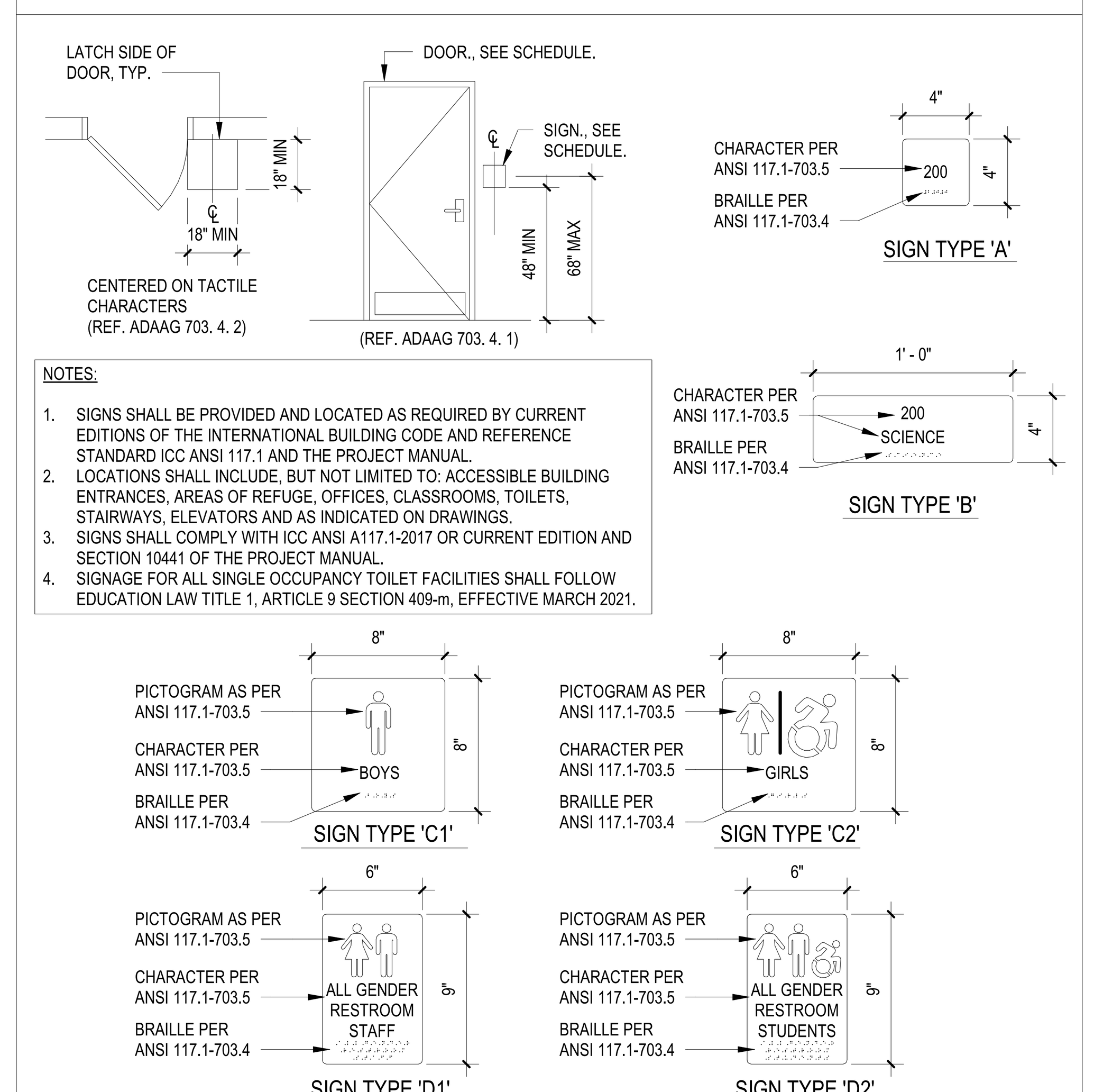
CONFORM TO ANSI STANDARDS FOR LATCH SIDE APPROACH
B DOOR PLAN/DETAIL
NOT TO SCALE

DOOR PLACEMENT TYPICAL/ UNLESS OTHERWISE NOTED
C DOOR PLAN/DETAIL
NOT TO SCALE

DOOR PLACEMENT DETAILS

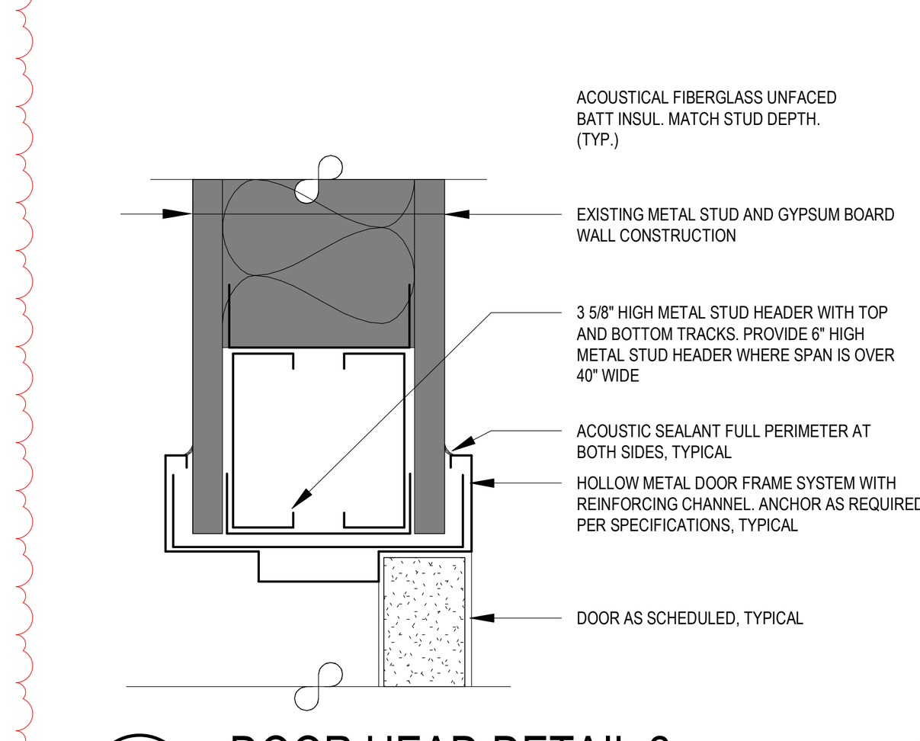
SCALE: N.T.S.

TYPICAL ADA SIGNAGE DETAILS

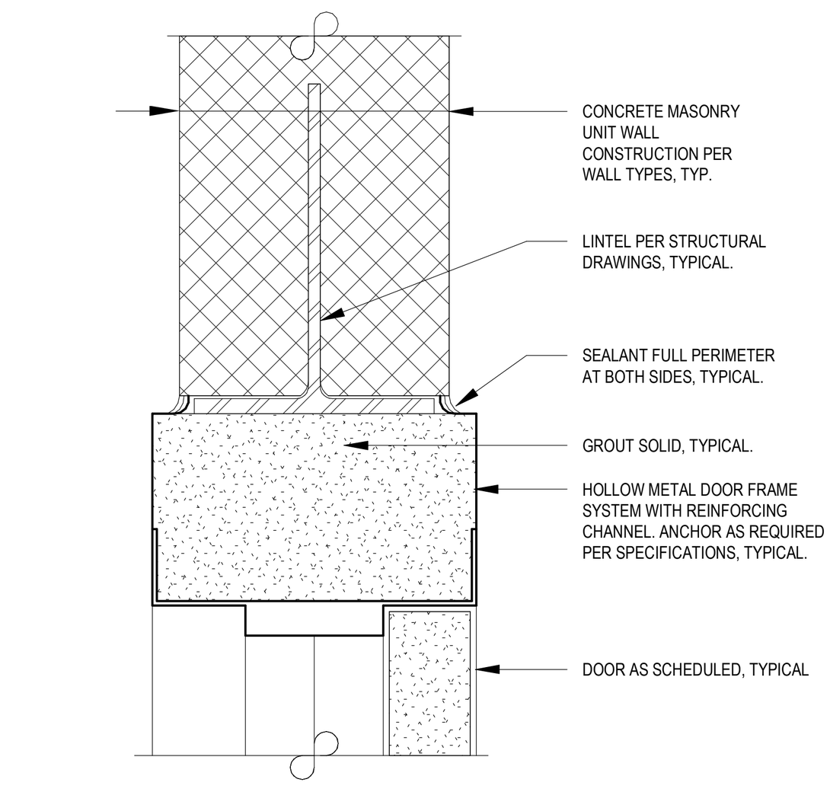


NOTES:

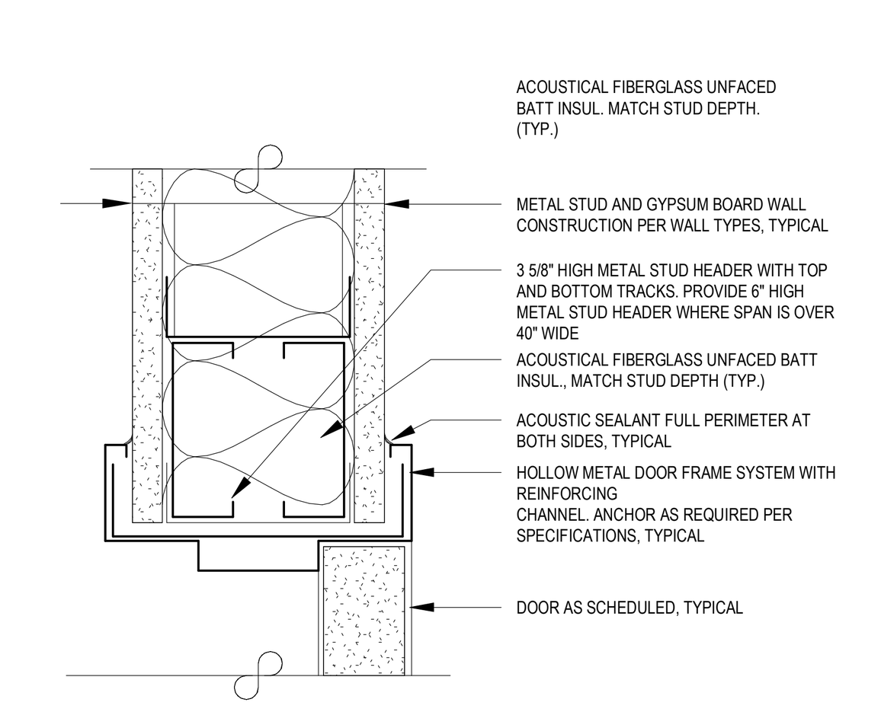
1. SIGNS SHALL BE PROVIDED AND LOCATED AS REQUIRED BY CURRENT EDITIONS OF THE INTERNATIONAL BUILDING CODE AND REFERENCE STANDARD ICC ANSI 117.1 AND THE PROJECT MANUAL.
2. LOCATIONS SHALL INCLUDE, BUT NOT LIMITED TO: ACCESSIBLE BUILDING ENTRANCES, AREAS OF REFUGE, OFFICES, CLASSROOMS, TOILETS, STAIRWAYS, ELEVATORS AND AS INDICATED ON DRAWINGS.
3. SIGNS SHALL COMPLY WITH ICC ANSI A117.1-2017 OR CURRENT EDITION AND SECTION 10441 OF THE PROJECT MANUAL.
4. SIGNAGE FOR ALL SINGLE OCCUPANCY TOILET FACILITIES SHALL FOLLOW EDUCATION LAW TITLE 1, ARTICLE 9 SECTION 409-m, EFFECTIVE MARCH 2021.



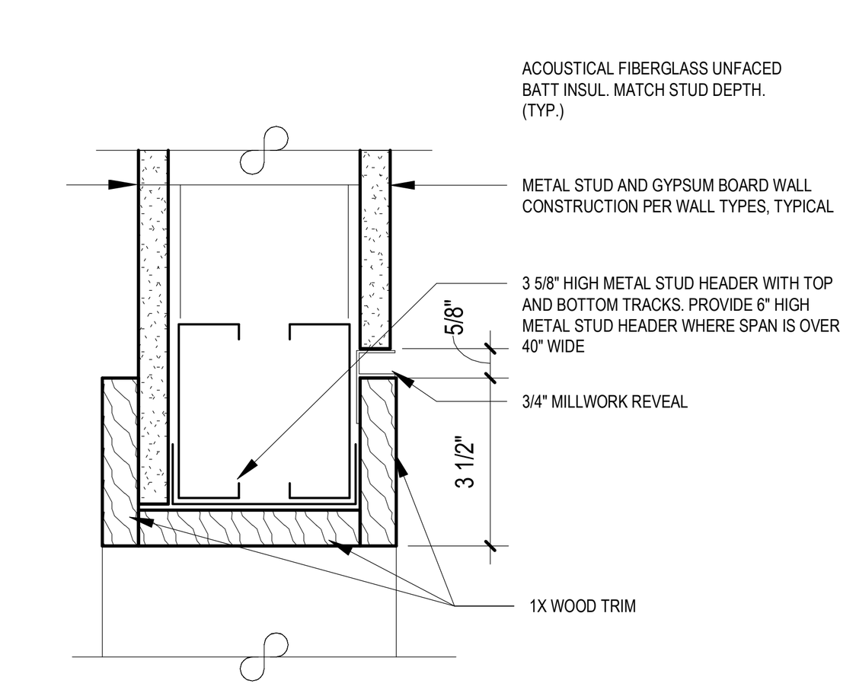
H2 DOOR HEAD DETAIL 2
SCALE:3" = 1'-0"



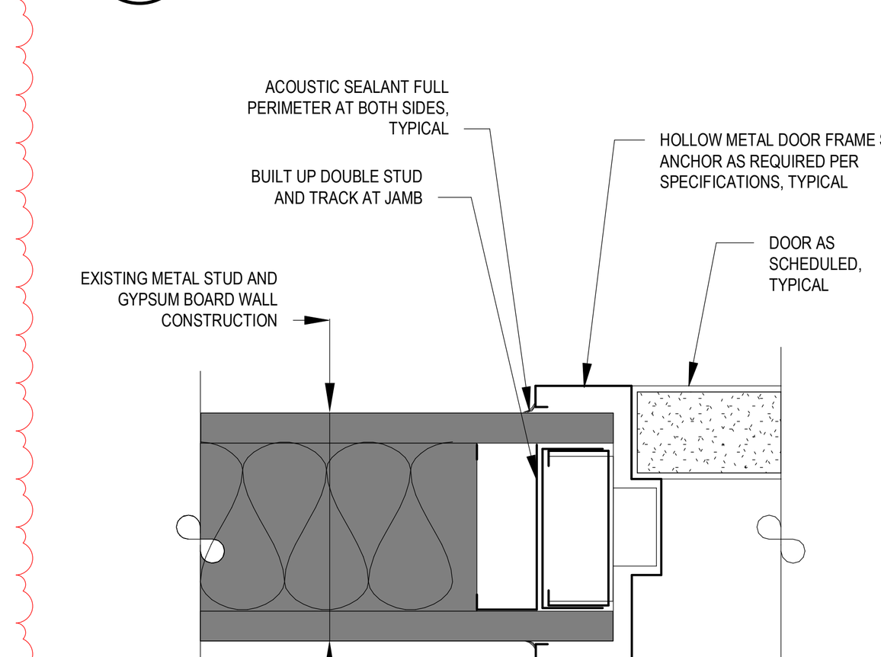
H3 DOOR HEAD DETAIL 3
SCALE:3" = 1'-0"



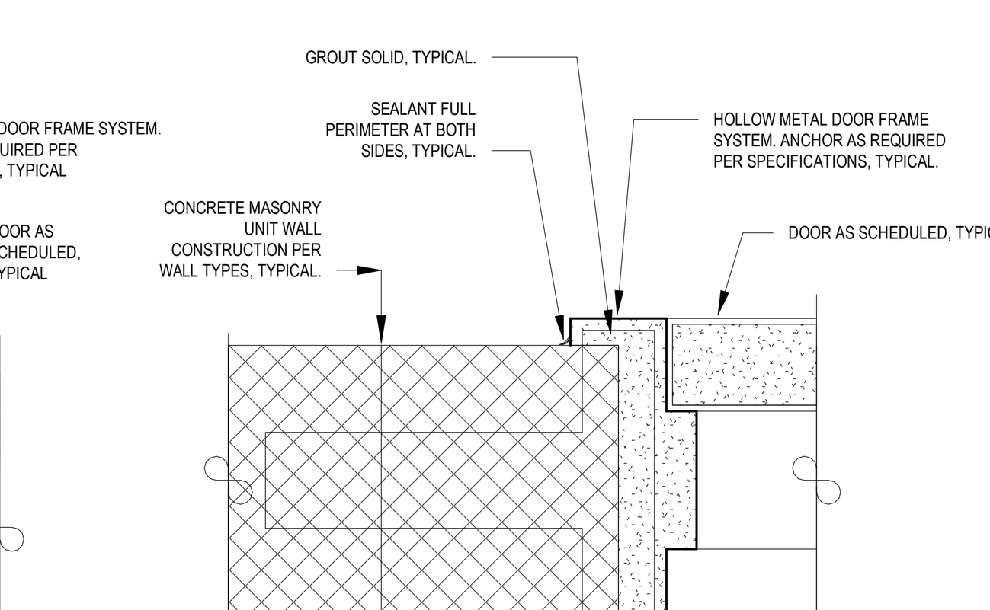
H4 DOOR HEAD DETAIL 4
SCALE:3" = 1'-0"



H5 CASE OPENING HEAD DETAIL 5
SCALE:3" = 1'-0"



J2 DOOR JAMB DETAIL 2
SCALE:3" = 1'-0"



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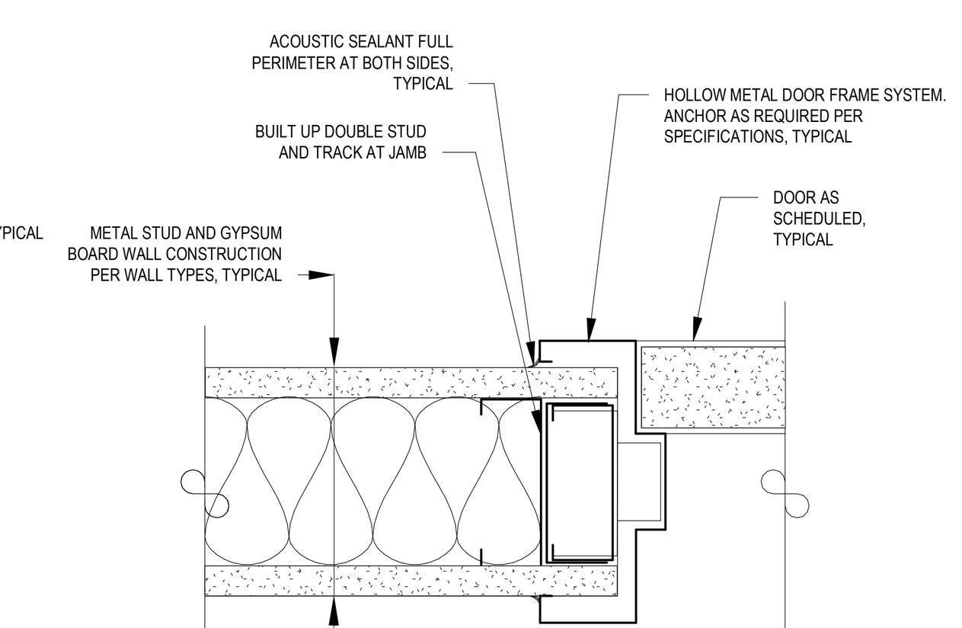
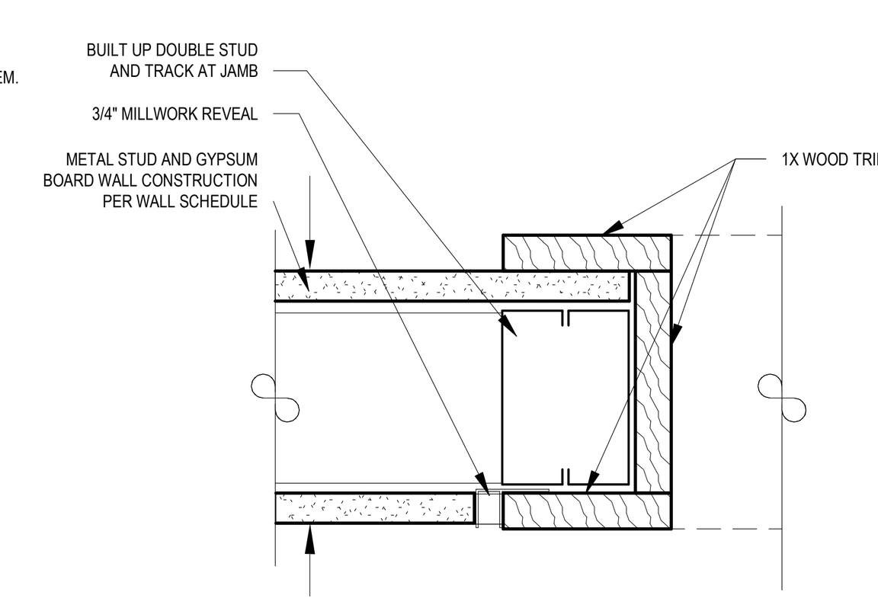
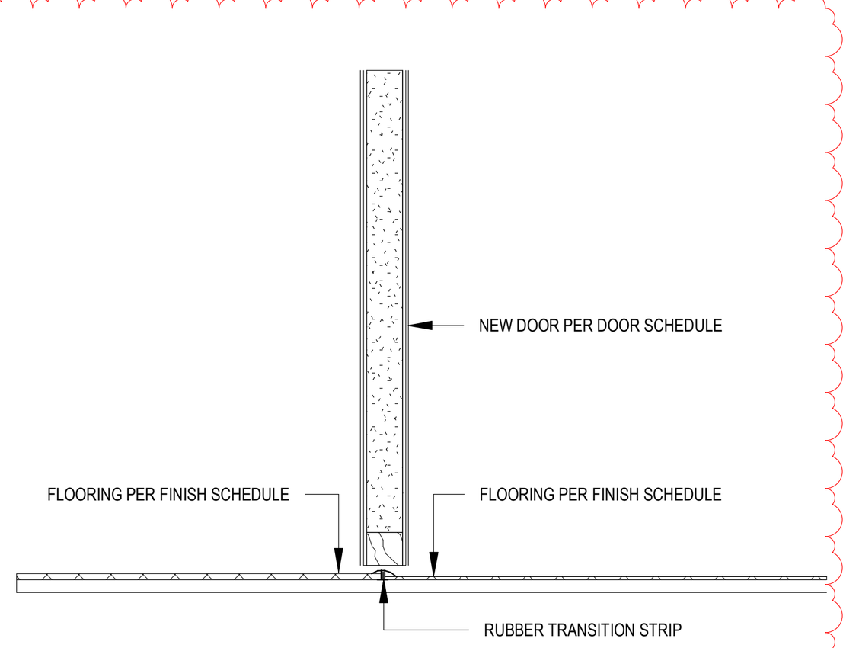


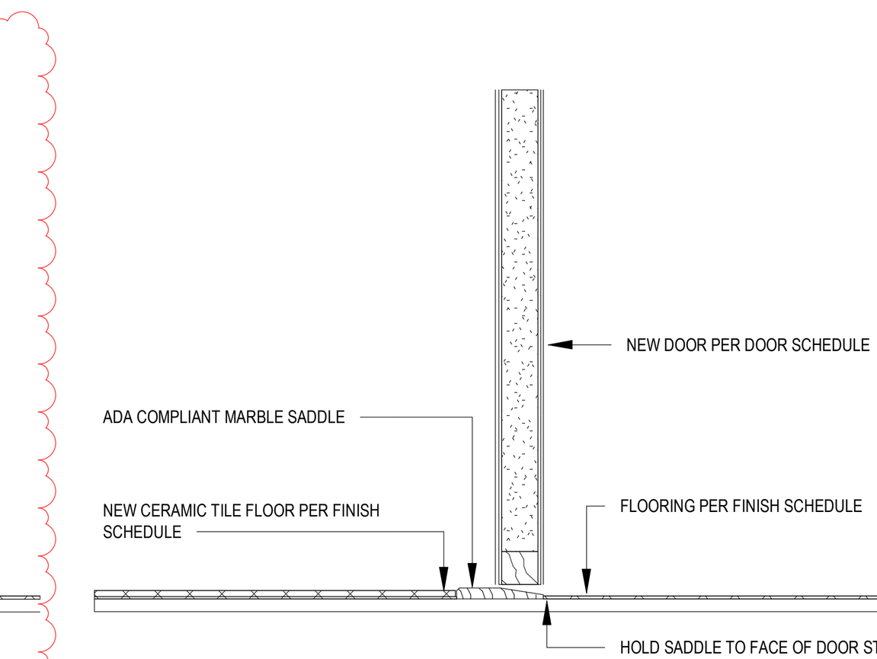
J4 DOOR JAMB DETAIL 4
SCALE:3" = 1'-0"



J5 CASE OPENING JAMB DETAIL 5
SCALE:3" = 1'-0"



T1 THRESHOLD DETAIL 1
SCALE:1 1/2" = 1'-0"



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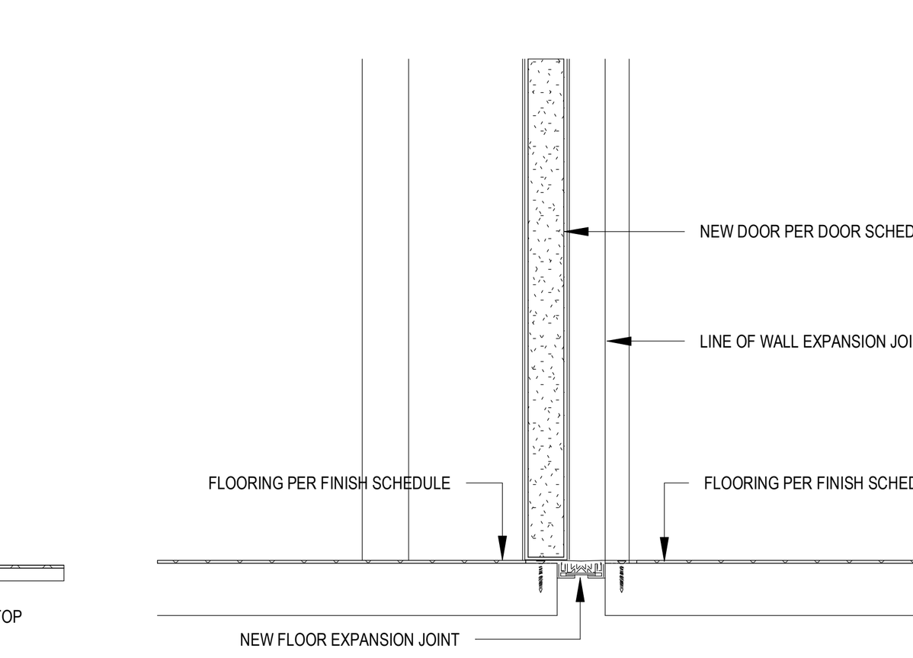
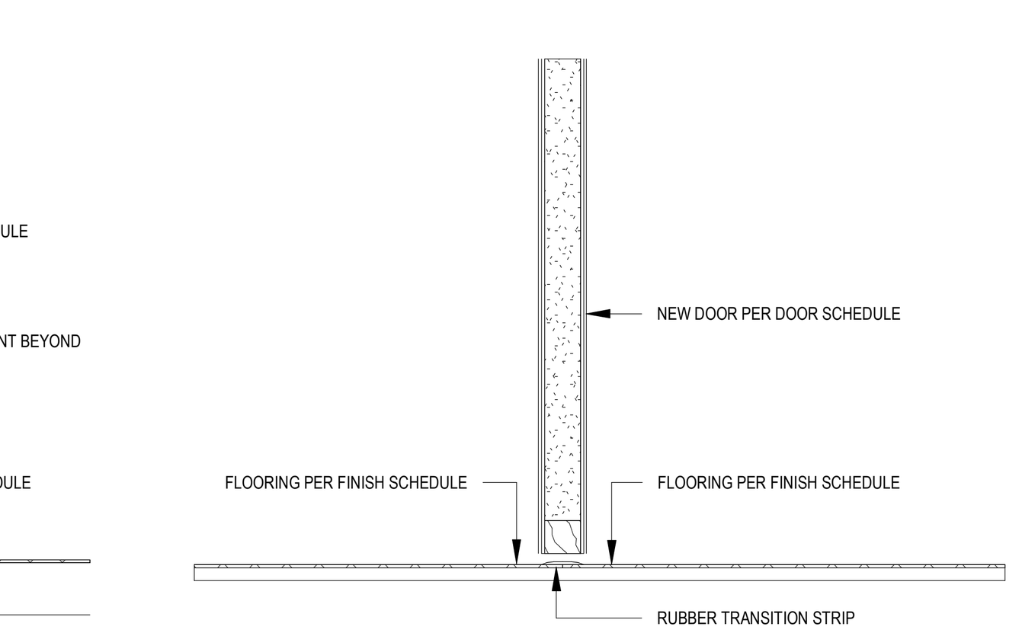
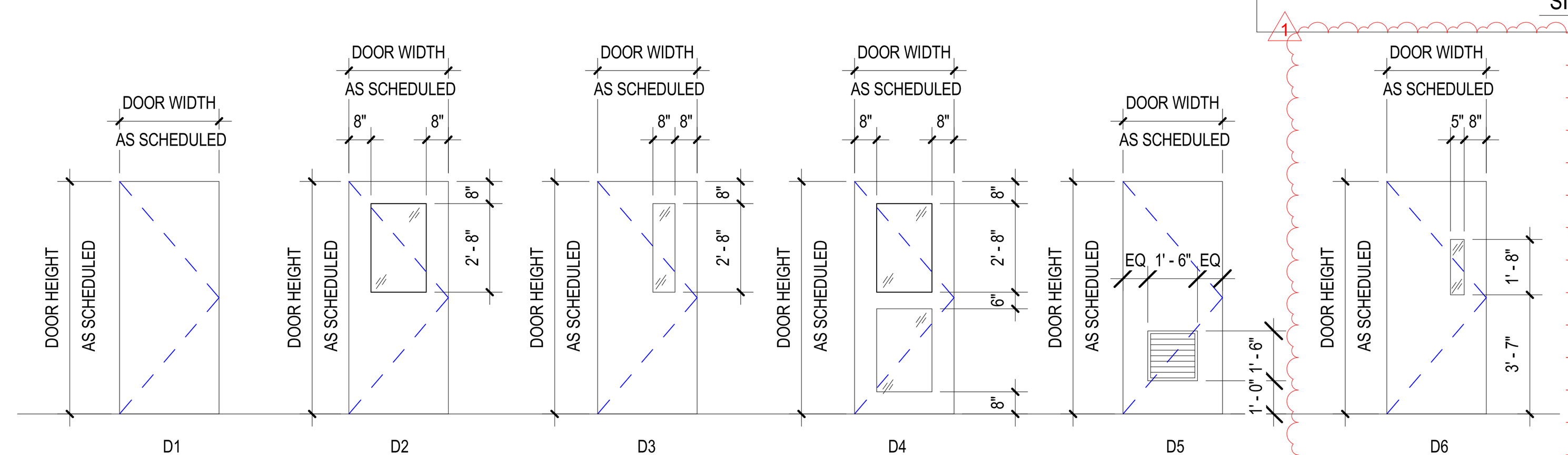
SCALE:1 1/2" = 1'-0"



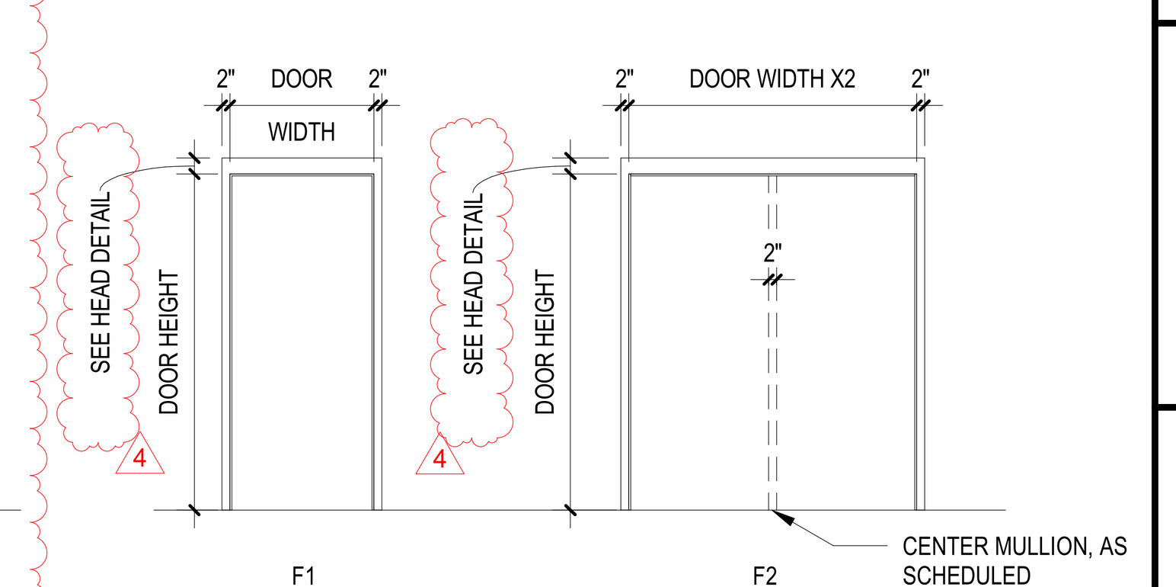
T3 THRESHOLD DETAIL 3
SCALE:1 1/2" = 1'-0"



T4 THRESHOLD DETAIL 4
SCALE:1 1/2" = 1'-0"



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



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

REV.	DATE	ITEM
1	11/29/2022	BID ADDENDUM #1
4	12/15/2022	BID ADDENDUM #4

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PROJECT
BRIARCLIFF MANOR U.F.S.D.
PHASE 2 BOND IMPROVEMENTS
BRIARCLIFF MANOR MIDDLE / HIGH SCHOOL
444 PLEASANTVILLE RD, BRIARCLIFF MANOR, NY 10510

DWGTITLE
DOOR SCHEDULE AND DETAILS

DRWG. BY: C.M.
CHK. BY: G.E.O.

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ARCHITECTS
LANDSCAPE ARCHITECTS
ENGINEERS

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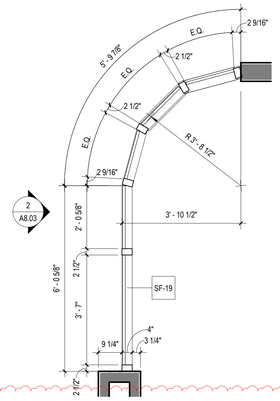
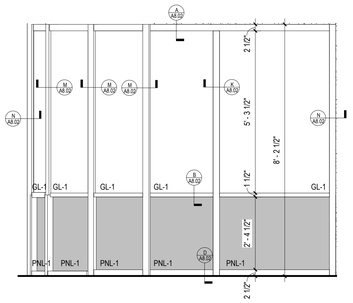
www.BBSARCHITECTURE.COM

SED No. 66-14-02-02-0-004-023
DISTRICT BRIARCLIFF MANOR U.F.S.D.
PROJECT PHASE 2 BOND IMPROVEMENTS
DWG TITLE DOOR SCHEDULE AND DETAILS

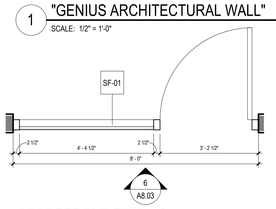
SCALE: AS NOTED
DATE: -
BID P/U DATE: 11/14/2022
FILE NO. 21-274C

A8.01 HSMS

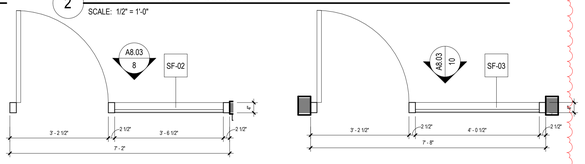




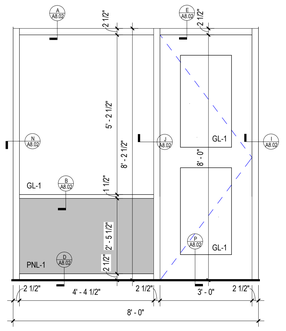
1 STOREFRONT PLAN - 19 "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"



2 STOREFRONT - 19 ELEVATION "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"

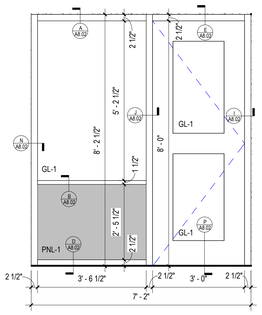


5 STOREFRONT PLAN - 01 "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"



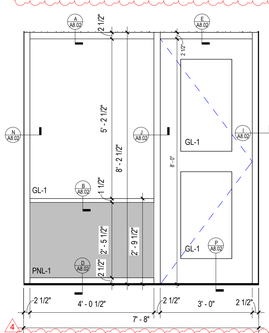
6 STOREFRONT - 01 ELEVATION "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"

7 STOREFRONT PLAN - 02 "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"

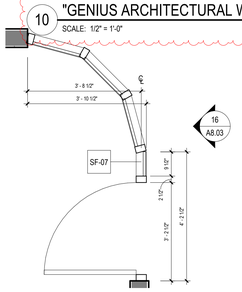


8 STOREFRONT - 02 ELEVATION "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"

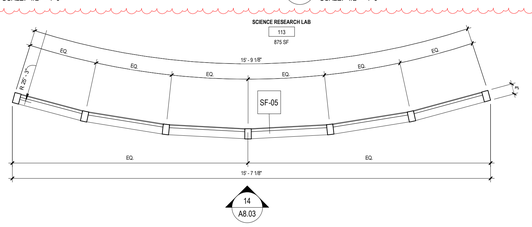
9 STOREFRONT PLAN - 03 "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"



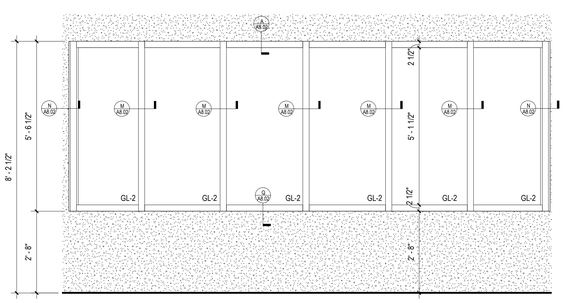
10 STOREFRONT - 03 ELEVATION "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"



13 1HR RATED STOREFRONT PLAN - 05 (ASTM E119)
SCALE: 1/2" = 1'-0"

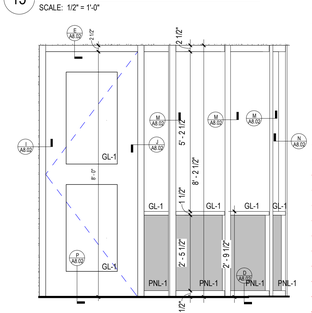


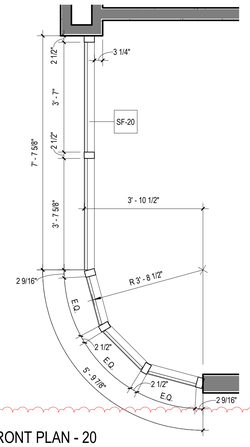
14 STOREFRONT - 05 ELEVATION
SCALE: 1/2" = 1'-0"



15 STOREFRONT PLAN - 07 "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"

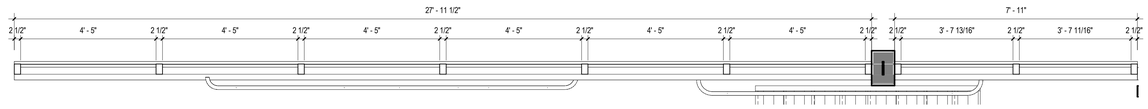
16 STOREFRONT - 07 ELEVATION "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"



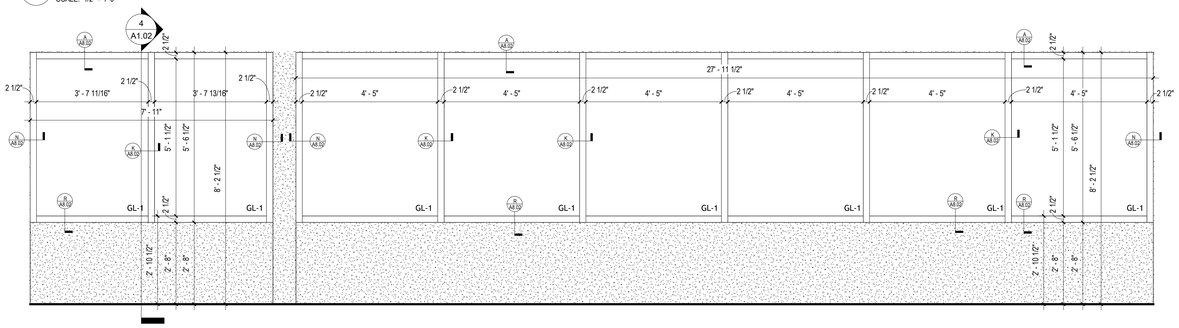


3 STOREFRONT PLAN - 20 "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"

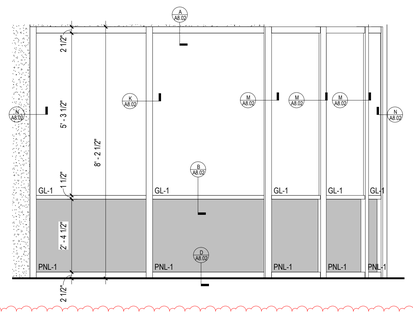
4 STOREFRONT - 20 ELEVATION "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"

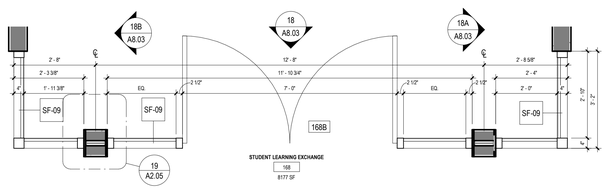


11 STOREFRONT PLAN - 06 "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"

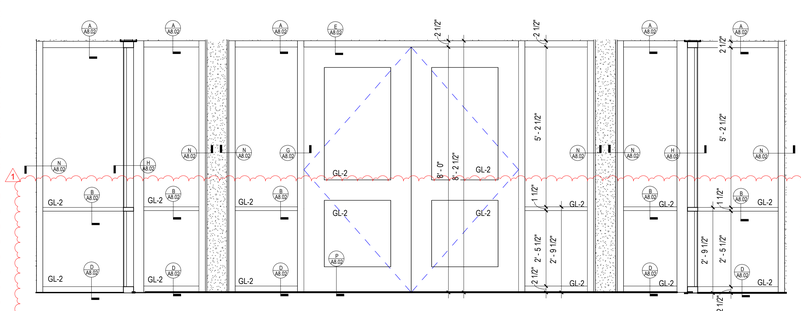


12 STOREFRONT - 06 ELEVATION "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"

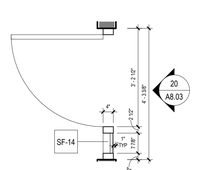




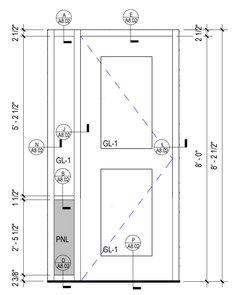
17 STOREFRONT PLAN - 09
SCALE: 1/2" = 1'-0"



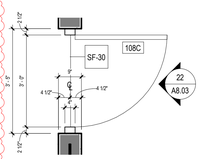
18 1HR RATED STOREFRONT - 09 ELEVATION 2 (ASTM E 119)
SCALE: 1/2" = 1'-0"



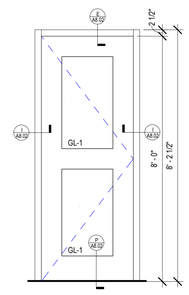
19 STOREFRONT PLAN - 14 "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"



20 STOREFRONT - 14 ELEVATION "GENIUS ARCHITECTURAL WALL"
SCALE: 1/2" = 1'-0"



21 STOREFRONT PLAN - 30
SCALE: 1/2" = 1'-0"



22 STOREFRONT - 30 ELEVATION
SCALE: 1/2" = 1'-0"

REV.	DATE	ITEM
1	11/25/2022	BID ADDENDUM #1
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DWG TITLE
STOREFRONT PLANS AND ELEVATIONS

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SED No. 66-14-02-02-0-004-023
DISTRICT BRIARCLIFF MANOR U.F.S.D.
PROJECT PHASE 2 BOND IMPROVEMENTS
DWG TITLE STOREFRONT PLANS AND ELEVATIONS

SCALE:	AS NOTED
DATE:	-
BID P/U DATE:	11/14/2022
FILE NO.	21-274C

A8.03 | HSMS

WALL TYPES:

TYPE P1: PAINT BY SHERWIN WILLIAMS
LATEX EGGSHELL ENAMEL
COLOR: EXTRA WHITE SW7006
(CEILING)

TYPE P2: PAINT BY SHERWIN WILLIAMS
LATEX FLAT ENAMEL
COLOR: DENIM SW6523
(CEILING ACCENT - BLUE)

TYPE P3: PAINT BY SHERWIN WILLIAMS
LATEX EGGSHELL ENAMEL
COLOR: BIG CHILL SW7648
(GENERAL WALLS)

TYPE P4: PAINT BY SHERWIN WILLIAMS
LATEX EGGSHELL ENAMEL
COLOR: DENIM SW6523
(ACCENT A - BLUE)

TYPE P5: PAINT BY SHERWIN WILLIAMS
LATEX EGGSHELL ENAMEL
COLOR: ROBUST ORANGE SW6628
(ACCENT B- ORANGE)

TYPE P6: PAINT BY SHERWIN WILLIAMS
LATEX EGGSHELL ENAMEL
COLOR: DAPHNE SW9151
(ACCENT C- LIGHT BLUE)

TYPE P7: PAINT BY SHERWIN WILLIAMS
LATEX EGGSHELL ENAMEL
COLOR: AS SELECTED BY ARCHITECT
(CORRIDOR)

TYPE P8: PAINT BY SHERWIN WILLIAMS
LATEX EGGSHELL ENAMEL
COLOR: AS SELECTED BY ARCHITECT
(CORRIDOR)

TYPE P9: PAINT BY SHERWIN WILLIAMS
LATEX SEMI-GLOSS ENAMEL
COLOR: AS SELECTED BY ARCHITECT
(TOILET)

TYPE WC1: WALLTALKERS MAG-RITE (M248) - MAGNETIC, WRITABLE WALL SURFACE AS MANUFACTURED BY KOROSEAL OR EQUAL. PROVIDE FLOOR TO CEILING-LEVEL 5 GYP. BOARD FINISH REQUIRED FOR INSTALLATION.

TYPE CT-1: 4" X 12" CERAMIC WALL TILE
MANUFACTURER: AMERICAN OLEAN
COLLECTION: COLORSTORY WALL
COLOR: MATTE DESIGNER WHITE 0061
NOTE: GROUT FOR CT1 TO BE CUSTOM - #381 BRIGHT WHITE. SPACED AT 1/8" UNLESS OTHERWISE NOTED.

TYPE CT-2: 4" X 12" CERAMIC WALL TILE
MANUFACTURER: AMERICAN OLEAN
COLLECTION: COLORSTORY WALL
COLOR: SAPPHIRE SKY 0070
NOTE: GROUT FOR CT2 TO BE CUSTOM - #381 BRIGHT WHITE. SPACED AT 1/8" UNLESS OTHERWISE NOTED.

TYPE CT-3: 4" X 12" CERAMIC WALL TILE
MANUFACTURER: AMERICAN OLEAN
COLLECTION: COLORSTORY WALL
COLOR: BLAZE 0029
NOTE: GROUT FOR CT3 TO BE CUSTOM - #381 BRIGHT WHITE. SPACED AT 1/8" UNLESS OTHERWISE NOTED.

FLOOR MATERIAL TYPES

TYPE VCT1: 12" X 12" VINYL COMPOSITION TILE
MANUFACTURER: ARMSTRONG 'EXCELON IMPERIAL'
FIELD COLOR: SOFT WARM GRAY 51861
ACCENT VCT1A: GO BLUE 57531
ACCENT VCT1B: SCREAMIN' PUMPKIN 57516

TYPE LVT1: 7"X48" LUXURY VINYL TILE
MANUFACTURER: PATCRAFT
STYLE: RESTON 20 MIL
COLOR: 00730 ANISE-V2

TYPE CPT1: 24" X 24" CARPET TILE
MANUFACTURER: TARKETT
STYLE: COLORKNIT
COLOR: 30230 REGAL BLUE

TYPE CT-4: 8" X 8" CERAMIC FLOOR TILE
MANUFACTURER: CREATIVE MATERIAL CO.
COLLECTION: FRAMMENTO
COLOR: BEIGE MACRO - NATURAL - RECTIFIED (BEIGE TERRAZZO)
NOTE: GROUT FOR CT4 TO BE CUSTOM - #380 HAYSTACK. SPACED AT 1/16" UNLESS OTHERWISE NOTED.

BASE TYPES:

TYPE RCB1: 4" RUBBER COVE BASE BY TARKETT
COLOR: BLUE INTENSITY TH2

TYPE RCB2: 4" RUBBER COVE BASE BY TARKETT
COLOR: SHORELINE 280

TYPE RCB3: RUBBER COVE BASE BY "JOHNSONITE" LATEX EGGSHELL ENAMEL
COLOR AS SELECTED BY ARCHITECT
(CORRIDORS)

TYPE RCB4: RUBBER COVE BASE BY "JOHNSONITE" LATEX EGGSHELL ENAMEL
COLOR AS SELECTED BY ARCHITECT
(OFFICES)

TYPE CT-5: 8" X 8" CERAMIC FLOOR TILE
MANUFACTURER: CREATIVE MATERIAL CO.
COLLECTION: FRAMMENTO
COLOR: BEIGE MACRO - NATURAL - RECTIFIED (BEIGE TERRAZZO)
NOTE: GROUT FOR CT5 TO BE CUSTOM - #380 HAYSTACK. SPACED AT 1/16" UNLESS OTHERWISE NOTED.

CEILING TILE TYPES:

TYPE ACT1: ACOUSTIC CEILING TILE BY "ARMSTRONG"
SIZE: 24" X 24" X 3/4"
STYLE: #1911 ULTIMA BEVELED TEGULAR
(CORRIDORS/CLASSROOMS)

TYPE ACT2: ACOUSTIC CEILING TILE BY "ARMSTRONG"
SIZE: 24" X 24" X 5/8"
STYLE: # 770 CORTEGA SQUARE LAY-IN
(STORAGE ROOMS/CUSTODIAL)

TYPE ACT3: ACOUSTIC CEILING TILE BY "ARMSTRONG"
SIZE: 24" X 24" X 1", NRC RATING .95
STYLE: # 3250 OPTIMA SQUARE TEGULAR
(STUDENT LEARNING EXCHANGE/OFFICES)

TYPE ACT4: ACOUSTIC CEILING BY "CERTAINTEED"
SIZE: 8' DEEP X 2" THICK
STYLE: TYPE 10 DECOUSTICS RONDOLO BAFFLES
COLOR(S) AS SELECTED BY ARCH.
(STUDENT LEARNING EXCHANGE)

TYPE ACT5: ACOUSTIC CEILING TILE BY "ARMSTRONG"
SIZE: 24" X 24" X 3/4"
STYLE: # 1935 ULTIMA HEALTH ZONE SQUARE LAY-IN
(TOILET ROOMS)

CEILING GRID: CEILING GRID BY "ARMSTRONG", 15/16" PRELUDE, WHITE, U.O.N.
NOTE: ALL CEILING TILE & GRID TO BE WHITE UNLESS OTHERWISE NOTED.

GROUT TYPES:

TYPE GRT1: GRT1: 1/8" GROUT
MANUFACTURER: CUSTOM BUILDING PRODUCTS
COLOR: #11 SNOW WHITE

TYPE GRT2: GRT2: 1/16" GROUT
MANUFACTURER: CUSTOM BUILDING PRODUCTS
COLOR: #380 HAYSTACK.

TACKBOARDS:

TBI: TACK BOARDS.
COLOR: AS PER ARCHITECT

WINDOW TREATMENTS:

TYPE WS1: DRAPER CLUTCH OPERATED FLEXSHADE, PHIFER SHEARWEAVE PW 2500, 1% OPEN COLOR AS SELECTED BY ARCHITECT (ROOMS 120 & 121)

TYPE WS2: DRAPER CLUTCH OPERATED FLEXSHADE, PHIFER SHEARWEAVE PW 2500, SOLID COLOR AS SELECTED BY ARCHITECT (ALL OFFICES 1 - 20)

NOTES:
1. PROVIDE (1) PER WINDOW UNIT
2. GC SHALL SUBMIT SHOP DRAWINGS AND SAMPLES FOR APPROVAL BY ARCHITECT.

ACOUSTICAL WALL PANEL:

AP: 3" ABSORBER PANELS AS MANUFACTUED BY 'WENGER CORPORATION' OR EQUAL
FABRIC: PALETTE 2155 BY GUILFORD OF MAINE
COLOR: AS PER ARCHITECT

WRITABLE WALL COVERING

1. 'WALLTALKERS WALLCOVERINGS', AS MANUFACTURED BY KOROSEAL INTERIOR PRODUCTS, LLC, 3875 EMBASSY PARKWAY, SUITE 110, FAIRLAWN, OHIO 44333, TELEPHONE: (855)753-5474, EMAIL: INFO@KOROSEAL.COM, OR APPROVED EQUAL.

2. 'WALLTALKERS' TO BE WRITE-ABLE WITH MAGNETIC CAPABILITIES AND WILL EXTEND ENTIRE LENGTH OF WALL, FLOOR TO CEILING. 'WALLTALKERS' TO BE WHITE WITH ALUMINUM J-CAP TRIM , SEMI-GLOSS (PRODUCT CODE M248).

3. ACCESSORIES - 1 SET REQUIRED FOR EACH ROOM. INCLUDE THE FOLLOWING:
a. ONE SILVER ANODIZED ALUMINUM MARKER CADDY (MODEL NO. AMCM).
b. STARTER KIT (8 MARKERS, ONE FELT ERASER, 8 OZ. SPRAY BOTTLE OF LIQUID CLEANER, ONE EMPTY 8 OZ. SPRAY BOTTLE FOR WATER, TWO DRY ERASE CLEANING CLOTHS).
c. HEAVY DUTY MAGNETS (MAG1), MINIMUM OF 12 MAGNETS.

4. WARRANTY: INCLUDE MANUFACTURER'S STANDARD 5 YEAR WARRANTY.

5. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS HORIZONTALLY WITH SEAM AT 2 A.F.F AND 6' A.F.F. REFER TO INSTALLATION INSTRUCTIONS, DOUBLE CUTTING ALL SEAMS.

6. G.C. SHALL CLEAN / PREP MATERIAL FOR FIRST USE AS RECOMMENDED BY MANUFACTURER AN AMMONIA OR ALCOHOL BASED CLEANER OR MILD SOAP AND RINSED THOROUGHLY WITH WATER.

BALANCE ALONG TOP
SEAM
SOLID 'WALLTALKERS' PIECE
SEAM
32" FROM FLOOR

GRAPHIC VINYL DECAL

GV1: GC RESPONSIBLE FOR USING GRAPHICS ALLOWANCE TO PROVIDE HEAT FORMED VINYL WALL DECAL. DESIGN AND INSTALLATION BY 71 VISUALS (631.532.6142) ON PAINTED GYP. BD. WALL.
PRODUCT: ARLON VINYL WITH MATTE LAMINATE, MULTIPLE COLORS

RUBBER TRANSITIONS/NOSINGS

GC RESPONSIBLE FOR USING GRAPHICS ALLOWANCE TO PROVIDE HEAT FORMED VINYL WALL DECAL. DESIGN AND INSTALLATION BY 71 VISUALS (631.532.6142) ON PAINTED GYP. BD. WALL.
PRODUCT: ARLON VINYL WITH MATTE LAMINATE, MULTIPLE COLORS

CASEWORK FINISHES

QT-1: SOLID SURFACE AS MANUFACTURED BY WILSONART OR EQUAL- COLOR: FROSTY WHITE MIRAGE 1573MG

PL-1: PLASTIC LAMINATE AS MANUFACTURED BY WILSONART OR EQUAL W/ MATCHING 3MM PVC EDGE WHERE REQUIRED
COLOR: LOFT OAK 7968-12

PL-2: PLASTIC LAMINATE AS MANUFACTURED BY WILSONART OR EQUAL W/ MATCHING 3MM PVC EDGE WHERE REQUIRED
COLOR: HIGH RISE 4996-38

PL-3: PLASTIC LAMINATE AS MANUFACTURED BY WILSONART OR EQUAL W/ MATCHING 3MM PVC EDGE WHERE REQUIRED
COLOR: INDIGO D379-60

**G.C. RESPONSIBLE FOR PROVIDING AND INSTALLING CASEWORK SHOWN IN ELEVATION 27, 28, & 29 ON A11.04 AND RECEPTION DESK DETAILED ON 11.06 ONLY. ALL OTHER CASEWORK TO BE PROVIDED AND INSTALLED BY OWNER'S CC ON SEPARATE CONTRACT.

FABRIC WRAPPED TACK BOARD:

FWTB: 1/2" HOMASOTE WALL BOARD BETWEEN COUNTERTOP AND UPPER CABINETS, WRAPPED WITH FABRIC. CUT TO MATCH LENGTH OF UPPER CABINETS
FABRIC: PALETTE 2155 BY GUILFORD OF MAINE
COLOR: AS PER ARCHITECT
TYPICAL OF ALL OFFICES (ROOM #1 THROUGH #20)

FINISH SCHEDULE

RM. NO.	LOCATION	FLOOR MATERIAL	FLOOR FINISH	BASE MATERIAL	BASE FINISH	WALLS MATERIAL	WALLS FINISH	CEILING	REMARKS
1	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
2	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
3	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
4	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
5	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
6	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
7	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
8	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
9	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
10	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
11	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
12	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
13	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
14	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
15	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
16	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
17	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
18	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
19	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
20	OFFICE	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P6	ACT3	FWTB
107	QUIET ROOM	LVT	LVT1	RUBBER BASE	RB2	GYP. BD	P6	ACT3	
108	AMPHITHEATER	LVT	LVT1	RUBBER BASE	RB2	GYP. BD	P3	ACT3&4/GYP	
111A	UNISEX ADA RESTROOM	CERAMIC TILE	CT1	CERAMIC TILE	CT2	CERAMIC TILE	CT2	ACT5	
111B	UNISEX RESTROOM	CERAMIC TILE	CT1	CERAMIC TILE	CT2	CERAMIC TILE	CT2	ACT5	
111C	UNISEX RESTROOM	CERAMIC TILE	CT1	CERAMIC TILE	CT2	CERAMIC TILE	CT2	ACT5	
111D	STAFF ADA UNISEX RESTROOM	CERAMIC TILE	CT1	CERAMIC TILE	CT2	CERAMIC TILE	CT2	ACT5	
112	FLEX SPACE	LVT	LVT1	RUBBER BASE	RB2	GYP. BD	P3	ACT1/GYP	
113	SCIENCE RESEARCH LAB	LVT	LVT1	RUBBER BASE	RB2	GYP. BD	P3/P5/WC1	ACT1&4/GYP	
114	COLLEGE CONF	CARPET	CPT1	RUBBER BASE	RB1	GYP. BD	P3/P4	ACT1	
115	MATH LAB	LVT	LVT1	RUBBER BASE	RB1	GYP. BD	P5/WC1	ACT1	
116	WRITING LAB	LVT	LVT1	RUBBER BASE	RB1	GYP. BD	P5/WC1	ACT1	
117	CLASSROOM	VCT	VCT1	RUBBER BASE	RB1	GYP. BD	P3/P5	ACT1	
118	STORAGE	VCT	VCT1	RUBBER BASE	RB1	GYP. BD	P3	ACT2	
119	STORAGE	VCT	VCT1	RUBBER BASE	RB1	GYP. BD	P3	ACT2	
120	FAB LAB/ PHOTOGRAPHY	VCT	VCT1	RUBBER BASE	RB1	GYP. BD	P4	ACT1	
120A	STORAGE	VCT	VCT1	RUBBER BASE	RB1	GYP. BD	P4	ACT1	
121	ROBOTICS/ ENGINEERING	VCT	VCT1	RUBBER BASE	RB1	GYP. BD	P4	ACT1	
121A	STORAGE	VCT	VCT1	RUBBER BASE	RB1	GYP. BD	P4	ACT1	
157	SECURITY	VCT	VCT1	RUBBER BASE	RB1	EXIST	P4	ACT2	
158	BOY'S TOILET	CERAMIC TILE	CT1	CERAMIC TILE	CT2	CERAMIC TILE	CT2	ACT5	
159	STOR.	VCT	VCT1	RUBBER BASE	RB1	EXIST	P3	ACT2	
160	GIRL'S TOILET	CERAMIC TILE	CT1	CERAMIC TILE	CT2	CERAMIC TILE	CT2	ACT5	
164	TECH	VCT	VCT1	RUBBER BASE	RB1	GYP. BD	P3/P5	ACT1	
165	TECH.	VCT	VCT1	RUBBER BASE	RB1	GYP. BD	P3/P5	ACT1	
166	STORAGE	VCT	VCT1	RUBBER BASE	RB1	GYP. BD	P3	ACT2	
167	STORAGE	VCT	VCT1	RUBBER BASE	RB1	GYP. BD	P3	ACT2	
168	STUDENT LEARNING EXCHANGE	CARPET/LVT	CPT1/LVT1	RUBBER BASE	RB1	GYP. BD	P3/P4/P5	ACT3&4/GYP	
181A	UNISEX ADA RESTROOM	CERAMIC TILE	CT1	CERAMIC TILE	CT2	CERAMIC TILE	CT2	ACT5	
181B	UNISEX RESTROOM	CERAMIC TILE	CT1	CERAMIC TILE	CT2	CERAMIC TILE	CT2	ACT5	
501B	GALLERY	VCT	VCT1	RUBBER BASE	RB2	GYP. BD	P	NO CLG/P1&11	
505	CAFETERIA	VCT	MATCH EXIST.	RUBBER BASE	MATCH EXIST	GYP. BD	MATCH EXIST.	MATCH EXIST	
B	CORRIDOR	VCT	VCT1	RUBBER BASE	RB2	GYP. BD	P	ACT1/GYP	
C	CORRIDOR	EXIST VCT	PATCH AS REQ'D	RUBBER BASE	RB2	GYP. BD	P	NO CLG/P1	
E	CORRIDOR	VCT	VCT1	RUBBER BASE	RB2	GYP. BD	P	ACT1	
F	CORRIDOR	VCT	VCT1	RUBBER BASE	RB2	GYP. BD	P	NO CLG/P1	
L	CORRIDOR	VCT	VCT1	RUBBER BASE	RB1	GYP. BD	P	ACT1	

FINISH NOTES

1. ALL FINISH TYPES (STYLE/COLOR/PATTERN) SHALL CONFORM TO THE STANDARD OF QUALITY INDICATED BY THE PROJECT MANUAL. FINAL STYLE/COLOR/PATTERN TO BE SELECTED BY ARCHITECT.
2. ALL CMU SURFACES SHALL BE PRIMED WITH INTERIOR & EXTERIOR BLOCK FILLER M88 INDUSTRIAL MAINTENANCE BY BENJAMIN MOORE. PRIOR TO FINISH PAINT APPLICATION.
3. ALL WINDOWS IN AREA OF WORK ARE TO HAVE NEW SHADES OR BLINDS SUPPLIED AND INSTALLED BY GC, (1) PER WINDOW UNIT. G.C. SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL.
4. NEW AND EXISTING DOOR FRAMES ASSOCIATED IN SCOPE OF WORK SHALL BE PREPPED AND PAINTED WITH 'BENJAMIN MOORE' LATEX SEMI-GLOSS PAINT BY GC. COLOR AS SELECTED BY ARCHITECT.
5. REFER TO FLOOR PLANS FOR TILE PATTERNS.
6. G.C. SHALL PREP/PRIME AND PAINT ALL SHEET METAL PIPE ENCLOSURES (INSTALLED BY MC). COLOR AS SELECTED BY ARCHITECT.
7. BEFORE PAINTING, CONCRETE SURFACES MUST CURE 30 DAYS, BLOCK AND PLASTER SURFACES MUST CURE FOR 30 DAYS.
8. ALL NEW WOOD WINDOW SILLS, MOLDING AND TRIM SHALL RECEIVE A "STAINED" FINISH AND RECEIVE (3) COATS OF 'BENWOOD' POLYURETHANE FINISH LOW LUSTER NO. 435 BY 'BENJAMIN MOORE' OR APPROVED EQUAL. STAIN COLOR AS SELECTED BY ARCHITECT. GC SHALL SUBMIT PHYSICAL COLOR SAMPLE FOR REVIEW AND APPROVAL.
9. ALL FINISHES SHALL BE PROVIDED AND INSTALLED BY GC UNLESS OTHERWISE NOTED. REFER TO SPEC SECTION 09900 FOR ADDITIONAL INFORMATION.
10. ALL INTERIOR FINISHES IN CORRIDOR SHALL BE CLASS 'A' RATED.
11. PATCH, REPAIR AND FINISH CEILING, WALLS, AND FLOOR @ POINTS OF DEMOLITION TO MATCH EXISTING ADJACENT. EXISTING FINISHES TO REMAIN.
12. SHOULD ANY FINISH MATERIALS BE DISCONTINUED BY MANUFACTURER, GC MUST REPLACE WITH CLOSEST MATCH AT NO ADDITIONAL COST, AND SUBMIT TO ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.
13. REFER TO REFLECTED CEILING PLANS AND FINISH FLOOR PLANS FOR ADDITIONAL INFORMATION.
14. DOOR FRAMES TO BE PREPPED & PAINTED AS PER SPEC. COLOR AS SELECTED BY ARCHITECT.
15. G.C. SHALL PREP, PRIME & PAINT SHEETROCK CEILINGS UNLESS OTHERWISE NOTED FINISH AS PER SPEC. COLOR: WHITE- FLAT FINISH.
16. REFER TO FINISH FLOOR PLANS FOR TILE PATTERNS - THE TILE PATTERNS MAY NOT REPRESENT THE FINAL PATTERNS TO BE DESIGNED, INSTALLED & TURNED OVER TO OWNER. THE BID SHALL BE BASED ON THE TILE MIX & PERCENTAGES, AS INDICATED IN THE PROJECT MANUAL.
17. REFER TO REFLECTED CEILING PLANS, TOILET ROOM TILE PLANS, AND FINISHED FLOOR PLANS FOR ADDITIONAL FINISH INFORMATION.
18. GENERAL CONTRACTOR SHALL PERFORM A BOND TEST IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS PRIOR TO INSTALLATION OF NEW V.C.T. FLOORING.
19. CONTRACTOR SHALL INSTALL PLANI/PATCH PLUS BY 'MAPEI' OR APPROVED EQUAL OVER SUBSTRATE AND/OR CONCRETE SLAB TO PROVIDE A FLOOR SURFACE IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS AND AS SPECIFIED FOR INSTALLATION OF NEW FINISH FLOOR MATERIALS.

PRIME CONTRACTOR TO PROVIDE ALL REQUIRED SADDLES, THRESHOLDS, REDUCER STRIPS, TRANSITION STRIPS AND OR FLAT PLATES AS REQUIRED TO PROVIDE A FINISHED. ADA COMPLIANT TRANSITION AT NUMEROUS FLOORING TRANSITIONS AND TERMINATIONS.

TYPICAL MOLDING NOTES

1. COORDINATE DEMOLITION AND PROPOSED DRAWINGS FOR EXTENT OF MOLDING REPLACEMENT IN THE EXISTING BUILDING. ALL MOLDING COMPONENTS AND PROFILES ARE INDICATED FOR REFERENCE ONLY.
2. EXISTING TRIM SHALL BE MAINTAINED WHERE INDICATED. WHERE NEW TRIM SHALL MATCH THE EXISTING TO REMAIN, THE SIZE AND PROFILE SHALL MATCH THE EXISTING - SPECIES MAY VARY.
3. CONTRACTOR SHALL PROVIDE SOLID BLOCKING AS REQUIRED TO SUPPORT ALL MOLDINGS AND TRIM WHETHER EXPLICITLY NOTED/SHOWN OR NOT.
4. ALL MOLDINGS TO BE EITHER MAPLE OR POPLAR AS SPECIFIED. ALL MOLDINGS SHALL BE PAINTED - COLOR BY ARCHITECT.
5. REFER TO SPECIFICATION SECTION 09900 FOR ADDITIONAL INFORMATION REGARDING PAINT FOR NEW/EXISTING MOLDINGS, PAINT FOR NEW/EXISTING PLASTER, CAULKING, REQUIRED PREPARATION WORK, AND APPLICATION PROCEDURES.

GYPSUM BOARD FINISHING

GENERAL CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF GYPSUM ASSOCIATION TRADE PUBLICATION GA-214-96 'RECOMMENDED LEVELS OF GYPSUM BOARD FINISH' & 3.06 OF SPECIFICATION SECTION 09250.

LEVEL 0 - FOR USE IN TEMPORARY CONSTRUCTION, OR WHERE FINAL FINISH/DECORATION HAS NOT BEEN DETERMINED.

LEVEL 1 - FOR USE AT PLENUM AREAS, ABOVE CEILING, IN ATTICS & IN AREAS WHERE THE ASSEMBLY WOULD GENERALLY BE CONCEALED OR IN BUILDING CORRIDORS & OTHER AREAS NOT NORMALLY OPEN TO THE PUBLIC VIEW.

LEVEL 2 - FOR USE AT LOCATIONS WHERE WATER-RESISTANT GYPSUM BACKING BOARD IS INSTALLED AS A TILE SUBSTRATE AND FOR USE IN GARAGES, WAREHOUSE STORAGE OR OTHER SIMILAR AREAS WHERE SURFACE APPEARANCES ARE NOT OF PRIMARY CONCERN.

LEVEL 3 - FOR USE IN APPEARANCE AREAS THAT ARE TO RECEIVE HEAVY OR MEDIUM TEXTURE FINISHES BEFORE FINAL PAINTING, OR WHERE HEAVY - GRADE WALL COVERINGS ARE TO BE APPLIED AS THE FINAL DECORATION.

LEVEL 4 - FOR USE WHERE LIGHT TEXTURE OR WALL COVERINGS ARE TO BE APPLIED, OR WHERE ECONOMY IS OF THE ARCHITECT'S CONCERN.

LEVEL 5 - FOR USE WHERE GLOSS, SEMI-GLOSS, ENAMEL OR NON-TEXTURED FLAT PAINTS ARE SPECIFIED, OR WHERE SEVERE LIGHTING CONDITIONS OCCUR (IN THE OPTION OF THE ARCHITECT.)

ABBREVIATIONS:

ACT.....ACOUSTIC CEILING TILE	CWT.....CERAMIC WALL TILE	MS.....MARBLE SADDLE (ADA)	PFT.....PORCELAIN FLOOR TILE	RT.....RUBBER TILE	VINYL.....SLIP-RESISTANT FLOORING
CPT.....CARPET	EPOXY.....EPOXY TERRAZZO	NA.....NOT APPLICABLE	PLAST.....PLASTER	TERR.....TERRAZZO	WD.....WOOD
C.M.U. .....CONCRETE MASONRY UNIT	GTW .....GLAZED TILE WAINSCOT	NIC .....NOT IN CONTRACT	RB .....RUBBER COVE BASE	VCT .....VINYL COMPOSITION TILE	WM .....WALK OFF MAT
CONC. .....CONCRETE	GYP .....GYPSUM BOARD	PCB .....PORCELAIN TILE COVE BASE	RF.....RUBBER FLOORING	VET .....VINYL ENHANCED TILE	

REV.	DATE	ITEM
1	11/29/2022	BID ADDENDUM #1
2	12/07/2022	BID ADDENDUM #2
4	12/15/2022	BID ADDENDUM #4

NOTICE

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PROJECT
BRIARCLIFF MANOR U.F.S.D.
PHASE 2 BOND IMPROVEMENTS
BRIARCLIFF MANOR MIDDLE / HIGH SCHOOL
444 PLEASANTVILLE RD, BRIARCLIFF MANOR, NY 10510

DWG TITLE
FINISH SCHEDULE

DRWG. BY: C.M.
CHK. BY: G.E.O.

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SED No. 66-14-02-02-0-004-023
DISTRICT BRIARCLIFF MANOR U.F.S.D.
PROJECT PHASE 2 BOND IMPROVEMENTS
DWG TITLE FINISH SCHEDULE

SCALE: AS NOTED
DATE: -
BID P/U DATE: 11/14/2022
FILE NO. 21-274C

A9.01 HSMS

2 ADD/ALT 1 TO BASE BID GC - 1

SCALE: 3/32" = 1'-0"

PROPOSED FINISH FLOOR PLAN

SCALE: 3/32" = 1'-0"

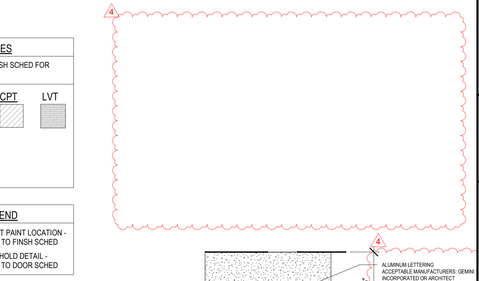
FLOOR TYPES

REFER TO FINISH SCHED FOR MORE INFO

VCT | CPT | LVT | CT

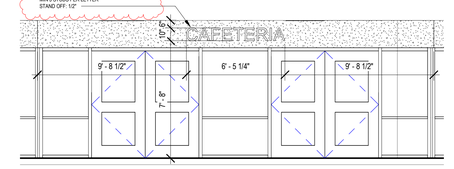
FINISH LEGEND

- P# — ACCENT PAINT LOCATION - REFER TO FINISH SCHED
- T# — THRESHOLD DETAIL - REFER TO DOOR SCHED



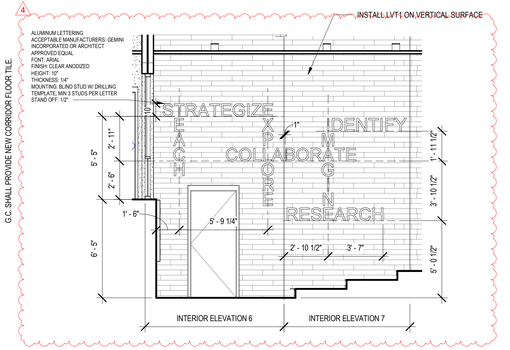
4 SLE SIGNAGE, TYP OF 2

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



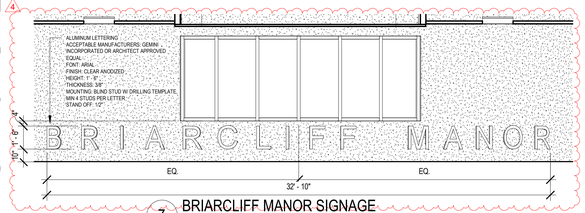
5 CAFETERIA SIGNAGE

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



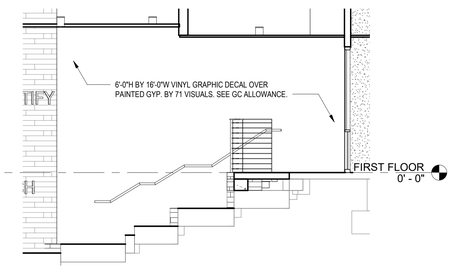
6A AMPHITHEATER SIGNAGE

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



7 BRIARCLIFF MANOR SIGNAGE

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



8 AMPHITHEATER GRAPHIC

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

REV.	DATE	ITEM
1	11/25/2022	BID ADDENDUM #1
4	12/15/2022	BID ADDENDUM #4

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KEY PLAN — NO SCALE

PROJECT: BRIARCLIFF MANOR U.F.S.D. PHASE 2 BOND IMPROVEMENTS BRIARCLIFF MANOR MIDDLE / HIGH SCHOOL 444 PLEASANTVILLE RD, BRIARCLIFF MANOR, NY 10510

DWG TITLE: FINISH FLOOR PLAN

DRWG. BY: C.M.
CHK. BY: G.E.O.

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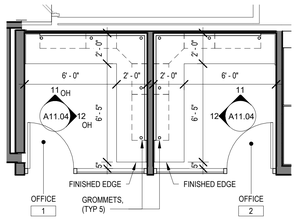
SED No. 66-14-02-02-0-004-023
DISTRICT: BRIARCLIFF MANOR U.F.S.D.
PROJECT: PHASE 2 BOND IMPROVEMENTS
DWG TITLE: FINISH FLOOR PLAN

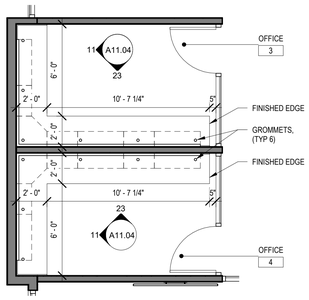
SCALE: AS NOTED
DATE: -
BID P/U DATE: 11/14/2022
FILE NO. 21-274C

A9.02 | HSMS



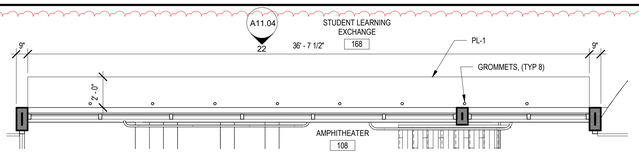
1 ENLARGED CASEWORK PLANS - OFFICE 1 & 2

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



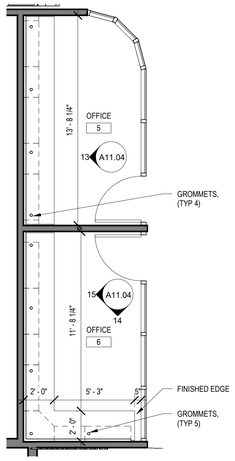
2 ENLARGED CASEWORK PLANS - OFFICE 3 & 4

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



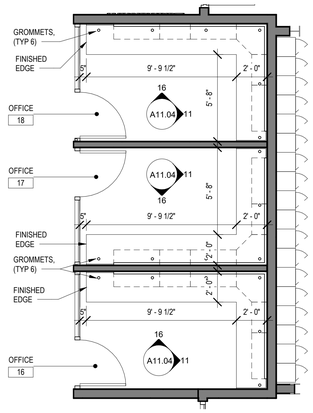
4 ENLARGED CASEWORK PLANS - SLE COUNTER

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



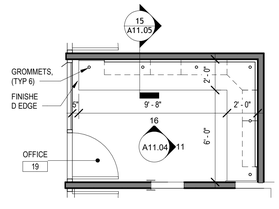
5 ENLARGED CASEWORK PLANS - OFFICE 4 & 5

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



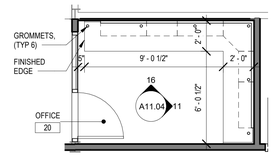
6 ENLARGED CASEWORK PLANS - OFFICE 16, 17, & 18

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



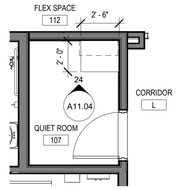
7 ENLARGED CASEWORK PLANS - OFFICE 19

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



8 ENLARGED CASEWORK PLANS - OFFICE 20

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



9 ENLARGED CASEWORK PLANS - QUIET ROOM

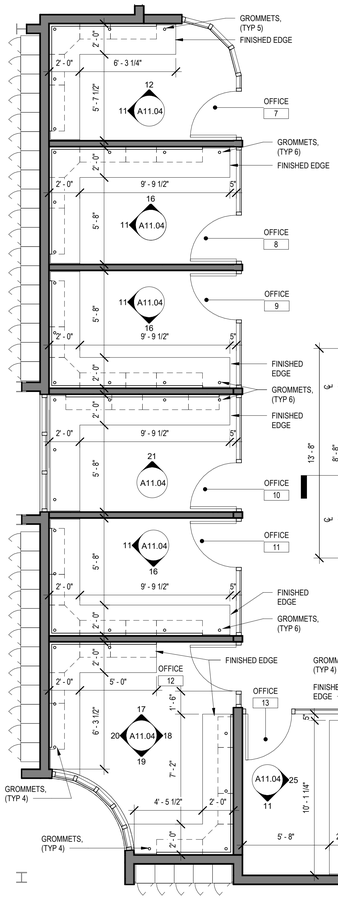
SCALE: 1/4" = 1'-0"

CASEWORK CONSTRUCTION NOTES

1. ALL CASEWORK AS OUTLINED ON THIS DRAWING IS TO BE PROVIDED AND INSTALLED BY THE CASEWORK CONTRACTOR (C.C.).
2. C.C. SHALL BE RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS & BUILD TO SUIT AND TO REVIEW AND REPORT ANY DISCREPANCIES TO ARCHITECT.
3. ALL PLUMBING INSTALLATIONS, CONNECTIONS, SERVICE PIPING & TRAPS SHALL BE PROVIDED & INSTALLED BY P.C.. ALL ELECTRIC INSTALLATIONS, CONNECTIONS AND ELECTRICAL CONDUIT BY E.C..
4. REFER TO ELECTRICAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION ON SINK, FIXTURE, FITTINGS & ELECTRICAL CONNECTIONS.
5. G.C. SHALL BE RESPONSIBLE TO INSTALL ALL FLOORING, 4" H RUBBER WALL BASE AT ALL NEW CASEWORK TOE KICKS AND AT ALL ADA KNEE SPACE AREAS AT SINK BASE UNITS. REFER TO FINISH SCHEDULE FOR ADDITIONAL FLOOR, WALL, BASE & CEILING FINISH INFORMATION.
6. C.C. SHALL FURNISH AND INSTALL FILLER PANELS, WHERE NECESSARY, TO PROVIDE A COMPLETE AND FINISHED INSTALLATION. (FILLER PANELS SHALL BE USED TO FORM CONTINUOUS CABINETRY BETWEEN ALL UNITS AND/OR ADJACENT SURFACES.)
7. G.C. SHALL BE RESPONSIBLE FOR ALL CUTTING, PATCHING, AND BLOCKING AS REQUIRED FOR COMPLETE AND PROPER INSTALLATION OF THEIR WORK.
8. ALL TRADE CONTRACTORS SHALL BE RESPONSIBLE TO COORDINATE THEIR WORK WITH THE G.C.
9. UNLESS OTHERWISE NOTED ALL TACK BOARDS, MARKER BOARDS SHALL BE PROVIDED AND INSTALLED BY G.C. G.C. SHALL COORDINATE WITH M.C., P.C. AND E.C. FOR WALL MOUNTED COMPONENTS WHICH MAY NOT BE SHOWN THESE PLANS OR ELEVATIONS.
10. ALL COUNTERTOPS SHALL BE PLASTIC LAMINATE OVER 1" THICK PLYWOOD SUBSTRATE WITH 4" HIGH BACK & SIDE SPLASHES, U.O.N. IN CASEWORK SHOP DRAWINGS.
11. C.C. AND E.C. SHALL COORDINATE MOUNTING LOCATIONS FOR POWER AND DATA MANAGEMENT SYSTEM TO UNDERSIDE OF COMPUTER WORKSTATIONS AND CIRCULATION DESKS. C.C. SHALL PROVIDE ALL CUTOUTS IN PANELS AS REQUIRED FOR CABLE PASSAGE BETWEEN UNITS. NO SURFACE MOUNTED INSTALLATIONS WILL BE ACCEPTED WHICH OCCUR ABOVE THE WORKSURFACE. ALL SHALL BE CONCEALED EITHER BELOW WORKSURFACE OR WITHIN CABINETS.
12. C.C. SHALL SUBMIT SHOP DRAWINGS AND COLOR SAMPLES FOR APPROVAL BY ARCHITECT ACCORDING TO SPECIFICATIONS PRIOR TO FABRICATION.
13. ALL WOOD BLOCKING TO BE RETARDANT (U.O.N)
14. ALL DOORS, DRAWERS, CABINETS, FILES, ETC. SHALL RECEIVE WARDEN LOCKS. (MASTERKEYED)
15. FINAL MECHANICAL CONNECTIONS BY M.C., FINAL ELECTRICAL CONNECTIONS BY E.C. & FINAL PLUMBING CONNECTIONS BY P.C.

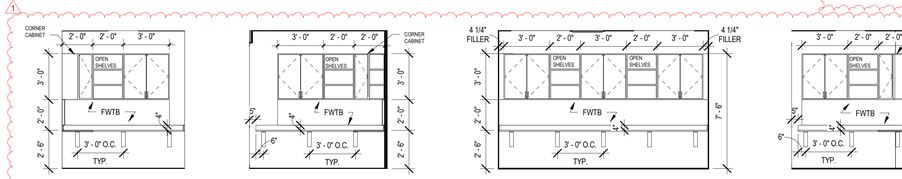
GENERAL CASEWORK/ FURNITURE NOTES

1. ALL UPPER CABINETS SHALL BE 12" DEEP, U.O.N.
2. ALL BASE CABINETS SHALL BE 34" TALL, U.O.N.
3. ALL LOOSE FURNITURE TO BE PROVIDED BY OWNER AND N.I.C.



3 ENLARGED CASEWORK PLANS - OFFICE 7 THRU 15

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



11 CASEWORK ELEVATION

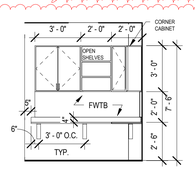
SCALE: 1/4" = 1'-0"

12 CASEWORK ELEVATION

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

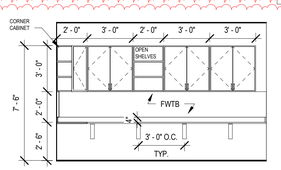
13 CASEWORK ELEVATION

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



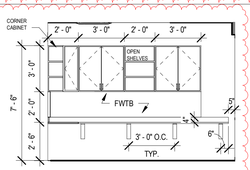
14 CASEWORK ELEVATION

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



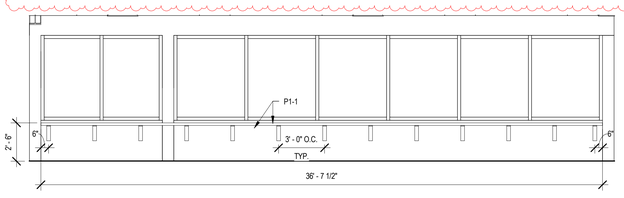
15 CASEWORK ELEVATION

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



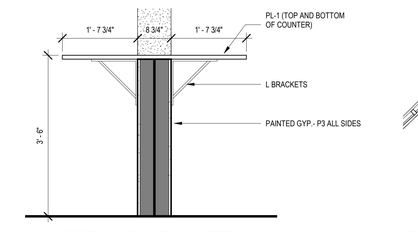
16 CASEWORK ELEVATION

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



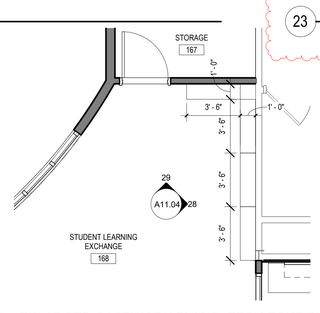
22 CASEWORK ELEVATION

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



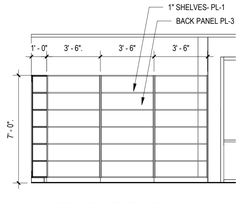
26 SECTION AT SLE COUNTER

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



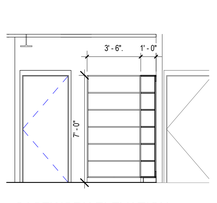
27 ENLARGED CASEWORK PLANS- TECH ZONE SHELVING

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



28 CASEWORK ELEVATION

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

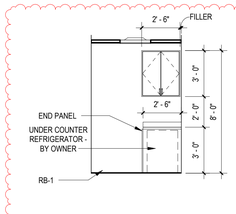


29 CASEWORK ELEVATION

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

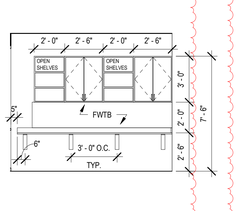
23 CASEWORK ELEVATION

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



24 QUIET ROOM CASEWORK ELEVATION

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



25 CASEWORK ELEVATION

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

REV.	DATE	ITEM
1	11/29/2022	BID ADDENDUM #1
2	12/07/2022	BID ADDENDUM #2
4	12/15/2022	BID ADDENDUM #4

NOTICE

THESE DRAWINGS ARE BASED ON CONSTRUCTION DRAWINGS NOT PREPARED BY BBS ARCHITECTS, LANDSCAPE ARCHITECTS AND ENGINEERS, PC. AND, THEREFORE, MAY NOT REPRESENT THE CONDITIONS AS CONSTRUCTED AT THE TIME. ALL EXISTING CONDITIONS SHOWN ARE REPRESENTED AS SUGGESTIVE INFORMATION AS THEY MAY NOT HAVE BEEN BUILT AND DETAILED PER THE ORIGINAL DOCUMENTS OR PER THE OWNER'S INFORMATION.

PROJECT: BRIARCLIFF MANOR U.F.S.D.
PHASE 2 BOND IMPROVEMENTS
BRIARCLIFF MANOR MIDDLE / HIGH SCHOOL
444 PLEASANTVILLE RD, BRIARCLIFF MANOR, NY 10510

DWGTITLE: ENLARGED EQUIPMENT PLANS & DETAILS

DRWG. BY: C.M.
CHK. BY: G.E.O.

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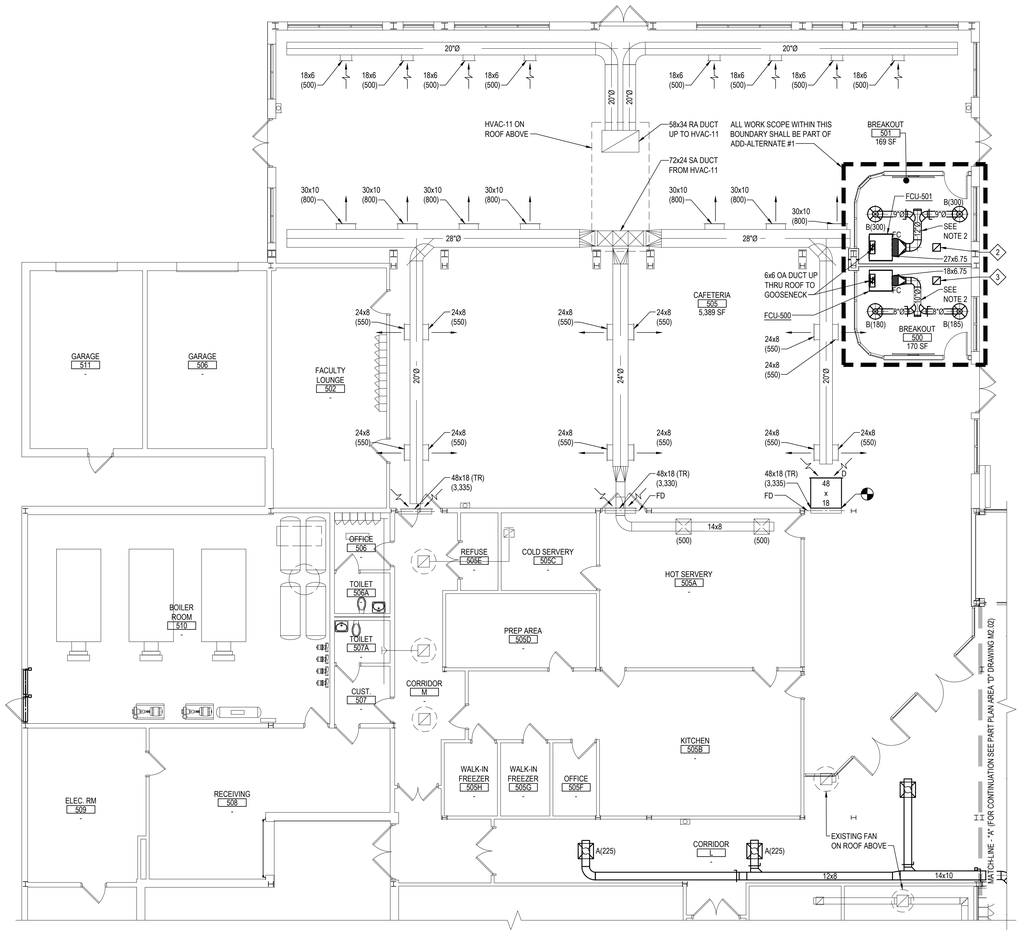
SED No. 66-14-02-02-0-004-023
DISTRICT BRIARCLIFF MANOR U.F.S.D.
PROJECT PHASE 2 BOND IMPROVEMENTS
DWG TITLE ENLARGED EQUIPMENT PLANS & DETAILS

SCALE: AS NOTED
DATE: -
BID P/U DATE: 11/14/2022
FILE NO. 21-274C

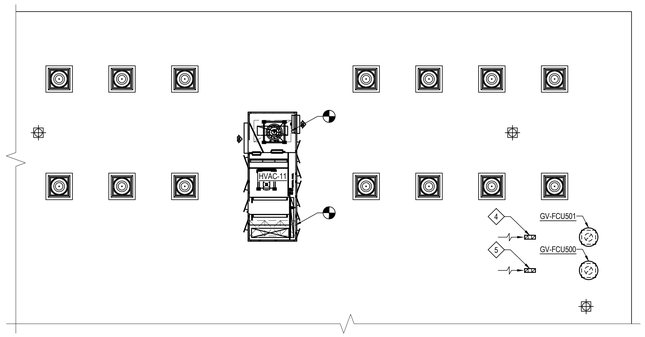
A11.04 HSMS



1 GROUND FLOOR PROPOSED HVAC PART PLAN - AREA "A"

NOTE:

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



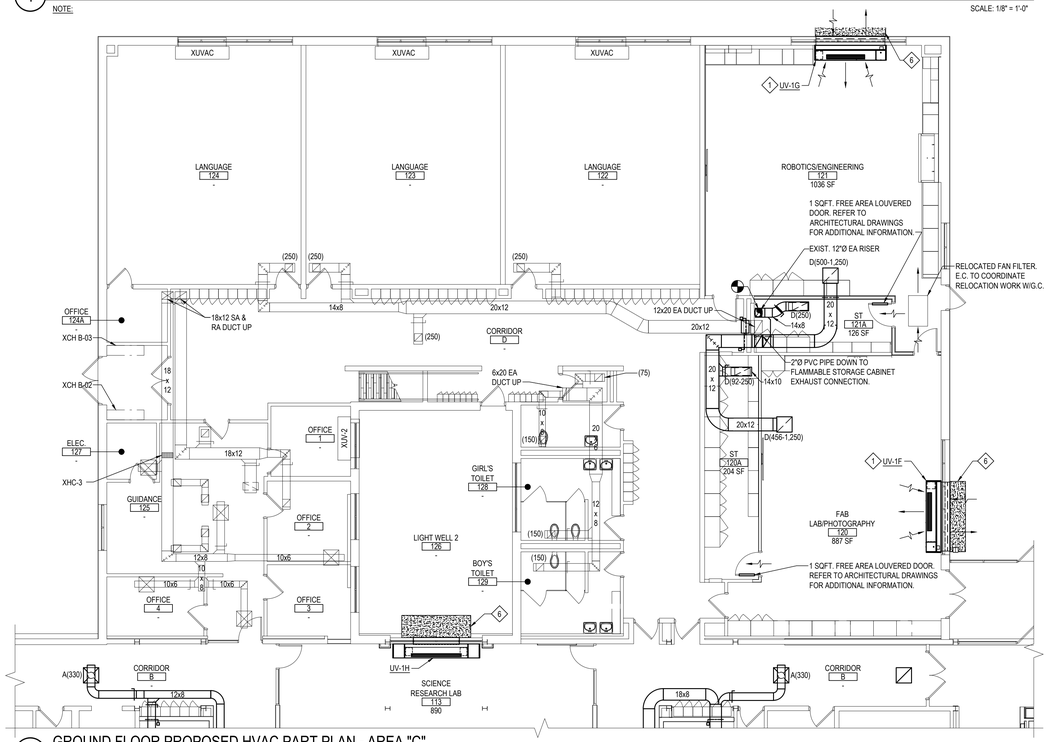
3 ROOF PROPOSED HVAC PART PLAN - AREA "A"

NOTE:

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

Note "LD" (NEW NATURAL GAS / CARBON MONOXIDE LEAK DETECTION SYSTEM)

PROVIDE & INSTALL A NEW "RKI BEACON" M16A 4 CHANNEL NATURAL GAS / CARBON MONOXIDE DETECTION PANEL FOR 120V, 1 PH. OPERATION. PROVIDE (2) #95-2496RK (0-300 PPM) CARBON MONOXIDE SENSORS, ONE MTD. IN BOILER RM. & (1) MTD. IN CORRIDOR OUTSIDE BOILER ROOM. PROVIDE (2) #61-0140RK LEL GAS DETECTORS, (1) MTD. IN BOILER RM. NEAR WATER HEATERS & (1) MTD. NEAR BOILER BURNERS. PROVIDE NEMA 4 ENCLOSURE, LED DISPLAY FOR ALL 4 CHANNELS. PROVIDE CONFIGURABLE ALARM OUTPUTS W/ ISOLATION RELAYS FOR INTERLOCK W/BOILERS, WATER HEATERS, & EXIST. FIRE ALARM CONTROL PANEL. PROVIDE (2) 15CD / D3. COMBINATION HORN / STROBE UNITS & RELATED POWER SUPPLIES. ONE HORN STROBE TO BE MOUNTED WITHIN THE BOILER ROOM & (1) TO BE MOUNTED IN ADJACENT CORRIDOR, 6'-8" A.F.F.



2 GROUND FLOOR PROPOSED HVAC PART PLAN - AREA "C"

NOTE:

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

NEW WORK NOTE:

ALL EXPOSED SPIRAL ROUND DUCTWORK SHALL BE INTERNALLY LINED. ALL HIDDEN DUCTWORK SHALL SHALL EXTERNALLY WRAPPED WITH INSULATION. REFER TO MECHANICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.

NEW WORK KEYED NOTES:

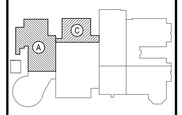
1. M.C. TO HAVE G.C. EXPAND EXISTING BRICK WALL OPENING (EQUALLY FROM CENTERLINE OF EXISTING OPENING) TO 108x28. M.C. TO FURNISH & INSTALL NEW OUTDOOR AIR INTAKE NON-FLANGED LOUVER. REFER TO SCHEDULES & DETAILS ON DRAWING M6.05 FOR ADDITIONAL INFORMATION. M.C. TO INSTALL NEW UNIT VENTILATOR SHOWN & CENTER IT WITH EXISTING OUTSIDE AIR INTAKE/DISCHARGE OPENING ON EXTERIOR WALL SHOWN. NEW UNIT VENTILATOR SHALL BE A FACE-AND-BYPASS DAMPER TYPE. M.C. TO PROVIDE 10" LENGTH 18-GAUGE FIN TUBE COVERS ON EACH SIDE OF NEW UNIT VENTILATOR. M.C. TO VERIFY ALL DIMENSIONS PRIOR TO START OF ANY WORK. REFER TO SCHEDULES, DETAILS AND MECHANICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. 12x12 RELIEF AIR DUCT UP THRU ROOF TO GRAVITY VENTILATOR GV-FCU501. TERMINATE ±1'-0" BELOW UNDERSIDE OF DECK W/WMS.
3. 12x12 RELIEF AIR DUCT UP THRU ROOF TO GRAVITY VENTILATOR GV-FCU500. TERMINATE ±1'-0" BELOW UNDERSIDE OF DECK W/WMS.
4. 6x6 OA DUCT DN THRU ROOF TO FCU-501. TERMINATE WITH GOOSENECK ABOVE ROOF W/WMS. BOTTOM OF OPEN END OF GOOSENECK SHALL BE A MINIMUM OF 3'-0" ABOVE FINISHED ROOF SURFACE.
5. 6x6 OA DUCT DN THRU ROOF TO FCU-500. TERMINATE WITH GOOSENECK ABOVE ROOF W/WMS. BOTTOM OF OPEN END OF GOOSENECK SHALL BE A MINIMUM OF 3'-0" ABOVE FINISHED ROOF SURFACE.
6. CONCRETE PAD (REFER TO ARCH. DRAWINGS FOR ADDITIONAL INFORMATION)

MECHANICAL NOTES:

1. UNLESS NOTED OTHERWISE, ALL BRANCH DUCTS SERVING AIR DEVICES SHALL BE 12x6
2. M.C. SHALL PAINT ALL EXPOSED AND PARTIALLY EXPOSED (DUCTS ABOVE OPEN SLAT CEILINGS) DUCT INSULATION. COORDINATE DUCT INSULATION TO BE PAINTED WITH ARCHITECT APPROVED REFLECTED CEILING PLANS. PAINT COLOR AND TYPE TO BE SPECIFIED BY ARCHITECT OF RECORD. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

REV.	DATE	ITEM
1	12.15.22	BID ADDENDUM #4

NOTICE



KEY PLAN

NOT TO SCALE

PROJECT

BRIARCLIFF MANOR U.F.S.D.
PHASE 2 BOND IMPROVEMENTS
BRIARCLIFF MANOR MIDDLE/HIGH SCHOOL
444 PLEASANTVILLE RD, BRIARCLIFF MANOR, NY 10510

DWG TITLE

PROPOSED HVAC PLAN - AREA A & C

DRAWING BY: R.D.P.

CHECK BY: F.S.

NOTICE

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SED No. 66-14-02-02-0-004-023

DISTRICT BRIARCLIFF MANOR UFSD

PROJECT PHASE 2 BOND IMPROVEMENTS

DWG TITLE PROPOSED HVAC PLAN AREA A & C

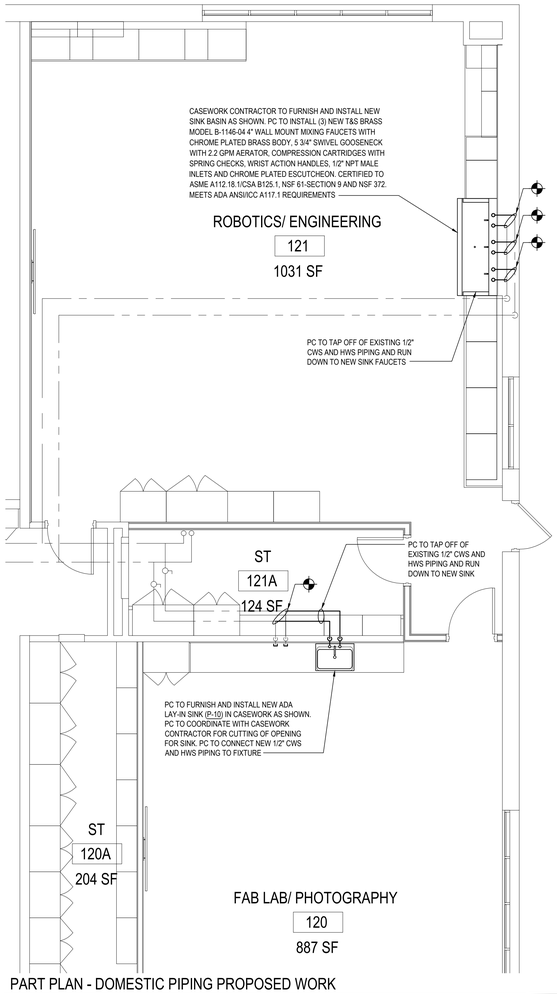
SCALE: AS NOTED

DATE: 7/15/22

BID PICK-UP:

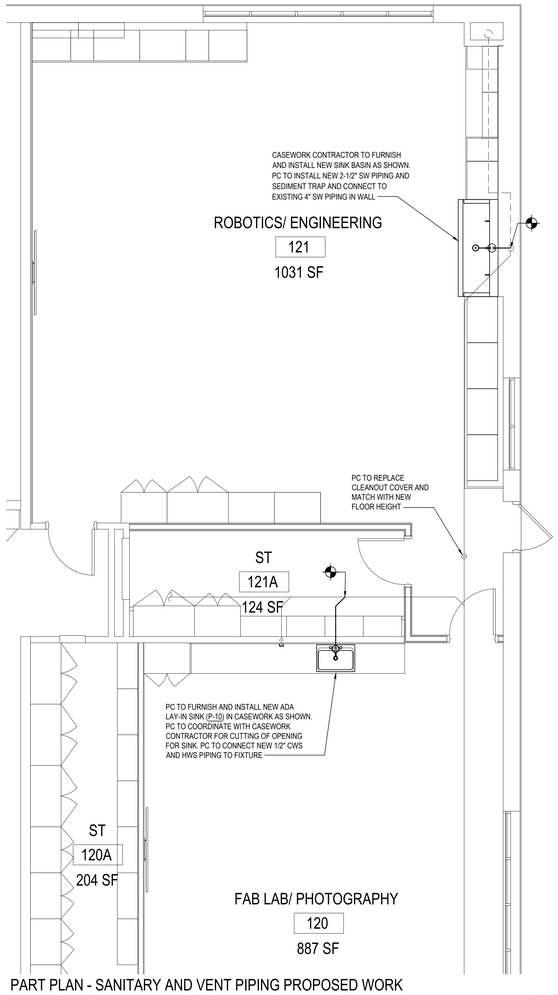
FILE No: 21-274C

M2.01 | HSMS



PART PLAN - DOMESTIC PIPING PROPOSED WORK

NOTE: AT BRIARCLIFF MANOR HIGH SCHOOL — SCALE: 1/4" = 1'-0"

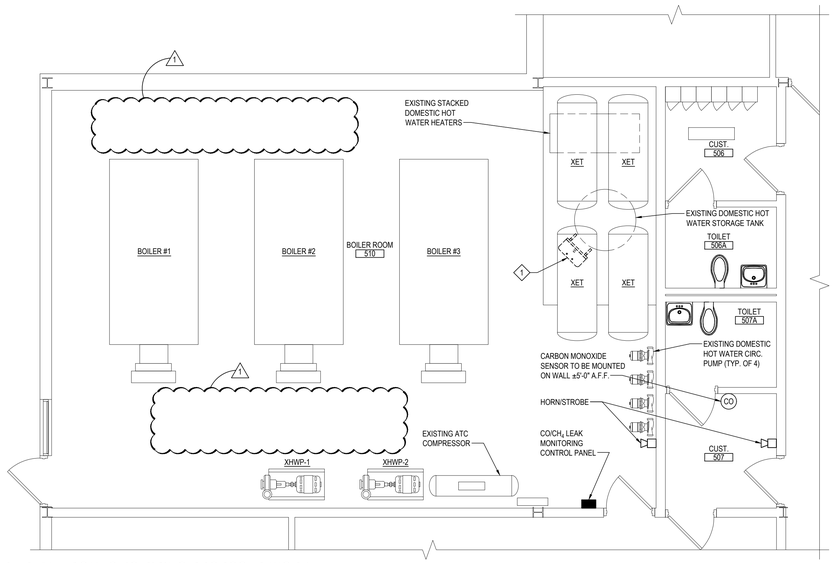


PART PLAN - SANITARY AND VENT PIPING PROPOSED WORK

NOTE: AT BRIARCLIFF MANOR HIGH SCHOOL — SCALE: 1/4" = 1'-0"

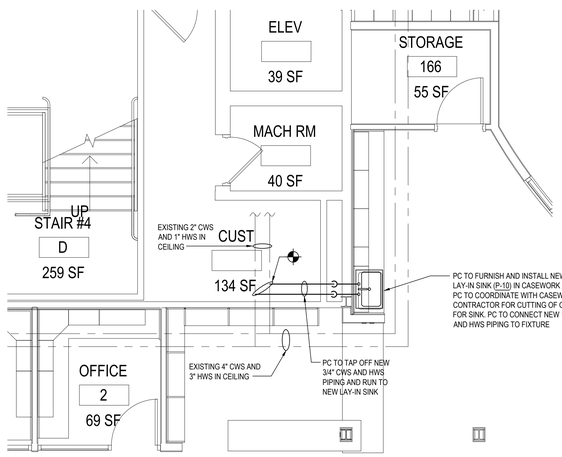
PLUMBING NEW WORK KEYED NOTES:

1. P.C. TO INSTALL A NEW STAND ALONE EMERGENCY EYEWASH STATION MOUNTED TO FREESTANDING KINDORF FRAME ANCHORED TO EXISTING HOUSEKEEPING PAD. NEW EYEWASH STATION SHALL BE MOUNTED 33" FROM FINISH FLOOR TO THE TOP OF EYEWASH FAUCETS FROM WHICH TEPID WATER COMES OUT. REFER TO INSTALLATION MANUAL. NEW EMERGENCY EYEWASH STATION SHALL BE A BRADLEY MODEL S19-921 ON-SITE GRAVITY FED EYEWASH STATION.
SPECIFICATION: SELF-CONTAINED EYEWASH UNIT SHALL HAVE THE ABILITY TO FLUSH EYES FOR 15 MINUTES AT A MINIMUM OF 0.4 GALLONS PER MINUTE BY USING 7 GALLONS OF WATER. TRANSPARENT TANK ASSEMBLY SHALL BE INCLUDED WHICH ALLOWS USER TO SEE AT A GLANCE WHEN IT IS TIME TO CLEAN OR RE-FILL THE TANK. THE STATION SHALL HAVE A STURDY PEDESTAL WITH HINGED EYEWASH TRAY THAT SHALL PULL DOWN IN ONE QUICK MOTION. THE TANK SHALL BE REMOVABLE AND SHALL BE INVERTED ONTO PEDESTAL, PIERCING A LINER. STAINLESS CLAMPS SHALL BE INCLUDED TO HOLD TANK TO PEDESTAL. THE STATION SHALL HAVE AN ARM, WHICH IS PULLED DOWN TO ACTIVATE WATER FLOW. TANK IS TO BE FILLED IN ACCORDANCE TO INSTALLATION MANUAL WITH TEPID WATER.
DIMENSIONS: TANK SHALL BE 12" HEIGHT x 22" WIDTH x 9" DEPTH. PEDESTAL SHALL BE 13-1/2" HEIGHT x 22" WIDTH x 18-1/2" DEPTH. WALL BRACKET SHALL BE STAINLESS STEEL MOUNTING BRACKET THAT IS INCLUDED WITH STATION. WASTE NIPPLE SHALL BE 1/2" I.D. TUBE.



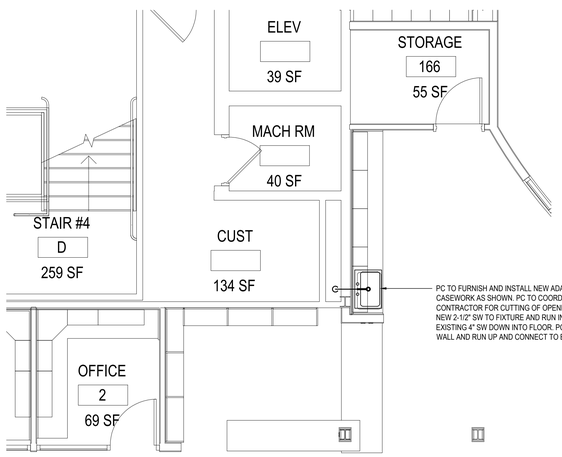
PART PLAN - DOMESTIC PIPING PROPOSED WORK

NOTE: AT BRIARCLIFF MANOR HIGH SCHOOL — SCALE: 1/4" = 1'-0"



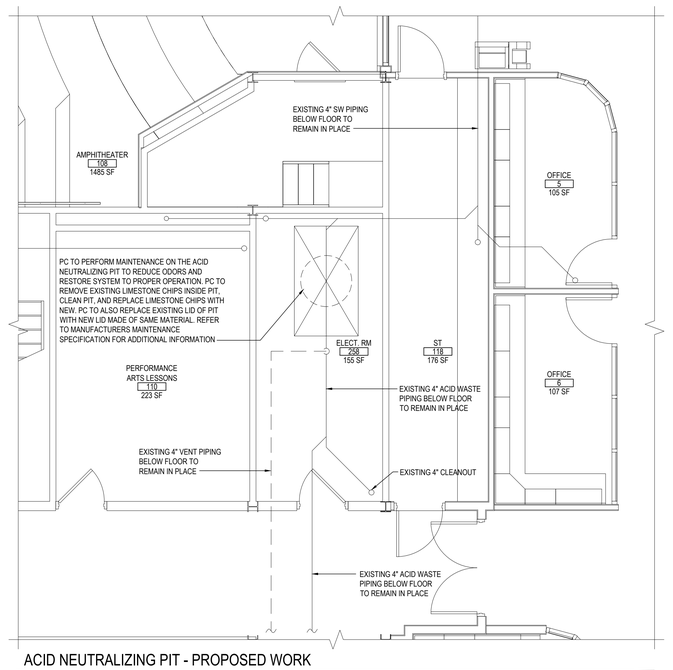
PART PLAN - DOMESTIC PIPING PROPOSED WORK

NOTE: AT BRIARCLIFF MANOR HIGH SCHOOL — SCALE: 1/4" = 1'-0"



PART PLAN - SANITARY & VENT PIPING PROPOSED WORK

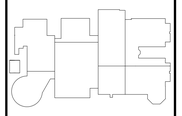
NOTE: AT BRIARCLIFF MANOR HIGH SCHOOL — SCALE: 1/4" = 1'-0"



ACID NEUTRALIZING PIT - PROPOSED WORK

NOTE: AT BRIARCLIFF MANOR HIGH SCHOOL — SCALE: 1/4" = 1'-0"

REV.	DATE	ITEM
1	12.15.22	BID ADDENDUM #4



KEY PLAN

NOT TO SCALE

BRIARCLIFF MANOR U.F.S.D.
PHASE 2 BOND IMPROVEMENTS
BRIARCLIFF MANOR MIDDLE/HIGH SCHOOL
444 PLEASANTVILLE RD, BRIARCLIFF MANOR, NY 10510

PROJECT

PLUMBING
FIRST FLOOR PROPOSED WORK CONTINUED

DWG TITLE

DRAWING BY: Z.M.Z.
CHECK BY: F.S.

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SED No. 66-14-02-02-0-004-023
DISTRICT BRIARCLIFF MANOR UFSD
PROJECT PHASE 2 BOND IMPROVEMENTS
DWG TITLE PLUMBING FIRST FLOOR PROPOSED WORK CONT.
SCALE: AS NOTED
DATE: 7/15/22
BID PICK-UP:
FILE No: 21-274C

P2.02 | HSMS

1 FIRST FLOOR ABATEMENT PLAN

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

2 LOWER LEVEL ABATEMENT PLAN

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

GENERAL ABATEMENT NOTES

1. ALL LEAD, ASBESTOS AND/OR PCB REMOVAL BY G.C. THE CONTRACTOR SHALL PERFORM A SITE INSPECTION PRIOR TO SUBMITTING A BID TO REVIEW AND QUANTIFY ALL ASBESTOS, LEAD and/or PCB CONTAINING CONSTRUCTION MATERIALS TO BE REMOVED OR AFFECTED BY THE PROPOSED SCOPE OF WORK.
2. REFER TO ASBESTOS, LEAD AND PCB CONSTRUCTION NOTES THIS DRAWING FOR ADDITIONAL INFORMATION.
3. REFER TO SPECIFICATIONS - INFORMATION TO BIDDERS FOR LEAD / ASBESTOS INSPECTION AND TESTING REPORTS FOR ADDITIONAL INFORMATION.
4. EACH CONTRACTOR PERFORMING WORK WITHIN OR ADJACENT TO ASBESTOS CONTAINING CONSTRUCTION MATERIALS SHALL EXERCISE EXTREME CAUTION TO NOT DAMAGE OR DISTURB EXISTING MATERIALS TO REMAIN. EACH CONTRACTOR SHALL BE / OBTAIN OSHA ASBESTOS TRAINING CERTIFIED TO PERFORM SPECIFIED WORK IN OR ADJACENT TO CONTAMINATED SPECIFICATIONS. EACH CONTRACTOR IS RESPONSIBLE FOR PROPER DISPOSABLE CLOTHING AND/OR MASKS IF REQUIRED

ASBESTOS, LEAD, AND PCB NOTES

1. ALL CONTRACTORS SHALL BE ADVISED THAT THE SCHOOL DISTRICT HAS SOLICITED AN INDEPENDENT TESTING COMPANY TO INSPECT AND TEST ALL AREAS OF THE EXISTING BUILDING WHICH ARE SCHEDULED TO BE DISTURBED DURING CONSTRUCTION FOR THE PRESENCE OF ASBESTOS, LEAD AND /OR PCB CONTAINING CONSTRUCTION MATERIALS.
2. RESULTS OF THE INSPECTIONS AND TESTING INDICATE THAT THE EXISTING BUILDING HAS TESTED POSITIVE FOR THE PRESENCE OF ASBESTOS, LEAD AND/OR PCB CONTAINING CONSTRUCTION MATERIALS. REFER TO SPECIFICATIONS FOR DESCRIPTION OF LOCATION, MATERIALS AND SAMPLE NUMBERS.
3. ALL DISTURBANCE, REMOVAL OR DEMOLITION WORK TO THESE IDENTIFIED AREAS MUST BE PERFORMED IN CONFORMANCE WITH THE GUIDELINES AS OUTLINED IN THE PROJECT MANUAL AND APPLICABLE LOCAL, STATE AND/OR FEDERAL REGULATIONS

FLUORESCENT BULB NOTES

ALL EXISTING FLUORESCENT BULBS TO BE REMOVED SHALL BE CONSIDERED HAZARDOUS WASTE AND SHOULD BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (DEC) & UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA) RULES, REGULATIONS & GUIDELINES.

ASBESTOS KEY NOTES

1

(A) AREAS INDICATED: ASBESTOS CONTAINING DOOR FRAME CAULKING GRAY

REFER TO PRE CONSTRUCTION SURVEY, BULK SAMPLING AND ANALYSIS OF SUSPECT ASBESTOS CONTAINING MATERIALS (INFORMATION AVAILABLE TO BIDDERS) FOR ASSUMED ASBESTOS CONTAINING CONSTRUCTION MATERIALS NOT IDENTIFIED BY KEYNOTES WHICH MAYBE SHOWN AS DEMOLITION OR POTENTIALLY DISTURBED AS A RESULT OF THE PROPOSED RENOVATIONS.

G.C.-2 SHALL CARRY 25FT OF ASBESTOS CONTAINING PIPE INSULATION REMOVAL AND 10 ELBOW FITTINGS IN THEIR BID.

LEAD CONTAINING KEY NOTES

(LCP) REMOVE FROM THE AREA INDICATED: LEAD CONTAINING PAINT. (REFER TO PROJECT MANUAL FOR ADDITIONAL INFORMATION)

DESIGNATED KEY NOTES INDICATE MATERIALS TO BE REMOVED AND PROPERLY DISPOSED OF UNDER THIS PROJECT. REFER TO THE PRECONSTRUCTION LEAD MATERIALS INSPECTION AND SAMPLING REPORT (INFORMATION AVAILABLE TO BIDDERS) FOR LEAD CONTAINING CONSTRUCTION MATERIALS TO REMAIN OR POTENTIALLY DISTURBED AS A RESULT OF THE PROPOSED RENOVATIONS.

REV.	DATE	ITEM
1	12/14/2022	BID ADDENDUM # 4

NOTICE

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PROJECT

BRIARCLIFF MANOR U.F.S.D.
PHASE 2 BOND IMPROVEMENTS
TODD ELEMENTARY SCHOOL
45 INGHAM ROAD, BRIARCLIFF MANOR, NY 10510

DWGTITLE

ABATEMENT PLAN

DRWG. BY: R.K.

CHK. BY: G.E.O.

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SED No. 66-14-02-02-0-002-021

DISTRICT BRIARCLIFF MANOR U.F.S.D.

PROJECT PHASE 2 BOND IMPROVEMENTS

DWG TITLE ABATEMENT PLAN

SCALE: AS NOTED

DATE: 12/15/2022 9:13:33 AM

BID P/U DATE:

FILE NO. 21-274D

A1.00 TES

MASONRY PHOTO DETAIL - 1

TUCKPOINT BELOW WINDOW

MASONRY PHOTO DETAIL - 2

TUCKPOINT BELOW WINDOW

MASONRY PHOTO DETAIL - 3

MASONRY PHOTO DETAIL - 4

TUCKPOINT ENTIRE WALL

G.C. SHALL REMOVE AND DISPOSE OF EXISTING ASBESTOS CONTAINING DOOR CAULK. G.C. SHALL REPLACE DOOR BACKER ROD AND CAULKING FULL PERIMETER. REFER TO A1.00 FOR ADDITIONAL INFO.

1

MASONRY PHOTO DETAIL - 5

TUCKPOINT ENTIRE WALL

MASONRY PHOTO DETAIL - 6

TUCKPOINT ENTIRE WALL

MASONRY PHOTO DETAIL - 7

TUCKPOINT BELOW WINDOW

MASONRY PHOTO DETAIL - 8

TUCKPOINT BELOW WINDOW

MASONRY PHOTO DETAIL - 9

TUCKPOINT BELOW WINDOW

MASONRY PHOTO DETAIL - 10

MASONRY PHOTO DETAIL - 11

MASONRY PHOTO DETAIL - 12

TUCKPOINT ENTIRE WALL

REPLACED DAMAGED BRICK

1

MASONRY PHOTO DETAIL - 13

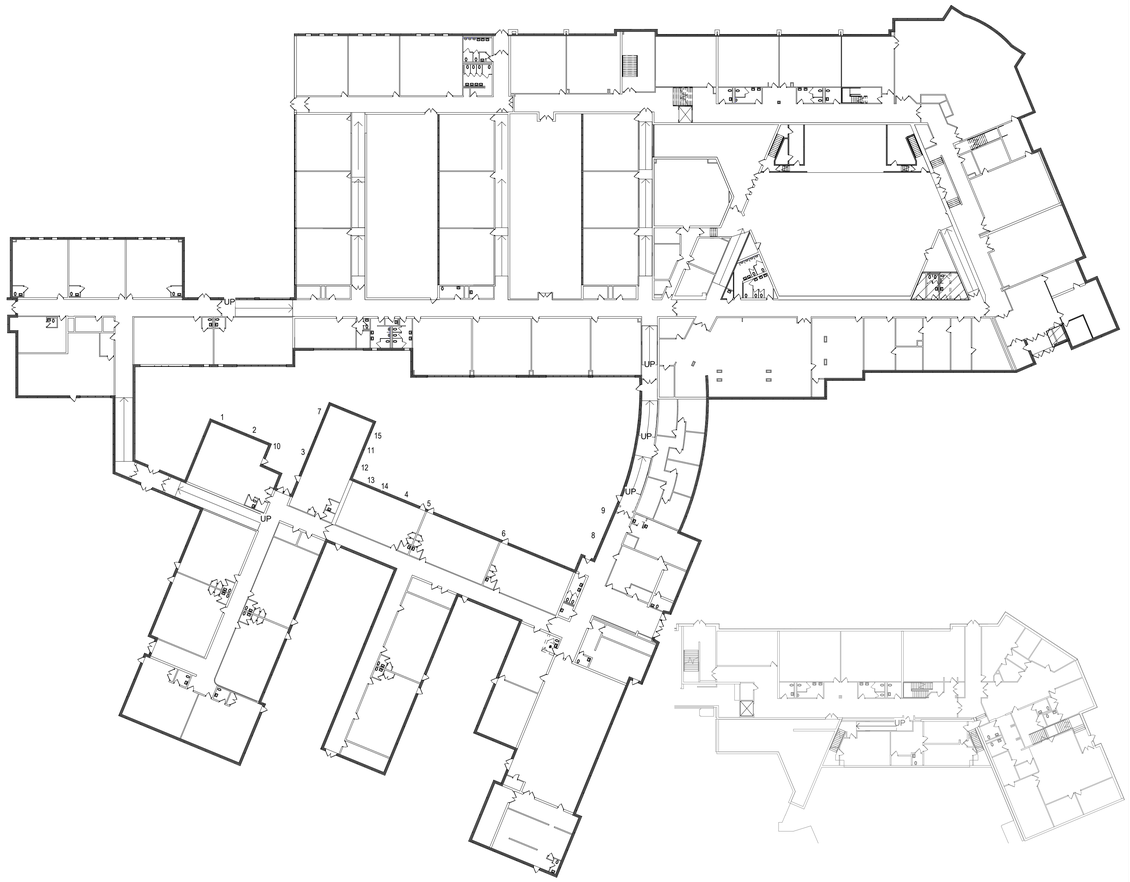
MASONRY PHOTO DETAIL - 14

MASONRY PHOTO DETAIL - 15

TUCKPOINT BELOW WINDOW

4 MASONRY DETAILS

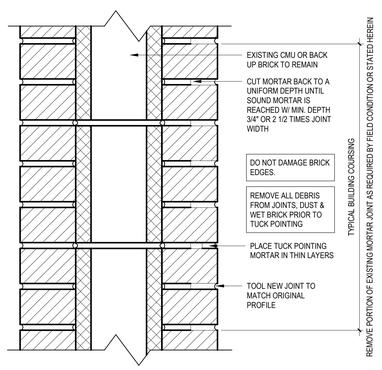
SCALE: 12" = 1'-0"



1 MASONRY PHOTO KEY PLAN

SCALE: 1/32" = 1'-0"

BIDDER NOTE:
ALL WORK NOTED ON THIS DRAWING SHALL BE COVERED UNDER ADD ALTERNATE #3 TO BASE BID GC-2



3 TUCKPOINT DETAILS & NOTES

SCALE: 3" = 1'-0"

MASONRY RECONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL SCAFFOLD ALL AREAS AS REQUIRED TO PERFORM THE REQUIRED SCOPE OF WORK WITH OSHA APPROVED SCAFFOLDING EQUIPMENT. THE SCAFFOLDING SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF THE PROJECT. AREAS OF SCAFFOLDING SHOULD BE ENCLOSED WITH CONSTRUCTION FENCING WITH THE PROPER MARKINGS.
2. MASONRY IS TO BE TUCK POINTED AND BRICK IS TO BE REMOVED AND REPLACED AS REQUIRED AND WHERE INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS. BRICK MORTAR, AND SEALANT SAMPLES SHALL BE SUBMITTED TO THE ARCHITECT AND TEST PANELS ERECTED FOR THE ARCHITECTS INSPECTION AND APPROVAL AS INDICATED IN THE SPECIFICATIONS.
3. AREAS REQUIRING TUCK POINTING INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING LOCATIONS:
   A. WHERE MORTAR HAS ERODED FROM THE FACE OF THE MASONRY
   B. WHERE MORTAR HAS CRUMBLED FROM THE JOINTS.
   C. WHERE HAIR LINE CRACKS ARE APPARENT IN THE MORTAR.
   D. WHERE THE BOND BETWEEN THE MASONRY AND THE MORTAR IS BROKEN.
4. PRIOR TO APPLYING NEW MORTAR, CLEAN OUT ALL DEBRIS AND DUST AND WET BRICK.
5. WHERE THE EXISTING BRICK UNITS ARE DAMAGED CUT OUT THE OLD MORTAR SURROUNDING THE AFFECTED UNITS AND REMOVE THE BRICK. CHISEL OUT ALL OLD MORTAR AND REMOVE ALL DUST AND DEBRIS, BEING CAREFUL NOT TO ALLOW DEBRIS TO FALL INTO CAVITY. DAMPEN SURROUNDING BRICK SURFACES AND PLACE NEW UNIT OF SIMILAR SIZE AND COLORATION INTO OPENING. TOOL JOINT TO MATCH ORIGINAL PROFILE.
6. MORTAR FOR REBUILDING AND TUCK POINTING SHALL BE AS SPECIFIED AND SHALL BE HIGH IN LIME CONTENT. MORTAR SHALL BE SOFTER THAN EXISTING BRICK AND NO HARDER THEN EXISTING MORTAR.
7. THE FINAL APPEARANCE OF THE FACADE SHALL BE UNIFORM IN TERMS OF MORTAR COLORATION, TOOLING, AND SIZE OF JOINTS. JOINTS SHALL BE TOOLED TO MATCH EXISTING OR, WHERE THE ENTIRE WALL IS BEING REDONE, NEW JOINTS SHALL BE TOOLED CONCAVE.
8. AFTER COMPLETION OF TUCK POINTING WORK, ALL LOOSE MORTAR AND MORTAR STAINING SHALL BE CLEANED FROM SURFACE OF MASONRY.
9. THE CONTRACTOR SHALL PROTECT ALL EXISTING WINDOWS AND DOOR OPENINGS AND ADJACENT MATERIALS AND SURFACES FROM DAMAGE DURING POINTING PROCESS. ANY DAMAGE INCURRED SHALL BE CORRECTED AT NO ADDITIONAL COST TO THE OWNER.
10. IN AREAS WHERE MORTAR CANNOT BE REMOVED BY GRINDING, CONTRACTOR SHALL USE MANUAL METHODS.
11. CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE RANDOM SAMPLES OF MORTAR DURING THE PROGRESS OF WORK, AS DIRECTED BY THE ARCHITECT.
12. THE CONTRACTOR SHALL SUBMIT A MORTAR DESIGN MIX FOR APPROVAL BY THE ARCHITECT AND SHALL INFORM THE ARCHITECT PRIOR TO APPLICATION FOR MORTAR TESTING
13. THE CONTRACTOR SHALL PROVIDE 2'X2' BRICK MOCK UP SHOWING BRICK AND MORTAR COLORS FOR APPROVAL

REV.	DATE	ITEM
1	12/14/2022	BID ADDENDUM # 4

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DWGTITLE

MASONRY RECONSTRUCTION

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SED No. 66-14-02-02-0-002-021
DISTRICT BRIARCLIFF MANOR U.F.S.D.
PROJECT PHASE 2 BOND IMPROVEMENTS
DWG TITLE MASONRY RECONSTRUCTION

SCALE: AS NOTED
DATE: 12/15/2022
BID P/U DATE: 10:01:09 AM
FILE NO. 21-274D

A4.01 TES