KALAMAZOO
GRAND RAPIDS
CHELSEA

Kingscott

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2017 Projects

Saline Area Schools

Saline, Michigan

A/E # 2900-03

ADDENDUM NO. 2

SPECIAL NOTE:

The Notice to Bidders, Instructions to Bidders, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, and all modifications and previously issued Contract Documentation are a part of this Addendum.

SCOPE OF WORK:

The following items are changes, additions, deletions, clarifications and/or errors and omissions in plans and specifications, and shall be considered by each Bidder in making up and submitting his proposal. All of these items shall be considered a part of the Contract Documents.

NOTICE TO ALL BIDDERS:

All Bidders shall take note of all items covered by this Addendum. Each Bidder shall review the total scope of his responsibilities with respect to his contract work and his interface with the work of others, as well as his required interface with their work.

ATTACHMENTS:

Specifications: 087100x, Hardware Index, 102239, 237416.13X

Drawings: LS-SK01, LS-A1.6X, LS-A2.1AX, LZ-A2.1BX, LS-A2.1C, LZ-A2.1D, WM-A1.1X, WM-A1,2X, WM-M2.1X, HS-M1.0X, HS-M2.0X, LS-ME1.1X, LS-M1.1AX, LS-M1.1BX, LS-M1.1DX, LS-PD1.1DX, LS-M2.0X, MS-M1.1X, MS-M1.2X, MS-M1.3X, MS-M1.9X, MS-M2.0X, LB-E5.0, LB-EP1.4, WM-E0.2

DRAWINGS:

Sheet LS-SK01 issued herein

a) Roof core legend.

Sheet LS-A1.6x Composite Roof Plan

a) See dimension to locate RTU.

Sheet LS-A2.1Ax Reflected Ceiling Plan Unit A

a) Refer to revised drawing for revisions to Symbol Legend, Ceiling Keynote Legend, Wall Types and Ceiling heights.

Sheet LS-A2.1Bx Reflected Ceiling Plan Unit B

a) Refer to revised drawing for revisions to Symbol Legend, Ceiling Keynote Legend, Wall Types and Ceiling heights.

Sheet LS-A2.1Cx Reflected Ceiling Plan Unit C

a) Refer to revised drawing for revisions to Symbol Legend, Ceiling Keynote Legend, Wall Types and Ceiling heights.

Sheet LS-A2.1Dx Reflected Ceiling Plan Unit D

a) Refer to revised drawing for revisions to Symbol Legend, Ceiling Keynote Legend, Wall Types and Ceiling heights.

Sheet WM-A1.1x Floor Plan Area 400

a) Add drawing 2 - Partial Roof Plan.
b) Add drawing 3 - Roof Access hatch, detail
c) Add drawing 4 - Partial Floor Plan Area 500.

Sheet WM-A1.2x Floor Plan Area 500

a) Add detail cut 2/WM-A1.1

Sheet HS-A4.1X: 1/HS-A4.1X and 2/HS-A4.1X – Add note "(2)1400S162-68 w/ (2)600T150-68, T&B".

a) 3/HS-A4.1X and 4/HS-A4.1X – Add note "6" CFMF BOX HEADER, (2)600S162-54 W/(2)600t150-54, T&B".

Sheet MS-A1.0X:

a) Addition of keynote #1 and General Floor Plan Notes

Sheet MS-A1.1CX:

a) Revised Keynote #9 to read "HSS 4 X 4 X 1/ 4 STEEL COLUMNS – SEE MS-A4.1 FOR DETAIL". Revised Keynote #7 to read "DASHED LINES INDICATE NEW BULKHEAD(S) ABOVE".

Sheet MS-A4.1X:

a) Indicated steel sizes on sheet MS-A4.1X. Addition of detail 7/MS-A4.1X to sheet MS-A4.1.

Sheet MS-A6.1X:

a) Addition of glazing schedule to sheet MS-A6.1X, addition of door elevation FG & FG1, addition of door frame elevations B thru G.

Sheet WM-M2.1X: First Floor Mechanical Plan – Unit 500

a) Added boiler emergency shutdown switch.

Sheet HS-M1.0X: Partial Mechanical Plans

a) Added Expansion tank and turned off new equipment in demo layout.

Sheet HS-M2.0X: Mechanical Details/Schedules
a) Revised schedules and boiler detail.

Sheet LS-ME1.1X: Mechanical/Electrical Schedules &Details
a) Added hot water heater detail and revised schedules.

Sheet LS-M1.1AX: First Floor Mechanical Plan – Unit A
a) Revised hydronic piping to RT-101A and added duct liner.

Sheet LS-M1.1BX: First Floor Mechanical Plan – Unit B
a) Revised hydronic piping.

Sheet LS-M1.1DX: First Floor Mechanical Plan – Unit D
a) Revised hydronic piping.

Sheet LS-PD1.1DX: First Floor Plumbing Demolition Plan – Unit D
a) Added demolition note 3.

Sheet LS-M2.0X: Enlarged Mechanical Plans
a) Revised boiler room layout.

Sheet MS-M1.1X: Mechanical Plan – UNIT 'A'
a) Revised UV tag and added general note.

Sheet MS-M1.2X: Mechanical Plan – UNIT 'B'
a) Revised UV tag and added general note.

Sheet MS-M1.3X: Mechanical Plan – UNIT 'C'
a) Revised UV tag and added general note.

Sheet MS-M1.9X: Mechanical Plan – UNIT 'J'
a) Revised UV tag and added general note.

Sheet MS-M2.0X: Mechanical /Electrical Schedules & Mechanical Details
a) Revised UV schedule.

Sheet LS-EP1.4:
a) Relocated Pumps (P-101C & P-102C) and Boilers (B-101C & B-102C) in Boiler room D122 to accommodate Mechanical changes.
b) Provide 120V, 20A circuit to feed new water heater WH-101C. Update panel directory for the added loads.
c) Revised Keyed Note #10 as indicated.

Sheet LS-E5.0
a) Revised panel schedule RP-D2 to accommodate added mechanical loads.

Sheet WM-E0.2
a) Added note #5 as indicated.
b) Provide 120V, 20A dedicated circuit from existing panel to feed boiler emergency shut-off switch per Mechanical changes.

SPECIFICATIONS:

Specification Section 224216.13X – Commercial Lavatories (SECTION NOT REISSUED)
a) Add 2.1.B "Lavatory L-2: Vitreous china, wall mounted, with back same as L-1 except standard height."

Specification Section 224716X – Pressure Water Coolers (SECTION NOT REISSUED)
a) Delete 2.1.A "Pressure Water Coolers, EWC-1…" and Add 2.1.A "Pressure Water Coolers, EWC-2…".
b) Delete 2.1.B "Pressure Water Coolers, EWC-2…" and Add 2.1.B "Pressure Water Coolers, EWC-1…".

Specification 237416.13X Packaged, Large-Capacity, Rooftop Air Conditioning Units (PART OF TRANE US COMMUNITIES HVAC EQUIPMENT PACKAGE)
a) Reissued entire section.

SECTION 102239
FOLDING PANEL PARTITIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Manually operated, acoustical panel partitions.

1.2 SUBMITTALS

A. Shop Drawings: For operable panel partitions.

1. Include plans, elevations, sections, attachment details.
2. Indicate stacking and operating clearances. Indicate location and installation requirements for blocking.

B. Samples: For each exposed product and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans, drawn to scale and coordinated with each other, using input from installers of the items involved.

B. Setting Drawings: For embedded items and cutouts required in other work**,** including support-beam, mounting-hole template.

C. Seismic Qualification Certificates: For operable panel partitions, tracks, accessories, and components, from manufacturer.

D. Product Certificates: For each type of operable panel partition.

1.4 CLOSEOUT SUBMITTALS

A. Operation and maintenance data.

1.5 QUALITY ASSURANCE

A. Preparation of the opening shall conform to the criteria set forth per ASTM E557 Standard Practice for Architectural Application and Installation of Operable Partitions

B. The partition STC (Sound Transmission Classification) shall be achieved per the standard test methods ASTM E90.

C. Noise isolation classifications shall be achieved per the standard test methods ASTM E336 and ASTM E413.

D. Noise Reduction Coefficient (NRC) ratings shall be per ASTM C423.

E. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.6 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of operable panel partitions that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Basis of Design Product: provide in compliance with requirements paired operable partition Series 632 manufactured by Hufcor Inc; www.hufcor.com. Upon compliance with all of the criteria specified in this section, Manufacturers wishing to bid products equal to the product specified must submit to the architect 10 days prior to bidding complete data in support of compliance and a list of three past installations of products similar to those listed. The submitting manufacturer guarantees the proposed substituted product complies with the performance items specified and as detailed on the drawings.

2.2 MATERIALS

A. Product to be top supported Series 632 paired panels as manufactured by Hufcor Inc.

1. Panels shall be nominally 3” thick, to 48” in width, and hinged in pairs.

2. Panel faces shall be laminated to appropriate substrate to meet the STC requirement in 2.04 Acoustical Performance.

   a. Optional substrate material: Medium Density Fiberboard

3. Frames shall be of 16 gauge painted steel with integral factory applied aluminum vertical edge and face protection.

4. Vertical sound seals shall be of tongue and groove configuration, ensure panel-to-panel alignment and prevent sound leaks between panels.

5. Horizontal top seals shall be fixed continuous contact dual 4-finger vinyl.

6. Horizontal bottom seals shall be retractable, provide up to 2” nominal operating clearance, and exert downward force when extended.

7. Low profile hinges on basic panels shall be of steel and project no more than 1/4” [6] beyond panel faces. Each pair of panels to have a minimum of three hinges.

B. Weight of the panels shall be 5.7-10.2 lbs. per sq. ft. based on options selected.

C. Suspension system:

1. Track shall be of clear anodized architectural grade extruded aluminum alloy 6063-T6. Track design shall provide precise alignment at the trolley running surfaces and provide integral support for adjoining ceiling, soffit, or plenum sound barrier. Track shall be connected to the structural support by pairs of minimum 3/8” dia. threaded steel hanger rods. Guide rails and/or track sweep seals shall not be required.

a. Each panel shall be supported by one 4-wheeled carrier. Wheels to be of hardened steel ball bearings encased with molded polymer tires.

D. Finishes

1. Face finish shall be:

a. Factory applied reinforced vinyl fabric with woven backing, weighing not less than 15 oz. per lineal yard. Color shall be selected from manufacturer's standard color selectors.

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2. Exposed metal trim and seal color shall be:

a. Lamb's Wool (standard)
b. Gray (standard)

3. Aluminum track shall be clear anodized.

2.3 OPERATION

A. Panels shall be manually moved from the storage area, positioned in the opening, and seals set.

B. Retractable Horizontal Seals

1. Retractable horizontal seals shall be activated by a removable quick-set operating handle located approximately 42" from the floor in the panel edge.
2. All retractable seals in each hinged pair shall be operated simultaneously.
3. Seal activation requires approximately 15 lbs. of force per panel and approximately a 190 degree turn of the removable handle.

C. Final partition closure to be:

1. Lever closure panel with expanding jamb which compensates for minor wall irregularities and provides a minimum of 250 lbs. seal force against the adjacent wall for optimum sound control. The jamb activator shall be located approximately 45" from the floor in the panel face and be accessed from either side of the panel. The jamb is equipped with a mechanical rack and pinion gear drive mechanism and shall extend 4"-6" by turning the removable operating handle.

D. Stack/Store Panels

1. Retract seals and move to storage area. Panels may be stored at either or both ends of the track or in a pocket.

2.4 ACOUSTICAL PERFORMANCE

A. Acoustical performance shall be tested at a laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) and in accordance with ASTM E90 Test Standards. Standard panel construction shall have obtained an STC rating of 43.

PART 3 - EXECUTION

A. Installation. The complete installation of the operable wall system shall be by an authorized factory-trained installer and be in strict accordance with the approved shop drawings and manufacturer's standard printed specifications, instructions, and recommendations.

B. Cleaning

1. All track and panel surfaces shall be wiped clean and free of handprints, grease, and soil.
2. Cartoning and other installation debris shall be removed to onsite waste collection area, provided by others.

C. Training

1. Installer shall demonstrate proper operation and maintenance procedures to owner's representative.
2. Operating handle and owners manuals shall be provided to owner's representative.

END OF SECTION 102239

SECTION 237416.13X
PACKAGED, LARGE-CAPACITY, ROOFTOP AIR-CONDITIONING UNITS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes packaged, large-capacity, rooftop air conditioning units (RTUs) with the following components and accessories:

1. Casings.
2. Fans.
3. Motors.
4. Coils.
5. Refrigerant circuit components.
6. Air filtration.
7. Gas furnaces.
8. Sound-attenuator section.
9. Dampers.
10. Electrical power connections.
11. Controls.
12. Accessories
13. Roof curbs.

1.3 DEFINITIONS

A. DDC: Direct-digital controls.

B. ECM: Electronically commutated motor.

C. Outdoor-Air Refrigerant Coil: Refrigerant coil in the outdoor-air stream to reject heat during cooling operations and to absorb heat during heating operations. "Outdoor air" is defined as the air outside the building or taken from outdoors and not previously circulated through the system.

D. RTU: Rooftop unit. As used in this Section, this abbreviation means packaged, large-capacity, rooftop air-conditioning units. This abbreviation is used regardless of whether the unit is mounted on the roof or on a concrete base on ground.

E. Supply-Air Fan: The fan providing supply air to conditioned space. "Supply air" is defined as the air entering a space from air-conditioning, heating, or ventilating apparatus.

F. Supply-Air Refrigerant Coil: Refrigerant coil in the supply-air stream to absorb heat (provide cooling) during cooling operations and to reject heat (provide heating) during heating operations. "Supply air" is defined as the air entering a space from air-conditioning, heating, or ventilating apparatus.

1.4 ACTION SUBMITTALS

A. Product Data: Include manufacturer's technical data for each RTU, including rated capacities, dimensions, required clearances, characteristics, furnished specialties, and accessories.

B. Shop Drawings:

1. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
2. Include diagrams for power, signal, and control wiring.

1.5 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

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

1.7 MAINTENANCE MATERIAL SUBMITTALS

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

1. Filters: One set of filters for each unit.

1.8 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace all components of RTUs that fail in materials or workmanship within five years from date of Substantial Completion (Parts and Labor for complete unit).

1. Warranty Period for Compressors: Manufacturer's standard, but not less than five years from date of Substantial Completion.
2. Warranty Period for Gas Furnace Heat Exchangers: Manufacturer's standard, but not less than five years from date of Substantial Completion.

3. Warranty Period for Solid-State Ignition Modules: Manufacturer's standard, but not less five years from date of Substantial Completion.
4. Warranty Period for Control Boards: Manufacturer's standard, but not less than fiveyears from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. AHRI Compliance:

1. Comply with AHRI 340/360 for testing and rating energy efficiencies for RTUs.

B. ASHRAE/IES 90.1 Compliance: Applicable requirements in ASHRAE/IES 90.1, Section 6 - "Heating, Ventilating, and Air-Conditioning."

C. NFPA Compliance: Comply with NFPA 90A or NFPA 90B.

D. UL Compliance: Comply with UL 1995.

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

2.2 MANUFACTURERS

A. MANUFACTURER: TRANE

2.3 CAPACITIES AND CHARACTERISTICS

A. Exterior Casing Thickness: 0.052 inch thick.

B. Refer to schedules for capacities.

2.4 CASINGS

A. General Fabrication Requirements for Casings: Formed and reinforced double-wall insulated panels, fabricated to allow removal for access to internal parts and components, with joints between sections sealed.

B. Double-Wall Construction: Fill space between walls with 1 inch foam insulation and seal moisture tight

C. Exterior Casing Material: Galvanized steel with factory-painted finish, with pitched roof panels and knockouts with grommet seals for electrical and piping connections and lifting lugs.

1. Corrosion Protection: 500 hours salt spray test in accordance with ASTM B117.

D. Casing Insulation and Adhesive: Comply with NFPA 90A or NFPA 90B.

1. Materials: ASTM C 1071, Type I.
2. Thickness: 1/2 inch
3. Liner materials shall have air-stream surface coated with an erosion- and temperature-resistant coating or faced with a plain or coated fibrous mat or fabric.
4. Liner Adhesive: Comply with ASTM C 916, Type I.

E. Condensate Drain Pans: Fabricated using stainless 0.025 inches (0.715 mm) thick steel sheet, a minimum of 2 inches (50 mm) deep, and complying with ASHRAE 62.1 for design and construction of drain pans.

1. Double-Wall Construction: Fill space between walls with foam insulation and seal moisture tight.
2. Drain Connections: Threaded nipple.

2.5 FANS

A. Supply-Air Fans: Aluminum or painted-steel wheels, and galvanized- or painted-steel fan scrolls.

1. Direct-Driven Supply-Air Fans: Motor shall be resiliently mounted in the fan inlet.

B. Condenser-Coil Fan: Variable-speed propeller, mounted on shaft of permanently lubricated multispeed motors.

C. Relief-Air Fan: shaft mounted on permanently lubricated motor.

2.6 MOTORS

A. Comply with NEMA MG 1, Design B, medium induction motor, unless otherwise indicated.

B. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.

C. Duty: Continuous duty at ambient temperature of 104 deg F (40 deg C) and at altitude of 3300 feet (1000 m) above sea level.

D. Efficiency: Energy efficient, as defined in NEMA MG 1.

E. Comply with NEMA designation, temperature rating, service factor, and efficiency requirements.

F. Multispeed Motors: Variable torque.

1. For motors with 2:1 speed ratio, consequent pole, single winding.
2. For motors with other than 2:1 speed ratio, separate winding for each speed.

G. Bearings: Regreasable, shielded, antifriction ball bearings suitable for radial and thrust loading.

H. Temperature Rise: Match insulation rating.

I. Insulation: Class F.

J. Code Letter Designation:

1. Motors 15 HP and Larger: NEMA starting Code F or Code G.
2. Motors Smaller than 15 HP: Manufacturer's standard starting characteristic.

K. Motors Used with Reduced-Voltage and Multispeed Controllers: Match wiring connection requirements for controller with required motor leads. Provide terminals in motor terminal box, suited to control method.

L. Motors Used with Variable Frequency Controllers: Ratings, characteristics, and features coordinated with and approved by controller manufacturer.

1. Windings: Copper magnet wire with moisture-resistant insulation varnish, designed and tested to resist transient spikes, high frequencies, and short time rise pulses produced by pulse-width modulated inverters.
2. Energy- and Premium-Efficient Motors: Class B temperature rise; Class F insulation.
3. Inverter-Duty Motors: Class F temperature rise; Class H insulation.

2.7 COILS

A. Supply-Air Refrigerant Coil:

1. Copperplate fin and seamless copper tube in steel casing with equalizing-type vertical distributor.
2. Coil Split: Interlaced.
3. Condensate Drain Pan: Stainless steel formed with pitch and drain connections

B. Outdoor-Air Refrigerant Coil:

1. Aluminum -plate fin and seamless copper tube in steel casing with equalizing-type vertical distributor.

C. Hot-Gas Reheat Refrigerant Coil:

1. Aluminum -plate fin and seamless copper tube in steel casing with equalizing-type vertical distributor.
2. Baked phenolic coating.

D. Heating Hot Water Hydronic Coil:

1. Aluminum -plate fin and seamless copper tube in steel casing with equalizing-type distributor.

2. Drain connection for coil drain down.

3. All components contained within RTU casing or curb.

4. Factory assembled and tested.

2.8 REFRIGERANT CIRCUIT COMPONENTS

A. Number of Refrigerant Circuits:

B. Compressor: Hermetic, variable speed scroll or digital refer to schedule, mounted on vibration isolators; with internal overcurrent and high-temperature protection, internal pressure relief, and crankcase heater.

C. Refrigeration Specialties:

1. Refrigerant: R-410A.
2. Expansion valve with replaceable thermostatic element.
3. Refrigerant filter/dryer.
4. Manual-reset high-pressure safety switch.
5. Automatic-reset low-pressure safety switch.
6. Minimum off-time relay.
7. Automatic-reset compressor motor thermal overload.
8. Brass service valves installed in compressor suction and liquid lines.

D. Minimum arrestance and a minimum efficiency reporting value according to ASHRAE 52.2.

E. Pleated Panel Filters:

1. Description: Factory-fabricated, self-supported, extended-surface, pleated, panel-type, disposable air filters with holding frames.
2. Filter Unit Class: UL 900
3. Media: Interlaced glass or synthetic fibers coated with nonflammable adhesive.

    a. Adhesive: As recommended by air-filter manufacturer and with a VOC content of 80 g/L or less.

2.9 GAS FURNACES

A. Description: Factory assembled, piped, and wired; complying with ANSI Z21.47/CSA 2.3 and NFPA 54.

1. CSA Approval: Designed and certified by and bearing label of CSA.

B. Burners: Stainless steel.

1. Fuel: Natural gas.
2. Ignition: Electronically controlled electric spark or hot-surface igniter with flame sensor.

C. Heat-Exchanger and Drain Pan: Stainless steel.

D. Venting: Gravity vented

E. Safety Controls:

1. Gas Control Valve: Modulating
2. Gas Train: Single-body, regulated, redundant, 24-V ac gas valve assembly containing pilot solenoid valve, pilot filter, pressure regulator, pilot shutoff, and manual shutoff.

2.10 DAMPERS

A. Outdoor-Air Damper: Linked damper blades, with motorized damper filter.

B. Outdoor- and Return-Air Mixing Dampers: Opposed-blade galvanized-steel dampers mechanically fastened to cadmium plated for galvanized-steel operating rod in reinforced cabinet. Connect operating rods with common linkage and interconnect so dampers operate simultaneously.

1. Leakage Rate: As required by ASHRAE/IES 90.1.
2. Damper Motor: Modulating with adjustable minimum position.
3. Relief-Air Damper: Gravity actuated or motorized, as required by ASHRAE/IES 90.1, with bird screen and hood.

2.11 ELECTRICAL POWER CONNECTIONS

A. RTU shall have a single connection of power to unit with unit-mounted disconnect switch accessible from outside unit and control-circuit transformer with built-in overcurrent protection.

2.12 CONTROLS

A. Basic Unit Controls:

1. Control-voltage transformer.
2. Wall-mounted thermostat or sensor with the following features:

    a. Concealed set point.
    b. Data entry and access port to input temperature and humidity set points, occupied and unoccupied periods, and output room temperature and humidity, supply-air temperature, operating mode, and status.

3. Unit Mounted Annunciator Panel for Each Unit:

    a. Lights to indicate power on, cooling, heating, fan running, filter dirty, and unit alarm or failure.
    b. DDC controller or programmable timer and interface with HVAC instrumentation and control system.
    c. Digital display of outdoor-air temperature, supply-air temperature, return-air temperature, economizer damper position, indoor-air quality, and control parameters.

B. DDC Controller:

1. Controller shall have volatile-memory backup.
2. Safety Control Operation:

    a. Include ventilation over ride modules which will provide fire safety interlock routines when energized.

3. Scheduled Operation: By BMS
4. Unoccupied Period:

    a. Heating Setback: 10 deg F
    b. Cooling Setback: System off.
    c. Override Operation: Two hours.

5. Supply Fan Operation:

    a. Occupied Periods: Run fan continuously.
    b. Unoccupied Periods: Cycle fan to maintain setback temperature.

6. Refrigerant Circuit Operation:

    a. Occupied Periods: Cycle or stage compressors to match compressor output to cooling load to maintain discharge temperature and humidity. Cycle condenser fans to maintain maximum hot-gas pressure. Operate low-ambient control kit to maintain minimum hot-gas pressure.

7. Hot Water Coils

8. Economizer Outdoor-Air Damper Operation:

    a. Morning warm up, cool down cycles.
    b. Occupied Periods: Open to 10 percent fixed minimum intake, and maximum 100 percent of the fan capacity. Controller shall permit air-side economizer operation when outdoor air is less than 60 deg F. Use mixed-air temperature and select between outdoor-air and return-air enthalpy to adjust mixing dampers. Start relief-air fan with end switch on outdoor-air damper. During economizer cycle operation, lock out cooling.
    c. Unoccupied Periods: Close outdoor-air damper and open return-air damper.

9. Carbon Dioxide Sensor Operation:

    a. Occupied Periods: Reset minimum outdoor-air ratio down to minimum 10 percent to maintain maximum 1000-ppm (adjustable) concentration.
    b. Unoccupied Periods: Close outdoor-air damper and open return-air damper.

10. Terminal-Unit Relays:

    a. Provide heating- and cooling-mode changeover relays compatible with terminal control system required in Section 233600 "Air Terminal Units" and Section 230923 "Direct Digital Control (DDC) System for HVAC."

C. Interface Requirements for HVAC Instrumentation and Control System:

1. Interface relay for scheduled operation.
2. Interface relay to provide indication of fault at the central workstation and diagnostic code storage.
3. Provide BACnet compatible interface for central HVAC control workstation for the following:

    a. Adjusting set points.
    b. Monitoring supply fan start, stop, and operation.
    c. Inquiring data to include outdoor-air damper position, supply- and room-air temperature and humidity.
    d. Monitoring occupied and unoccupied operations.
    e. Monitoring constant and variable motor loads.
    f. Monitoring variable-frequency drive operation.
    g. Monitoring cooling load.
    h. Monitoring economizer cycles.
    i. Monitoring air-distribution static pressure and ventilation air volume.

2.13 ACCESSORIES

A. Duplex, 115-V, ground-fault-interrupter outlet with 15-A overcurrent protection. Include transformer if required

B. Filter differential pressure switch with sensor tubing on either side of filter. Set for final filter pressure loss.

C. Remote potentiometer to adjust minimum economizer damper position.

D. Factory- or field-installed demand-controlled ventilation.

E. Safeties:

1. Condensate overflow switch.
2. Phase-loss & reversal protection.
3. High and low pressure control.

F. Coil guards of painted, galvanized-steel wire.

G. Hail guards of galvanized steel, painted to match casing.

H. Door switches to disable heating or reset setpoint when open.

I. Outdoor air intake weather hood with moisture eliminator.

J. Service Lights and Switch: Factory installed in fan and coil sections with weatherproof cover. Factory wire lights to a single-point field connection.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of RTUs.

B. Examine roughing-in for RTUs to verify actual locations of piping and duct connections before equipment installation.

C. Examine roofs for suitable conditions where RTUs will be installed.

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

3.2 INSTALLATION

A. Roof Curb: Install on roof structure or concrete base, level and secure, according to NRCA's "NRCA Roofing Manual: Membrane Roof Systems." Install RTUs on curbs and coordinate roof penetrations and flashing with roof construction specified in Section 077200 "Roof Accessories." Secure RTUs to upper curb rail, and secure curb base to roof framing or concrete base with anchor bolts.

B. Unit Support: Install unit level on structural curbs. Coordinate wall penetrations and flashing with wall construction. Secure RTUs to structural support with anchor bolts.

3.3 CONNECTIONS

A. Install condensate drain, minimum connection size, with trap and indirect connection to nearest roof drain or area drain.

B. Install piping adjacent to RTUs to allow service and maintenance.

1. Gas Piping: Comply with applicable requirements in Section 231123 "Facility Natural-Gas Piping." Connect gas piping to burner, full size of gas train inlet, and connect with union and shutoff valve with sufficient clearance for burner removal and service.

C. Duct installation requirements are specified in other HVAC Sections. Drawings indicate the general arrangement of ducts. The following are specific connection requirements:

1. Install ducts to termination at top of roof curb.
2. Remove roof decking only as required for passage of ducts. Do not cut out decking under entire roof curb.
3. Connect supply ducts to RTUs with flexible duct connectors specified in Section 233300 "Air Duct Accessories."
4. Install return-air duct continuously through roof structure.

3.4 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.

B. Perform the following tests and inspections with the assistance of a factory-authorized service representative:

1. After installing RTUs and after electrical circuitry has been energized, test units for compliance with requirements.
2. Inspect for and remove shipping bolts, blocks, and tie-down straps.
3. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. RTU will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

3.5 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

B. Complete installation and startup checks according to manufacturer's written instructions.

1. Inspect for visible damage to unit casing.
2. Inspect for visible damage to furnace combustion chamber.
3. Inspect for visible damage to compressor, coils, and fans.
4. Inspect internal insulation.
5. Verify that labels are clearly visible.
6. Verify that clearances have been provided for servicing.
7. Verify that controls are connected and operable.
8. Verify that filters are installed.
9. Clean condenser coil and inspect for construction debris.
10. Clean furnace flue and inspect for construction debris.
11. Connect and purge gas line.
12. Remove packing from vibration isolators.
13. Inspect operation of barometric relief dampers.
14. Verify lubrication on fan and motor bearings.
15. Inspect fan-wheel rotation for movement in correct direction without vibration and binding.
16. Start unit according to manufacturer's written instructions.

    a. Start refrigeration system.
    b. Do not operate below recommended low-ambient temperature.
    c. Complete startup sheets and attach copy with Contractor's startup report.

17. Inspect and record performance of interlocks and protective devices; verify sequences.
18. Operate unit for an initial period as recommended or required by manufacturer.

19. Perform the following operations for both minimum and maximum firing. Adjust burner for peak efficiency.

    a. Measure gas pressure on manifold.
    b. Inspect operation of power vents.
    c. Measure combustion-air temperature at inlet to combustion chamber.
    d. Measure flue-gas temperature at furnace discharge.
    e. Perform flue-gas analysis. Measure and record flue-gas carbon dioxide and oxygen concentration.
    f. Measure supply-air temperature and volume when burner is at maximum firing rate and when burner is off. Calculate useful heat to supply air.

20. Calibrate thermostats.
21. Adjust and inspect high-temperature limits.
22. Inspect outdoor-air dampers for proper stroke and interlock with return-air dampers.
23. Start refrigeration system and measure and record the following when ambient is a minimum of 15 deg F (8 deg C) above return-air temperature:

    a. Coil leaving-air, dry- and wet-bulb temperatures.
    b. Coil entering-air, dry- and wet-bulb temperatures.
    c. Outdoor-air, dry-bulb temperature.
    d. Outdoor-air-coil, discharge-air, dry-bulb temperature.

24. Inspect controls for correct sequencing of heating, mixing dampers, refrigeration, and normal and emergency shutdown.
25. Measure and record the following minimum and maximum airflows. Plot fan volumes on fan curve.

    a. Supply-air volume.
    b. Return-air volume.
    c. Relief-air volume.
    d. Outdoor-air intake volume.

26. Simulate maximum cooling demand and inspect the following:

    a. Compressor refrigerant suction and hot-gas pressures.
    b. Short circuiting of air through condenser coil or from condenser fans to outdoor-air intake.

27. Verify operation of remote panel including pilot-light operation and failure modes. Inspect the following:

    a. High-temperature limit on gas-fired heat exchanger.
    b. Low-temperature safety operation.
    c. Filter high-pressure differential alarm.
    d. Economizer to minimum outdoor-air changeover.
    e. Relief-air fan operation.
    f. Smoke and firestat alarms.

28. After startup and performance testing and prior to Substantial Completion, replace existing filters with new filters.

3.6 CLEANING AND ADJUSTING

A. Occupancy Adjustments: When requested within 12 months from date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.

B. After completing system installation and testing, adjusting, and balancing RTU and air-distribution systems, clean filter housings and install new filters.

3.7 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain RTUs. Provide two meetings for training.

END OF SECTION 237416.13

Door/Hardware Index

Mark #	HWSet #
HERIT-233A/B	HERITAGE 01
HERIT-236	HERITAGE 02
HS-01	HS-01
HS-02	HS-03
HS-03	HS-04
HS-04 - 2 PAIRS OF DOORS	HS-05
HS-05	HS-01
HS-06	HS-01
HS-07	HS-01
HS-08	HS-01
HS-NW BOILER	HS-01
HS-NW CORRIDOR	HS-02
LBTY-A100A	LBTY-06
LBTY-A100B	LBTY-07
LBTY-A100C	LBTY-08
LBTY-A100D	LBTY-09
LBTY-A104	LBTY-11
LBTY-A106	LBTY-05
LBTY-A108	LBTY-11
LBTY-A111	LBTY-03
LBTY-A114	LBTY-12
LBTY-A115	LBTY-12
LBTY-A117A	LBTY-10
LBTY-A117B	LBTY-10
LBTY-A123	LBTY-03
LBTY-A126	LBTY-03
LBTY-A127A	LBTY-03
LBTY-A127B	LBTY-03
LBTY-A127C	LBTY-03
LBTY-A129A	LBTY-03
LBTY-A129B	LBTY-03
LBTY-A131	LBTY-03
LBTY-A132	LBTY-03
LBTY-A134	LBTY-03

Mark #	HWSet #
LBTY-A135	LBTY-01
LBTY-A136A	LBTY-01
LBTY-A136B	LBTY-03
LBTY-A137	LBTY-01
LBTY-A139	LBTY-01
LBTY-A141	LBTY-03
LBTY-A142	LBTY-03
LBTY-A145	LBTY-03
LBTY-A148A/B	LBTY-13
LBTY-A148C/D	LBTY-14
LBTY-A149	LBTY-01
LBTY-A152	LBTY-02
LBTY-A153	LBTY-02
LBTY-A161	LBTY-03
LBTY-A163	LBTY-03
LBTY-A164A	LBTY-03
LBTY-A164B	LBTY-03
LBTY-B104A	LBTY-15
LBTY-B104B	LBTY-07
LBTY-B104C	LBTY-14
LBTY-B104D	LBTY-14
LBTY-B155	LBTY-01
LBTY-B156	LBTY-12
LBTY-C101A	LBTY-03
LBTY-C102	LBTY-20
LBTY-C103	LBTY-20
LBTY-C104	LBTY-20
LBTY-C105	LBTY-20
LBTY-C117A	LBTY-17
LBTY-C117B	LBTY-17
LBTY-C117C	LBTY-17
LBTY-C117D	LBTY-16
LBTY-C117E	LBTY-21
LBTY-C121A	LBTY-01
LBTY-C121B/C	LBTY-19
LBTY-C143	LBTY-01
LBTY-C151	LBTY-01
LBTY-C152	LBTY-01
LBTY-C153	LBTY-02
LBTY-C157	LBTY-20

Mark #	HWSet #
LBTY-C158	LBTY-20
LBTY-C159	LBTY-20
LBTY-D101	LBTY-01
LBTY-D102	LBTY-03
LBTY-D103	LBTY-02
LBTY-D104	LBTY-04
LBTY-D105	LBTY-04
LBTY-D106	LBTY-01
LBTY-D107	LBTY-04
LBTY-D110A	LBTY-10
LBTY-D110B	LBTY-10
LBTY-D122	LBTY-02
LBTY-D127A	LBTY-03
LBTY-D127B	LBTY-03
LBTY-D131	LBTY-04
LBTY-D132	LBTY-04
LBTY-D136A/B	LBTY-13
LBTY-D136C/D	LBTY-14
LBTY-D137	LBTY-02
LBTY-D138	LBTY-03
LBTY-D139	LBTY-04
LBTY-D140	LBTY-02
LBTY-D141	LBTY-18
LBTY-D142	LBTY-04
LBTY-D144	LBTY-01
LBTY-D145	LBTY-01
MS-A116	MS-03
MS-A118	MS-02
MS-A123	MS-03
MS-A127	MS-03
MS-A128	MS-03
MS-A145	MS-02
MS-A151	MS-02
MS-A152	MS-02
MS-A154	MS-02
MS-A155	MS-02
MS-A156	MS-03
MS-B108	MS-04
MS-B133	MS-03
MS-B134	MS-02
MS-B137	MS-01

Mark #	HWSet #
MS-B138	MS-01
MS-B147	MS-02
MS-B149	MS-03
MS-B150	MS-02
MS-B151	MS-02
MS-B152	MS-02
MS-B153	MS-03
MS-B156	MS-01
MS-B157A	MS-03
MS-B157B	MS-03
MS-B157C	MS-03
MS-C107	MS-05
MS-C108	MS-03
MS-C109	MS-03
MS-C110	MS-02
MS-C126A	MS-05
MS-C126B	MS-05
MS-C126C	MS-05
MS-C127	MS-03
MS-C130	MS-03
MS-C131	MS-06
MS-C132	MS-06
MS-C133	MS-06
MS-C134	MS-06
MS-C136	MS-02
MS-C137A	MS-05
MS-C137B	MS-05
MS-C137C	MS-05
MS-C138	MS-02
MS-C142	MS-03
MS-C143A	MS-03
MS-C143B	MS-03
MS-C143C	MS-03
MS-C144	MS-03
MS-C145A	MS-07
MS-C145B	MS-07
MS-C145C	MS-07
MS-C145D	MS-05
MS-C145E	MS-05
MS-D102	MS-02
MS-D105	MS-02
MS-E104A	MS-03
MS-E104B	MS-03

Mark #	HWSet #
MS-E105A	MS-03
MS-E105B	MS-03
MS-E110	MS-08
MS-E111	MS-03
MS-E113	MS-02
MS-E115	MS-02
MS-E116A	MS-03
MS-E116B	MS-03
MS-E117	MS-05
MS-E118	MS-02
MS-E119	MS-03
MS-F100	MS-01
MS-F103	MS-02
MS-F106	MS-04
MS-F108	MS-04
MS-F109	MS-01
MS-F113	MS-03
MS-F114	MS-03
MS-F117A	MS-03
MS-F117B	MS-03
MS-F118	MS-02
MS-F128	MS-02
MS-F131	MS-02
MS-F138	MS-02
MS-F139	MS-03
MS-F146	MS-02
MS-H102	MS-02
MS-H104A	MS-03
MS-H104B	MS-03
MS-H105	MS-03
MS-H106	MS-02
MS-H112	MS-02
MS-H118	MS-02
MS-H122	MS-02
MS-H127A	MS-03
MS-H127B	MS-03
MS-H129	MS-02
MS-H130	MS-02
MS-L111A	MS-02
MS-L111B	MS-02
MS-L112	MS-03
MS-L113	MS-03
MS-L114	MS-03

Mark #	HWSet #
MS-L128	MS-03
WOOD-541A	WOODLAND 01

SECTION 087100
DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

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

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

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

C. Related Sections:

1. Division 08 Section “Door Hardware Schedule”.
2. Division 08 Section “Hollow Metal Doors and Frames”.
3. Division 08 Section “Flush Wood Doors”.
4. Division 08 Section “Integrated Door Opening Assemblies”.

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

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. Michigan Building Code 2012, Local Amendments.

E. Standards: All hardware specified herein shall comply with the following industry standards:

1. ANSI/BHMA Certified Product Standards - A156 Series
2. UL10C – Positive Pressure Fire Tests of Door Assemblies

1.3 SUBMITTALS

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

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

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

3. Content: Include the following information:

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

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

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
b. Complete (risers, point-to-point) access control system block wiring diagrams.
c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Proof of Certification: Provide copy of manufacturer(s) official certification or accreditation document indicating proof of status as a qualified installer of Windstorm assemblies.

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

F. Informational Submittals:

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

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

1.4 QUALITY ASSURANCE

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

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

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

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

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

2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

E. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

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

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

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

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

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

1.5 DELIVERY, STORAGE, AND HANDLING

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

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

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

1.6 COORDINATION

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

B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

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

1.7 WARRANTY

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

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

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

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods:

1. Two years for mortise locks and latches.
2. Ten years for manual surface door closer bodies.
3. Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

C. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

D. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

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

1. Quantity: Provide the following hinge quantity, unless otherwise indicated:

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

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

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

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

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

4. Hinge Options: Comply with the following where indicated in the Hardware Sets or on Drawings:

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

5. Acceptable Manufacturers:

a. Ives.
b. McKinney Products
c. Hager.

B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Acceptable Manufacturers:

a. Ives.
b. Pemko Manufacturing
c. Stanley Hardware

2.3 POWER TRANSFER DEVICES

A. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

1. Acceptable Manufacturers:

a. Securitron (SU) - EL-CEPT Series.
b. Von Duprin (VD) - EPT-10 Series.

2.4 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified.

1. Manual flush bolts to be furnished with top rod of sufficient length to allow bolt location approximately six feet from the floor.

2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8” in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.

5. Acceptable Manufacturers:

    a. Ives.
    b. Rockwood Manufacturing .
    c. Trimco.

2.5 CYLINDERS AND KEYING

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

B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.

C. Cylinders: Original manufacturer cylinders complying with the following:

1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
5. Keyway: Match Facility Standard.
6. All cylinders to have interchangeable cores.

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

1. Conduct specified "Keying Conference" to define and document keying system instructions and requirements.
2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
3. Existing System: Key locks to Owner's existing system or as directed by Owner.

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

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).
4. Construction Control Keys (where required): Two (2).

F. Construction Keying: Provide construction master keyed cylinders.

G. Construction Keying: Provide temporary keyed construction cores.

H. Key Registration List (Bitting List):

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

2.6 EXIT DEVICES

A. ANSI Grade 1, UL Listed panic hardware:
1. Acceptable Manufacturers:
a. Von Duprin 98/35 Series, No Substitute

2.7 MECHANICAL LOCKS AND LATCHING DEVICES

A. Mortise Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.13, Series 1000, Operational Grade 1 certified. Locksets are to be manufactured with a corrosion resistant steel case and be field-reversible for handing without disassembly of the lock body.

1. Acceptable Manufacturers:

a. Schlage (SC) – L9000 Series/ND series as specified in sets.
b. No Substitution.

2.8 LOCK AND LATCH STRIKES

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

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

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.5.
4. Dustproof Strikes: BHMA A156.16.

2.9 ELECTRIC STRIKES

A. Standard Electric Strikes: Heavy duty, cylindrical and mortise lock electric strikes conforming to ANSI/BHMA A156.31, Grade 1, UL listed for both Burglary Resistance and for use on fire

rated door assemblies. Stainless steel construction with dual interlocking plunger design tested to exceed 3000 lbs. of static strength and 350 ft-lbs. of dynamic strength. Strikes tested for a minimum 1 million operating cycles. Provide strikes with 12 or 24 VDC capability and supplied standard as fail-secure unless otherwise specified. Option available for latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike.

1. Acceptable Manufacturers:

    a. HES (HS).
    b. Von Duprin (VO).

2.10 DOOR CLOSERS

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

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.

2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.

3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.

4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.

5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates, and through-bolt and security type fasteners as required for proper installation.

7. **Through-bolt closers on all wood doors.**

B. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.

1. Acceptable Manufacturers:

    a. LCN Closers (LC) – 4040XP Series, No Substitute.

2.11 SURFACE MOUNTED HOLDERS

A. Electromagnetic Door Holders: Certified ANSI A156.15 electromagnetic door holder/releases with a minimum 20 to 40 pounds holding power and single coil construction able to accommodate.12VDC, 24VAC, 24VDC and 120VAC. Coils to be independently wound, employing an integral fuse and armatures to include a positive release button.

1. Acceptable Manufacturers:

    a. LCN Door Closers (LC) - SEM7800 Series.
    b. Rixson (RF) - 980/990 Series.

2.12 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.

2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1” LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:

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

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

5. Acceptable Manufacturers:

    a. Ives.
    b. Rockwood Manufacturing .
    c. Trimco

2.13 DOOR STOPS AND HOLDERS

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

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

1. Acceptable Manufacturers:

    a. Ives
    b. Trimco
    c. Rockwood Manufacturing (RO).

2.14 ARCHITECTURAL SEALS

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

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

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

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

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and UBC 7-2, Fire Tests of Door Assemblies.

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

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

F. Acceptable Manufacturers:

1. National Guard Products
2. Pemko Manufacturing .
3. Reese Enterprises, Inc.
4. Zero.

2.15 ELECTRONIC ACCESSORIES

A. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.

1. Acceptable Manufacturers:

    a. Schlage Electronics

2.16 FABRICATION

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

2.17 FINISHES

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

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

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

PART 3 - EXECUTION

3.1 EXAMINATION

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

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

3.2 PREPARATION

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

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

3.3 INSTALLATION

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

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

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

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

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

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

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

3.4 FIELD QUALITY CONTROL

A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

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

3.6 CLEANING AND PROTECTION

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

B. Clean adjacent surfaces soiled by door hardware installation.

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

3.7 DEMONSTRATION

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

3.8 DOOR HARDWARE SCHEDULE

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

B. Manufacturer’s Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. MR - Markar
4. RF - Rixson
5. DO - Dorma Door Controls Inc
6. RO - Rockwood
7. VD - Von Duprin
8. SC - Schlage
9. SU - Securitron
10. AD - Adams Rite
11. RI - Rite Door
12. HS - HES
13. GJ - Glynn-Johnson
14. LC - LCN Closers

Hardware Schedule

Heritage

Hardware Group No. HERITAGE 01

For use on mark/door #(s):
HERIT-233A/B

Each To Have:

Qty	Description	Catalog Number	Finish	Mfr

2	EA	CONT. HINGE	112HD	628	IVE
1	EA	KEYED REMOVABLE MULLION	KR4954	689	VON
2	EA	PANIC HARDWARE	98-EO	626	VON
1	EA	MORTISE CYLINDER	20-062	626	SCH
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	THRESHOLD	655A-MSLA-10	A	ZER
1	EA		WEATHERSTRIP BY DOOR/FRAME MANUFACTURER		

Hardware Group No. HERITAGE 02

For use on mark/door #(s):
HERIT-236

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	98-EO	626	VON
1	EA	FLUSH PULL	BY DOOR MANUFACTURER		
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	THRESHOLD	655A-MSLA-10	A	ZER
1	EA		WEATHERSTRIP BY DOOR/FRAME MANUFACTURER		

High School

Hardware Group No. HS-01

For use on mark/door #(s):
HS-01 HS-05 HS-06 HS-07 HS-08 HS-NW BOILER

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	90 DEG OFFSET PULL	8190HD 12" O	630	IVE
	EA		REMOVE EXISTING TRIM AND PATCH/FILLS HOLES AS REQU		

Hardware Group No. HS-02

For use on mark/door #(s):
HS-NW
CORRIDOR

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	STOREROOM LOCK	L9080R 03N	626	SCH
1	EA	ELECTRIC STRIKE	6211 FSE CON	630	VON

BALANCE OF HARDWARE EXISTING

Hardware Group No. HS-03

For use on mark/door #(s):
HS-E100A

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
6	EA	HW HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
2	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	KEYED REMOVABLE MULLION	KR4954	689	VON
1	EA	ELEC PANIC HARDWARE	QEL-98-EO-CON	626	VON
1	EA	ELEC PANIC HARDWARE	QEL-98-NL-OP-110WD-CON	626	VON
1	EA	RIM CYLINDER	20-057	626	SCH
1	EA	MORTISE CYLINDER	20-062	626	SCH
2	EA	90 DEG OFFSET PULL	8190HD 12" O	630	IVE
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
2	EA	WIRE HARNESS	CON-32 Electrified Device to Power Transfer (evaluate conditions and modify wire length as required)		VON
1	EA	POWER SUPPLY	PS902 900-2RS	LGR	SCE

Hardware Group No. HS-04

For use on mark/door #(s):
HS-E100B

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
6	EA	HW HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
2	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	KEYED REMOVABLE MULLION	KR4954	689	VON
2	EA	ELEC PANIC HARDWARE	QEL-98-EO-CON	626	VON
1	EA	MORTISE CYLINDER	20-062	626	SCH
2	EA	90 DEG OFFSET PULL	8190HD 12" O	630	IVE
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
2	EA	WIRE HARNESS	CON-32 Electrified Device to Power Transfer (evaluate conditions and modify wire length as required)		VON
1	EA	POWER SUPPLY	PS902 900-2RS	LGR	SCE

Hardware Group No. HS-05

For use on mark/door #(s):
HS-E102

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
6	EA	HW HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	POWER TRANSFER	EPT10 CON	689	VON
1	EA	PANIC HARDWARE	9849-NL-LBL	626	VON
1	EA	ELEC PANIC HARDWARE	QEL-9849-DT-LBL-CON	626	VON
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
1	EA	WIRE HARNESS	CON-32 Electrified Device to Power Transfer (evaluate conditions and modify wire length as required)		VON
1	EA	POWER SUPPLY	PS902 900-2RS CARD READER BY OTHERS	LGR	SCE

Liberty

Hardware Group No. LBTY-01

For use on mark/door #(s):

LBTY-A135	LBTY-A136A	LBTY-A137	LBTY-A139	LBTY-A149	LBTY-B155
LBTY-C121A	LBTY-C143	LBTY-C151	LBTY-C152	LBTY-D101	LBTY-D106
LBTY-D144	LBTY-D145				

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM SECURITY	L9071R 03A	626	SCH
1	EA	WALL STOP	WS33	626	IVE

Verify door prep and hardware requirements in field prior to ordering.

Hardware Group No. LBTY-02

For use on mark/door #(s):

LBTY-A152	LBTY-A153	LBTY-C153	LBTY-D103	LBTY-D122	LBTY-D137
LBTY-D140					

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	STOREROOM LOCK	L9080R 03A	626	SCH
1	EA	WALL STOP	WS33	626	IVE

Verify door prep and hardware requirements in field prior to ordering.

Hardware Group No. LBTY-03

For use on mark/door #(s):

LBTY-A111	LBTY-A123	LBTY-A126	LBTY-A127A	LBTY-A127B	LBTY-A127C
LBTY-A129A	LBTY-A129B	LBTY-A131	LBTY-A132	LBTY-A134	LBTY-A136B
LBTY-A141	LBTY-A142	LBTY-A145	LBTY-A161	LBTY-A163	LBTY-A164A
LBTY-A164B	LBTY-C101A	LBTY-D102	LBTY-D127A	LBTY-D127B	LBTY-D138

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1 4.5 X 4.5 NRP	652	IVE
1	EA	CLASSROOM LOCK	L9070R 03A	626	SCH
1	EA	WALL STOP	WS33	626	IVE

Verify door prep and hardware requirements in field prior to ordering.

Hardware Group No. LBTY-04

For use on mark/door #(s):

LBTY-D104	LBTY-D105	LBTY-D107	LBTY-D131	LBTY-D132	LBTY-D139
LBTY-D142					

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA	PRIVACY LOCK	L9040 03A L583-363	626	SCH
1	EA	OH STOP	90S	630	GLY

Verify door prep and hardware requirements in field prior to ordering.

Hardware Group No. LBTY-05

For use on mark/door #(s):

LBTY-A106

Each To Have:

Qty	Description	Catalog Number	Finish	Mfr

6	EA	HW HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	KEYED REMOVABLE MULLION	KR4954	689	VON
2	EA	PANIC HARDWARE	98-L-2SI-03	626	VON
4	EA	RIM CYLINDER	20-057	626	SCH
1	EA	MORTISE CYLINDER	20-062	626	SCH
2	EA	SURFACE CLOSER	4040XP	689	LCN
2	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS	630	IVE
			BALANCE OF HARDWARE EXISTING		

Verify door prep, fire rating, and hardware requirements in field prior to ordering.

Hardware Group No. LBTY-06

For use on mark/door #(s):
LBTY-A100A

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112HD	628	IVE
1	EA	KEYED REMOVABLE MULLION	KR4954	689	VON
1	EA	PANIC HARDWARE	CD-98-EO	626	VON
1	EA	PANIC HARDWARE	CD-98-NL-OP-110MD	626	VON
1	EA	RIM CYLINDER	20-057	626	SCH
3	EA	MORTISE CYLINDER	20-062	626	SCH
2	EA	ELECTRIC STRIKE	6300 FSE	630	VON
2	EA	90 DEG OFFSET PULL	8190HD 12" O	630	IVE
2	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	SURF. AUTO OPERATOR	4642 WMS	689	LCN
2	EA	ACTUATOR, WALL MOUNT	8310-853T	630	LCN
2	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	655A-MSLA-10	A	ZER
1	EA	POWER SUPPLY	PS904 900-2RS 900-2RS - Doors 100A, 100B	LGR	SCE
			CARD READER BY OTHERS		
1	EA		WEATHERSTRIP BY DOOR/FRAME MANUFACTURER		

Doors locked/unlocked on schedule by access control system. Card reader or key override allows access after hours. ADA operator opens doors when unlocked by access control schedule/card reader. Free egress at all times. RX and Door Contacts by others.

Hardware Group No. LBTY-07

For use on mark/door #(s):

LBTY-A100B LBTY-B104B

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112HD	628	IVE
1	EA	KEYED REMOVABLE MULLION	KR4954	689	VON
2	EA	PANIC HARDWARE	CD-98-EO	626	VON
1	EA	RIM CYLINDER	20-057	626	SCH
3	EA	MORTISE CYLINDER	20-062	626	SCH
2	EA	ELECTRIC STRIKE	6300 FSE	630	VON
2	EA	90 DEG OFFSET PULL	8190HD 12" O	630	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP EDA	689	LCN
2	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	655A-MSLA-10	A	ZER
1	EA		WEATHERSTRIP BY DOOR/FRAME MANUFACTURER		

Doors locked/unlocked on schedule by access control system. Free egress at all times. RX and Door Contacts by others.

Hardware Group No. LBTY-08

For use on mark/door #(s):
LBTY-A100C

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112HD	628	IVE
1	EA	KEYED REMOVABLE MULLION	KR4954	689	VON
1	EA	PANIC HARDWARE	CD-98-EO	626	VON
1	EA	PANIC HARDWARE	CD-98-NL-OP-110MD	626	VON
1	EA	RIM CYLINDER	20-057	626	SCH
3	EA	MORTISE CYLINDER	20-062	626	SCH
2	EA	ELECTRIC STRIKE	6300 FSE	630	VON
2	EA	90 DEG OFFSET PULL	8190HD 12" O	630	IVE
2	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	SURF. AUTO OPERATOR	4642 WMS	689	LCN
2	EA	ACTUATOR, WALL MOUNT	8310-853T	630	LCN
1	EA	POWER SUPPLY	PS904 900-2RS 900-2RS - Doors 100C, 100D CARD READER BY OTHERS	LGR	SCE

Doors locked/unlocked on schedule by access control system. Card reader or key override allows access after hours. ADA operator opens doors when unlocked by access control schedule/card reader. Free egress at all times. RX and Door Contacts by others.

Hardware Group No. LBTY-09

For use on mark/door #(s):
LBTY-A100D

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112HD	628	IVE
1	EA	KEYED REMOVABLE MULLION	KR4954	689	VON
2	EA	PANIC HARDWARE	CD-98-EO	626	VON
1	EA	RIM CYLINDER	20-057	626	SCH
3	EA	MORTISE CYLINDER	20-062	626	SCH
2	EA	ELECTRIC STRIKE	6300 FSE	630	VON
2	EA	90 DEG OFFSET PULL	8190HD 12" O	630	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP EDA	689	LCN

Doors locked/unlocked on schedule by access control system. Free egress at all times. RX and Door Contacts by others.

Hardware Group No. LBTY-10

For use on mark/door #(s):
LBTY-A117A LBTY-A117B LBTY-D110A LBTY-D110B

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HW HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	PANIC HARDWARE	98-DT	626	VON
1	EA	MAGNETIC LOCK	M490	628	SCE
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33	626	IVE
1	EA	POWER SUPPLY	PS902 900-2RS FA900 - 1 power supply for door 117A and 117B CARD READER BY OTHERS	LGR	SCE

For Doors 117A/B free egress in both directions. Magnetic locks tied to access control system will restrict access in both directions based on access control scheduling/programming. Card reader on both sides will allow access if doors are locked. Magnetic locks will release on signal from fire alarm system.

Hardware Group No. LBTY-11

For use on mark/door #(s):
LBTY-A104 LBTY-A108

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
6	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	SET	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	DUST PROOF STRIKE	DP2	626	IVE
1	EA	STOREROOM LOCK	L9080R 03A	626	SCH
2	EA	OH STOP	90S	630	GLY

Hardware Group No. LBTY-12

For use on mark/door #(s):
LBTY-A114 LBTY-A115 LBTY-B156

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
3	EA	HW HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	PUSH PLATE	8200 6" X 16"	630	IVE
1	EA	PULL PLATE	8303 10" 4" X 16"	630	IVE
1	EA	SURFACE CLOSER	4040XP	689	LCN
1	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS33	626	IVE

Hardware Group No. LBTY-13

For use on mark/door #(s):
LBTY-A148A/B LBTY-D136A/B

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112HD	628	IVE
1	EA	KEYED REMOVABLE MULLION	KR4954	689	VON
1	EA	PANIC HARDWARE	CD-98-EO	626	VON
1	EA	PANIC HARDWARE	CD-98-NL-OP-110MD	626	VON
1	EA	RIM CYLINDER	20-057	626	SCH
3	EA	MORTISE CYLINDER	20-062	626	SCH
1	EA	ELECTRIC STRIKE	6300 FSE	630	VON
2	EA	90 DEG OFFSET PULL	8190HD 12" O	630	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP EDA	689	LCN
2	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	655A-MSLA-10	A	ZER
1	EA	POWER SUPPLY	PS902 900-2RS CARD READER BY OTHERS	LGR	SCE
1	EA		WEATHERSTRIP BY DOOR/FRAME MANUFACTURER		

Doors locked/unlocked on schedule by access control system. Card reader or key override allows access after hours. Free egress at all times. RX and Door Contacts by others.

Hardware Group No. LBTY-14

For use on mark/door #(s):
LBTY-A148C/D LBTY-B104C LBTY-B104D LBTY-D136C/D

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112HD	628	IVE
2	SET	PUSH/PULL BAR	9190HD-10"-NS	630	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP	689	LCN

Hardware Group No. LBTY-15

For use on mark/door #(s):
LBTY-B104A

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
2	EA	CONT. HINGE	112HD	628	IVE
1	EA	KEYED REMOVABLE MULLION	KR4954	689	VON
1	EA	PANIC HARDWARE	CD-98-EO	626	VON
1	EA	PANIC HARDWARE	CD-98-NL-OP-110MD	626	VON
1	EA	RIM CYLINDER	20-057	626	SCH
3	EA	MORTISE CYLINDER	20-062	626	SCH
2	EA	ELECTRIC STRIKE	6300 FSE	630	VON
2	EA	90 DEG OFFSET PULL	8190HD 12" O	630	IVE
2	EA	OH STOP	100S	630	GLY
2	EA	SURFACE CLOSER	4040XP EDA	689	LCN
2	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	655A-MSLA-10	A	ZER
1	EA	POWER SUPPLY	PS904 900-2RS 900-2RS - Doors B104A/B CARD READER BY OTHERS	LGR	SCE
1	EA		WEATHERSTRIP BY DOOR/FRAME MANUFACTURER		

Doors locked/unlocked on schedule by access control system. Card reader or key override allows access after hours. Free egress at all times. RX and Door Contacts by others.

Hardware Group No. LBTY-16

For use on mark/door #(s):
LBTY-C117D

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	98-NL-OP-110MD	626	VON
1	EA	RIM CYLINDER	20-057	626	SCH
1	EA	ELECTRIC STRIKE	6111 FSE	630	VON
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	655A-MSLA-10	A	ZER
1	EA	POWER SUPPLY	PS904 900-2RS 900-2RS	LGR	SCE
1	EA		WEATHERSTRIP BY DOOR/FRAME MANUFACTURER		

Doors locked/unlocked on schedule by access control system. Card reader or key override allows access after hours. Free egress at all times. RX and Door Contacts by others.

Hardware Group No. LBTY-17

For use on mark/door #(s):
LBTY-C117A LBTY-C117B LBTY-C117C

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	98-NL-OP-110MD	626	VON
1	EA	RIM CYLINDER	20-057	626	SCH
1	EA	ELECTRIC STRIKE	6111 FSE	630	VON
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	655A-MSLA-10	A	ZER
1	EA		WEATHERSTRIP BY DOOR/FRAME MANUFACTURER		

Doors locked/unlocked on schedule by access control system. Free egress at all times. RX and Door Contacts by others.

Hardware Group No. LBTY-18

For use on mark/door #(s):
LBTY-D141

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112HD	628	IVE

1	EA	PANIC HARDWARE	CD-98-EO	626	VON
1	EA	MORTISE CYLINDER	20-062	626	SCH
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	DOOR SWEEP	8198AA	AA	ZER
1	EA	THRESHOLD	655A-MSLA-10	A	ZER
1	EA		WEATHERSTRIP BY DOOR/FRAME MANUFACTURER		

Exit Only. RX and Door Contact by Access Control.

Hardware Group No. LBTY-19

For use on mark/door #(s):
LBTY-C121B/C

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
6	EA	HINGE	5BB1 4.5 X 4.5	652	IVE
1	SET	AUTO FLUSH BOLT	FB31P	630	IVE
1	EA	CLASSROOM SECURITY	L9071R 03A	626	SCH
2	EA	SURFACE CLOSER	4040XP	689	LCN
2	EA	KICK PLATE	8400 10" X 1" LDW B-CS	630	IVE
2	EA	WALL STOP	WS33	626	IVE

Hardware Group No. LBTY-20

For use on mark/door #(s):
LBTY-C102 LBTY-C103 LBTY-C104 LBTY-C105 LBTY-C157 LBTY-C158 LBTY-C159

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	REVERSE LATCH	1591A - backset as required for existing door prep BALANCE OF HARDWARE EXISTING	630	TRI

Pushing or pulling paddle on exterior of door will engage latchbolt. When paddle is released, door is un-latched.

Hardware Group No. LBTY-21

For use on mark/door #(s):
LBTY-C117E

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112HD	628	IVE
1	SET	PUSH/PULL BAR	9190HD-10"-NS	630	IVE
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN

Middle School

Hardware Group No. MS-01

For use on mark/door #(s):

MS-B137	MS-B138	MS-B156	MS-F100	MS-F109

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CLASSROOM SECURITY	L9071R 03A	626	SCH
			BALANCE OF HARDWARE EXISTING		

Verify door prep and hardware requirements in field prior to ordering.

Hardware Group No. MS-02

For use on mark/door #(s):

MS-A118	MS-A145	MS-A151	MS-A152	MS-A154	MS-A155
MS-B134	MS-B147	MS-B150	MS-B151	MS-B152	MS-C110
MS-C136	MS-C138	MS-D102	MS-D105	MS-E113	MS-E115
MS-E118	MS-F103	MS-F118	MS-F128	MS-F131	MS-F138
MS-F146	MS-H102	MS-H106	MS-H112	MS-H118	MS-H122
MS-H129	MS-H130	MS-L111A	MS-L111B		

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	STOREROOM LOCK	L9080R 03A	626	SCH
			BALANCE OF HARDWARE EXISTING		

Verify door prep and hardware requirements in field prior to ordering.

Hardware Group No. MS-03

For use on mark/door #(s):

MS-A116	MS-A123	MS-A127	MS-A128	MS-A156	MS-B133
MS-B149	MS-B153	MS-B157A	MS-B157B	MS-B157C	MS-C108
MS-C109	MS-C127	MS-C130	MS-C142	MS-C143A	MS-C143B
MS-C143C	MS-C144	MS-E104A	MS-E104B	MS-E105A	MS-E105B
MS-E111	MS-E116A	MS-E116B	MS-E119	MS-F113	MS-F114

MS-F117A MS-F117B MS-F139 MS-H104A MS-H104B MS-H105
MS-H127A MS-H127B MS-L112 MS-L113 MS-L114 MS-L128

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CLASSROOM LOCK	L9070R 03A	626	SCH
			BALANCE OF HARDWARE EXISTING		

Verify door prep and hardware requirements in field prior to ordering.

Hardware Group No. MS-04

For use on mark/door #(s):
MS-B108 MS-F106 MS-F108

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	PRIVACY LOCK	L9040 03A L583-363	626	SCH
			BALANCE OF HARDWARE EXISTING		

Verify door prep and hardware requirements in field prior to ordering.

Hardware Group No. MS-05

For use on mark/door #(s):
MS-C107 MS-C126A MS-C126B MS-C126C MS-C137A MS-C137B
MS-C137C MS-C145D MS-C145E MS-E117

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	PANIC HARDWARE	98-L-2SI-03	626	VON
2	EA	RIM CYLINDER	20-057	626	SCH
1	EA	SURFACE CLOSER	4040XP	689	LCN
			BALANCE OF HARDWARE EXISTING		

Verify door prep, fire rating, and hardware requirements in field prior to ordering.

Hardware Group No. MS-06

For use on mark/door #(s):
MS-C131 MS-C132 MS-C133 MS-C134

Each To Have:

Qty	Description	Catalog Number	Finish	Mfr
		HARDWARE BY MANUFACTURER		

Hardware Group No. MS-07

For use on mark/door #(s):
MS-C145A MS-C145B MS-C145C

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
6	EA	HW HINGE	5BB1HW 4.5 X 4.5 NRP	652	IVE
1	EA	KEYED REMOVABLE MULLION	KR4954	689	VON
2	EA	PANIC HARDWARE	98-L-2SI-03	626	VON
4	EA	RIM CYLINDER	20-057	626	SCH
1	EA	MORTISE CYLINDER	20-062	626	SCH
2	EA	SURFACE CLOSER	4040XP	689	LCN
2	EA	KICK PLATE	8400 10" X 1 1/2" LDW B-CS	630	IVE
			BALANCE OF HARDWARE EXISTING		

Verify door prep, fire rating, and hardware requirements in field prior to ordering.

Hardware Group No. MS-08

For use on mark/door #(s):
MS-E110

Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	PASSAGE SET	L9010 03A	626	SCH
			BALANCE OF HARDWARE EXISTING		

Verify door prep and hardware requirements in field prior to ordering.

Woodland

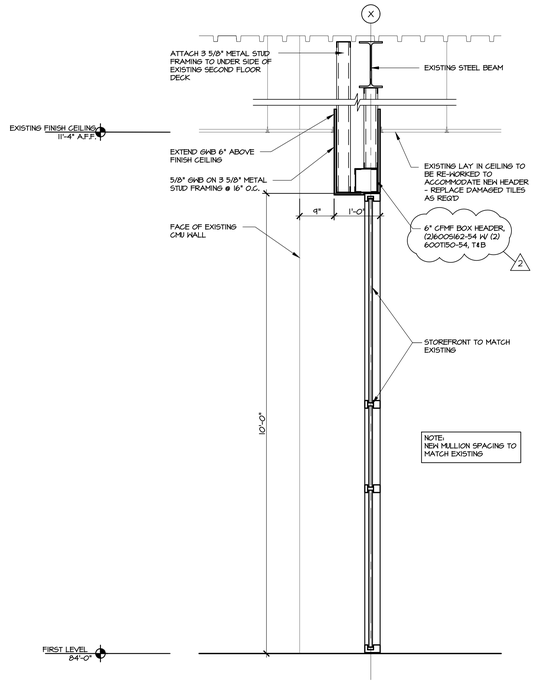
Hardware Group No. WOODLAND 01

For use on mark/door #(s):
WOOD-541A

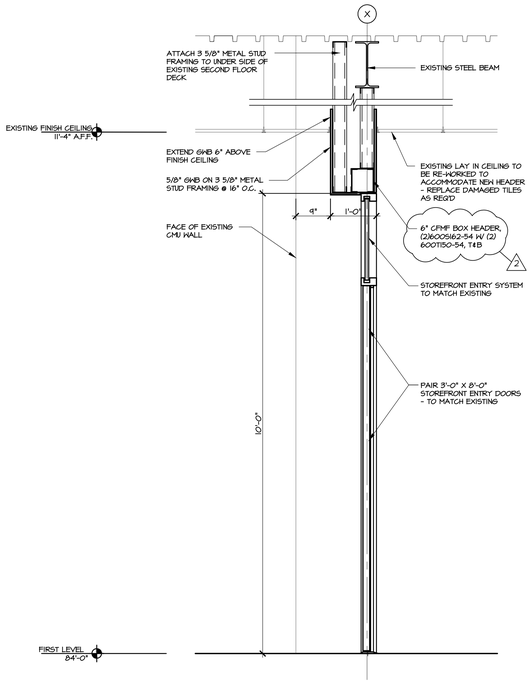
Each To Have:

Qty		Description	Catalog Number	Finish	Mfr
1	EA	CONT. HINGE	112HD	628	IVE
1	EA	PANIC HARDWARE	98-EO	626	VON
1	EA	FLUSH PULL	BY DOOR MANUFACTURER		
1	EA	OH STOP	100S	630	GLY
1	EA	SURFACE CLOSER	4040XP EDA	689	LCN
1	EA	THRESHOLD	655A-MSLA-10	A	ZER

1	EA	WEATHERSTRIP BY DOOR/FRAME MANUFACTURER



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



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

2 WALL SECTION
SCALE: 3/4" = 1'-0"

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

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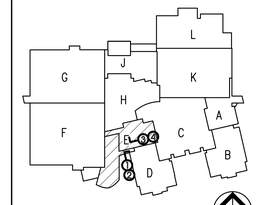
Barton Malow

Saline Area Schools
2017 Projects
Saline High School
Saline, Michigan

THE PURSUIT OF EXCELLENCE

Saline Area Schools

REVISIONS/REVIEW | DATE
ISSUED FOR BID | 01-06-2017
ADDENDUM 2 | 01-26-2017



JOB NO. 2900-03

SHEET TITLE
WALL SECTIONS & DETAILS

SHEET NO.
HS-A4.1X

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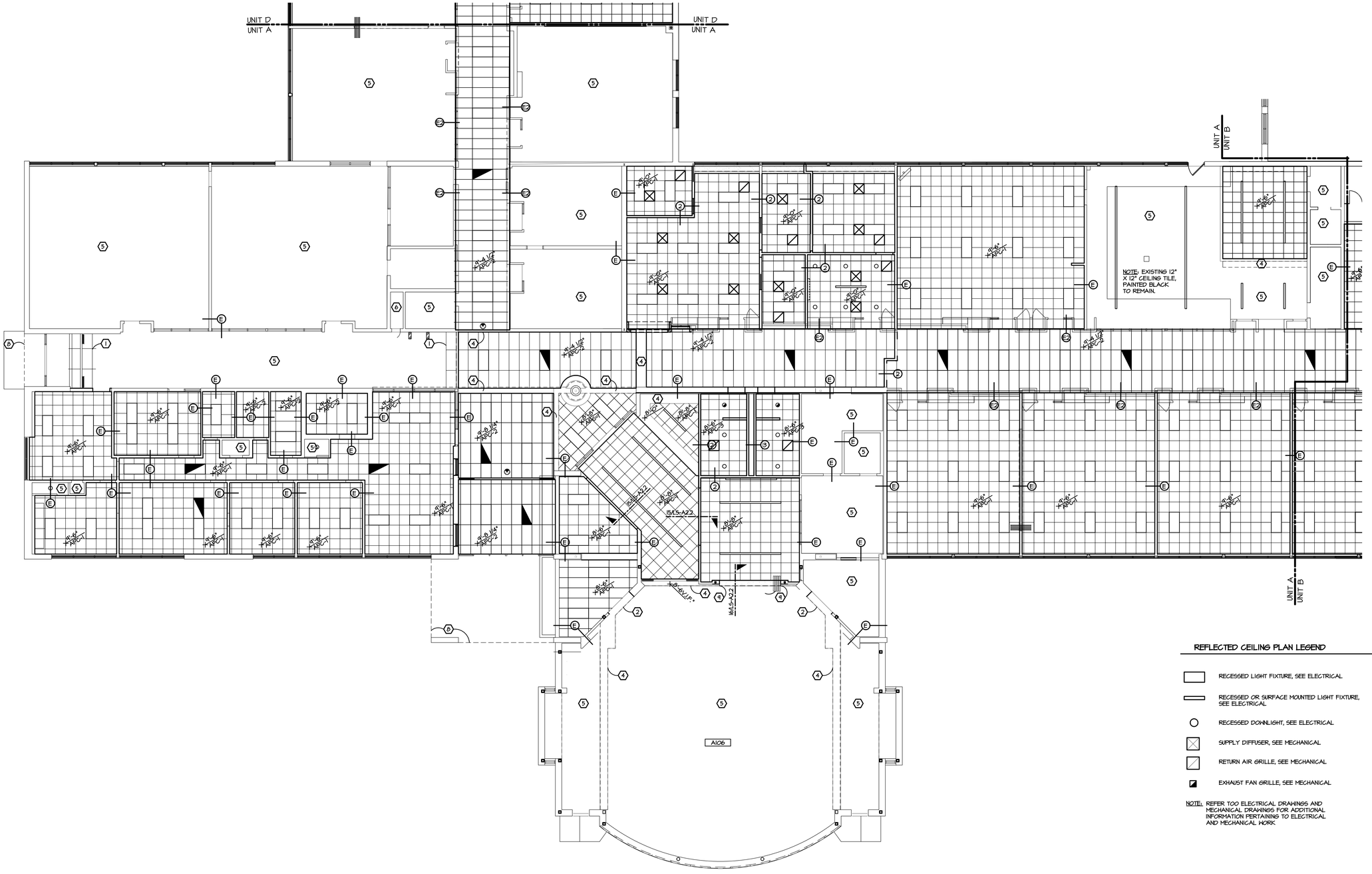
CEILING PLAN GENERAL NOTES:

1. GYPSUM BOARD CEILING/BULKHEAD U.N.O.
2. 24" x 24" ACOUSTICAL PANEL CEILING
2A. 24" x 48" ACOUSTICAL PANEL CEILING
3. PATCH/REPAIR/PAINT EXISTING CEILINGS OR BULKHEADS AS REQUIRED DUE TO DEMOLITION, MECH OR ELECTRICAL WORK.
4. ALL GYPSUM BOARD BULKHEADS SHALL BE PAINTED REFER TO COLOR LAYOUT PLANS.
5. REFER TO ELECTRICAL DRAWINGS FOR FIXTURE TYPES.
6. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL UNITS, DIFFUSERS AND RETURN GRILLES.
7. FOR PARTITION TYPES INDICATED BY (X)—, REFER TO SHEET LS-A2.2.

CEILING FINISH KEY NOTES:

1. EXISTING ACOUSTICAL PANEL CEILING TO REMAIN. PATCH/REPAIR ACOUSTICAL PANEL CEILING AND GRID AS REQ'D DUE TO EXIST DAMAGE OR BY MECHANICAL/ELECTRICAL OR OTHER WORK
2. EXISTING PLASTER OR GYP BD CEILING OR BULKHEAD TO REMAIN. PATCH/REPAIR AS REQ'D DUE TO EXISTING DAMAGE OR BY MECHANICAL/ELECTRICAL OR OTHER WORK
3. EXISTING CEILING GRID TO REMAIN. PROVIDE NEW ACOUSTICAL CEILING PADS.
4. EXISTING GYP. BD. BULKHEAD TO REMAIN.
5. EXISTING CEILING TO REMAIN.
6. EXPOSED TO STRUCTURE ABOVE.
7. EXISTING CLERESTORY GLAZING TO REMAIN.
8. LINE OF CANOPY OR OVERHANG.
9. MATCH EXIST BULKHEAD FACE AND ELEVATION.



REFLECTED CEILING PLAN LEGEND

- RECESSED LIGHT FIXTURE, SEE ELECTRICAL
- RECESSED OR SURFACE MOUNTED LIGHT FIXTURE, SEE ELECTRICAL
- RECESSED DOWNLIGHT, SEE ELECTRICAL
- SUPPLY DIFFUSER, SEE MECHANICAL
- RETURN AIR GRILLE, SEE MECHANICAL
- EXHAUST FAN GRILLE, SEE MECHANICAL

NOTE: REFER TOO ELECTRICAL DRAWINGS AND MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION PERTAINING TO ELECTRICAL AND MECHANICAL WORK

1 REFLECTED CEILING PLAN UNIT A
SCALE: 1/8" = 1'-0"

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THE PURSUIT OF EXCELLENCE
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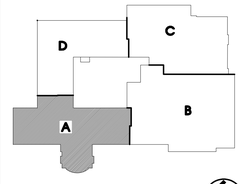
REVISIONS/REVIEW	DATE
ISSUED FOR BID	01-06-2017
ADDENDUM #2	01-26-2017



JOB NO. 2900-03
NORTH

SHEET TITLE
REFLECTED CEILING PLAN UNIT A

SHEET NO.
XXACLG
LS-A2.1AX

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REFLECTED CEILING PLAN LEGEND

- RECESSED LIGHT FIXTURE, SEE ELECTRICAL
- RECESSED OR SURFACE MOUNTED LIGHT FIXTURE, SEE ELECTRICAL
- RECESSED DOWNLIGHT, SEE ELECTRICAL
- SUPPLY DIFFUSER, SEE MECHANICAL
- RETURN AIR GRILLE, SEE MECHANICAL
- EXHAUST FAN GRILLE, SEE MECHANICAL

NOTE: REFER TOO ELECTRICAL DRAWINGS AND MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION PERTAINING TO ELECTRICAL AND MECHANICAL WORK

CEILING PLAN GENERAL NOTES:

1. GYPSUM BOARD CEILING/BULKHEAD U.N.O.
2. 24" x 24" ACOUSTICAL PANEL CEILING
2A. 24" x 48" ACOUSTICAL PANEL CEILING
3. PATCH/REPAIR/PAINT EXISTING CEILINGS OR BULKHEADS AS REQUIRED DUE TO DEMOLITION, MECH OR ELECTRICAL WORK.
4. ALL GYPSUM BOARD BULKHEADS SHALL BE PAINTED REFER TO COLOR LAYOUT PLANS.
5. REFER TO ELECTRICAL DRAWINGS FOR FIXTURE TYPES.
6. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL UNITS, DIFFUSERS AND RETURN GRILLES.
7. FOR PARTITION TYPES INDICATED BY (X), REFER TO SHEET LS-A2.2.

CEILING FINISH KEY NOTES:

1. EXISTING ACOUSTICAL PANEL CEILING TO REMAIN. PATCH/REPAIR ACOUSTICAL PANEL CEILING AND GRID AS REQ'D DUE TO EXIST DAMAGE OR BY MECHANICAL/ELECTRICAL OR OTHER WORK.
2. EXISTING PLASTER OR GYP BD CEILING OR BULKHEAD TO REMAIN. PATCH/REPAIR AS REQ'D DUE TO EXISTING DAMAGE OR BY MECHANICAL/ELECTRICAL OR OTHER WORK.
3. EXISTING CEILING GRID TO REMAIN. PROVIDE NEW ACOUSTICAL CEILING PADS.
4. EXISTING GYP. BD. BULKHEAD TO REMAIN.
5. EXISTING CEILING TO REMAIN.
6. EXPOSED TO STRUCTURE ABOVE.
7. EXISTING CLERESTORY GLAZING TO REMAIN.
8. LINE OF CANOPY OR OVERHANG.
9. MATCH EXIST BULKHEAD FACE AND ELEVATION.

1 REFLECTED CEILING PLAN UNIT D
SCALE: 1/8" = 1'-0"

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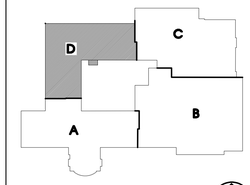

JOB NO. 2900-03
NORTH

SHEET TITLE
REFLECTED CEILING PLAN UNIT D

SHEET NO.
XXACLG
LS-A2.1DX

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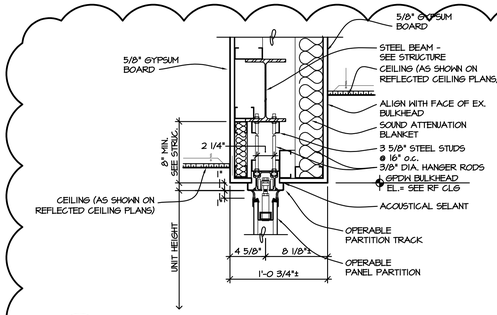
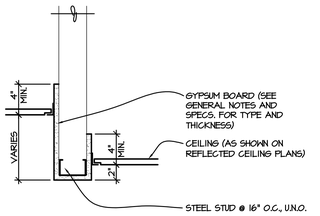
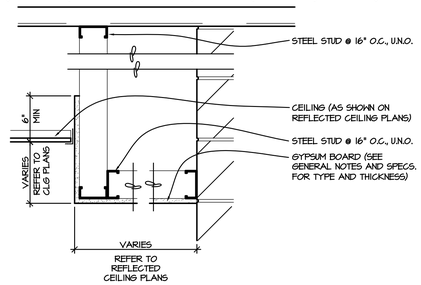


16 OPERABLE PANEL PARTITION
1 1/2"=1'-0"



15 TYPICAL GYP BD BULKHEAD
1 1/2"=1'-0"



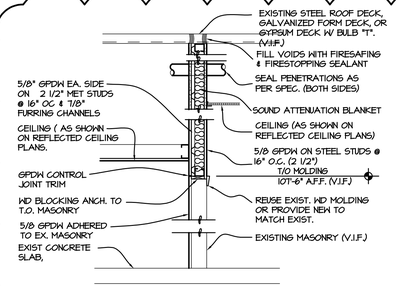
14 BULKHEAD DETAIL
1 1/2"=1'-0"

2

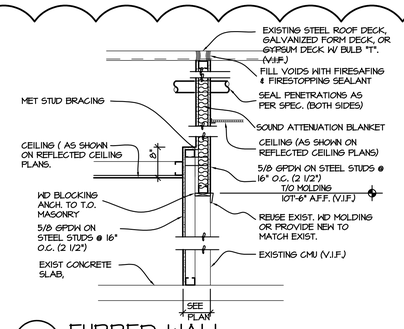
PARTITION TYPE GENERAL NOTES:

PARTITION TYPES ON PLANS AND PARTITION TYPE DETAILS HAVE BEEN PROVIDED TO SHOW GENERAL INTENT OF THE CONSTRUCTION. CONTRACTORS MUST VERIFY EACH CONDITION FOR FIRE RATING, BEARING, STRUCTURAL REQUIREMENTS AND WALL FINISHES.. PROVIDE APPROPRIATE CONSTRUCTION AS REQUIRED, WHETHER SPECIFICALLY INDICATED OR NOT. REFER TO THE FOLLOWING NOTES FOR ADDITIONAL REQUIREMENTS FOR APPLICATION OF SEALANT, MATERIALS AND GYPSUM BOARD TYPES.

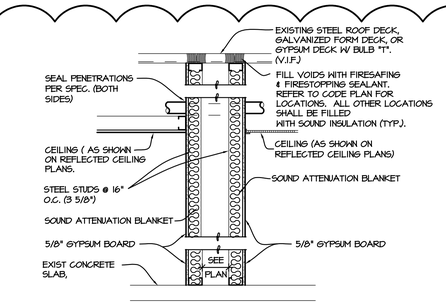
1. REFER TO CODE COMPLIANCE PLANS FOR REQUIRED RATED WALLS. PROVIDE FIRE RATED SEALANT, FIRE STOPPING, AND TYPE "X" GYPSUM BOARD AS REQUIRED. ALL RECESSES IN FIREWALLS SHALL HAVE SOLID MASONRY OR MULTIPLE LAYERS OF GYPSUM BOARD AS REQUIRED TO MAINTAIN APPLICABLE FIRE RATING. PROVIDE ACOUSTICAL SEALANT AT ALL NON-RATED WALLS (SEALANT - ACS). PROVIDE FIRE RATED SEALANT AT ALL RATED WALLS (SEALANT - FRS).
2. PROVIDE FIRE RATED SEALANT AND OR STOPPING AT ALL PENETRATIONS (CONDUIT, PIPING, DUCTWORK, ETC.) THROUGH FIRE RATED WALLS.
3. PROVIDE 2-LAYERS TAPED AND SANDED OF GYPSUM BOARD TYPE "X" AT 2-HOUR RATED WALLS. PROVIDE 1-LAYER OF GYPSUM BOARD TYPE "X" AT ALL OTHER RATED WALLS.
4. PROVIDE ABUSE RESISTANT GYPSUM BOARD UP TO 7'-4" A.F.F. FOR ALL WALLS NOT COVERED BY TILE, THEN PROVIDE STANDARD GYPSUM BOARD FOR THE REMAINDER OF THE WALL AND/ OR BULKHEAD. STANDARD GYPSUM BOARD MAY BE USED BELOW 8'-0" A.F.F. WHEN BEHIND FIXED ITEMS SUCH AS CASEWORK, SHELVES, LOCKERS, ETC.
5. PROVIDE COMBINATION WATER AND ABUSIVE RESISTANT GYPSUM BOARD FROM FLOOR TO 48" A.F.F. FOR ALL JANITOR CLOSETS AND NON-TILED ROOMS. PROVIDE TYPE "X" GYPSUM BOARD FOR THE REMAINDER OF THE WALL AND/OR BULKHEAD.
6. PROVIDE MOISTURE AND MILDEW RESISTANT GYPSUM BOARD, RECOMMENDED BY MANUFACTURER FOR CERAMIC TILE BACKING, WHERE CERAMIC TILE FINISH IS INDICATED. REFER TO INTERIOR DRAWINGS.
7. REFER TO BUILDING DETAILS, EQUIPMENT PLANS AND SPECIFICATIONS. PROVIDE BLOCKING IN ALL STEEL STUD PARTITIONS AS REQUIRED FOR CASEWORK SUPPORT AND OTHER EQUIPMENT. PROVIDE SOLID WOOD BLOCKING FOR ALL DOOR STOP LOCATIONS.
8. PROVIDE MINIMUM 20 GA STUDS @ 16" O.C. FOR ALL WALLS, U.N.O. STUD SIZE AND GAUGE WILL VARY DEPENDING ON STUD WALL HEIGHT AND AS REQUIRED FOR MINIMUM GUAGE AND SIZE NOTES.
9. PROVIDE CONTROL JOINTS IN GYPSUM CEILINGS @ MINIMUM OF 30'-0" O.C. VERTICALLY & HORIZONTALLY.



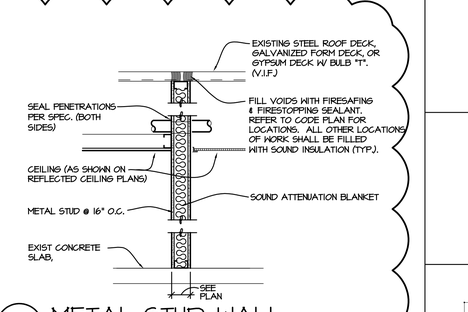
5 ADHERED GPDW ON EX. WALL
3/4"=1'-0"



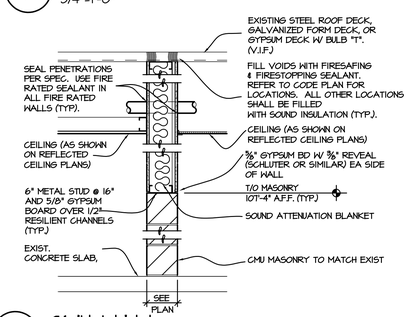
4 FURRED WALL
3/4"=1'-0"



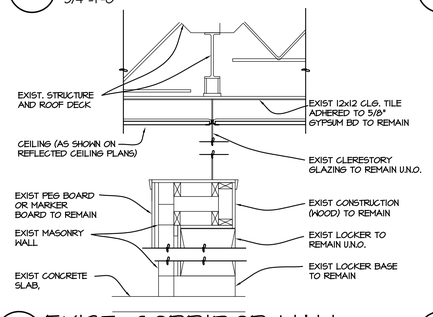
3 CHASE WALL
3/4"=1'-0"



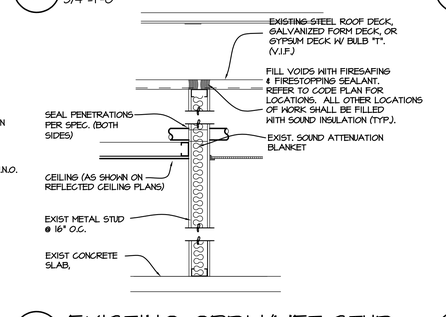
2 METAL STUD WALL
3/4"=1'-0"



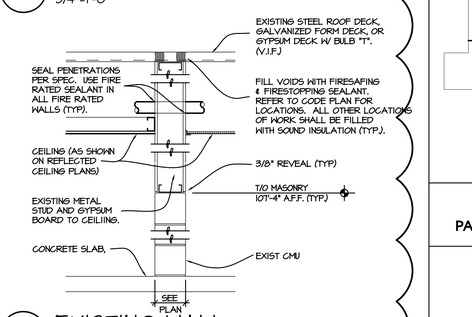
1 CMU WALL
3/4"=1'-0"



E2 EXIST. CORRIDOR WALL
3/4"=1'-0"



E1 EXISTING GPDW/MET STUD
3/4"=1'-0"



E EXISTING WALL
3/4"=1'-0"

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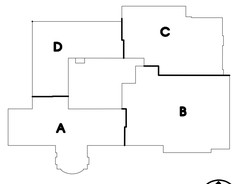
REVISIONS/REVIEW	DATE
ISSUED FOR BID	01-06-2017
ADDENDUM #2	01-26-2017



JOB NO. 2900-03
NORTH

SHEET TITLE
PARTITION TYPES AND DETAILS

SHEET NO.
XXACLG
LS-A2.2X

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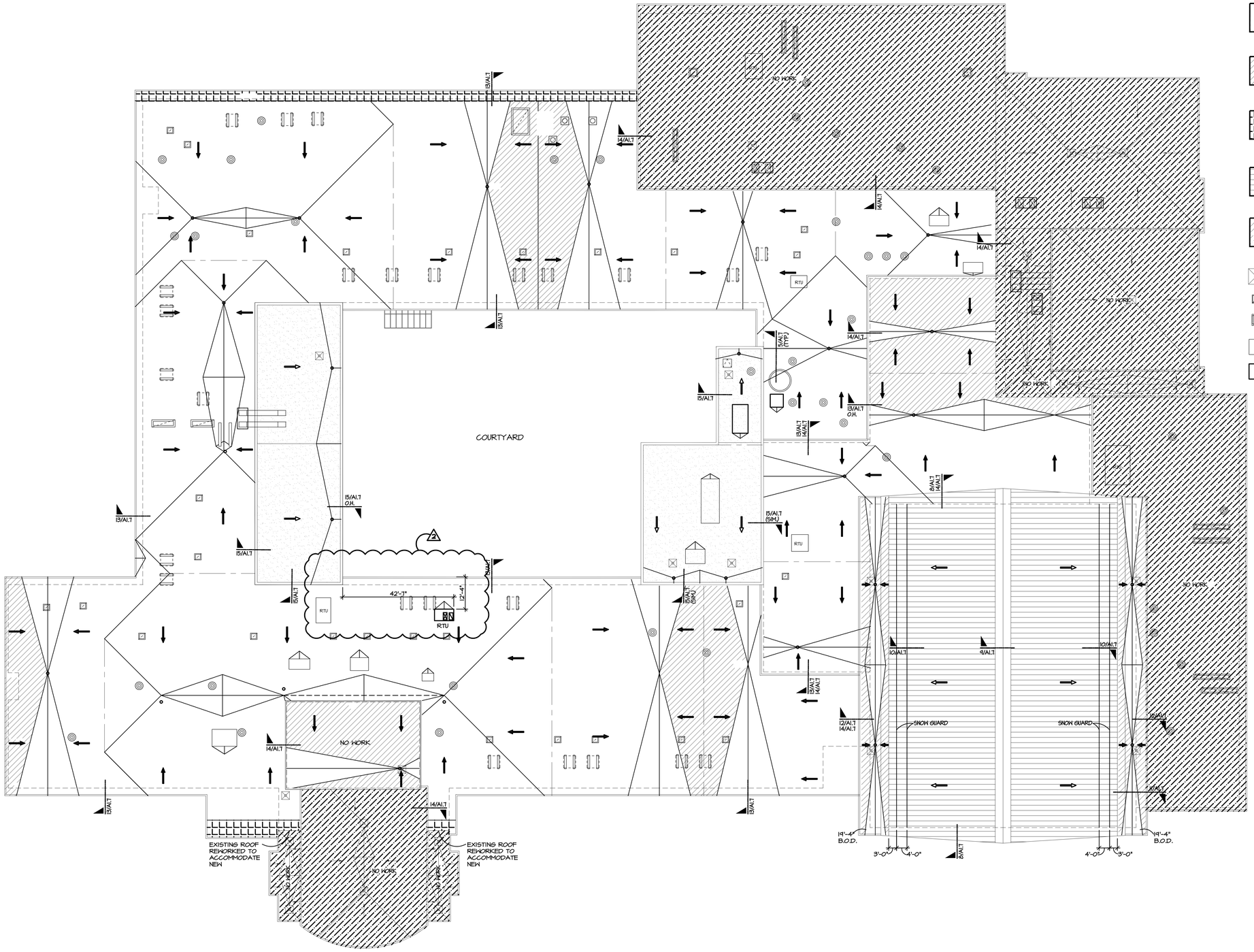

1 COMPOSITE ROOF PLAN
SCALE: 1/16" = 1'-0"

GENERAL NOTES:

1. SEE MECHANICAL DRAWINGS FOR LOCATIONS OF PLUMBING VENTS, FLASH AS SPECIFIED.
2. SEE MECHANICAL DRAWINGS FOR ADDITIONAL OPENINGS, IF ANY, IN NEW AND/OR EXISTING ROOFS. DETAILS OF SIMILAR OPENINGS REFERENCED ON THIS SHEET ARE APPLICABLE.
3. WHERE NEW OPENINGS OCCUR IN EXISTING ROOF AREAS, INSTALL SUPPLEMENTAL STEEL FRAMING UNDER DECK PRIOR TO CUTTING HOLE IN DECK. REPAIR ROOFING AND INSULATION TO 2'-0" (MIN.) AROUND OPENING.
4. WHERE WOOD NAILERS ARE SHOWN IN PLANE OF ROOF INSULATION, CUT NAILERS AS REQUIRED TO MATCH INSULATION THICKNESS.
5. CONTRACTOR TO FIELD VERIFY LOCATIONS OF EXISTING ROOF TOP EQUIPMENT AND PENETRATIONS (REFER TO TYPICAL DETAILS ON A4.5 FOR RE-FLASHING AND RE-ROOFING OF EXIST. EQUIPMENT).

ROOF PLAN LEGEND

- FULLY ADHERED SINGLE-PLY ROOFING ON TAPERED RIGID ROOF INSULATION ADHERED WITH LOW RISE FOAM ADHESIVE; AVERAGE R25 ON EXISTING GYPSUM DECK (REPLACE ANY DAMAGED OR ROTTED GYPSUM DECK AS REQUIRED WITH NEW METAL ROOF DECK). 1/8"/FT SLOPE
  NOTE: THIS PATTERN ALSO DESIGNATES THE REMOVAL OF EXISTING BUILT-UP ROOFING AND INSULATION DOWN TO EXISTING GYPSUM DECK.
- FULLY ADHERED SINGLE-PLY ROOFING ON TAPERED RIGID ROOF INSULATION ADHERED WITH LOW RISE FOAM ADHESIVE; AVERAGE R25 ON EXISTING GYPSUM DECK (REPLACE ANY DAMAGED OR ROTTED GYPSUM DECK AS REQUIRED WITH NEW METAL ROOF DECK). 1/4"/FT SLOPE
  NOTE: THIS PATTERN ALSO DESIGNATES THE REMOVAL OF EXISTING BUILT-UP ROOFING AND INSULATION DOWN TO EXISTING GYPSUM DECK.
- FULLY ADHERED SINGLE-PLY ROOFING ON TAPERED RIGID ROOF INSULATION ADHERED WITH LOW RISE FOAM ADHESIVE; AVERAGE R25 ON EXISTING GYPSUM DECK (REPLACE ANY DAMAGED OR ROTTED GYPSUM DECK AS REQUIRED WITH NEW METAL ROOF DECK). FLAT INSUL.
  NOTE: THIS PATTERN ALSO DESIGNATES THE REMOVAL OF EXISTING BUILT-UP ROOFING AND INSULATION DOWN TO EXISTING GYPSUM DECK.
- STANDING SEAM METAL ROOFING OVER 5" RIGID INSULATION ON SLOPED WOOD DECK, TOP LAYER OF INSULATION SHALL HAVE 7/16 INCH OSB LAMINATED TO THE INSULATION. FASTENERS USED TO INSTALL INSULATION, SHALL PENETRATE WOOD DECK A MINIMUM 1-1/2 INCHES. (REPLACE ANY DAMAGED OR ROTTED WOOD DECK AS REQUIRED WITH NEW WOOD DECK).
  NOTE: THIS PATTERN ALSO DESIGNATES THE REMOVAL OF EXISTING SHINGLE ROOFING DOWN TO EXISTING WOOD DECK.
- EXISTING ROOF TO REMAIN; NO WORK.
- R.D. — EXIST. ROOF DRAIN
- E.F./ R.V. — EXIST EXHAUST FAN (E.F.) OR RELIEF VENT (R.V.)
- C.U. — EXIST CONDENSING UNIT AND SUPPORTS.
- RTU — EXIST MECHANICAL ROOF TOP EQUIPMENT
- RTU — NEW MECHANICAL ROOF TOP EQUIPMENT
- SLOPE BY TAPERED INSULATION
- SLOPE BY STRUCTURE

TYPICAL NOTES:

1. PROVIDE NEW TREATED WOOD BLOCKING TO MATCH NEW INSULATION HEIGHT.
2. PROVIDE NEW ROOF EDGE METAL WHERE NEW ROOFING IS INSTALLED.

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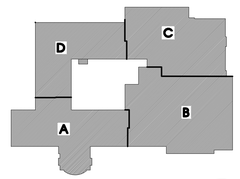

JOB NO. 2900-03 NORTH

SHEET TITLE
COMPOSITE ROOF PLAN

SHEET NO.
RHAFUR1
LS-A1.6X

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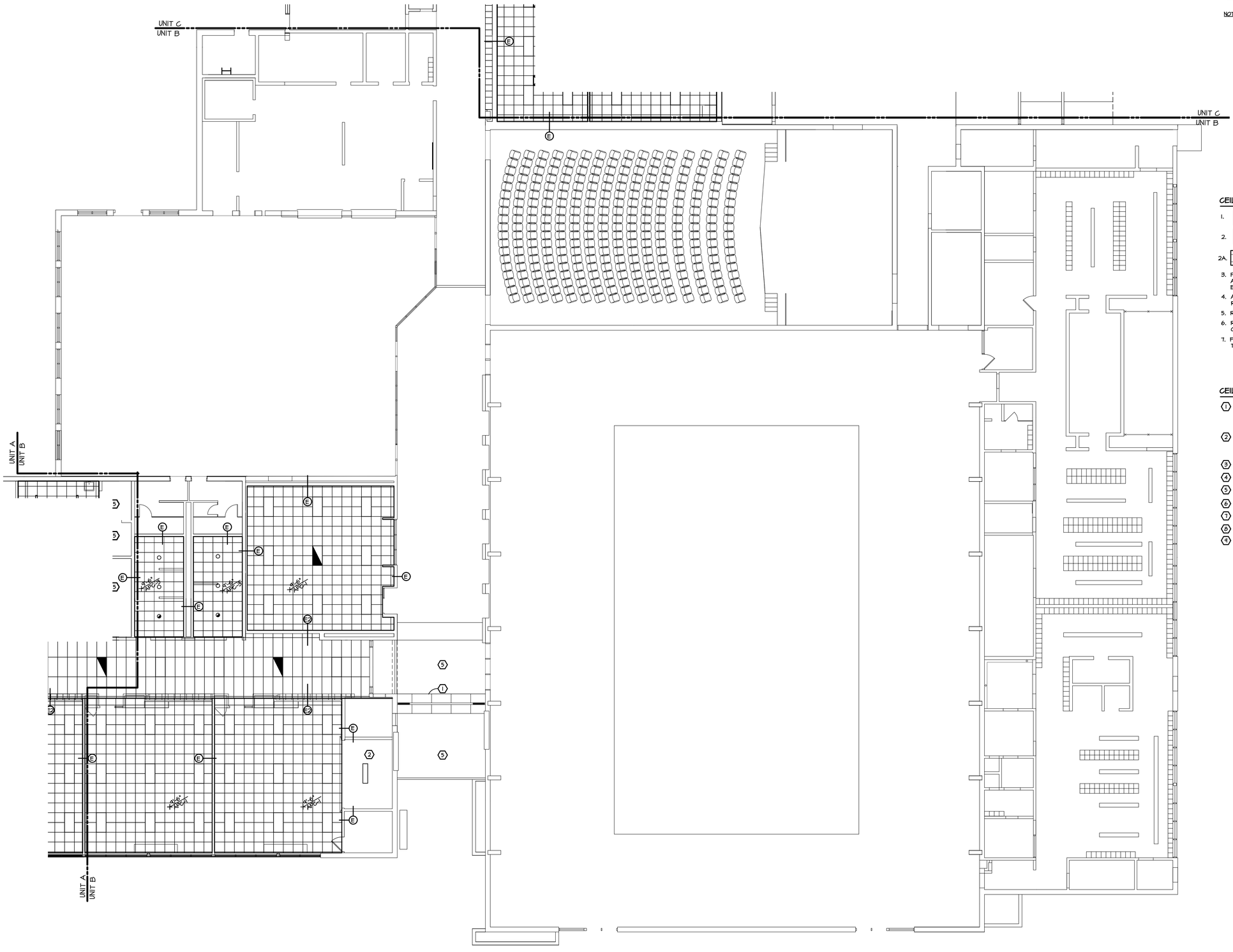

1 REFLECTED CEILING PLAN UNIT B
SCALE: 1/8" = 1'-0"

REFLECTED CEILING PLAN LEGEND

- RECESSED LIGHT FIXTURE, SEE ELECTRICAL
- RECESSED OR SURFACE MOUNTED LIGHT FIXTURE, SEE ELECTRICAL
- RECESSED DOWNLIGHT, SEE ELECTRICAL
- SUPPLY DIFFUSER, SEE MECHANICAL
- RETURN AIR GRILLE, SEE MECHANICAL
- EXHAUST FAN GRILLE, SEE MECHANICAL

NOTE: REFER TOO ELECTRICAL DRAWINGS AND MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION PERTAINING TO ELECTRICAL AND MECHANICAL WORK

CEILING PLAN GENERAL NOTES:

1. GYPSUM BOARD CEILING/BULKHEAD U.N.O.
2. 24" x 24" ACOUSTICAL PANEL CEILING
2A. 24" x 48" ACOUSTICAL PANEL CEILING
3. PATCH/REPAIR/PAINT EXISTING CEILINGS OR BULKHEADS AS REQUIRED DUE TO DEMOLITION, MECH OR ELECTRICAL WORK.
4. ALL GYPSUM BOARD BULKHEADS SHALL BE PAINTED REFER TO COLOR LAYOUT PLANS.
5. REFER TO ELECTRICAL DRAWINGS FOR FIXTURE TYPES.
6. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL UNITS, DIFFUSERS AND RETURN GRILLES.
7. FOR PARTITION TYPES INDICATED BY (X)—, REFER TO SHEET LS-A2.2.

CEILING FINISH KEY NOTES:

1. EXISTING ACOUSTICAL PANEL CEILING TO REMAIN. PATCH/REPAIR ACOUSTICAL PANEL CEILING AND GRID AS REQ'D DUE TO EXIST DAMAGE OR BY MECHANICAL/ELECTRICAL OR OTHER WORK.
2. EXISTING PLASTER OR GYP BD CEILING OR BULKHEAD TO REMAIN. PATCH/REPAIR AS REQ'D DUE TO EXISTING DAMAGE OR BY MECHANICAL/ELECTRICAL OR OTHER WORK.
3. EXISTING CEILING GRID TO REMAIN. PROVIDE NEW ACOUSTICAL CEILING PADS.
4. EXISTING GYP. BD. BULKHEAD TO REMAIN.
5. EXISTING CEILING TO REMAIN.
6. EXPOSED TO STRUCTURE ABOVE.
7. EXISTING CLERESTORY GLAZING TO REMAIN.
8. LINE OF CANOPY OR OVERHANG.
9. MATCH EXIST BULKHEAD FACE AND ELEVATION.

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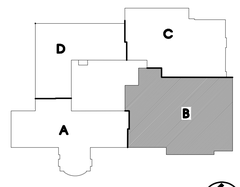

JOB NO. 2900-03
NORTH

SHEET TITLE
REFLECTED CEILING PLAN UNIT B

SHEET NO.
XXACLG
LS-A2.1BX

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REFLECTED CEILING PLAN LEGEND

- RECESSED LIGHT FIXTURE, SEE ELECTRICAL
- RECESSED OR SURFACE MOUNTED LIGHT FIXTURE, SEE ELECTRICAL
- RECESSED DOWNLIGHT, SEE ELECTRICAL
- SUPPLY DIFFUSER, SEE MECHANICAL
- RETURN AIR GRILLE, SEE MECHANICAL
- EXHAUST FAN GRILLE, SEE MECHANICAL

NOTE: REFER TOO ELECTRICAL DRAWINGS AND MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION PERTAINING TO ELECTRICAL AND MECHANICAL WORK.

CEILING PLAN GENERAL NOTES:

1. GYPSUM BOARD CEILING/BULKHEAD U.N.O.
2. 24" x 24" ACOUSTICAL PANEL CEILING
2A. 24" x 48" ACOUSTICAL PANEL CEILING
3. PATCH/REPAIR/PAINT EXISTING CEILINGS OR BULKHEADS AS REQUIRED DUE TO DEMOLITION, MECH OR ELECTRICAL WORK.
4. ALL GYPSUM BOARD BULKHEADS SHALL BE PAINTED REFER TO COLOR LAYOUT PLANS.
5. REFER TO ELECTRICAL DRAWINGS FOR FIXTURE TYPES.
6. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF MECHANICAL UNITS, DIFFUSERS AND RETURN GRILLES.
7. FOR PARTITION TYPES INDICATED BY (X)—, REFER TO SHEET LS-A2.2.

CEILING FINISH KEY NOTES:

1. EXISTING ACOUSTICAL PANEL CEILING TO REMAIN. PATCH/REPAIR ACOUSTICAL PANEL CEILING AND GRID AS REQ'D DUE TO EXIST DAMAGE OR BY MECHANICAL/ELECTRICAL OR OTHER WORK.
2. EXISTING PLASTER OR GYP BD CEILING OR BULKHEAD TO REMAIN. PATCH/REPAIR AS REQ'D DUE TO EXISTING DAMAGE OR BY MECHANICAL/ELECTRICAL OR OTHER WORK.
3. EXISTING CEILING GRID TO REMAIN. PROVIDE NEW ACOUSTICAL CEILING PADS.
4. EXISTING GYP. BD. BULKHEAD TO REMAIN.
5. EXISTING CEILING TO REMAIN.
6. EXPOSED TO STRUCTURE ABOVE.
7. EXISTING CLERESTORY GLAZING TO REMAIN.
8. LINE OF CANOPY OR OVERHANG.
9. MATCH EXIST BULKHEAD FACE AND ELEVATION.

1 REFLECTED CEILING PLAN UNIT C
SCALE: 1/8" = 1'-0"

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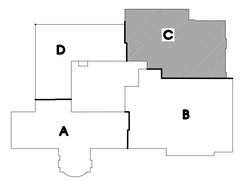

JOB NO. 2900-03
NORTH

SHEET TITLE
REFLECTED CEILING PLAN UNIT C

SHEET NO.
XXACLG
LS-A2.1CX

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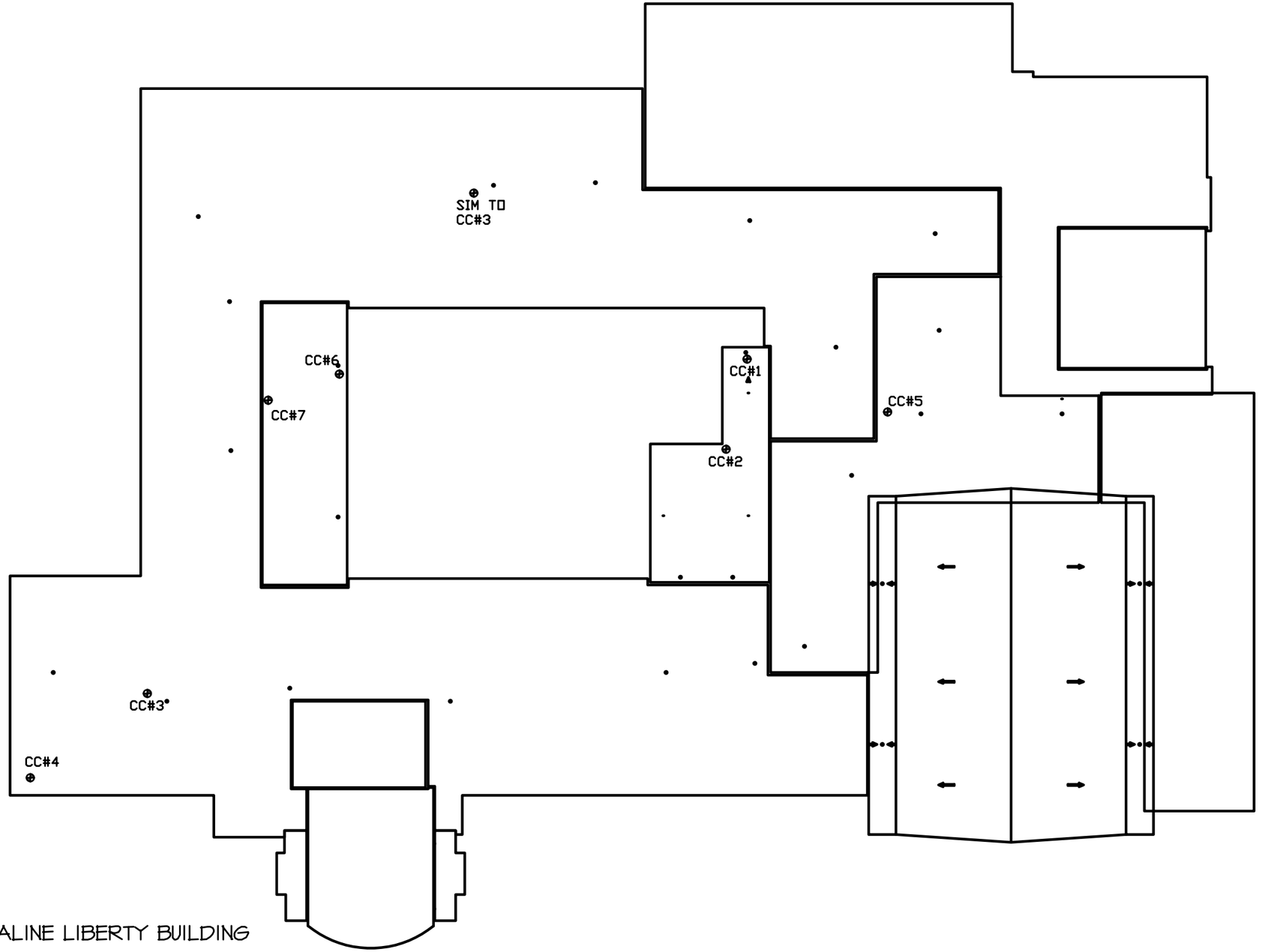

SALINE LIBERTY BUILDING

CORE CUT LEGEND

CC#1 STEEL DECK - 3" POLYISO - FA CARLISLE EPDM (DELAM)
CC#2 STEEL DECK - 3" POLYISO - FA CARLISLE EPDM (DELAM)
CC#3 GYP. DECK - BASE SHEET - 1.5" PERLITE - 1.25" BUR/GRAVEL (2-3/4" TOTAL)
CC#4 GYP. DECK - BASE SHEET - 1.5" POLYISO - 1" WOOD FIBER - 1.25" BUR/GRAVEL (3-3/4" TOTAL)
CC#5 GYP. DECK - BASE SHEET - 1.5" POLYISO - 1" WOOD FIBER - 1.25" BUR/GRAVEL (3-3/4" TOTAL)
CC#6 STEEL DECK - 3" POLYISO - FA EPDM
CC#7 STEEL DECK - 3" POLYISO - FA EPDM

1 EXIST. ROOF CORE LEGEND
NOT TO SCALE

SHEET NO. X.X

Liberty School
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Sketch No.: LS_SK.01
JOB NUMBER: 2900.03
DATE: 01.26.17

GENERAL FLOOR PLAN NOTES:

1. ALL PARTITIONS TO RUN TIGHT TO BOTTOM OF STRUCTURE ABOVE U.N.O.
2. (XXX) INDICATES DOOR; REFER TO DOOR SCHEDULE FOR DOOR DETAILS.
3. PROVIDE AND INSTALL SOLID BLOCKING IN WALLS FOR ANCHORING OF GRAB BARS, CABINETS, WALL BUMPERS, WALL MOUNTED EQUIPMENT, ETC. REFER TO EQUIPMENT PLANS FOR SIZE AND LOCATION OF ANY APPLICABLE WALL MOUNTED EQUIPMENT.
4. INTERIOR DIMENSIONS ARE FROM FACE OF STUD WALL U.N.O.
5. ALL DOORS TO BE MIN. 3" FROM ADJACENT WALL U.N.O.
6. DOOR HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON DOORS REQUIRED TO BE ACCESSIBLE BY CHAPTER 11 OF THE MICHIGAN BUILDING CODE SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TURNING OF THE WRIST TO OPERATE.
7. ALL ACCESSIBLE EXITS TO HAVE AN EXTERIOR LANDING WITH THE FINISHED FLOOR ELEVATION TO BE THE SAME AS THE INTERIOR FINISHED FLOOR ELEVATION.
8. THRESHOLDS AT DOORWAYS SHALL NOT EXCEED ½" RAISED THRESHOLDS AND FLOOR LEVEL CHANGES GREATER THAN ¼" AT DOORWAYS SHALL BE BEVELED WITH A SLOPE NOT GREATER THAN ONE UNIT VERTICAL IN TWO UNITS HORIZONTAL.
9. ALL CORRIDOR, JANITOR, AND STORAGE ROOM WALLS AND PENETRATIONS ARE CONSIDERED TO HAVE A 1-HOUR RATING. ALL WORK IN THESE AREAS SHALL BE PERFORMED IN A MANNER TO MAINTAIN THIS RATING EVEN IF NOT SPECIFICALLY SHOWN ON THE DRAWINGS.

KEYED FLOOR PLAN NOTES:

1. PROVIDE 3M SECURITY FILM ON EXISTING DOORS AND ADJACENT GLAZING AS INDICATED ON PLANS. - SEE MS-A6.1 AND SPECIFICATIONS FOR DETAIL.

2

CODE COMPLIANCE LEGEND:

RULES AND CODES:	2012 NFPA 101 LIFE SAFETY CODE 2012 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS LEVEL 1 ALTERATIONS INCLUDE THE REMOVAL AND REPLACEMENT OR THE COVERING OF EXISTING MATERIALS, ELEMENTS, EQUIPMENT, OR FIXTURES USING NEW MATERIALS, ELEMENTS, EQUIPMENT, OR FIXTURES THAT SERVE THE SAME PURPOSE. LEVEL 2 ALTERATIONS INCLUDE THE RECONFIGURATION OF SPACE, THE ADDITION OR ELIMINATION OF ANY DOOR OR WINDOW, THE RECONFIGURATION OR EXTENSION OF ANY SYSTEM, OR THE INSTALLATION OF ANY ADDITIONAL EQUIPMENT.
PLUMBING CODE:	2012 MICHIGAN PLUMBING CODE
MECHANICAL CODE:	2012 MICHIGAN MECHANICAL CODE
ELECTRICAL CODE:	2011 NATIONAL ELECTRICAL CODE AS AMENDED BY PART 8 RULES
BARRIER-FREE DESIGN:	2012 MICHIGAN BARRIER FREE RULES (ICC/ANSI A117.1-2009)
FIRE SUPPRESSION:	EXISTING BUILDING STRUCTURE DOES NOT CONTAIN A FIRE SUPPRESSION SYSTEM.
OCCUPANCY:	EXISTING EDUCATIONAL
TYPE OF CONSTRUCTION:	TYPE II-B
TOTAL BUILDING AREA:	MAIN FLOOR: 281,803 S.F. TOTAL: 281,803 S.F.

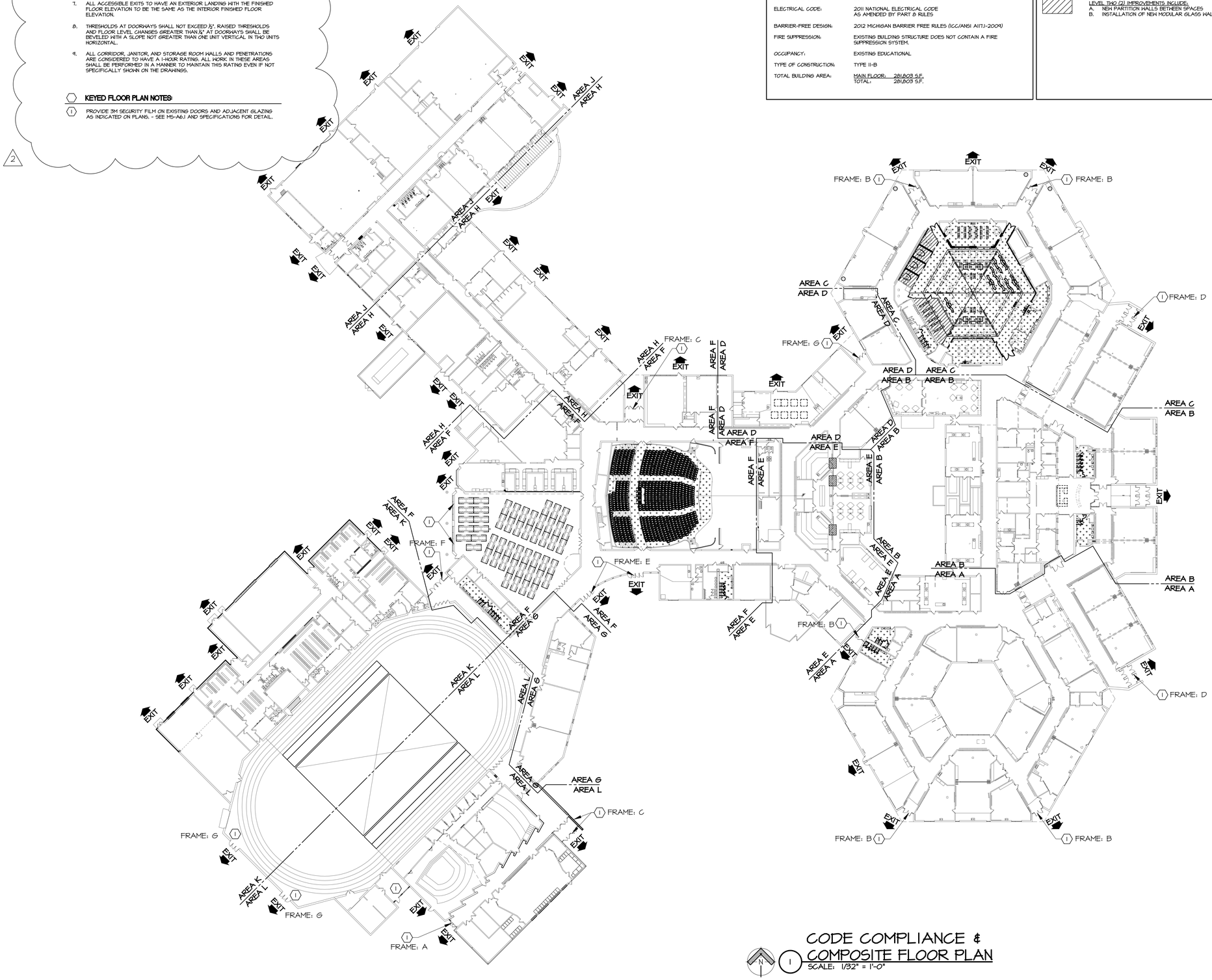
PROJECT DATA:

EXIT — EGRESS EXIT

EXISTING — EXISTING BUILDING TO REMAIN
A. SOME AREAS INCLUDE NEW PAINT.

LEVEL 1 — LEVEL ONE (1) IMPROVEMENTS INCLUDE:
A. REPLACE EXISTING FLOOR FINISH
B. REPLACE EXISTING CEILING TILES
C. REPLACE OR REWORK EXISTING LIGHTING
D. REPLACE EXISTING TOILET PARTITIONS
E. FURRING OF EXISTING WALLS FOR DATA/POWER
F. REPLACE EXISTING AUDITORIUM SEATING TO MATCH EXISTING CONFIGURATION AND COUNT.

LEVEL 2 — LEVEL TWO (2) IMPROVEMENTS INCLUDE:
A. NEW PARTITION WALLS BETWEEN SPACES
B. INSTALLATION OF NEW MODULAR GLASS WALLS



1 CODE COMPLIANCE & COMPOSITE FLOOR PLAN
SCALE: 1/32" = 1'-0"

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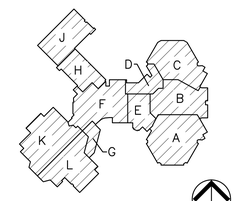

JOB NO. 2900-03 NORTH

SHEET TITLE
CODE COMPLIANCE & COMPOSITE FLOOR PLAN

SHEET NO.
MS-A1.0X

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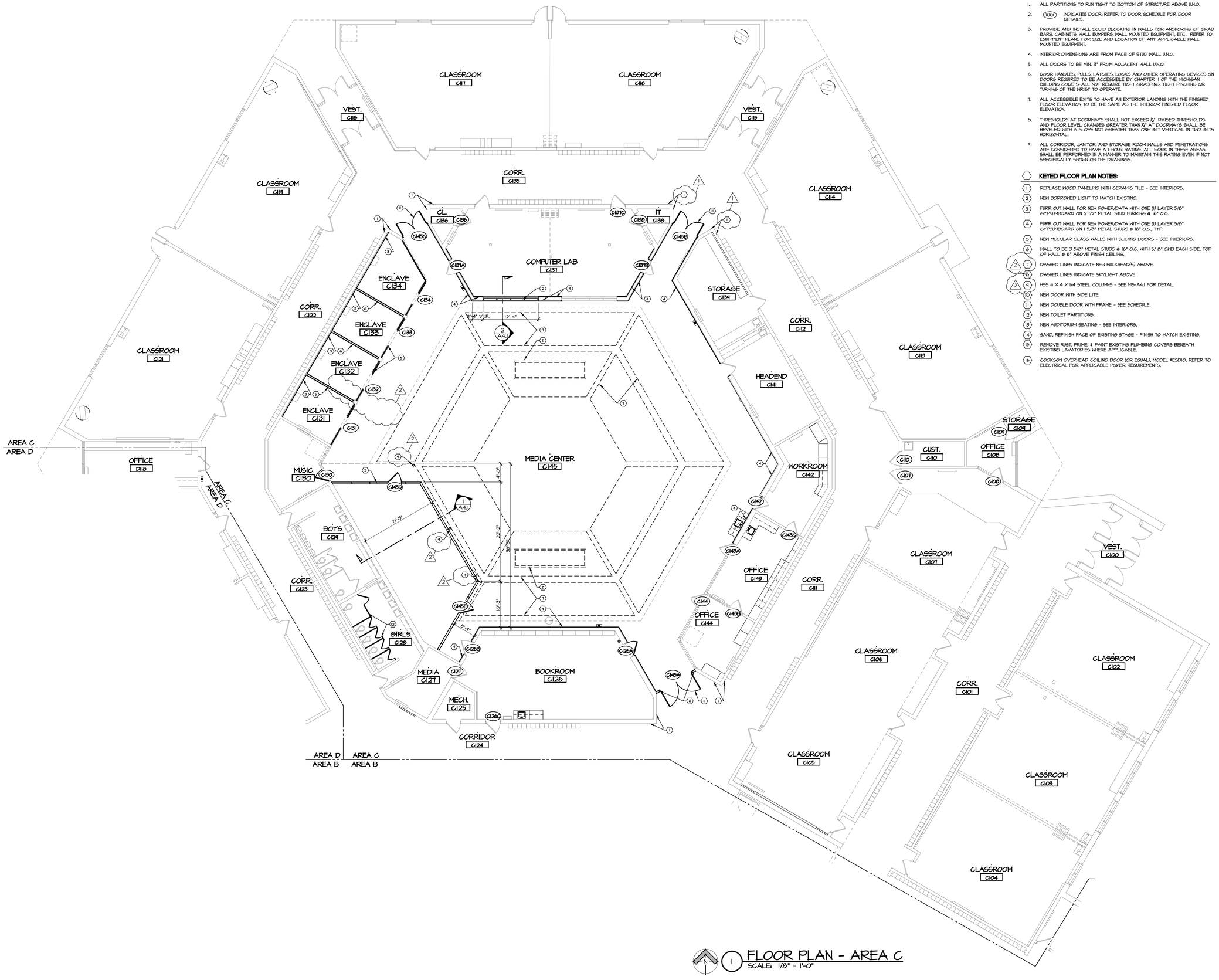

GENERAL FLOOR PLAN NOTES:

1. ALL PARTITIONS TO RUN TIGHT TO BOTTOM OF STRUCTURE ABOVE U.N.O.
2. (XXX) INDICATES DOOR; REFER TO DOOR SCHEDULE FOR DOOR DETAILS.
3. PROVIDE AND INSTALL SOLID BLOCKING IN WALLS FOR ANCHORING OF GRAB BARS, CABINETS, WALL BUMPERS, WALL MOUNTED EQUIPMENT, ETC. REFER TO EQUIPMENT PLANS FOR SIZE AND LOCATION OF ANY APPLICABLE WALL MOUNTED EQUIPMENT.
4. INTERIOR DIMENSIONS ARE FROM FACE OF STUD WALL U.N.O.
5. ALL DOORS TO BE MIN. 3" FROM ADJACENT WALL U.N.O.
6. DOOR HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES ON DOORS REQUIRED TO BE ACCESSIBLE BY CHAPTER 11 OF THE MICHIGAN BUILDING CODE SHALL NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TURNING OF THE WRIST TO OPERATE.
7. ALL ACCESSIBLE EXITS TO HAVE AN EXTERIOR LANDING WITH THE FINISHED FLOOR ELEVATION TO BE THE SAME AS THE INTERIOR FINISHED FLOOR ELEVATION.
8. THRESHOLDS AT DOORWAYS SHALL NOT EXCEED ½". RAISED THRESHOLDS AND FLOOR LEVEL CHANGES GREATER THAN ¼" AT DOORWAYS SHALL BE BEVELED WITH A SLOPE NOT GREATER THAN ONE UNIT VERTICAL IN TWO UNITS HORIZONTAL.
9. ALL CORRIDOR, JANITOR, AND STORAGE ROOM WALLS AND PENETRATIONS ARE CONSIDERED TO HAVE A 1-HOUR RATING. ALL WORK IN THESE AREAS SHALL BE PERFORMED IN A MANNER TO MAINTAIN THIS RATING EVEN IF NOT SPECIFICALLY SHOWN ON THE DRAWINGS.

KEYED FLOOR PLAN NOTES:

1. REPLACE HOOD PANELING WITH CERAMIC TILE - SEE INTERIORS.
2. NEW BORROWED LIGHT TO MATCH EXISTING.
3. FURR OUT WALL FOR NEW POWER/DATA WITH ONE (1) LAYER 5/8" GYPSUMBOARD ON 2 1/2" METAL STUD FURRING @ 16" O.C.
4. FURR OUT WALL FOR NEW POWER/DATA WITH ONE (1) LAYER 5/8" GYPSUMBOARD ON 1 5/8" METAL STUDS @ 16" O.C., TYP.
5. NEW MODULAR GLASS WALLS WITH SLIDING DOORS - SEE INTERIORS.
6. WALL TO BE 3 5/8" METAL STUDS @ 16" O.C. WITH 5/ 8" GWB EACH SIDE. TOP OF WALL @ 6" ABOVE FINISH CEILING.
7. DASHED LINES INDICATE NEW BULKHEAD(S) ABOVE.
8. DASHED LINES INDICATE SKYLIGHT ABOVE.
9. HSS 4 X 4 X 1/4 STEEL COLUMNS - SEE MS-A4.1 FOR DETAIL
10. NEW DOOR WITH SIDE LITE.
11. NEW DOUBLE DOOR WITH FRAME - SEE SCHEDULE.
12. NEW TOILET PARTITIONS.
13. NEW AUDITORIUM SEATING - SEE INTERIORS.
14. SAND, REFINISH FACE OF EXISTING STAGE - FINISH TO MATCH EXISTING.
15. REMOVE RUST, PRIME, & PAINT EXISTING PLUMBING COVERS BENEATH EXISTING LAVATORIES WHERE APPLICABLE.
16. COOKSON OVERHEAD COILING DOOR (OR EQUAL), MODEL #ESD10. REFER TO ELECTRICAL FOR APPLICABLE POWER REQUIREMENTS.

1 FLOOR PLAN - AREA C

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

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ADDENDUM 1	01-18-2017
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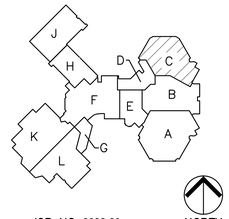

JOB NO. 2900-03

NORTH

SHEET TITLE
FLOOR PLAN - AREA C

SHEET NO.
MS-A1.1CX

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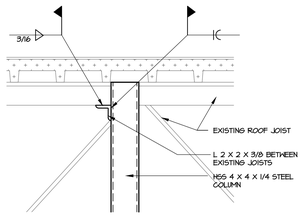
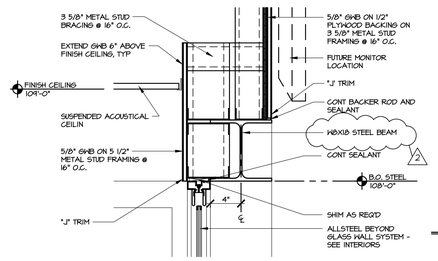
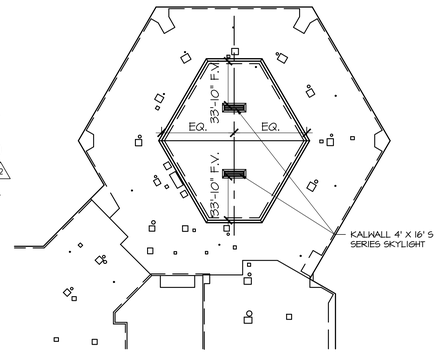


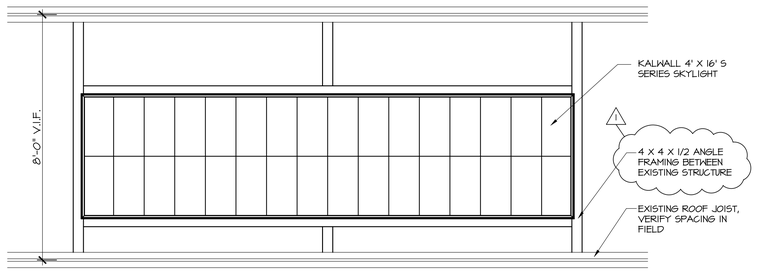


2 7 SECTION DETAIL @ COLUMN
SCALE: 1 1/2" = 1'-0"

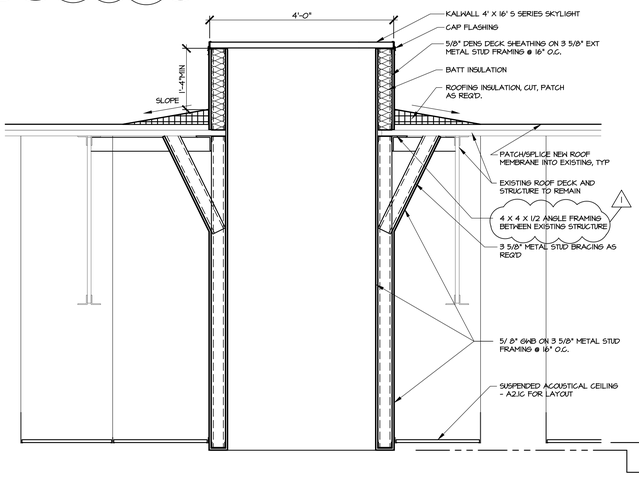
6 SECTION DETAIL
SCALE: 1 1/2" = 1'-0"



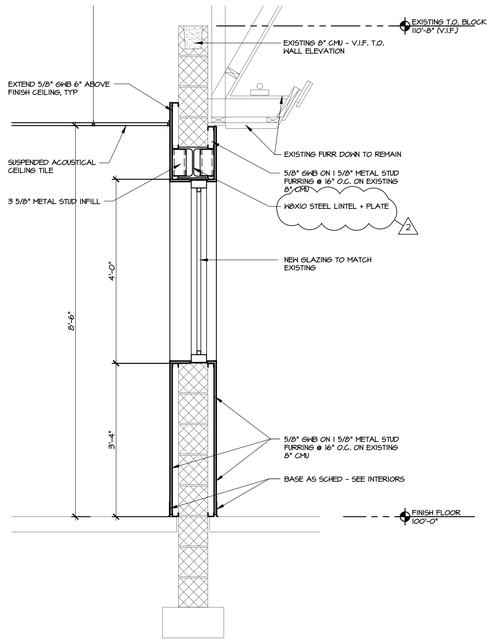
N 5 PARTIAL ROOF PLAN - AREA C
SCALE: 1" = 50'-0"



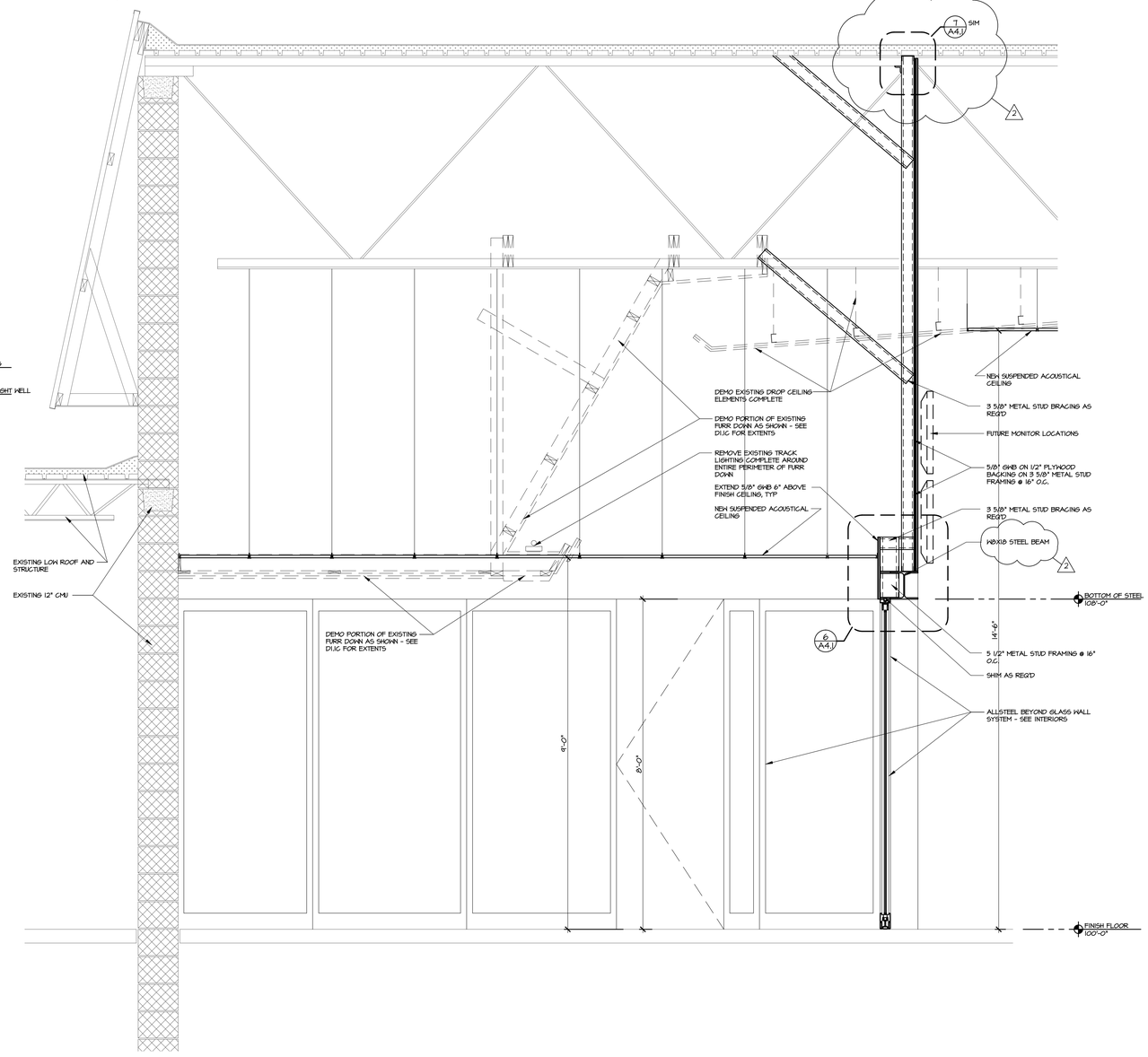
4 SKYLIGHT FRAMING DETAIL
SCALE: 1/2" = 1'-0"



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



2 WALL SECTION
SCALE: 3/4" = 1'-0"



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

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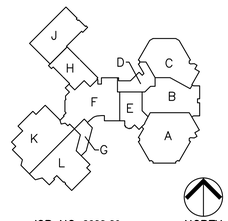

JOB NO. 2900-03 NORTH

SHEET TITLE
WALL SECTIONS & DETAILS

SHEET NO.
MS-A4.1X

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DOOR SCHEDULE

AREA	OPNG	DOOR SIZE	DOOR TYPE	DOOR MAT	DOOR GLASS	FRAME TYPE	FRAME MAT	FRAME GLASS	FRAME HEAD	FRAME JAMB	FRAME JAMB	FRAME SILL	HDW	LABEL	REMARKS
AREA A	A116	EXISTING												A116	REPLACE EX HDW
	A118	EXISTING												A118	REPLACE EX HDW
	A123	EXISTING												A123	REPLACE EX HDW
	A127	EXISTING												A127	REPLACE EX HDW
	A128	EXISTING												A128	REPLACE EX HDW
	A145	EXISTING												A145	REPLACE EX HDW
	A151	EXISTING												A151	REPLACE EX HDW
	A152	EXISTING												A152	REPLACE EX HDW
	A154	EXISTING												A154	REPLACE EX HDW
	A155	EXISTING												A155	REPLACE EX HDW
	A156	EXISTING												A156	REPLACE EX HDW
AREA B	B108	EXISTING												B108	REPLACE EX HDW
	B133	EXISTING												B133	REPLACE EX HDW
	B134	EXISTING												B134	REPLACE EX HDW
	B137	EXISTING												B137	REPLACE EX HDW
	B138	EXISTING												B138	REPLACE EX HDW
	B147	EXISTING												B147	REPLACE EX HDW
	B149	EXISTING												B149	REPLACE EX HDW
	B150	EXISTING												B150	REPLACE EX HDW
	B151	EXISTING												B151	REPLACE EX HDW
	B152	EXISTING												B152	REPLACE EX HDW
	B153	EXISTING												B153	REPLACE EX HDW
	B156	EXISTING												B156	REPLACE EX HDW
	B157A	EXISTING												B157A	REPLACE EX HDW
	B157B	EXISTING												B157B	REPLACE EX HDW
	B157C	EXISTING												B157C	REPLACE EX HDW
AREA C	C107	EXISTING												C107	REPLACE EX HDW
	C108	EXISTING												C108	REPLACE EX HDW
	C109	EXISTING												C109	REPLACE EX HDW
	C110	EXISTING												C110	REPLACE EX HDW
	C126A	3080	2	SC										C126A	
	C126B	EXISTING												C126B	REPLACE EX HDW
	C126C	EXISTING												C126C	REPLACE EX HDW
	C127	EXISTING												C127	REPLACE EX HDW
	C130	3080	1	SC										C130	
	C131	3072	ALLSTEEL BEYOND											C131	SEE SPECIFICATIONS
	C132	3072	ALLSTEEL BEYOND											C132	SEE SPECIFICATIONS
	C133	3072	ALLSTEEL BEYOND											C133	SEE SPECIFICATIONS
	C134	3072	ALLSTEEL BEYOND											C134	SEE SPECIFICATIONS
	C136	EXISTING												C136	REPLACE EX HDW
	C137A	EXISTING												C137A	REPLACE EX HDW
	C137B	EXISTING												C137B	REPLACE EX HDW
	C137C	EXISTING												C137C	REPLACE EX HDW
	C138	EXISTING												C138	REPLACE EX HDW
	C142	EXISTING												C142	REPLACE EX HDW
	C143A	EXISTING												C143A	REPLACE EX HDW
	C143B	EXISTING												C143B	REPLACE EX HDW
	C143C	EXISTING												C143C	REPLACE EX HDW
	C144	EXISTING												C144	REPLACE EX HDW
	C145A	PR4080	3	SC		A	HM		3/M5A6.1	3/M5A6.1				C145A	20 MIN
	C145B	PR3080	3	SC		A	HM		3/M5A6.1	3/M5A6.1				C145B	20 MIN
	C145C	PR3080	3	SC		A	HM		3/M5A6.1	3/M5A6.1				C145C	20 MIN
	C145D	3080	ALLSTEEL BEYOND											C145D	SEE SPECIFICATIONS
	C145E	3080	ALLSTEEL BEYOND											C145E	SEE SPECIFICATIONS

DOOR SCHEDULE

AREA	OPNG	DOOR SIZE	DOOR TYPE	DOOR MAT	DOOR GLASS	FRAME TYPE	FRAME MAT	FRAME GLASS	FRAME HEAD	FRAME JAMB	FRAME JAMB	FRAME SILL	HDW	LABEL	REMARKS
AREA D	D102	EXISTING												D102	REPLACE EX HDW
	D105	EXISTING												D105	REPLACE EX HDW
AREA E	E104A	EXISTING												E104A	REPLACE EX HDW
	E104B	EXISTING												E104B	REPLACE EX HDW
	E105A	EXISTING												E105A	REPLACE EX HDW
	E105B	EXISTING												E105B	REPLACE EX HDW
	E110	EXISTING												E110	REPLACE EX HDW
	E111	EXISTING												E111	REPLACE EX HDW
	E113	EXISTING												E113	REPLACE EX HDW
	E115	EXISTING												E115	REPLACE EX HDW
	E116A	EXISTING												E116A	REPLACE EX HDW
	E116B	EXISTING												E116B	REPLACE EX HDW
	E117	EXISTING												E117	REPLACE EX HDW
	E118	EXISTING												E118	REPLACE EX HDW
	E119	EXISTING												E119	REPLACE EX HDW
AREA F	F100	EXISTING												F100	REPLACE EX HDW
	F103	EXISTING												F103	REPLACE EX HDW
	F106	EXISTING												F106	REPLACE EX HDW
	F108	EXISTING												F108	REPLACE EX HDW
	F109	EXISTING												F109	REPLACE EX HDW
	F113	EXISTING												F113	REPLACE EX HDW
	F114	EXISTING												F114	REPLACE EX HDW
	F117A	EXISTING												F117A	REPLACE EX HDW
	F117B	EXISTING												F117B	REPLACE EX HDW
	F118	EXISTING												F118	REPLACE EX HDW
	F128	EXISTING												F128	REPLACE EX HDW
	F131	EXISTING												F131	REPLACE EX HDW
	F138	EXISTING												F138	REPLACE EX HDW
	F139	EXISTING												F139	REPLACE EX HDW
	F146	EXISTING												F146	REPLACE EX HDW
AREA H	H102	EXISTING												H102	REPLACE EX HDW
	H104A	EXISTING												H104A	REPLACE EX HDW
	H104B	EXISTING												H104B	REPLACE EX HDW
	H105	EXISTING												H105	REPLACE EX HDW
	H106	EXISTING												H106	REPLACE EX HDW
	H112	EXISTING												H112	REPLACE EX HDW
	H118	EXISTING												H118	REPLACE EX HDW
	H122	EXISTING												H122	REPLACE EX HDW
	H127A	EXISTING												H127A	REPLACE EX HDW
	H127B	EXISTING												H127B	REPLACE EX HDW
	H129	EXISTING												H129	REPLACE EX HDW
	H130	EXISTING												H130	REPLACE EX HDW
AREA L	L111A	EXISTING												L111A	REPLACE EX HDW
	L111B	EXISTING												L111B	REPLACE EX HDW
	L112	EXISTING												L112	REPLACE EX HDW
	L113	EXISTING												L113	REPLACE EX HDW
	L114	EXISTING												L114	REPLACE EX HDW
	L128	EXISTING												L128	REPLACE EX HDW

NOTES

1. EXTERIOR DOORS SHALL BE FABRICATED IN SIZES TO ACCOMMODATE OPENINGS (I.E. UNDERCUT AT BARRIER FREE THRESHOLDS).
2. REFER TO SPECIFICATIONS FOR HARDWARE SCHEDULE.
3. ALL INTERIOR BORROW LIGHT AND SIDE LIGHT GLAZING SHOULD BE ON CORRIDOR SIDE.

GLAZING SCHEDULE

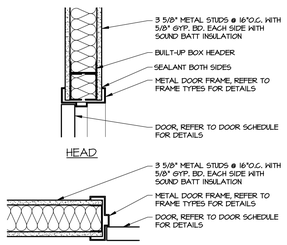
GL-1 EXISTING VISION GLASS, PROVIDE SECURITY WINDOW FILM ON INTERIOR SIDE

GL-2 EXISTING VISION/TEMPERED SAFETY GLASS WHERE REQUIRED BY CODE WITH SECURITY WINDOW FILM ON INTERIOR SIDE

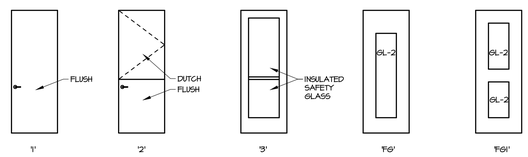
2

ABBREVIATIONS

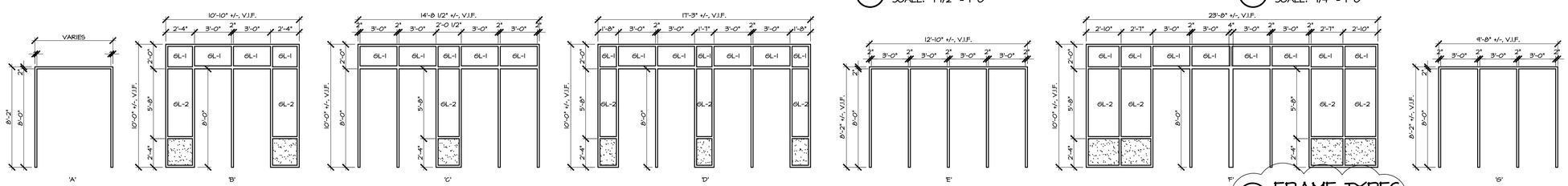
AL - ALUMINUM
HM - HOLLOW METAL
HMI - HOLLOW METAL INSULATED
SC - SOLID CORE WOOD



3 TYP JAMB/HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



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



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

2

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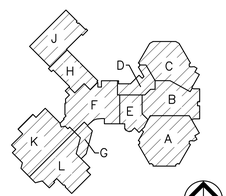

JOB NO. 2900-03

NORTH

SHEET TITLE
DOOR SCHEDULE & DOOR DETAILS

SHEET NO.
MS-A6.1

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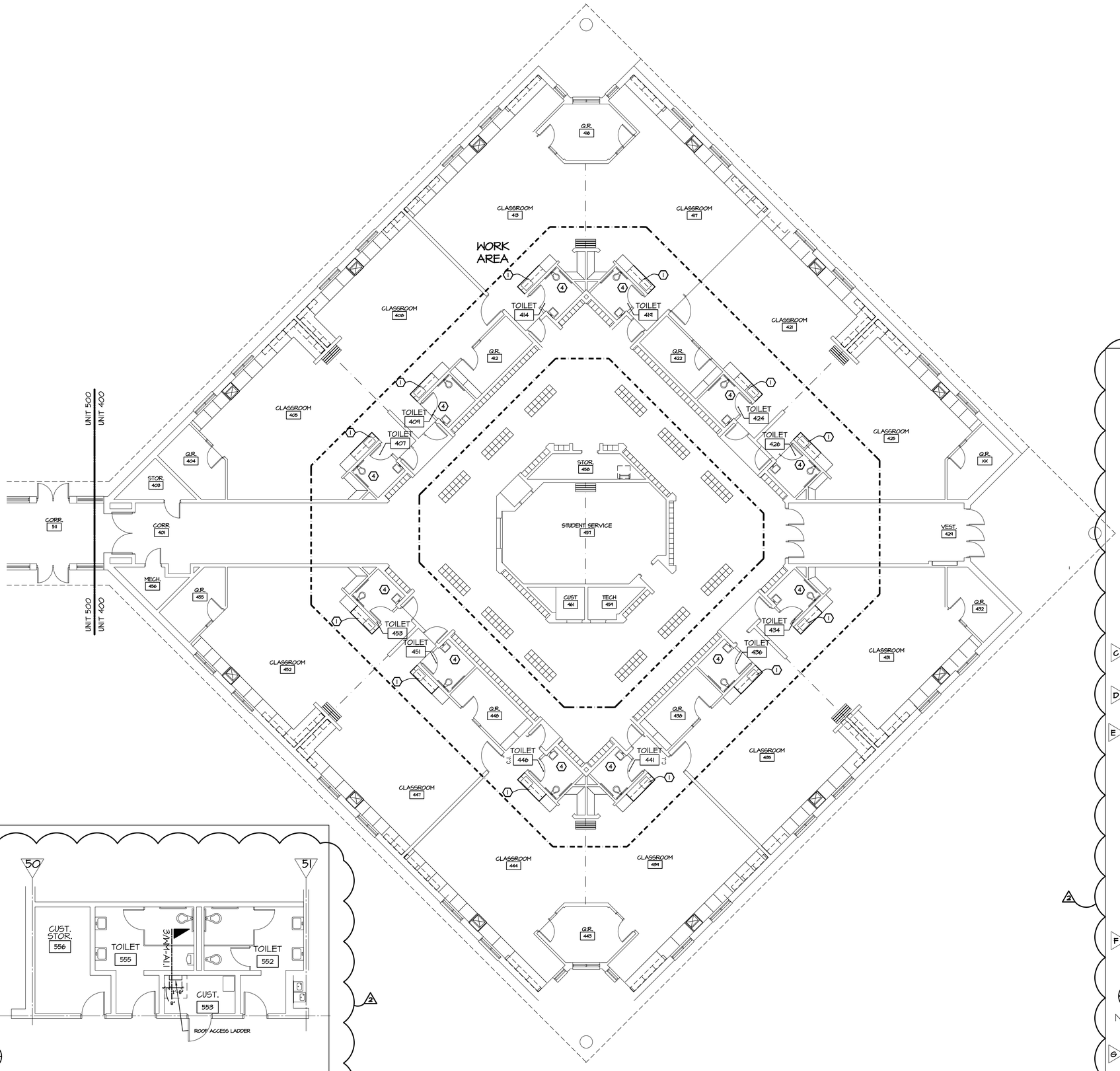
GENERAL NOTES

1. XXXX INDICATES CONSTRUCTION DOCUMENTS ROOM NUMBERS.
2. (XXXX) INDICATES DOOR. REFER TO FRAME TYPES FOR EXTERIOR DOOR & STOREFRONT SIZES. REFER TO SHEET WM-A1.0 FOR DOOR SCHEDULE AND DETAILS.
3. REFER TO DEMOLITION PLANS FOR ADDITIONAL NOTES REGARDING PATCHING AT AREAS OF REMOVAL AND/OR ALTERATIONS. COORDINATE WITH MECHANICAL, ELECTRICAL, AND PLUMBING CONTRACTORS.
4. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS LISTED AS "MATCH EXISTING", "EXISTING", OR PLUS OR MINUS (±).
5. REFER TO SHEET #T2 FOR FLOOR PLAN SYMBOLS LEGEND.
6. FILL/SEAL ALL PENETRATIONS, INCLUDING OPENINGS WHERE PIPING AND DUCKWORK WAS REMOVED, THROUGH WALLS AND VOIDS AT STRUCTURAL MEMBERS. USE FIRE RATED PATCHING MATERIALS IN RATED WALLS IDENTIFIED ON THE CODE COMPOSITE PLAN. USE CMU WHERE REQUIRED TO MATCH ADJACENT CONSTRUCTION.
7. ALL PARTITIONS TO RUN TIGHT TO DECK U.N.O.
8. REFER TO EQUIPMENT PLANS FOR CASEWORK, VISUAL DISPLAY BOARDS, LOCKERS, SHELVING, ETC.
9. ALL NEW MASONRY ABUTTING EXISTING MASONRY SHALL BE TOOTHED INTO EXISTING MASONRY.
10. WHERE THE NOTE "PREP SURFACES" IS ENCOUNTERED, THE CONTRACTOR SHALL TAKE THIS TO MEAN ALL GLUES, RESIDUES, MASTICS, PRTRUSIONS, PITTING, AND MISSING SUBSTRATE MATERIAL SHALL BE REMOVED

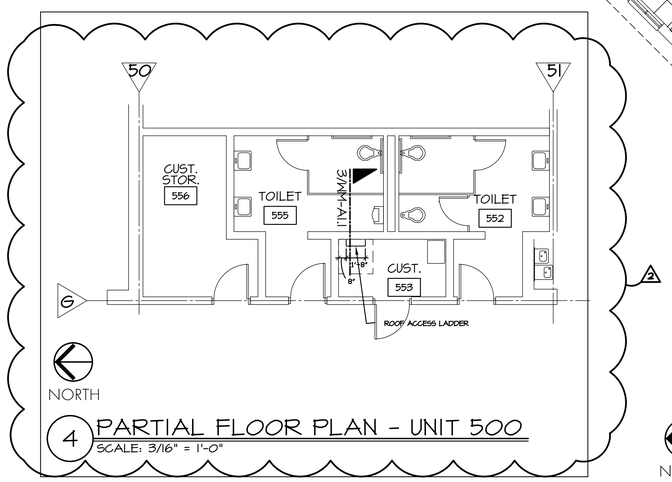
KEY NOTES:

1. REPLACE 6'L COUNTERTOP & BACKSPLASH ON EXISTING BASE CABINETS. VERIFY ALL DIMENSIONS IN FIELD. EXISTING SINK TO BE RE-INSTALLED. NEW COUNTERTOP LAMINATE TO MATCH EXISTING COLOR WITH 3MM PVC EDGE. SEE SPEC. SECTION 123216 & 123623.16.
2. CLEAN / REMOVE GROUT FROM DAMAGED CMU MASONRY JOINT. PROVIDE FOAM BACKER ROD IN PORTION OF JOINT WHERE APPLICATION OF SEALANT REQUIRES. APPLY BUTYL BASED, NON-JAS, NON-HARDENING PAINTABLE SEALANT. PAINT WALL TO MATCH ADJACENT FINISH, AFTER SEALANT CURES.
   REFER TO IMAGE #2, THIS SHEET FOR SOUTH WALL OF GYM
   REFER TO IMAGE #3, THIS SHEET FOR NORTH WALL OF CORRIDOR 525
3. PROVIDE NEW DOOR AND FRAME IN EXISTING OPENING. REFER TO DOOR SCHEDULE ON SHEET WM-A0.1
4. REMOVE EXISTING VCT FLOORING; PREPARE SUBFLOOR TO BE SUITABLE FOR NEW FLOOR FINISH INSTALLATION. COORDINATE WITH INTERIOR DRAWINGS. REMOVE AND REINSTALL EXISTING FLOOR MOUNTED TOILETS WHERE THIS OCCURS, AFTER NEW FLOORING INSTALLATION.

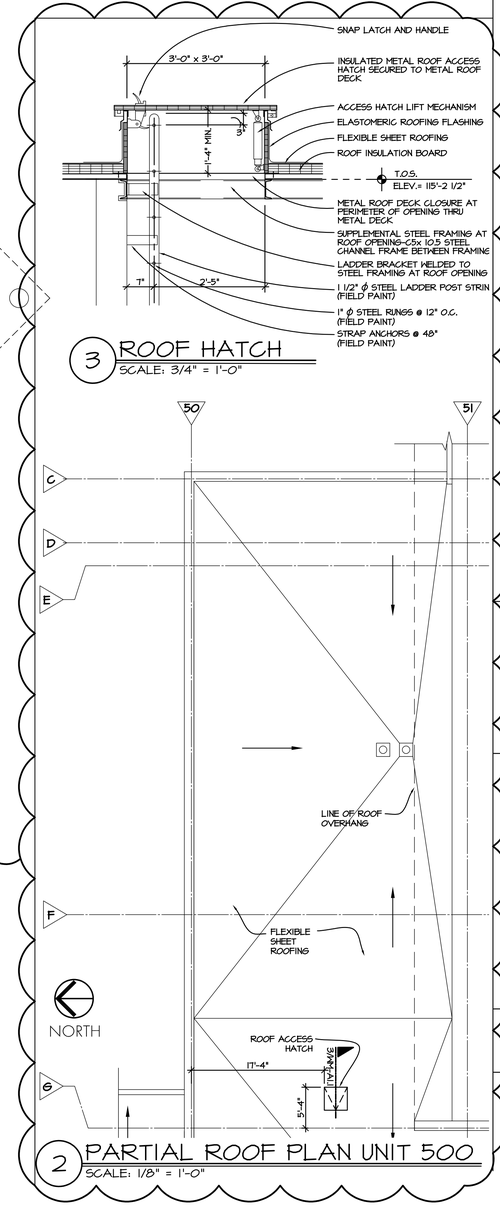


1 FLOOR PLAN - UNIT 400
SCALE: 1/8" = 1'-0"

NORTH



4 PARTIAL FLOOR PLAN - UNIT 500
SCALE: 3/16" = 1'-0"



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

2 PARTIAL ROOF PLAN UNIT 500
SCALE: 1/8" = 1'-0"

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ADDENDUM #2	01-27-2017

600
500
400

JOB NO. 2900-03

NORTH

SHEET TITLE

FLOOR PLAN - UNIT 400

SHEET NO.

XXAFLR

WM-A1.1X

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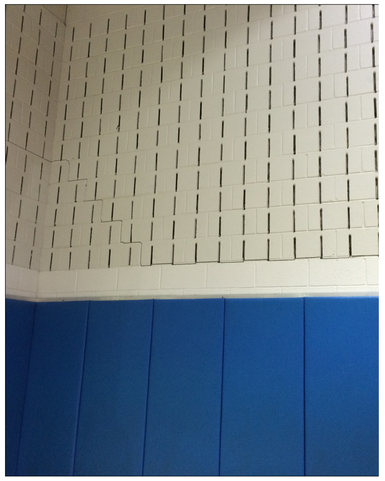
GENERAL NOTES

1. XXXX INDICATES CONSTRUCTION DOCUMENTS ROOM NUMBERS.
2. XXX INDICATES DOOR. REFER TO FRAME TYPES FOR EXTERIOR DOOR & STOREFRONT SIZES. REFER TO SHEET WM-A1.0. FOR DOOR SCHEDULE AND DETAILS.
3. REFER TO DEMOLITION PLANS FOR ADDITIONAL NOTES REGARDING PATCHING AT AREAS OF REMOVAL AND/OR ALTERATIONS. COORDINATE WITH MECHANICAL, ELECTRICAL, AND PLUMBING CONTRACTORS.
4. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS LISTED AS "MATCH EXISTING", "EXISTING", OR PLUS OR MINUS (±).
5. REFER TO SHEET #T2 FOR FLOOR PLAN SYMBOLS LEGEND.
6. FILL/SEAL ALL PENETRATIONS, INCLUDING OPENINGS WHERE PIPING AND DUCKWORK WAS REMOVED, THROUGH WALLS AND VOIDS AT STRUCTURAL MEMBERS. USE FIRE RATED PATCHING MATERIALS IN RATED WALLS IDENTIFIED ON THE CODE COMPOSITE PLAN. USE CMU WHERE REQUIRED TO MATCH ADJACENT CONSTRUCTION.
7. ALL PARTITIONS TO RUN TIGHT TO DECK U.N.O.
8. REFER TO EQUIPMENT PLANS FOR CASEWORK, VISUAL DISPLAY BOARDS, LOCKERS, SHELVING, ETC.
9. ALL NEW MASONRY ABUTTING EXISTING MASONRY SHALL BE TOOTHED INTO EXISTING MASONRY.
10. WHERE THE NOTE "PREP SURFACES" IS ENCOUNTERED, THE CONTRACTOR SHALL TAKE THIS TO MEAN ALL GLUES, RESIDUES, MASTICS, PETRUSIONS, PITTING, AND MISSING SUBSTRATE MATERIAL SHALL BE REMOVED

KEY NOTES:

1. REPLACE 6'L COUNTERTOP & BACKSPLASH ON EXISTING BASE CABINETS. VERIFY ALL DIMENSIONS IN FIELD. EXISTING SINK TO BE RE-INSTALLED. NEW COUNTERTOP LAMINATE TO MATCH EXISTING COLOR WITH 3MM PVC EDGE. SEE SPEC. SECTION 123216 & 123623.16.
2. CLEAN / REMOVE GROUT FROM DAMAGED CMU MASONRY JOINT. PROVIDE FOAM BACKER ROD IN PORTION OF JOINT WHERE APPLICATION OF SEALANT REQUIRES. APPLY BUTYL BASED, NON-SAG, NON-HARDENING PAINTABLE SEALANT. PAINT WALL TO MATCH ADJACENT FINISH, AFTER SEALANT CURES.
   REFER TO IMAGE #2, THIS SHEET FOR SOUTH WALL OF GYM
   REFER TO IMAGE #3, THIS SHEET FOR NORTH WALL OF CORRIDOR 525
3. PROVIDE NEW DOOR AND FRAME IN EXISTING OPENING. REFER TO DOOR SCHEDULE ON SHEET WM-A0.1
4. REMOVE EXISTING VCT FLOORING; PREPARE SUBFLOOR TO BE SUITABLE FOR NEW FLOOR FINISH INSTALLATION. COORDINATE WITH INTERIOR DRAWINGS. REMOVE AND REINSTALL EXISTING FLOOR MOUNTED TOILETS WHERE THIS OCCURS, AFTER NEW FLOORING INSTALLATION.



3 GYM SOUTH WALL
NO SCALE

2 CORRIDOR 525 NORTH WALL
NO SCALE

NORTH

1 FLOOR PLAN - UNIT 500
SCALE: 1/8" = 1'-0"

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Barton Malow

Saline Area Schools
2017 Projects
Woodland Meadow Elementary
Saline, Michigan

THE PURSUIT OF EXCELLENCE

Saline Area Schools

REVISIONS/REVIEW	DATE
ISSUED FOR BID	01-06-2017
ADDENDUM #2	01-27-2017

600
500
400

JOB NO. 2900-03

NORTH

SHEET TITLE

FLOOR PLAN - UNIT 500

SHEET NO.

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WM-A1.2

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