DOCUMENT 00 90 00
ADDENDUM

ADDENDUM NO. [1] **Date: March 13, 2020**

RE: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL ADDITION AND REMODELING PHASE 2
1001 McHUGH ROAD
HOLMEN, WISCONSIN 54636
HSR 18061

FROM: HSR Associates, Inc
100 Milwaukee Street
La Crosse, WI 54603
(608) 784-1830

To: Prospective Bidders

This addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated February 2020. Acknowledge receipt of this Addendum in the space provided on the bid form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of [5] pages, pre-bid attendance, [2] specification sections, and [37] 30 x 42 drawings.

CHANGES TO BIDDING REQUIREMENTS AND CONDITIONS OF THE CONTRACT:

1. Pre-bid attendance attached hereto.

GENERAL REQUIREMENTS:

2. Section 01 23 00 ALTERNATES
    a. 1.05, A, 1: Change “ID105” to “ID100”.

CHANGES TO SPECIFICATIONS:

3. Section 08 71 00 DOOR HARDWARE
    a. Revised groups as follows:

HARDWARE GROUP 1
EACH ALUM SIDE FOLDING GATE TO HAVE:
DR. ~~F106A~~ **F106B**
2 EA MORTISE CYLINDER 1E74 626 BEST
VERIFY CYLINDER TYPE WITH GATE MANUFACTURER PRIOR TO ORDERING.

HARDWARE GROUP 2
EACH COILING DOOR TO HAVE:

DR. ~~H106C~~, **F107**, H107, H102B, H102C, H107, **H106A**
1 EA MORTISE CYLINDER 1E74 626 BEST
VERIFY CYLINDER TYPE WITH GATE MANUFACTURER PRIOR TO ORDERING

4. Section 23 21 23 HVAC PUMPS
    a. Section attached hereto as part of Contract Documents.

5. Section 23 73 13 MODULAR AIR HANDLING UNITS
    a. Section attached hereto as part of Contract Documents.

CHANGES TO DRAWINGS

6. Sheet A090 REMOVAL PLAN 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. Slab removal indicated in Kitchen.
    c. Opening height indicated at SE corner of FAC.
7. Sheet A101 FLOOR PLAN – SEGMENT F 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. Room F107; correction made to detail reference.
8. Sheet A123 REFLECTED CEILING PLAN – SEGMENT H 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. Rooms H106 and H110; deleted load requirements for secondary ceiling support. Ceiling shall be supported from existing structure above.
9. Sheet A200 INTERIOR ELEVATIONS 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. 2A200; Add projector shelf.
10. Sheet A210 CASEWORK ELEVATIONS 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
11. Sheet A300 BUILDING SECTIONS 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. 1 & 2 A300; Delete secondary ceiling support. Suspend ceiling from structure above.
12. Sheet A301 BUILDING SECTIONS 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. At each section, delete secondary ceiling support. Suspend ceiling from structure above.
13. Sheet A310 WALL SECTIONS 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. 3, 5, 6, 7A310; Delete secondary ceiling support. Suspend ceiling from structure above.
    c. 8A310; Revised skylight curb to meet install requirements.
14. Sheet A500 DETAILS 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. Door detail section added.

15. Sheet A601 DOOR SCHEDULE 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. Hardware groups revised for F doors.
16. Sheet ID100 OVERALL INTERIOR PLAN 30 x 42 attached hereto
    a. Revisions clouded on Drawing.
17. Sheet ID 101 FINISH FLOOR PLAN SEGMENT F 30 x 42 attached hereto
    a. Revisions clouded on Drawing.
18. Sheet ID 103 FINISH FLOOR PLAN SEGMENT H 30 x 42 attached hereto
    a. Revisions clouded on Drawing.
19. Sheet ID 104 FINISH FLOOR PLAN SEGMENT J 30 x 42 attached hereto
    a. Revisions clouded on Drawing.
20. Sheet ID600 MASTER COLOR SCHEDULE 30 x 42 attached hereto
    a. Revisions clouded on Drawing.
21. Sheet S001 STRUCTURAL NOTES 30 x 42 attached hereto
    a. Revisions clouded on Drawing.
22. Sheet S002 STRUCTURAL SCHEDULES 30 x 42 attached hereto
    a. Revisions clouded on Drawing.
23. Sheet S100 FOUNDATION/FRAMING PLANS 30 x 42 attached hereto
    a. Revisions clouded on Drawing.
24. Sheet S800 DETAILS 30 x 42 attached hereto
    a. Revisions clouded on Drawing.
25. Sheet P101 PLUMBING PLANS – SEGMENT F & H 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
26. Sheet P200 DWV RISER ISOMETRIC 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
27. Sheet M090 OVERALL DUCTWORK REMOVAL PLAN 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. Keynote added stating all existing curbs shall remain in place. Add insulated cap with taper top layer to allow water to drain away and a sheet metal cap. Flashing to not void the roof warranty.
28. Sheet M092 ENLARGED MEZZANINE REMOVAL PLAN 30 x 42 attached hereto.
    a. Drawing attached hereto shall be included in contract documents.
    b. Indicating the removal of two (2) existing AHUs in the Mechanical Mezzanine Room.
29. Sheet M103 MECHANICAL DUCT REMOVAL PLAN – SEGMENT H 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. The mini-split unit is no longer required per IT. Unit has been removed.

30. Sheet M105 MECHANICAL PIPING REMODEL PLAN – SEGMENT E 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. New thermostats to be installed with the upgraded DDC Controls for new Unit Ventilators.
31. Sheet M107 MECHANICAL PIPING REMODEL PLAN – SEGMENT H 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. New piping connections have been shown to the new VAV boxes and Unit Heater. New Stand-alone T-stat for new UH-1.
    c. The mini-split unit is no longer required by IT. Unit has been removed along with the condensate piping.
32. Sheet M108 MECHANICAL ROOF PLAN 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. Outdoor Condensing Unit to Mini Split (MS-1) has been removed.
33. Sheet M200 ENLARGED MEZZANINE REMODEL PLAN 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. New AHUs (AHU-2 and AHU-3) have been shown along with new recirculating Pumps (HCP-2 and HCP-3).
34. Sheet M400 CONTROL SCHEMATICS 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. Revised controls for new Air Handling Units (AHU-2 and AHU-3).
35. Sheet M401 AHU-2 DETAILS 30 x 42 attached hereto.
    a. Drawing attached hereto shall be included in contract documents.
    b. Indicating details for new AHU-2.
36. Sheet M402 AHU-3 DETAILS 30 x 42 attached hereto.
    a. Drawing attached hereto shall be included in contract documents.
    b. Indicating details for new AHU-3.
37. Sheet M501 HVAC DETAILS 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. Revised details 2M501 and 7M501 on this sheet.
38. Sheet M600 HVAC DETAILS 30 x 42 attached hereto.
    a. Revisions clouded on Drawing.
    b. New Air Handling Unit Schedule has been included along with the Circulation Pump Schedule.
    c. DDC Controls note has been included on the Unit Ventilator Schedule.
39. Sheet E102 PLAN SEGMENT G 30 x 42 attached hereto
    a. Revisions clouded on Drawing.
40. Sheet E103 PLAN SEGMENT H 30 x 42 attached hereto
    a. Revisions clouded on Drawing.

41. Sheet E104 PLAN SEGMENT J 30 x 42 attached hereto
    a. Revisions clouded on Drawing.
42. Sheet E600 LIGHTING, MOTOR AND PANELBOARD SCHEDULES 30 x 42 attached hereto
    a. Revisions clouded on Drawing

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ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
HSR Associates
Celebrating 65 Years of Innovative Design

Pre-Bid Meeting Sign-In Sheet

March 11, 2020

PROJECT: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL ADDITION AND REMODELING PHASE 2
1001 McHUGH ROAD
HOLMEN, WISCONSIN 54636
HSR 18061

BID OPENING: 2:00 PM, March 24, 2020

Name	Company
1. Doug Ramsey	HSR Associates
2. Michelle Maland	HSR Associates
3. Mike Lorens	HSR Associates
4. Shaun Lescher	HSR Associates
5. Wayne Sackett	School District of Holmen
6. Greg Krueger	School District of Holmen
7. Kevin Berg	Market & Johnson
8. Marcus Schindler	Market & Johnson
9. Austin Hoffman	Fowler & Hammer
10. Paul Giese	Fowler & Hammer
11. Mark Clough	E. Stanek Electric
12. Travis Horstman	Wettstein Brothers Electric
13. Jason Yahnke	Olympic Builders
14. Kevin Kuderer	B & B Electric
15. Brad Burke	Americon Construction
16. Andy Faile	All American
17. H.L. Maher	Reedy Concrete
18. Casey Stemper	Wieser Brothers
19. C.J. Thurner	Certified Plumbing & Heating

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SECTION 23 21 23

HVAC PUMPS

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Conditions of the Contract and portions of Division One of this Project Manual apply to this Section as though repeated herein.

B. The requirements of Section 23 05 00 apply to this Section.

1.02 DESIGN CRITERIA

A. Pump sizes, capacities, pressures and operating characteristics shall be as scheduled.

B. Pumps shall meet or exceed operating efficiencies scheduled.

C. Provide all pumps with motors, impellers, drive assemblies, bearings, coupling guard, and other accessories specified. Statically and dynamically balance all rotating parts. Provide flanged connections on all pumps unless specified otherwise. Service or repair of base mounted pumps shall not require breaking piping connections or removal of motor.

D. Where a pump is specified for parallel operation, the scheduled conditions are for that pump with both pumps operating; i.e., total system flow rate is twice that scheduled for a single pump. When only one of the parallel pumps is operating, the operating point of that pump must fall within the manufacturer's recommended operating range.

E. Provide pump with a motor sized for non-overloading over the entire pump curve. Motors to be 1750 rpm unless specified otherwise.

F. Unless noted on the pump schedule, the selected impeller diameter must be chosen to allow a future impeller change to provide a capacity of 110% of the scheduled flow rate at 110% of the scheduled head.

G. Pump selections shall meet the scheduled capacities and be selected so the scheduled design flow rate is not greater than 85% of the published end of curve flow rate for the impeller selected. Extrapolations beyond the published curve will not be accepted. Unless noted on the schedule, the maximum suction velocity shall be 20 FPS for double suction pumps and 12 FPS for end suction and inline pumps.

H. Furnish each pump and motor with a nameplate giving the manufacturer's name, serial number of pump, capacity in GPM and head in feet at design condition, horsepower, voltage, frequency, speed and full load current.

I. Test all pumps, clean and paint before shipment. The manufacturer shall certify all pump ratings.

J. All pumps to operate without excessive noise or vibration.

1.03 EXTRA MATERIALS

A. Furnish one spare seal and casing gasket for each pump to user agency.

1.04 SUBMITTALS

A. Submit in accord with Section 01 30 00.

1. Shop drawings and descriptive product data describing all material furnished under Part 2 of this Section.

1.05 EQUIPMENT START-UP

A. Provide system start-up; the equipment manufacturer's representative will provide supervision and be in attendance during unit start-up.

1. Equipment shall not be placed in operation until a competent installation and service representative of the manufacturer has inspected the installation and certified that the equipment is properly installed, adjusted and lubricated; that preliminary operating instructions have been given; and that the equipment is ready for operation. Submit four copies of a written startup report following the initial start up to be included to O&M manuals. Include in the report: work done to the system, all readings taken, a statement certifying that the unit(s) have been placed in proper running condition as recommended by the manufacturer and as intended in the drawings and specifications.

PART 2: PRODUCTS

2.01 PUMP MOTORS

A. See specifications Section 23 05 13 for pump motor requirements.

B. Pump motors with Variable Frequency Drives (VFD's)

1. All drives on the project shall be from the same manufacturer in a separate submittal. See specification Section 23 05 13 for drive requirements.
2. Shaft Grounding Rings
   a) All motors operated on variable frequency drives shall be equipped with a maintenance-free, conductive microfiber shaft grounding ring to meet NEMA MG-1, 3.4.4.4.3 requirements, with a minimum of two rows of circumferential microfibers to discharge damaging shaft voltages away from the bearings to ground. SGR's Service Life: Designed to last for service life of motor. Product manufactured by AEGIS SGR Conductive MicroFiber Shaft Grounding Ring, Inpro/Seal CDR or approved equal.

2.02 IN-LINE ECM WET ROTOR CENTRIFUGAL PUMPS WITH INTEGRAL VFD

A. Based on product by Grundfos MAGNA3.

1. Armstrong, Bell and Gossett Ecocirc XL, Wilo Stratos and Taco Viridian equals are acceptable.

B. The MAGNA3 is of the canned-rotor type, i.e. pump and motor form an integral unit without shaft seal and with only two gaskets for sealing. The bearings are lubricated by the pumped liquid. The innovative clamp with only one screw enables easy repositioning of the pump head. Provide a pump of size, type and capacities listed in schedule on Drawings. Pumps shall be suitable fluid media and application.

C. The pump is characterized by the following:

1. Controller integrated in the control box.
2. Control panel with TFT display on the control box.
3. Control box prepared for optional CIM modules.
4. Built-in differential-pressure and temperature sensor.
5. Cast-iron pump housing (depending on model). Carbon-fiber-reinforced composite rotor can.
6. Stainless-steel bearing plate and rotor cladding.

7. Aluminum alloy stator housing.
8. Air-cooled power electronics

D. The MAGNA3 is a single-phase pump with the following characteristic features:
1. AUTOADAPT.
2. FLOWADAPT and FLOWLIMIT (more than a pump function as it reduces the need for pump throttling valves).
3. Proportional-pressure control.
4. Constant-pressure control.
5. Constant-temperature control.
6. Constant-curve duty.
7. Maximum or minimum curve duty.
8. Automatic Night Setback. No external motor protection required.
9. Insulating shells supplied with single-head pumps for heating systems.
10. Large temperature range where the liquid temperature and the ambient temperature are independent of each other.

E. Communication. The MAGNA3 enables communication via the following:
1. Wireless Grundfos GO Remote
2. Fieldbus communication via CIM modules
3. Digital inputs
4. Relay outputs
5. Analog input (more than a pump function as heat energy meter)

F. Motor and electronic controller
1. The MAGNA3 incorporates a 4- or 8-pole synchronous, permanent-magnet motor (PM motor). This motor type is characterized by higher efficiency than a conventional asynchronous squirrel-cage motor. Conventional asynchronous squirrel-cage motors shall not be acceptable.
2. Each motor shall be of the integrated Variable Speed Drive design consisting of a motor and a Variable Frequency Drive (VFD) built and tested as one unit by the same manufacturer.

G. Interface and Communication
1. The pump shall have an integrated operator interface consisting of:
   a) Minimum 2.4” (measured diagonally) color TFT display
   b) 7 push buttons for navigation of menu
   c) Push buttons must be able to operate at minimum 25,000 times
   d) Push buttons must be isolated from the main supply by reinforced insulation according to UL60730
   e) LEDs to signal pump status for quick indication
2. The pump shall have a sensor integrated directly into the pump housing with 4 wires consisting of Ground, Supply, and two signals for Differential Pressure and Media Temperature.
   a) Sensor Supply shall be 4.8VDC ±2% at 20mA referenced to Ground. The supply must be able to withstand a permanent short circuit.
   b) The electrical values for the signal shall be 4.8VDC ±2% referenced to ground.

3. The pump module shall have one analog input configurable for either 4-20mA or 0-10VDC input signal configurable for external Temperature or Pressure sensor, or Setpoint influence. Sensor input shall have three wires for Ground, Supply, and Signal. The Supply for external analog input shall be 24VDC 10% at 22mA reference to Ground. The supply must be able to withstand a permanent short circuit. Connection can be made to a screw terminal capable of wire sizes up to AWG16.

4. The pump shall have 3 digital inputs galvanically isolated from the main supply by a reinforced insulation according to UL60730.
   a) Start/Stop – Used to start or start the pump. The pump shall be enabled when connected to common ground by an external potential free short circuit. An open circuit to this input shall disable the pump. Connection can be made to a screw terminal capable of wire sizes up to AWG16.
   b) Minimum – used to force the pump to run at minimum load (curve). When connected to common ground by an external potential free short circuit the pump must run at minimum load. Connection can be made to a screw terminal capable of wire sizes up to AWG16.
   c) Maximum - used to force the pump to run at maximum load (curve). When connected to common ground by an external potential free short circuit the pump must run at maximum load. Connection can be made to a screw terminal capable of wire sizes up to AWG16.
   d) The pump module shall have two output relays. Each relay shall be configurable for Alarm, Reading, or Operating indication. Each relay must have three screw terminals capable of wire sizes up to AWG16. Output relays contacts shall be rated for maximum 250VAC at 2A and minimum 5VDC at 20mA. Each must have galvanic isolation from the internal supply by reinforced insulation according to UL60730.
5. Provide add-on module for integration into Building Automation Systems:
   1) Coordinate communication protocol for BAS integration with control contractor, Section 23 09 93 Controls.
   2) See Section 23 09 93 Controls for Equipment Integrations and list of points to be integrated.
6. The pump module shall have wireless connectivity for two pumps to communicate with one another or for the pump to communicate to a mobile device with additional hardware.
   a) Communication range shall at minimum within 30 feet of the pump without walls or barriers.
   b) Two identical pumps shall be capable of wireless communication with one another to operate as a two pump system in:
      1) Duty/Standby
      2) Alternating Mode, pumps alternate operation every 24 hours
      3) Cascade operation with both pumps running simultaneously in constant differential pressure mode.

PART 3: EXECUTION

3.01 PUMPS

A. Install all pumps in accordance with manufacturer's instructions. Access/service space around pumps shall not be less than minimum space recommended by pump manufacturer.

B. All pumps shall be fitted with pressure gauge piped to the inlet and outlet pump flanges, to inlet of suction diffuser or inlet of inline strainer, and outlet of triple duty valve. The gauge is to be isolated from each flange via ¼" ball valve. This gauge is to be used to take the differential across the pump unless otherwise indicated.

C. Pipe connections to pumps shall be made in such a manner so as not to exert any stress on pump housings. If necessary to meet this requirement, provide additional pipe supports and flex connectors.

3.02 FLEXIBLE PUMP CONNECTIONS

A. Provide a pipe anchor beyond each flexible connection, in direction away from pump.

B. Provide adequate pipe anchoring immediately on both sides of in-line pump.

3.03 IN-LINE PUMPS

A. Provide adequate pipe hangers immediately on both sides of in-line pumps. The pump must be installed in such a way that it is not stressed by the pipework. The pump may be suspended direct in the pipes, provided that the pipework can support the pump. Twin-head pumps are prepared for installation on a mounting bracket or base plate.

B. Inline wet rotor pumps shall be designed for indoor installation. The wet rotor pumps must be installed with horizontal motor shaft. The pump may be installed in horizontal as well as vertical pipes. Arrows on the pump housing indicate the liquid flow direction through the pump. The control box must be in horizontal position with the Grundfos logo in vertical position.

C. To ensure adequate cooling of motor and electronics, the following must be observed:

1. Position the pump in such a way that sufficient cooling is ensured.
2. The temperature of the ambient air must not exceed 104 °F [+40 °C].

3.04 WIRING

A. Wiring under Division 26, Electrical. .

B. The electrical connection and protection should be carried out in accordance with local regulations.

1. The pump must be connected to an external mains switch.
2. The pump must always be correctly earthed.
3. The pump requires no external motor protection.
4. The pump incorporates thermal protection against slow overloading and blocking.
5. When switched on via the power supply, the pump will start pumping after approx. 5 seconds.
6. **Note:** The number of starts and stops via the power supply must not exceed four times per hour.
7. The pump has a digital input that can be used for external control of start/stop without switching the power supply on/off. The pump mains connection must be made as shown in the diagrams on the following pages.

C. Use screened cables for external on/off switch, digital input, sensor and setpoint signals.

1. All cables used must be heat-resistant up to at least 185 °F [+85 °C].
2. All cables used must be installed in accordance with EN 60204-1 and EN 50174-2:2000.

D. Additional protection

1. If the pump is connected to an electric installation where an earth leakage circuit breaker (ELCB) is used as an additional protection, this circuit breaker must trip when earth fault currents with DC content (pulsating DC) occur

END OF SECTION 23 21 23

SECTION 23 73 13

MODULAR AIR HANDLING UNITS/COILS

PART 1: GENERAL

1.01 RELATED DOCUMENTS

A. Conditions of the Contract and portions of Division One of this Project Manual apply to this Section as though repeated herein.

B. The requirements of Section 23 05 00 apply to this Section.

1.02 RELATED SECTIONS

A. Section 23 05 13 Motors & VFDs

B. Section 23 05 48 Vibration Isolation

C. Section 23 07 13 Duct Insulation

D. Section 23 09 00 Controls and Instrumentation

E. Section 23 21 14 Hot Water Heating System

F. Section 23 21 16 Hydronic Specialties

G. Section 23 21 17 Air Control Devices

1.03 REFERENCES

A. AMCA Publication 99 – Standards Handbook.

B. AMCA Publication 611 – Certified Ratings Program – Airflow Measurement Performance

C. AMCA Standard 500-D – Laboratory Methods of Testing Dampers for Rating.

D. ANSI/ABMA Standard 9 - Load Ratings and Fatigue Life for Ball Bearings.

E. ANSI/AMCA Standard 204 – Balance Quality and Vibration Levels for Fans.

F. ANSI/AMCA Standard 610 – Laboratory Methods of Testing Airflow Measuring Stations for Rating.

G. ANSI/AHRI Standard 410 - Forced Circulation Air-Cooling and Air-Heating Coils.

H. ANSI/AHRI Standard 430 - Central Station Air Handling Units.

I. ANSI/AHRI Standard 1060 – Rating Air-To-Air Energy Recovery Ventilation Equipment

J. ANSI/ASHRAE Standard 52.2 – Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size.

K. ANSI/ASHARE Standard 62.1 – Ventilation for Acceptable Indoor Air Quality.

L. ANSI/ASHARE Standard 90.1 – Energy Standard for Buildings Except Low-Rise Residential Buildings.

M. ANSI/NEMA MG 1 – Motors and Generators.

N. ANSI/UL 900 – Standard for Safety Air Filter Units.

O. AHRI Standard 260 – Sound rating of Ducted Air Moving and Conditioning Equipment.

P. ASHRAE Standard 84 - Method of Testing Air-to-Air Heat Exchangers.

Q. ASHRAE Standard 111 – Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems.

R. ASTM B117 - Standard Practice for Operation Salt Spray Apparatus.

S. ASTM C1071 – Thermal and Acoustic Insulation (Mineral Fiber, Duct Lining Material).

T. ASTM C1338 – Standard Test Method for Determining Fungi Resistance of Insulation Material and Facings.

U. ASTM E477 – Standard Test Method for Measure Acoustical and Airflow Performance of Duct Liner Materials and Prefabricated Silencers.

V. NFPA 70 – National Electrical Code®.

W. NFPA 90A – Standard for the Installation of Air Conditioning and Ventilation Systems.

X. UL 1995 – Standard for Safety Heating and Cooling Equipment.

1.04 QUALITY ASSURANCE

A. Air Coils: Certify capacities, pressure drops and selection procedures in accordance with current AHRI Standard 410.

B. Air handling units with fan sections utilizing single fans shall be rated and certified in accordance with AHRI Standard 430.

C. Air handling units with fan sections utilizing multiple fans shall be rated in accordance with AHRI Standard 430 for airflow, static pressure, and fan speed performance.

D. Airflow monitoring station: Certify airflow measurement station performance in accordance with AMCA 611.

E. ISO 9001 Certification.

1.05 SUBMITTALS

A. Submit in accord with Section 01 30 00.

1. Shop drawings and descriptive product data describing all material furnished under Part 2 of this Section.

B. AHU manufacturer shall provide the following information with each shop drawing/product data submission:

1. Dimensioned arrangement drawings for each AHU including a plan and elevation view of the assembled unit with overall dimensions, lift points, unit shipping split locations and dimensions, installation and operating weights, and installation, operation and service clearances.
2. All electrical, piping, and ductwork requirements, including sizes, connection locations, and connection method recommendations.
3. Each component of the unit shall be identified and mechanical specifications shall be provided for unit and accessories describing construction, components, and options.
4. All performance data, including capacities and airside and waterside pressure drops, for components.
5. Fan curves shall be provided for fans with the design operating points indicated. Data shall be corrected to actual operating conditions, temperatures, and altitudes.
6. For units with multiple fans, a fan curve shall be provided showing the performance of the entire bank of fans at design conditions. In addition, a fan curve shall be provided showing the performance of each individual fan in the bank of fans at design conditions. Finally, a fan curve shall be provide showing the performance of the bank of fans when one fan is down. The percent redundancy of the bank of fans with one fan down shall be noted on the fan curve or in the tabulated fan data.

7. A filter schedule must be provided for each air handling unit supplied by the air handling unit manufacturer. Schedule shall detail unit tag, unit size, corresponding filter section location within the AHU, filter arrangement (e.g. angled/flat), filter depth, filter type (e.g. pleated media), MERV rating, and filter quantity and size.
8. A schedule detailing necessary trap height shall be provided for each air handling unit. Schedule shall detail unit tag, unit size, appropriate trap schematic with recommended trap dimensions, and unit supplied base rail height. Contractor shall be responsible for additional trap height required for trapping and insulation beyond the unit supplied base rail height by adequate housekeeping pad.
9. A coil valve coordination schedule shall be provided for each air handling unit supplied by the air handling unit manufacturer. Schedule shall detail unit tag, coil type and corresponding section location within the AHU, valve style (e.g. global, ball), valve type (e.g. electronic 2-way/3-way), valve position (e.g. normally open/closed), size, flow coefficient (CV), and close-off pressure.
10. An electrical MCA – MOP schedule shall be provided for each electrical circuit to which field-power must be supplied. Schedule to detail unit tag, circuit description, voltage/phase/hertz, Minimum Circuit Ampacity (MCA), and calculated Maximum Overcurrent Protection (MOP).
11. Sound data shall be provided using AHRI 260 test methods. Unit discharge, inlet, and radiated sound power levels in dB shall be provided for 63, 125, 250, 500, 1000, 2000, 4000, and 8000 Hz.

1.06 REGULATORY REQUIREMENTS

A. Agency Listings/Certifications

1. Unit shall be manufactured to conform to UL 1995 and shall be listed by either UL/CUL or ETL. Units shall be provided with listing agency label affixed to the unit. In the event the unit is not UL/CUL or ETL approved, the contractor shall, at his/her expense, provide for a field inspection by a UL/CUL or ETL representative to verify conformance. If necessary, contractor shall perform modifications to the unit to comply with UL/CUL or ETL as directed by the representative, at no additional expense to the owner.
2. Certify air handling units in accordance with AHRI Standard 430. Units shall be provided with certification label affixed to the unit. If air handling units are not certified in accordance with AHRI Standard 430, contractor shall be responsible for expenses associated with testing of units after installation to verify performance of fan(s). Any costs incurred to adjust fans to meet scheduled capacities shall be the sole responsibility of the contractor.
3. Certify air handling coils in accordance with AHRI Standard 410. Units shall be provided with certification label affixed to the unit. If air handling coils are not certified in accordance with AHRI Standard 410, contractor shall be responsible for expenses associated with testing of coils after installation to verify performance of coil(s). Any costs incurred to adjust coils to meet scheduled capacities shall be the sole responsibility of the contractor.
4. Certify airflow monitoring stations are tested for differential pressure in accordance with AMCA 611 in an AMCA registered laboratory and comply with the requirements of the AMCA Certified Ratings Program. Airflow monitoring station shall be licensed to bear the AMCA Seal.

1.07 DESIGN CRITERIA

A. Furnish factory fabricated modular indoor central-station air handling units complete meeting the configuration shown on drawings and/or as scheduled.

B. Units to be tested, rated and certified in accordance with ARI Standard 430 and bear ARI certification label.

C. All material shall meet NFPA 90A flame spread and smoke develop rating requirements.

D. Any revisions made by the Contractor to the inlet and outlet ductwork conditions from that shown on the drawings shall not increase system effect and/or static pressure and shall not decrease mixing efficiencies.

PART 2: PRODUCTS

2.01 MODULAR AIR HANDLING UNITS

A. Based on product by Trane.

1. Daikin, or York/JCI equals are acceptable.

B. Units to be of model, type, size and capacities listed in schedules on Drawings.

2.02 GENERAL

A. Unit manufacturer to provide an integral base frame to support all sections of unit and raise unit for proper trapping. Contractor will be responsible for providing a housekeeping pad when indoor air handling unit base frame is not of sufficient height to properly trap unit. Unit base frames not constructed of galvanized steel shall be chemically cleaned and coated with both a rust-inhibiting primer and finished coat of rust-inhibiting enamel.

2.03 UNIT CASING

A. Unit manufacturer shall ship separate segments so unit can be broken down for ease of installation in tight spaces. The entire air handler shall be constructed of galvanized steel. Indoor air handling unit casing finish to meet ASTM B117 250-hour salt-spray test. See Section 2.26 for outdoor air handling unit requirements. The removal of access panels or access doors shall not affect the structural integrity of the unit. All removable panels shall be gasketed. All doors shall have gasketing around full perimeter to prevent air leakage. Contractor shall be responsible to provide connection flanges and all other framework that is needed to properly support the unit.

1. Casing performance – Casing air leakage shall not exceed 1% of design airflow at the specified casing pressure.
2. Under 55°F supply air temperature and design conditions on the exterior of the unit of 91°F dry bulb and 74°F wet bulb, condensation shall not form on the casing exterior. The AHU manufacturer shall provide tested casing thermal performance for the scheduled supply air temperature plotted on a psychometric chart. The design condition on the exterior of the unit shall also be plotted on the chart. If tested casing thermal data is not available, AHU manufacturer shall provide, in writing to the Engineer and Owner, a guarantee against condensation forming on the unit exterior at the stated design conditions above. The guarantee shall note that the AHU manufacturer will cover all expenses associated with modifying units in the field should external condensate form on them. In lieu of AHU manufacturer providing a written guarantee, the installing contractor must provide additional external insulation on AHU to prevent condensation.

3. Unit casing (wall/floor/pressure bulkhead roof panels and doors) shall be able to withstand up to 1.5 times design static pressure up to +8" w.g. in all positive pressure sections and -8" w.g. in all negative pressure sections, whichever is less, and shall not exceed 0.0042" per inch of panel span (L/240).
4. Floor panels shall be double-wall construction and designed to support a 300-lb load during maintenance activities and shall deflect no more than 0.0042" per inch of panel span.
5. Unit casing panels shall be 2" double-wall construction, with solid galvanized exterior and solid stainless steel interior, to facilitate cleaning of unit interior.
6. Unit casing panels (pressure bulkhead roof panels, walls, floor) and doors shall be provided with a minimum thermal resistance (R-value) of 13 Hr*Ft2*°F/BTU.
7. Unit casing panels (pressure bulkhead roof panels, walls, floor) and external structural frame members shall be completely insulated filling the entire panel cavity in all directions so that no voids exist. Panel insulation shall comply with NFPA 90A.
8. Structural frame must not extend from air-handling unit interior to exterior. All component and panel support structure must be internal to AHU. Casing panel inner liners must not extend to the exterior of the unit or contact the exterior frame. A mid-span, no-through-metal, internal thermal break shall be provided for all unit casing panels.
9. Access panels and/or access doors shall be provided in all sections to allow easy access to drain pan, coil(s), motor, drive components and bearings for cleaning, inspection, and maintenance.
10. Access panels and doors shall be fully removable without the use of specialized tools to allow complete access of interior surfaces.
11. Treadplate shall be applied to the unit floor to improve the walking surface in those unit sections where the floor is fully accessible, and not impeded by internal structural or functional features.

2.04 ACCESS DOORS

A. Access doors shall be 2" double-wall construction. Interior and exterior shall be of the same construction as the interior and exterior wall panels.
B. All doors downstream of cooling coils shall be provided with a thermal break construction of door panel and door frame.
C. Gasketing shall be provided around the full perimeter of the doors to prevent air leakage.
D. Door hardware shall be surface-mounted to prevent through-cabinet penetrations that could likely weaken the casing leakage and thermal performance.
E. Handle hardware shall be designed to prevent unintended closure.
F. Access doors shall be hinged and removable without the use of specialized tools to allow.
G. Hinges shall be interchangeable with the door handle hardware to allow for alternating door swing in the field to minimize access interference due to unforeseen job site obstructions.
H. Door handle hardware shall be adjustable and visually indicate locking position of door latch external to the section.
I. All doors shall be a minimum 60" high when sufficient height is available, or the maximum height allowed by the unit height.

J. Multiple door handles for indoor air handling units shall be provided for each latching point of the door necessary to maintain the specified air leakage integrity of the unit. See Section 2.26 for outdoor air handling unit requirements.

K. Whenever the air handling unit is over 6 feet tall, a single door handle shall be provided for each door linking multiple latching points necessary to maintain the specified air leakage integrity of the unit.

L. A shatterproof window shall be provided in ALL access doors.

2.05 PRIMARY DRAIN PANS

A. All cooling coil sections shall be provided with an insulated, double-wall, galvanized drain pan.

B. All cooling coil sections shall be provided with an insulated, double-wall, stainless steel drain pan.

C. The drain pan shall be designed in accordance with ASHRAE 62.1 being of sufficient size to collect all condensation produced from the coil and sloped in two planes, pitched toward drain connections, promoting positive drainage to eliminate stagnant water conditions when unit is installed level and trapped per manufacturer's requirements. See section 2.07, paragraph F through H for specifications on intermediate drain pans between cooling coils.

D. The outlet shall be located at the lowest point of the pan and shall be sufficient diameter to preclude drain pan overflow under any normally expected operating condition.

E. All drain pan threaded connections shall be visible external to the unit. Threaded connections under the unit floor shall not be accepted.

F. Drain connections shall be of the same material as the primary drain pan and shall extend a minimum 2-1/2” beyond the base to ensure adequate room for field piping of condensate traps.

G. The installing contractor is responsible to ensure the unit is installed level, trapped in accordance with the manufacturer's requirements, and visually inspected to ensure proper drainage of condensate.

H. Coil support members inside the drain pan shall be of the same material as the drain pan and coil casing.

2.06 FANS

A. Fan sections shall have a minimum of one access door located on the drive side of the unit to allow inspection and maintenance of the fan, motor, and drive components.

B. Provide fans of type and class as specified on the schedule. Fan shafts shall be solid steel, coated with a rust-inhibiting coating, and properly designed so that fan shaft does not pass through first critical speed as unit comes up to rated RPM. All fans shall be statically and dynamically tested by the manufacturer for vibration and alignment as an assembly at the operating RPM to meet design specifications. Fans controlled by variable frequency drives shall be statically and dynamically tested for vibration and alignment at speeds between 25% and 100% of design RPM. If fans are not factory-tested for vibration and alignment, the contractor shall be responsible for cost and labor associated with field balancing and certified vibration performance. Fan wheels shall be keyed to fan shafts to prevent slipping.

C. Belt-driven fans shall be provided with grease lubricated, self-aligning, anti-friction bearings selected for L-50 200,000-hour average life per ANSI/AFBMA Standard 9. Lubrication lines for both bearings shall be extended to the drive side of the AHU and rigidly attached to support bracket with zerk fittings. Lubrication lines shall be a clear, high-pressure, polymer to aid in visual inspection. If extended lubrication lines are not provided, manufacturer shall provide permanently lubricated bearing with engineering calculations for proof of bearing life.

D. All fans, including direct-drive plenum fans, shall be mounted on spring isolation bases. Internally-mounted motor shall be on the same isolation base. Fan and motor shall be internally isolated with spring isolators. Unit sizes up to nominal 4,000 cfm shall have 1-inch springs. Unit sizes larger than nominal 4,000 cfm shall have 2-inch spring isolators. A flexible connection (e.g. canvas duct) shall be installed between fan and unit casing to ensure complete isolation. Flexible connection shall comply with NFPA 90A and UL 181 requirements. If fans and motors are not internally isolated, then the entire unit shall be externally isolated from the building, including supply and return duct work, piping, and electrical connections. External isolation shall be furnished by the installing contractor in order to avoid transmission of noise and vibration through the ductwork and building structure.

E. Fan sections containing multiple fans shall be provided as indicated on the schedule and drawings. Each fan shall operate in parallel to each other fan in the array. The fans shall be SWSI plenum type with high efficient AF blades. Fans shall be direct-driven. Fan wheels shall be aluminum. The HP characteristic of the fans shall be non-overloading.

F. Fan sections containing multiple fans shall be controlled using a common control signal, such as the duct static control signal, to modulate the fan speed.

G. Belts shall be enclosed as required by OSHA standard 29 CFR 1910 to protect worker from accidental contact with the belts and sheaves.

H. ALL fan sections shall contain perforated panels for acoustical purposes.

I. Fan Inlet Air Flow Stations

1. For fans that are specified or scheduled to have fan inlet air flow station, provide a piezometer ring air flow station mounted on the fan inlet bell housing. Pressure tubes from the piezometer ring shall be extended to a termination plate labeled with the high and low pressure connections. Provide an initial flow rate coefficient that will be adjusted by the balancing contractor for measured flow reading. Piezometer ring air flow station shall measure static pressure drop through the fan inlet cone to provide an overall air flow measurement to within +/- 5% accuracy. Devices shall not affect the submitted fan performance and acoustical levels. Devices that obstruct the fan inlet or outlet shall not be acceptable. Devices shall be connected to transducers with a 0-10 VDC output provided under this section. Signal shall be proportional to air velocity.

J. Motors and Drives

1. All motors and drives shall be factory-installed and run tested. All motors shall be installed on a slide base to permit adjustment of belt tension. Slide base shall be designed to accept all motor sizes offered by the air-handler manufacturer for that fan size to allow a motor change in the future, should airflow requirements change. Fan sections without factory-installed motors shall have motors field installed by the contractor. The contractor shall be responsible for all costs associated with installation of motor and drive, alignment of sheaves and belts, run testing of the motor, and balancing of the assembly.

2. Motors shall meet or exceed all NEMA Standards Publication MG 1 – 2006 requirements and comply with NEMA Premium efficiency levels when applicable. Motors shall comply with applicable requirements of NEC and shall be UL Listed.
3. Fan Motors shall be heavy duty, NEMA Premium efficient ODP, operable at 460/60/3, exceeding the EPAct efficiency requirements.
4. Belt-driven fan sections with single fans shall use 4-pole (1800 rpm) motors, NEMA Design B, with Class B insulation to operate continuously at 104°F (40°C) ambient without tripping of overloads.
5. Direct-driven fan sections shall use 2-pole (3600 rpm), 4-pole (1800 rpm), or 6-pole (1200 rpm) motors, NEMA Design B, with Class B insulation to operate continuously at 104°F (40°C) ambient without tripping of overloads. Multiple fan selections utilizing 8-pole (900 rpm) motors are unacceptable due to motor inefficiency, cost, and replacement lead times.
6. Motors shall have a +/- 10 percent voltage utilization range to protect against voltage variation.
7. V-Belt Drive shall be fixed pitch rated at 1.2 times the motor nameplate. Drives 20 hp and larger or any drives on units equipped with VFDs shall be fixed pitch.
8. All fans with fixed-pitch drives and motors 15 hp and larger shall be equipped with multiple belt drives.
9. Manufacturer shall provide for each fan a nameplate with the following information to assist air balance contractor in start up and service personnel in maintenance:
   a) Fan and motor sheave part number
   b) Fan and motor bushing part number
   c) Number of belts and belt part numbers
   d) Fan design RPM and motor HP
   e) Belt tension and deflection
   f) Center distance between shafts

2.07 COILS

A. Coils section side panel shall be removable to allow for removal and replacement of coils without impacting the structural integrity of the unit.

B. Install coils such that headers and return bends are enclosed by unit casing to ensure that if condensate forms on the header or return bends, it is captured by the drain pan under the coil.

C. Coils shall be manufactured with plate fins to minimize water carryover and maximize airside thermal efficiency. Fin tube holes shall have drawn and belled collars to maintain consistent fin spacing to ensure performance and air pressure drop across the coil as scheduled. Tubes shall be mechanically expanded and bonded to fin collars for maximum thermal conductivity. Use of soldering or tinning during the fin-to-tube bonding process is not acceptable due to the inherent thermal stress and possible loss of bonding at that joint.

D. Construct coil casings of stainless steel. End supports and tube sheets shall have belled tube holes to minimize wear of the tube wall during thermal expansion and contraction of the tube.

E. All coils shall be completely cleaned prior to installation into the air handling unit. Complete fin bundle shall be degreased and cleaned to remove any lubricants used in the manufacturing of the fins, or dirt that may have accumulated, in order to minimize the chance for water carryover.

F. When two or more cooling coils are stacked in the unit, an intermediate drain pan shall be installed between each coil. The intermediate drain pan shall be designed being of sufficient size to collect all condensation produced from the coil and sloped to promote positive drainage to eliminate stagnant water conditions. The intermediate drain pan shall be constructed of the same material as the primary drain pan.

G. The intermediate drain pan shall begin at the leading face of the water-producing device and be of sufficient length extending downstream to prevent condensate from passing through the air stream of the lower coil.

H. Intermediate drain pan shall include downspouts to direct condensate to the primary drain pan. The intermediate drain pan outlet shall be located at the lowest point of the pan and shall be sufficient diameter to preclude drain pan overflow under any normally expected operating condition.

I. Hydronic Coils

1. Supply and return header connections shall be clearly labeled on unit exterior such that direction of coil water-flow is counter to direction of unit air-flow.
2. Coils shall be proof-tested to 300 psig and leak-tested to 200 psig air pressure under water.
3. Headers shall be constructed of round copper pipe or cast iron.
4. Tubes shall be 1/2 inch O.D., minimum 0.016 inch thick copper. Fins shall be aluminum.
5. Tubes shall be 5/8 inch O.D., minimum 0.020 inch thick copper. Fins shall be aluminum.
6. Extended Drain and Vent
   a) Hydronic coils shall be supplied with factory installed drain and vent piping to the unit exterior.

2.08 FILTERS

A. Provide factory-fabricated filter section of the same construction and finish as unit casings. Filter section shall have side access filter guides and access door(s) extending the full height of the casing to facilitate filter removal. Construct doors in accordance with Section 2.04. Provide fixed filter blockoffs as required to prevent air bypass around filters. Blockoffs shall not need to be removed during filter replacement. Filters to be of size and quantity required to maximize filter face area for each air handling unit.

B. Provide factory-fabricated filter section of the same construction and finish as unit casings. Filter section shall be provided with front-loading filter frames. Filter holding frames shall be constructed of galvanized steel and equipped with foam gaskets to seal filters against filter frames. Frame seams shall be sealed to eliminate air bypass. Access door(s) shall be provided to facilitate filter removal. Construct doors in accordance with Section 2.04. Manufacturer to provide necessary filter clips to lock primary and secondary pre-filters (when specified) tightly to filter frame without the need for special tools, bolts or nuts. Filter holding frames shall be of a universal type to accommodate standard filters of 12x24 and 24x24 nominal size as well as appropriate fasteners.

C. Provide factory-fabricated filter section of the same construction and finish as unit casings. Filter section shall be provided with front-loading filter frames. Filter holding frames shall be continuously welded for heavy-duty construction, long-term reliability, minimal maintenance, and minimal air bypass such that filtration efficiency is that of the scheduled HEPA filters. Frames shall be equipped with filter fasteners of the same material as the filter frame. Filter holding frames shall be of the universal type to accommodate standard filters as well as appropriate fasteners. Access door(s) shall be provided to facilitate filter removal. Construct doors in accordance with Section 2.04.

D. Filter type, MERV rating, and arrangement shall be provided as defined in project plans and schedule.

E. Manufacturer shall provide one set of startup filters.

Each filter section shall be provided with a factory-installed, flush-mounted Dwyer dial-type differential pressure gauge piped to both sides of the filter to indicate status. Gauge shall maintain a +/- 5 percent accuracy within operating temperature limits of -20°F to 120°F. Filter sections consisting of pre- and post-filters shall have a gauge for each.

2.09 DAMPERS

A. All dampers, with the exception of external bypass and multizones (if scheduled), shall be internally mounted. Dampers shall be premium ultra low leak and located as indicated on the schedule and plans. Blade arrangement (parallel or opposed) shall be provided as indicated on the schedule and drawings. Dampers shall be Ruskin CD60 double-skin airfoil design or equivalent for minimal air leakage and pressure drop. Manufacturer shall submit brand and model of damper(s) being furnished, if not Ruskin CD60.

B. All dampers, unless otherwise specified, to be rated at a minimum of 180º F working temperature. Leakage testing shall be certified to be based on latest edition of AMCA Standard 500-D and all dampers, unless otherwise specified, shall have leakage ratings as follows:

Damper Class	Differential Pressure	Leakage
Class IA	1” w.g.	≤3 CFM/ft2
Class I	4” w.g.	≤8 CFM/ft2
Class I	8” w.g.	≤11 CFM/ft2
Class I	12” w.g.	≤14 CFM/ft2

Leakage rate dampers for differential pressures that they will encounter at maximum system design pressures.

2.10 ACCESS SECTIONS

A. Access sections shall be provided where indicated in the schedule and plans to allow additional access for inspection, cleaning, and maintenance of unit components. The unit shall be installed for proper access. Procedure for proper access, inspection and cleaning of the unit shall be provided in the AHU manufacturer’s maintenance manual. Access section doors shall be constructed per Section 2.04.

2.11 MARINE LIGHTS

A. Marine lights shall be provided throughout AHUs as indicated on the schedule and plans. Lights shall be instant-on, light-emitting diode (LED) type to minimize amperage draw and shall produce lumens equivalent to a minimum 75W incandescent bulb (1200 lumens). LED lighting shall provide instant-on, white light and have a minimum 50,000 hr life.

B. Light fixture shall be weather-resistant, enclosed and gasketed to prevent water and dust intrusion.

C. Fixtures shall be designed for flexible positioning during maintenance and service activities for best possible location providing full light on work surface of interest and not being blocked by technician.

D. All lights on a unit shall be wired in the factory to a single on-off switch.

E. Installing contractor shall be responsible for providing 115V supply to the factory-mounted marine light circuit.

2.12 VARIABLE FREQUENCY DRIVES (VFDS)

A. Variable frequency drives shall be provided under Section 23 05 13 Motors.

B. Variable frequency drives shall be provided, mounted and wired by the AHU manufacturer as indicated on the schedule and drawings. All standard and optional features shall be included within the VFD enclosure, unless otherwise specified. The VFDs shall be UL listed. The listing shall allow mounting in plenum or other air handling compartments.

1. Refer to Section 23 05 13 Motors for VFD specification.

C. Provide bearing protection grounding rings to bleed current from the motor shaft to the motor casing. Product manufactured by Aegis SGR, Inpro/Seal CDR or equal.

D. The VFD shall convert incoming fixed frequency three-phase AC power into a variable frequency and voltage for controlling the speed of three-phase AC motors. The motor current shall closely approximate a sine wave. Motor voltage shall be varied with frequency to maintain desired motor magnetization current suitable for centrifugal pump and fan control and to eliminate the need for motor derating.

E. With the motor’s rated voltage applied to the VFD input, the VFD shall allow the motor to produce full rated power at rated amps, RMS fundamental volts, and speed without using the motor's service factor. VFDs utilizing sine weighted/coded modulation (with or without 3rd harmonic injection) must provide data verifying that the motors will not draw more than full load current during full load and full speed operation.

F. The VFD shall include an input full-wave bridge rectifier and maintain a fundamental power factor near unity regardless of speed or load.

G. The VFD and options shall be tested to ANSI/UL Standard 508. The complete VFD, including all specified options, shall be assembled by the manufacturer, which shall be UL 508 certified for the building and assembly of option panels. Assembly of separate panels with options by a third-party is not acceptable. The appropriate UL stickers shall be applied to both the VFD and option panel, in the case where these are not contained in one panel.

H. The VFD shall have DC link reactors on both the positive and negative rails of the DC bus to minimize power line harmonics. VFDs without DC link reactors shall provide a minimum 3% impedance line reactor.

I. The VFDs full load amp rating shall meet or exceed NEC Table 430-150. The VFD shall be able to provide full rated output current continuously, 110% of rated current for 60 seconds and 160% of rated current for up to 0.5 second while starting.

J. The VFD shall be able to provide full torque at any selected frequency from 28 Hz to base speed to allow driving direct drive fans without derating.

K. An automatic energy optimization selection feature shall be provided standard in the VFD. This feature shall automatically and continually monitor the motor's speed and load and adjust the applied voltage to maximize energy savings and provide up to an additional 3% to 10% energy savings.

L. Input and output power circuit switching shall be able to be accomplished without interlocks or damage to the VFD. Switching rate may be up to 1 time per minute on the input and unlimited on the output.

M. An automatic motor adaptation test algorithm shall measure motor stator resistance and reactance to optimize performance and efficiency. It shall not be necessary to run the motor or de-couple the motor from the load to run the test.

N. Galvanic and/or optical isolation shall be provided between the VFDs power circuitry and control circuitry to ensure operator safety and to protect connected electronic control equipment from damage caused by voltage spikes, current surges, and ground loop currents. VFDs not including either galvanic or optical isolation on both analog I/O and discrete I/O shall include additional isolation modules.

O. The VFD shall minimize the audible motor noise through the use of an adjustable carrier frequency. The carrier frequency shall be automatically adjusted to optimize motor and VFD efficiencies while reducing motor noise.

P. Protective Features

1. Protection shall be provided against input transients, loss of AC line phase, output short circuit, output ground fault, overvoltage, under voltage, VFD over temperature and motor over temperature. The VFD shall display all faults as words. Codes are not acceptable.
2. The VFD shall be protected from sustained power or phase loss. The VFD shall provide full rated output with an input voltage as low as 90% of the nominal. The VFD shall continue to operate with reduced output with an input voltage as low as 164 V AC for 208/230 volt units, 313 V AC for 460 volt units, and 394 volts for 600 volts units.
3. The VFD shall incorporate a motor preheat circuit to keep the motor warm and prevent condensation build up in the stator.
4. The VFD package shall include semi-conductor rated input fuses to protect power components.
5. To prevent breakdown of the motor winding insulation, the VFD shall be designed to comply with IEC Part 34-17. Otherwise the AHU manufacturer shall ensure that inverter rated motors are supplied.
6. The VFD shall include a "signal loss detection" circuit to sense the loss of an analog input signal such as 4 to 20 mA or 2 to 10 V DC, and shall be programmable to react as desired in such an instance.
7. The VFD shall function normally when the keypad is removed while the VFD is running and continue to follow remote commands. No warnings or alarms shall be issued as a result of removing the keypad.
8. The VFD shall catch a rotating motor operating forward or reverse up to full speed.
9. The VFD shall be rated for 100,000 amp interrupting capacity (AIC).
10. The VFD shall include current sensors on all three output phases to detect and report phase loss to the motor. The VFD shall identify which of the output phases is low or lost.
11. The VFD shall continue to operate without faulting until input voltage reaches 300 V AC on 208/230 volt units, 539 V AC on 460 volt units, and 690 volts on 600 volt units.

Q. Interface Features

1. Hand/Start, Off/Stop and Auto/Start selector switches shall be provided to start and stop the VFD and determine the speed reference. On units with bypass, a VFD/Off/Bypass selector switch shall be provided.
2. The VFD shall be able to be programmed to provide a 24 V DC output signal to indicate that the VFD is in Auto/Remote mode.
3. The VFD shall provide digital manual speed control. Potentiometers are not acceptable.
4. A lockable, alphanumeric backlit display keypad shall be provided. The keypad shall be remotely mountable up to 10 feet away using standard 9-pin cable.
5. The keypads for all sizes of VFDs shall be identical and interchangeable.
6. To set up multiple VFDs, it shall be possible to upload all setup parameters to the VFDs keypad, place that keypad on all other VFDs in turn and download the setup parameters to each VFD. To facilitate setting up VFDs of various sizes, it shall be possible to download from the keypad only size independent parameters.
7. The display shall be programmable to display in English, Spanish and French at a minimum.
8. A red FAULT light, a yellow WARNING light and a green POWER-ON light shall be provided. These indications shall be visible both on the keypad and on the VFD when the keypad is removed.
9. A quick setup menu with factory preset typical HVAC parameters shall be provided on the VFD eliminating the need for macros.
10. The VFD shall include a standard EIA-485 communications port and capabilities to be connected at a future date to a Johnson Controls N2 Metasys or Siemens FLN system at no additional cost to the owner. The connection shall be software selectable by the user.
11. At a minimum, the following points shall be controlled and/or accessible:
    a) VFD Start/Stop
    b) Speed reference
    c) Fault diagnostics
    d) Meter points
        1) Motor power in HP
        2) Motor power in kW
        3) Motor kW-hr
        4) Motor current
        5) Motor voltage
        6) Hours run
        7) 2 Feedback signals
        8) DC link voltage
        9) Thermal load on motor
        10) Thermal load on VFD
        11) Heatsink temperature
12. Four additional Form C 230 volt programmable relays shall be available for field installation within the VFD
13. BACnet communication shall be available for factory or field installation within the VFD.

14. Two set-point control interfaces (PID control) shall be standard in the unit. The VFD shall be able to look at two feedback signals, compare with two set-points and make various process control decisions.
15. Floating point control interface shall be provided to increase/decrease speed in response to contact closures.
16. Four simultaneous displays shall be available. They shall include frequency or speed, run time, output amps and output power. VFDs unable to show these four displays simultaneously shall provide panel meters.
17. Sleep mode shall be provided to automatically stop the VFD when its speed drops below set “sleep” level for a specified time. The VFD shall automatically restart when the speed command exceeds the set “wake” level.
18. The sleep mode shall be functional in both follower mode and PID mode.
19. A run permissive circuit shall be provided to accept a “system ready” signal to ensure that the VFD does not start until dampers or other auxiliary equipment are in the proper state for VFD operation. The run permissive circuit shall also be capable of sending an output signal as a start command to actuate external equipment before allowing the VFD to start.
20. The following displays shall be accessible from the control panel in actual units: Reference Signal Value, Output Frequency in Hz or percent, Output Amps, Motor HP, Motor kW, kWhr, Output Voltage, DC Bus Voltage, VFD Temperature in degrees, and unit CFM.
21. The display shall be programmed to read in inches of water column (in-wg).
22. The VFD shall be able to be programmed to sense the loss of load and signal a no load/broken belt warning or fault.
23. If the temperature of the VFDs heat sink rises to 80°C, the VFD shall automatically reduce its carrier frequency to reduce the heat sink temperature. If the temperature of the heat sink continues to rise the VFD shall automatically reduce its output frequency to the motor. As the VFDs heat sink temperature returns to normal, the VFD shall automatically increase the output frequency to the motor and return the carrier frequency to its normal switching speed.
24. The VFD shall have temperature controlled cooling fans for quiet operation and minimized losses.
25. The VFD shall store in memory the last 10 faults and related operational data.
26. Eight programmable digital inputs shall be provided for interfacing with the systems control and safety interlock circuitry.
27. Two programmable relay outputs, one Form C 240 V AC, one Form A 30 V AC, shall be provided for remote indication of VFD status.
28. Three programmable analog inputs shall be provided and shall accept a direct-or-reverse acting signal. Analog reference inputs accepted shall include two voltage (0 to 10 V DC, 2 to 10 V DC) and one current (0 to 20 mA, 4 to 20 mA) input.
29. Two programmable 0 to 20 mA analog outputs shall be provided for indication of VFD status. These outputs shall be programmable for output speed, frequency, current and power. They shall also be programmable to provide a selected 24V DC status indication.
30. Under fire mode conditions, the VFD shall be able to be programmed to automatically default to a preset speed.

R. Adjustments

1. The VFD shall have an adjustable carrier frequency in steps of not less than 0.1 kHz to allow tuning the VFD to the motor.
2. A minimum of sixteen preset speeds shall be provided.
3. Four acceleration and four deceleration ramps shall be provided. Accel and decel time shall be adjustable over the range from 0 to 3,600 seconds to base speed. The shape of these curves shall be automatically contoured to ensure no-trip acceleration and deceleration.
4. Four current limit settings shall be provided.
5. If the VFD trips on one of the following conditions, the VFD shall be programmable for automatic or manual reset: undervoltage, overvoltage, current limit and inverter overload.
6. The number of restart attempts shall be selectable from 0 through 20 or infinitely and the time between attempts shall be adjustable from 0 through 600 seconds.
7. An automatic “on delay” shall be selectable from 0 to 120 seconds.

S. Service Conditions

1. VFDs shall provide full output in an ambient temperature from -10 to 50°C (14 to 104°F).
2. VFDs shall provide full output in a relative humidity from 0 to 95%, non-condensing.
3. VFDs shall provide full output up to 3,300 feet elevation without derating.
4. VFDs shall provide full output with an AC line voltage variation from -10 to +10% of nominal voltage.
5. No side clearance shall be required for cooling of any units. All power and control wiring shall be done from the bottom.

T. Warranty

The VFD shall be warranted by the manufacturer for a period of 42 months from date of shipment, or 36 months from start-up, whichever occurs first. The warranty shall include parts, labor, travel costs and living expenses incurred by the manufacturer to provide factory-authorized on-site service.

2.13 FACTORY-INSTALLED MOTOR WIRE TERMINATION, VFD, AND COMBINATION STARTER/DISCONNECT ENCLOSURES

A. VFDs shall be factory mounted on the drive side of the fan section. VFD may be mounted on the interior of the unit, accessible from the unit exterior through an access door, or on the casing exterior in a NEMA Type 1 enclosure for indoor units. If not mounted on the fan section due to NEC disconnect height limitations or serviceability constraints in the mechanical equipment room, VFD may be mounted in another location other than the fan.

B. Any welds shall be properly finished with no rough edges. Enclosures shall house circuit breaker disconnects, bypass circuitry, Drive-OFF-Bypass switches, manual speed controls, and control transformers. VFDs and starter/disconnects shall have an external disconnect located on the outside of the access door.

2.14 FACTORY WIRING OF LIGHTS, VFDS, AND COMBINATION STARTERS/DISCONNECTS

A. VFDs shall be wired per NEC, UL, and NFPA 90A requirements. Units with factory-mounted controls shall also include power wiring from the VFD or starter/disconnect control transformer to the control system transformers. Units with VFDs and factory-mounted controls shall have a binary start-stop signal and an analog speed signal wired from the direct digital controller to the VFD.

B. All power wiring for voltages greater than 24V and traveling through multiple unit sections shall be contained in an enclosed, metal, power-wiring raceway or EMT. Sections less than 6' in length may be contained in FMC.

2.15 FACTORY COMMISSIONING OF VFDS AND COMBINATION STARTER/DISCONNECTS

A. After mounting and wiring of VFDs, on the AHUs, trained factory personnel shall ensure proper operation of each VFD, through a thorough factory test. Testing shall include a Hypot test of unit wiring to ensure that no weaknesses exist in wiring or motor. Each VFD shall be energized and the fan run to ensure the VFD will operate throughout the usable range of the drive and that the fan rotation is correct. Each VFD with bypass shall also be tested in the bypass position to ensure the bypass is operational.

PART 3: EXECUTION

3.01 INSTALLATION

A. Complete installation as recommended by manufacturer.

B. The Mechanical Contractor shall be responsible to coordinate ALL installation requirements with the Owner and the Owner's selected Mechanical Contractor to ensure that a complete installation for each unit is being provided. Coordination efforts shall include such items as unloading and hoisting requirements, field wiring requirements, field piping requirements, field ductwork requirements, requirements for assembly of field-bolted or -welded joints, and all other installation and assembly requirements.

C. Mount on concrete pad.

D. Drain pans: Copper, galvanized iron or PVC drain piping to sewer, with trap seal, shall be included.

E. Mount assembled unit on Neoprene Mounts: Double deflection neoprene mount having a minimum static deflection of 0.35 inches. Cover all metal surfaces with neoprene to resist corrosion. Include friction pads on both top and bottom surfaces so mounts need not be bolted to the floor but include bolt holes for those areas where bolting is required. For equipment such as small vent sets and close coupled pumps, include steel rails for use between the isolator and the equipment to accommodate equipment overhang; Mason Model ND or rails Type DNR.

F. Provide heating and cooling coil piping connections to units with unions or flanges to permit coil removal without dismantling piping.

1. Verify with manufacturer the quantity of coils and provide the correct number of coil connections as required. Additional piping, fittings, unions or flanges, shutoff valves, balancing stations, and drain valves shall be provided for greater quantity of coils other than basis of design unit at no additional cost to owner.

G. Provide tubing extensions on grease fittings where access is difficult.

H. The AHU manufacturer shall provide all screws and gaskets for joining of sections in the field.

I. At all points where air handling unit components are joined, provide gasket or caulking bead to reduce leakage.

J. Entire unit casing - including coil section and filter/filter-mixing box shall be insulated.

K. The Mechanical Contractor shall verify that the following items have been completed prior to scheduling the AHU manufacturer's final inspection and start up:

1. All spring-isolated components have had their shipping restraints removed and the components have been leveled.
2. On all field-joined units, that all interconnections have been completed, i.e., electrical and control wiring, piping, casing joints, bolting, welding, etc.
3. All water and steam piping connections have been completed and hydrostatically tested and all water flow rates have been set in accordance with the capacities scheduled on the Drawings.
4. All ductwork connections have been completed and all ductwork has been pressure tested for its intended service.
5. All power wiring, including motor starters and disconnects, serving the unit has been completed.
6. All automatic temperature and safety controls have been completed.
7. All dampers are fully operational.
8. All shipping materials have been removed.
9. All (clean) filter media has been installed in the units.

3.02 LEVELING

A. The Mechanical Contractor shall level all unit sections in accordance with the unit manufacturer’s instructions. The Mechanical Contractor shall provide and install all necessary permanent shim material to ensure individual sections and entire assembled units are level.

3.03 FILTERS

A. Filters shall be clean when building is accepted by Owner.

B. Provide temporary 2" thick glass fiber throwaway filters for use during the cleaning and testing of the systems. Air handling units shall not be operated without these filters. Upon Owner acceptance of the systems, remove and dispose of temporary filters and install the permanent media. Entire air handling unit and return air ductwork shall be washed clean prior to occupancy.

C. Ductwork with interior acoustic lining shall not be used as a return air path during construction, with or without temporary filtration.

3.04 UNIT START-UP

A. Air handling unit start-up shall not be used for temporary heating and cooling purposes without the consent of the Architect/Engineer.

3.05 FINAL INSPECTION AND START UP SERVICE

A. After the Mechanical Contractor has provided all water and steam piping connections, ductwork connections, and field control wiring, and Electrical Contractor has provided all the field power wiring, the Mechanical Contractor shall in¬spect the installation. The Mechanical Contractor shall then perform startup of the equipment.

B. The Automatic Temperature Control (Building Direct Digital Control) Contractor shall be scheduled to be at the job site at the time of the equipment start up.

C. The Mechanical Contractor, shall perform the following tests and services and submit a report outlining the results:

1. Record date, time, and person(s) performing service.
2. Lubricate all moving parts.
3. Check all motor and starter power lugs and tighten as required.
4. Verify all electrical power connections.
5. Conduct a startup inspection per the AHU manufacturer's recommendations.
6. Record fan motor voltage and amperage readings.
7. Check fan rotation and spin wheel to verify that rotation is free and does not rub or bind.
8. Check fan for excessive vibration.
9. Check V belt drive or coupling for proper alignment.
10. Check V belt drive for proper tension. Tighten the belts in accordance with the AHU manufacturer's directions. Check belt tension during the second and seventh day's operation and re-adjust belts, as may be required, to maintain proper tension as directed by the AHU manufacturer.
11. Remove all foreign loose material in ductwork leading to and from the fan and in the fan itself.
12. Disengage all shipping fasteners on vibration isolation equipment.
13. Check safety guards to insure they are properly secured.
14. Secure all access doors to the fan, the unit and the ductwork.
15. Switch electrical supply "on" and allow fan to reach full speed.
16. Physically check each fan at start up and shut down to insure no abnormal or problem conditions exist.
17. Check entering and leaving air temperatures (dry bulb and wet bulb) and simultaneously record entering and leaving chilled water temperatures and flow, steam pressures and flow, and outside air temperature.
18. Check all control sequences.

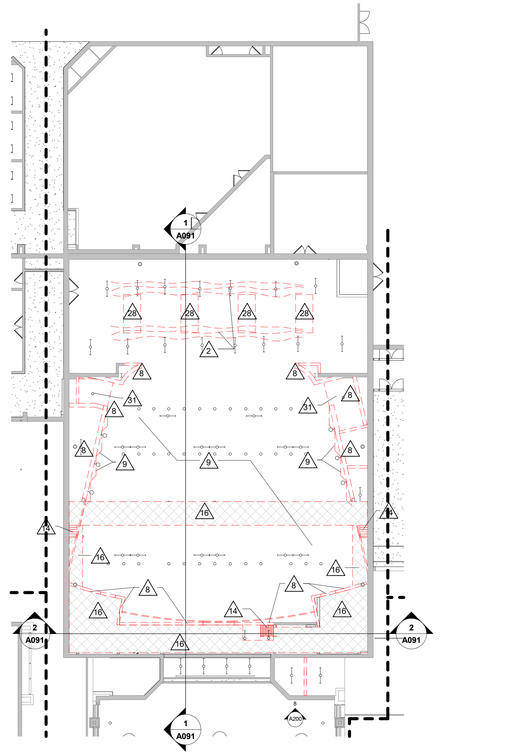
3.06 WIRING

A. Wiring under Division 26, Electrical; including mounting of starters, specified under Division 23.

END OF SECTION 23 73 13

1 FIRST FLOOR DEMO

1/16" = 1'-0"



2 UPPER AUDITORIUM DEMO

1/16" = 1'-0"

REFER TO ID SHEETS FOR ALTERNATE BID AND FLOORING REMOVAL NOTES

REMOVAL GENERAL NOTES:

A	ALL STRUCTURES SHOWN DASHED ON THIS PLAN SHALL BE COMPLETELY REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR UNLESS OTHERWISE NOTED. REFERENCE MEP SHEETS FOR ALL EQUIPMENT REMOVALS AND MODIFICATIONS. TIME AND METHODS SHALL BE COORDINATED WITH AND AGREED TO BY THE OWNER AND ARCHITECT. THIS SHALL INCLUDE ALL ELECTRICAL, MECHANICAL OR PLUMBING WITHIN THE REMOVED STRUCTURE. TERMINATE AND CAP MEP AS REQUIRED. DO NOT ABANDON IN PLACE UNUSED CONDUIT, PIPE, ETC. REMOVE COMPLETELY. VERIFY GENERAL CONDITIONS IN FIELD PRIOR TO BIDDING.
B	PREPARATION FOR NEW FINISHES SHALL INCLUDE BUT NOT LIMITED TO REMOVAL OF EXISTING FINISHES, REMOVAL OF TAPES, GLUES (MASTIC), NAILS, ETC. PATCHING OF HOLES AND CRACKS TO PROVIDE AN ACCEPTABLE SURFACE FOR NEW FINISH INSTALLATION.
C	OWNER WILL REMOVE LOOSE FURNISHINGS AND EQUIPMENT FROM THE WORK AREA PRIOR TO START OF CONSTRUCTION.
D	DELIVERY ROUTE AND TIMES FOR NEW MATERIALS AND EQUIPMENT SHALL BE COORDINATED WITH AND AGREED TO BY THE OWNER.
E	MAINTAIN ALL EXIT DOORS AND CORRIDORS IN UNOBSTRUCTED OPERABLE CONDITION WITH SAFE PASSAGE AWAY FROM THE BUILDING. COORDINATE WITH LOCAL FIRE MARSHAL AS REQUIRED.
F	SEE SHEET A091 FOR ADDITIONAL REMOVAL NOTES.
G	CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SHORING, BRACING, ETC. AS REQUIRED FOR THE WORK.
H	SEE MECHANICAL, PLUMBING AND ELECTRICAL SHEETS FOR ADDITIONAL REMOVAL NOTES AND ITEMS.
J	COORDINATE REMOVAL AND PATCHING WITH MEP DRAWINGS. PATCH TO MATCH EXISTING ADJACENT CONDITIONS.
L	COORDINATE STORAGE LOCATIONS FOR SALVAGED EQUIPMENT, ACCESSORIES, ETC. WITH THE OWNER. SALVAGED ITEMS SHALL BE PLACED AT A COMMON LOCATION INDICATED BY OWNER.
M	CONTRACTOR TO INSTALL AND MAINTAIN A DUST ENCLOSURE FOR REMOVAL AND NEW CONSTRUCTION WORK.
N	PROVIDE FLOOR PROTECTION AS SPECIFIED AT DEBRIS REMOVAL PATHS THROUGH BUILDING.
P	MATERIAL PENETRATIONS SHALL BE COMPLETED BY THE DISCIPLINE DOING THE WORK EXCEPT AS NOTED. ALL PATCH AND REPAIRS SHALL BE DONE BY QUALIFIED PERSONNEL TO ACCEPTABLE INDUSTRY STANDARDS.

REMOVAL PLAN LEGEND:

- △ SYMBOL INDICATES CONSTRUCTION NOTE THIS SHEET
- - - - REMOVE ITEMS NOTED WITH DASHED LINES
- SYMBOL INDICATES REMOVAL OF DOOR AND FRAME UNLESS NOTED OTHERWISE

KEY NOTES REMOVAL

1	REMOVE PLYWOOD SUBFLOOR AND SLEEPER SYSTEM TO CONCRETE.
2	REMOVE STAGE RIGGING AND LIGHTING. SALVAGE TO OWNER.
3	REMOVE HAND RAIL AND BRACKETS.
4	REMOVE AUDITORIUM SEATS. SLAVAGE TO OWNER.
5	REMOVE DOOR AND HM FRAME.
6	REMOVE DOOR AND FRAME. INCLUDE CMU UNDERNEATH SILL TO 8" BELOW FINISH FLOOR.
7	REMOVE TERRAZZO FLOORING, CONCRETE SLAB AND FILL.
8	REMOVE BRICK AND CMU WALL TO EXISTING FOOTING.
9	REMOVE METAL STUD AND GYP BD ACOUSTIC DEFLECTORS.
10	REMOVE WOOD TRIM AND BRICK AT FRONT OF STAGE TO BELOW ELEV 100-0 TO ALLOW FOR INSTALLATION OF NEW FLOOR.
11	REMOVE CMU/BURNISHED BLOCK WALL IN ITS ENTIRETY.
12	REMOVE CONCRETE SLAB .
13	REMOVE CONCRETE/ BRICK STEPS.
14	REMOVE STEEL SHIPS LADDER AND RAILING.
15	REMOVE CEILING TILE AND GRID. INCLUDE ANY ELECTRICAL ITEMS.
16	REMOVE METAL GRATE AND STEEL FRAMED MEZZANINE/ CATWALK.
17	REMOVE CMU/ BURNISHED BLOCK WALL TO DIMENSIONS INDICATED. PROVIDE SHORING AS REQUIRED. TOOTH JAMBS.
18	EXISTING DATA RACK TO REMAIN.
19	REMOVE STUD AND GYP BD WALL.
20	REMOVE DOOR AND HM FRAME. PREPARE OPENING AS REQUIRED FOR NEW COILING COUNTER SHUTTER.
21	REMOVED BURNISHED BLOCK AS REQUIRED FOR NEW COILING COUNTER SHUTTER. TOOTH JAMBS
22	REMOVE CONCRETE SLAB AS REQUIRED FOR CONSTRUCTION OF NEW COLUMN FOOTINGS.
23	REMOVE ROOFING AND METAL DECK ABOVE AS REQUIRED FOR INSTALLATION OF NEW SKYLIGHTS- SEE SHEET A130.
24	REMOVE LOAD BEARING CMU/ BURNISHED BLOCK WALL FROM FOOTING TO HEIGHT INDICATED.
25	EXISTING LINTEL TO REMAIN.
26	REMOVE EXISTING CONCRETE FLOOR AS REQUIRED FOR CONSTRUCTION OF NEW STEPS.
27	REMOVE COLUMN AFTER BEAM ABOVE IS MODIFIED- SEE STRUCTURAL.
28	REMOVE SMOKE VENTS ABOVE. PATCH ROOF.
29	REMOVE WOOD STAIRS AND PLATFORM.
30	REMOVE BRICK ONLY, CMU BACK UP TO REMAIN ABOVE NEW DOOR OPENING.
31	REMOVE METAL JOISTS AND GYP BD CEILING.
32	REMOVE COILING GATE/ GRILLE.
33	REMOVE EXISTING CARPET AND PREP FOR NEW FLOOR FINISH.
34	REMOVE PLAM COUNTERTOP. LEAVE BASE CABINETS IN PLACE.
35	MOVE SLAT WALL AND DISPLAY TO SCHOOL STORE H105- SEE 20A210.
36	REMOVE SLATWALL SYSTEM. SALVAGE FOR REINSTALLATION
37	REMOVE EXISTING VCT FLOORING AND PREP FOR NEW FINISH.
38	REMOVE EXISTING MIRRORS.
39	REMOVE EXISTING CASEWORK.
40	REMOVE EXISTING PLUMBING FIXTURE.
41	REMOVE EXISTING SINK AND SALVAGE FOR REINSTALLATION IN NEW COUNTERTOP
42	REMOVE ATM AND SALVAGE TO OWNER.
43	REMOVE EXISTING ACOUSTICAL CEILING TILES, LIGHTS, GRILLS AND SPEAKERS - GRID TO REMAIN. MECHANICAL GRILLS TO BE REINSTALLED - COORDINATE WITH MECH. AND ELEC.
44	REMOVE HM DOOR ONLY. FRAME TO REMAIN.
45	REMOVE CMU/ BURNISHED BLOCK WALL. SEE 7A200 FOR SIZE AND LOCATION OF OPENING PROVIDE SHORING AS REQUIRED.
46	REMOVE QUARRY TILE AND PREP FLOOR FOR NEW FINISH
47	REMOVE CONCRETE SLAB AS REQUIRED FOR FOR NEW PLUMBING.

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Consultant:

Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: REMOVAL PLAN

HSR Project Number: 18061

Project Date: FEBRUARY 2020

Drawn By: MPL

Key Plan:

KEY PLAN PROJECT NORTH TRUE NORTH

Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale: VARIES

Last Update: 3/13/2020 11:08:09 AM

A090

GENERAL NOTES:

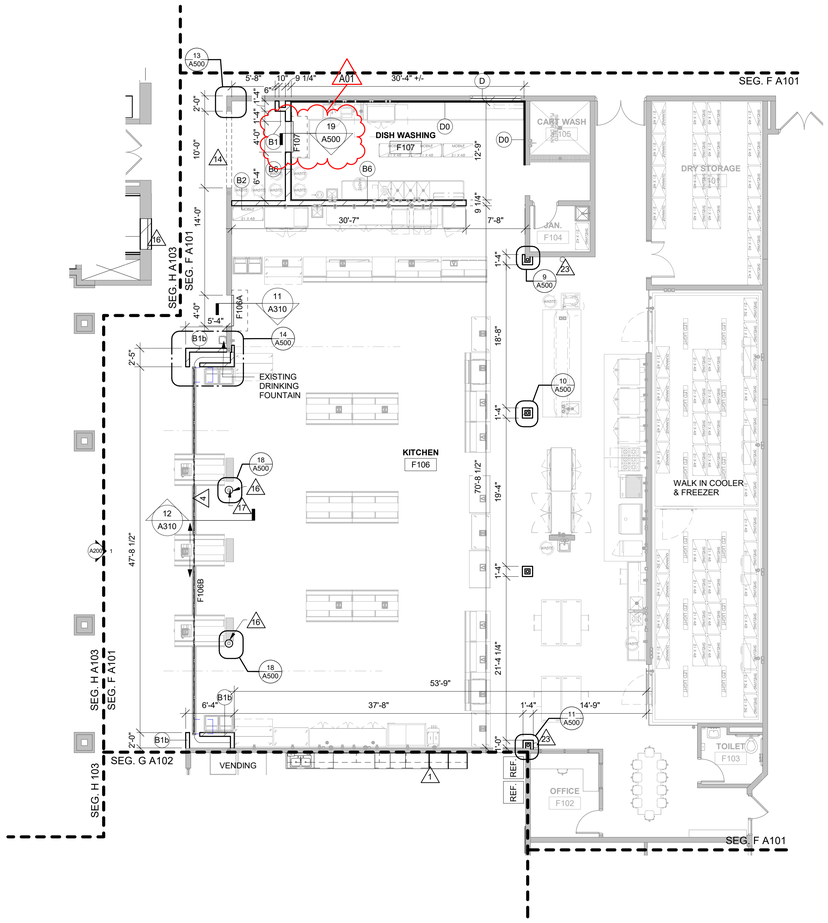
A	SEE ID SHEETS FOR FLOOR AND WALL FINISH LAYOUTS.
B	LOOSE FURNISHINGS EXCEPT AS NOTED SHALL BE PROVIDED AND INSTALLED BY THE OWNER.
C	VERIFY EXACT SIZE AND LOCATION OF ALL MECHANICAL / PLUMB AND ELEC. OPENINGS - GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINISH AT ALL VISIBLE AREAS. ALL OPENING SHALL BE SEALED AFTER UTILITY INSTALLATION.
D	PAINT ALL EXPOSED STEEL LINTELS.
E	SEE STRUCTURAL FOR SLAB CONTROL JOINTS.
F	EXTEND ALL WALLS TO DECK UNLESS NOTED OTHERWISE. SEE A600 FOR TOP OF WALL DETAILS.

LEGEND:

- SYMBOL INDICATES WALL TYPE - SEE SHEET A600 & A601 FOR WALL TYPE DETAILS.
- SYMBOL INDICATES CONSTRUCTION NOTE THIS SHEET
- BORROWED LIGHT- SEE A200.
- WALL SECTION
- BUILDING SECTION
- EXISTING DOOR TO REMAIN
- NEW DOOR- 4" FROM CORNER UNLESS NOTED OTHERWISE

KEY NOTES PLAN

1	PLAM CASEWORKS - SEE ELEVATIONS.
2	FOLDING GLASS WALL.
3	TOP OF WALL @4'-0" A.F.F.
4	SLIDING SECURITY GRILLE - BI-PARTING.
5	CONCRETE STEPS - SEE 15A500.
6	LINE OF GYP. SOFFIT ABOVE.
7	NEW LVT FLOORING - SEE INTERIOR SHEETS FOR EXTENTS
8	PAINT NEW DOOR AND EXISTING FRAME-VERIFY EXISTING COLOR.
9	24"W x 18"D VENTED METAL LOCKERS 84" HIGH W/ SLOPED TOP AND BUILT IN BENCH W/ WOOD SEAT- ON 4" CONCRETE SLAB.
10	TOOTH IN OPENING WITH BURNISHED BLOCK TO MATCH ADJACENT WALL.
11	MIRRORS -3'-0"W X 6'-0"H MOUNTED @2'-0" A.F.F BUTTED NEXT TO ONE ANOTHER TO COVER WALL.
12	TOOTH-IN-NEW BRICK TO EXISTING.
13	KNEE WALL SUPPORT.
14	PATCH CONCRETE SLAB AS REQUIRED TO ACCEPT NEW FINISHES.
15	LINE OF FLOOR INFILL AND NEW CONCRETE SLAB.
16	METAL COLUMN ENCLOSURE.
17	NEW COLUMN LOCATION- SEE STRUCTURAL.
18	4'-0"H x 6'-0"W TACKBOARD - MOUNTED 3'-0" A.F.F.
19	MONITOR - NIC
20	EMERGENCY EYEWASH. SEE PLUMBING.
21	ATM MACHINE - PROVIDED BY OWNER
22	RELOCATE EXISTING OPERABLE PROJECTOR SCREEN - COORDINATE W/ ELEC.
23	BRACKET MOUNTED FIRE EXTINGISHER- FE.
24	1 1/2" RECESSED FLOOR IN SHOWERS. FD= FLOOR DRAIN- COORDINATE WITH PLUMBING.



1 FIRST FLOOR SEGMENT F REMODEL PLAN

1/8" = 1'-0"

PROJECT NORTH TRUE NORTH

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **FLOOR PLAN - SEGMENT F**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **M.MALAND/ MPL**

Key Plan:

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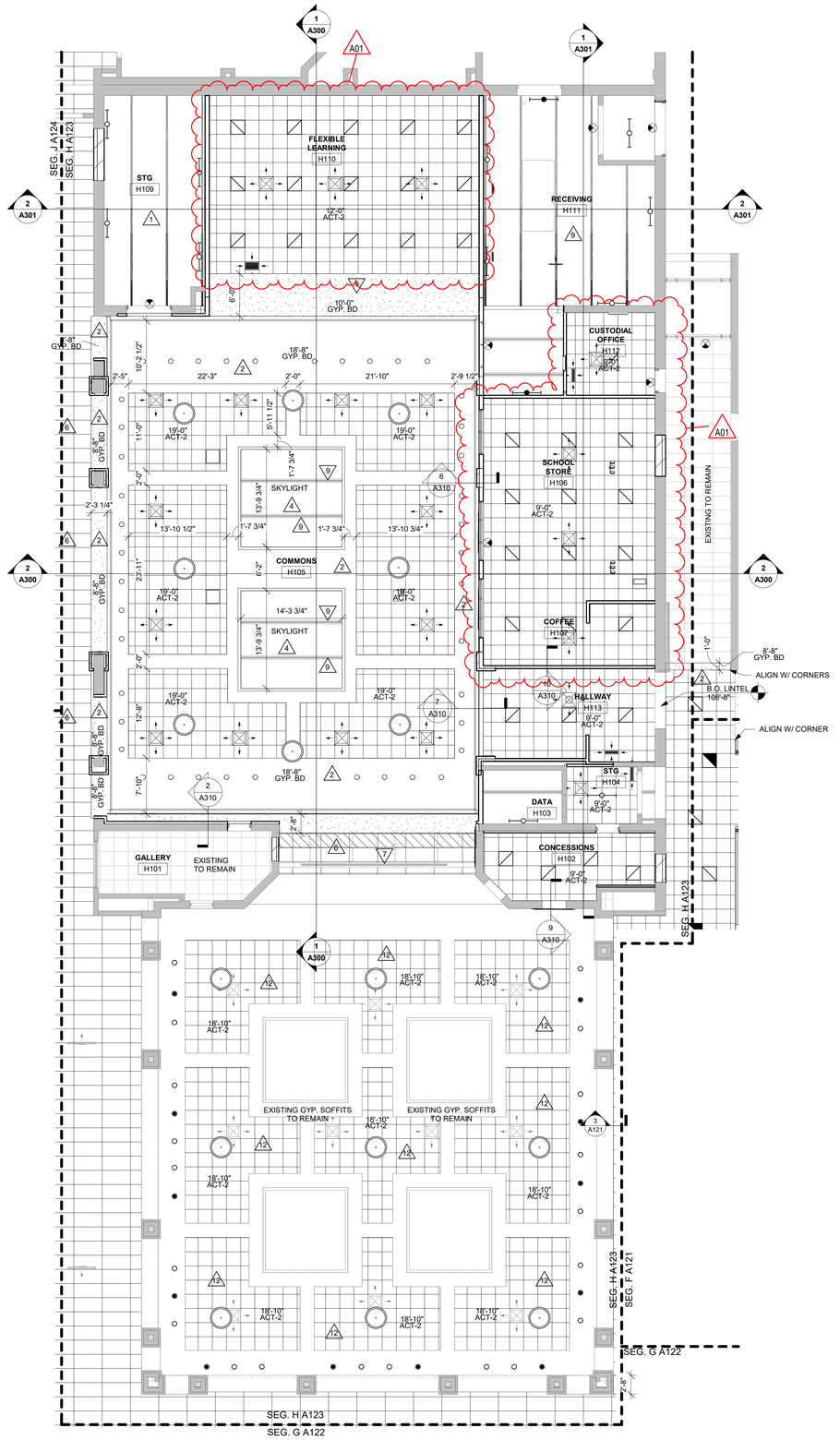
A101



1 REFLECTED CEILING PLAN - SEGMENT H

1/8" = 1'-0"

PROJECT NORTH TRUE NORTH

GENERAL NOTES:

A	REFER TO MECHANICAL AND PLUMBING CEILING ACCESS PANEL LOCATIONS & SIZES.
B	SEE MECHANICAL FOR CEILING GRILLE INFORMATION
C	SEE ELECTRICAL FOR LIGHTING TYPES
D	ALL INTERIOR PARTITIONS TO EXTEND TO BOTTOM OF DECK UNLESS OTHERWISE NOTED. CLOSE DECK FLUTES AT TOP OF WALL WITH NEOPRENE FILLER OR FIRESTOPPING SYSTEM.
E	ALL REMAINING ANNULAR SPACE AROUND ITEMS PENETRATING WALLS SHALL BE NEATLY SEALED. PENETRATIONS OF FIRE RATED WALLS SHALL BE FIRESTOPPED WITH THE SAME RATING AS THE WALL.
F	AT EXPOSED STRUCTURE, UNLESS NOTED OTHERWISE, KEEP ALL MEP ABOVE OR EVEN WITH THE LEVEL OF THE LIGHTS. MEP SHALL RUN IN NEAT ORDERLY APPEARANCE, GENERALLY PARALLEL OR PERPENDICULAR TO FINISHED STRUCTURE. WALLS IN THESE ROOMS TO RUN TO DECK AND ALL STRUCTURE / MEP COMPONENTS ARE TO BE PAINTED.
G	REFER TO INTERIOR DESIGN SHEETS FOR OTHER FINISHES
H	HANGERS AND SUPPORTS: MECHANICAL, PLUMBING, ELECTRICAL AND OTHER CABLING CONTRACTORS SHALL NOT HANG OR SUPPORT THE WORK FROM THE ROOF DECK IN ANY FASHION. CONDUIT RUNS SHALL NOT BE LAID ON ROOF DECK NOR LAID ON THE STRUCTURAL SUPPORT THAT SUPPORTS THE ROOF DECK. NO FASTENERS SHALL PENETRATE ROOF DECK BY ANY TRADE OTHER THAN THE ROOFING CONTRACTOR FOR THE NEW ROOF SYSTEM.
J	CONFIRM EXACT LOCATION OF OVERHEAD PROJECTORS AND OTHER CEILING MOUNTED EQUIPMENT WITH OWNER / MANUFACTURER PRIOR TO INSTALLATION. SEE EQUIPMENT PLANS FOR ADDITIONAL EQUIPMENT.
K	CEILING TYPES INSTALLED AS NOTED ON PLANS. SEE SPECIFICATIONS FOR ADDITIONAL SYSTEM INFORMATION. **ACT-2**=TEGULAR EDGE, **ACT-3**=VINYL FACED GYP **LMC-1** = LINEAR METAL CEILING SYSTEM

LEGEND:

- LIGHT FIXTURE - SEE ELECTRICAL
- LIGHT FIXTURE - SEE ELECTRICAL
- LIGHT FIXTURE - SEE ELECTRICAL
- LIGHT FIXTURE - SEE ELECTRICAL
- LIGHT FIXTURE - SEE ELECTRICAL
- LIGHT FIXTURE - SEE ELECTRICAL
- SPEAKER - SEE ELECTRICAL
- SUPPLY - SEE MECHANICAL
- RETURN - SEE MECHANICAL
- EXHAUST - SEE MECHANICAL
- DESTRAT FAN - SEE MECHANICAL
- SHOWER CURTAIN AND ROD - SEE SPECIFICATIONS

KEY NOTES RCP

1	EXPOSED STRUCTURE.
2	GYP. BOARD SOFFIT/CEILING - PAINT.
3	LINEAR METAL CEILLINGS W/ 4" PROFILE EDGE.
4	SKYLIGHT.
5	FOLDING PANEL PARTITION WALL AND TRACK.
6	MODIFIY EXISTING CEILING TILE AND GRID FOR NEW CONSTRUCTION.
7	EXISTING MOTORIZED PROJECTOR SCREEN TO REMAIN.
8	SLIDING GRILLE AND TRACK.
9	PAINT EXPOSED EXISTING JOISTS.
10	PENDANT LIGHT - SEE ELECTRICAL
11	PAINT EXPOSED MEP SYSTEMS
12	FIELD VERIFY EXISTING CEILING HEIGHT AND MATCH EXISTING

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **REFLECTED CEILING PLAN - SEGMENT H**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **M.MALAND/ MPL**

Key Plan:

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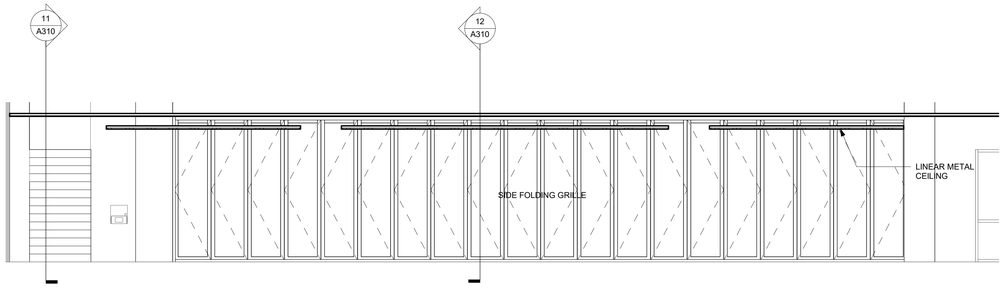
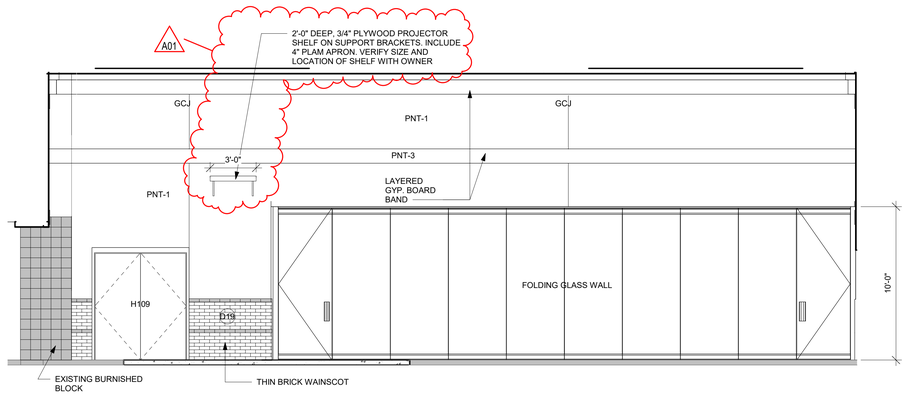
A123



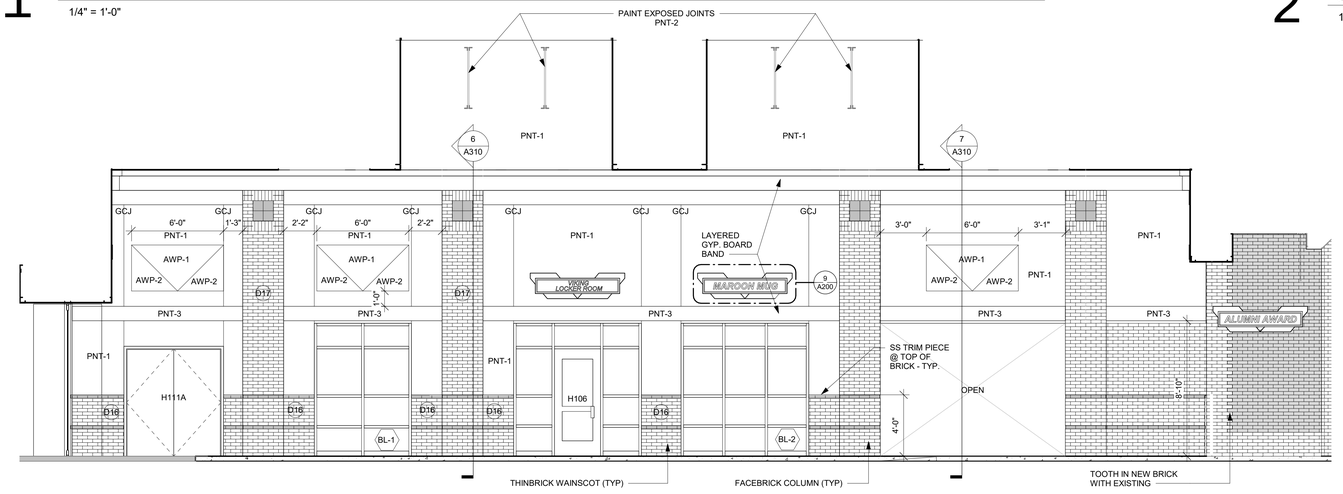
1 COMMONS H100 EAST

1/4" = 1'-0"



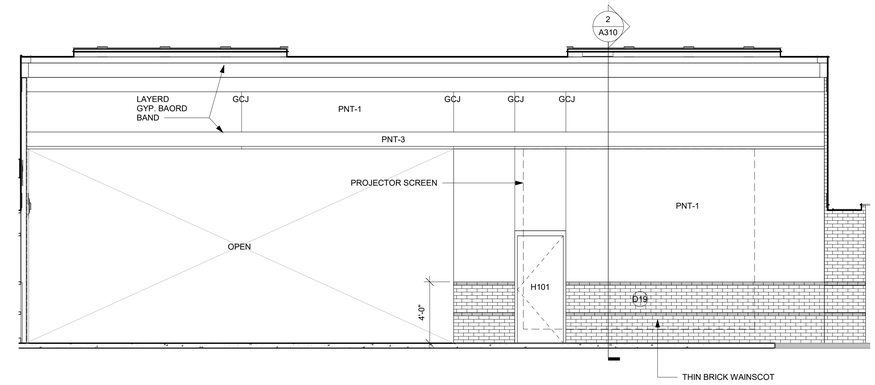
2 COMMONS H105 EAST

1/4" = 1'-0"



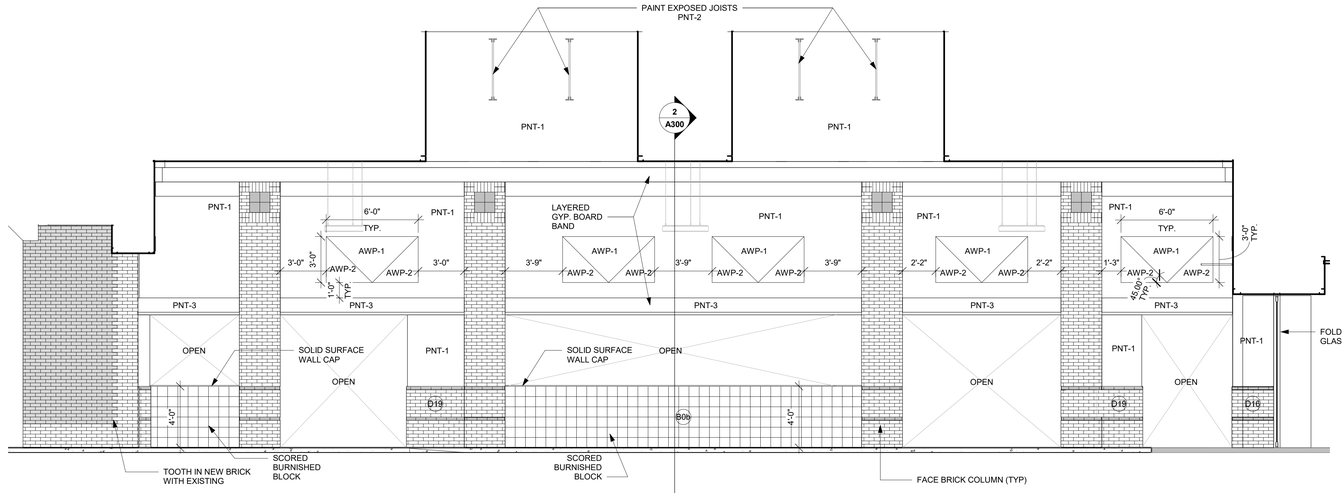
3 COMMONS H105 SOUTH

1/4" = 1'-0"



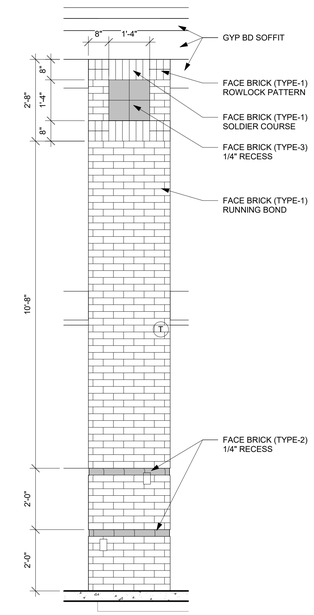
4 COMMONS H105 WEST

1/4" = 1'-0"



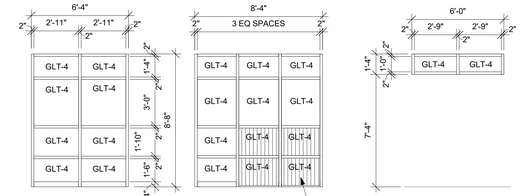
5 COMMONS H105 NORTH

1/4" = 1'-0"



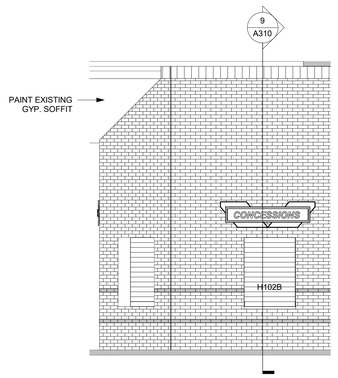
6 COLUMN ELEVATION

1/2" = 1'-0"



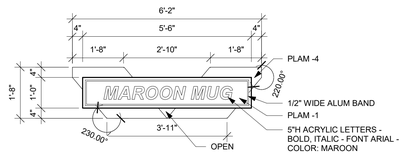
7 BORROWED LIGHTS

1/4" = 1'-0"



8 CONCESSIONS SIGNAGE

1/4" = 1'-0"



9 INTERIOR SIGNAGE DETAIL

1/2" = 1'-0"

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **INTERIOR ELEVATIONS**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **MPL**

Key Plan:

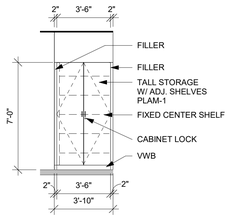
Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale: **VARIES**

Last Update: **3/12/2020 2:33:38 PM**

A200



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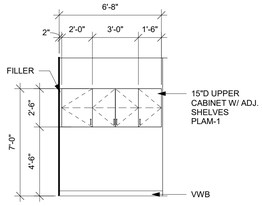
1/4" = 1'-0"



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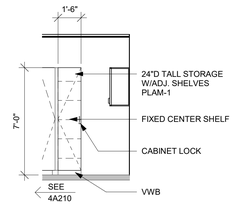

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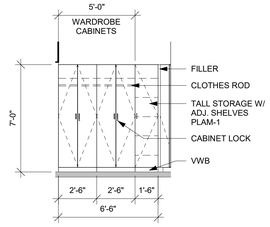

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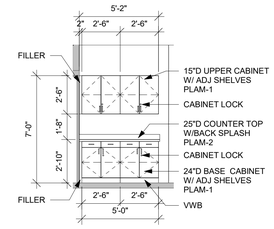
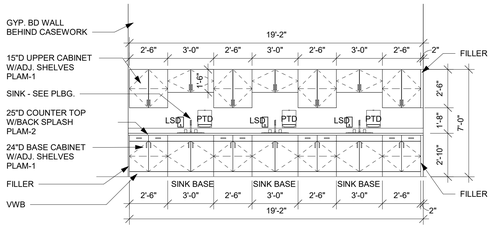


5 CW RM G102
1/4" = 1'-0"

CASEWORK GENERAL NOTES:	
A	ALL CABINET LOCKS TO BE KEYED ALIKE.
B	PROVIDE FINISHED END PANELS AT ALL KNEE SPACE, ALCOVES, AND EXPOSED CABINET ENDS.
C	CASEWORK MANUFACTURER TO FIELD VERIFY ALL CASEWORK DIMESNIONS & CONDITIONS PRIOR TO FABRICATION OF CASEWORK.
D	INSTALL 1-1/2" WOOD BLOCKING BETWEEN STUDS FOR CASEWORK MOUNTING AT TOP AND BOTTOM OF ALL WALL CABINETS AND AT TOP OF ALL BASE CABINETS.
E	ALL BASE CABINET KICKS, ALCOVES, KNEE SPACES AND END PANELS TO RECEIVE BASE UNLESS OTHERWISE NOTED. SEE MASTER COLOR SCHEDULE FOR SIZES AND COLOR.
F	SEAL EDGE OF COUNTER/BACKSPLASH TO ALL WALL LOCATIONS W/ CLEAR SEALANT.
G	REFER TO MASTER COLOR SCHEDULE FOR ID100 FOR PLASTIC LAMINATE SELECTIONS.
H	INSTALL TWO MAGNETIC CATCHES FOR TALL CABINETS, TOP AND BOTTOM AT EACH DOOR. TALL CABINETS SHALL HAVE AN ELBOW LATCH INSTALLED AT A CENTER FIXED SHELF. ALL OTHER SHELVES SHALL BE ADJUSTABLE.



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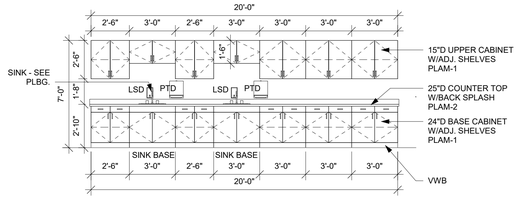
1/4" = 1'-0"



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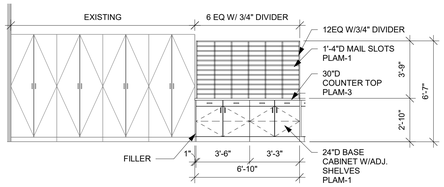

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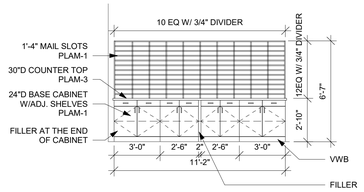

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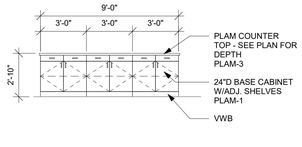

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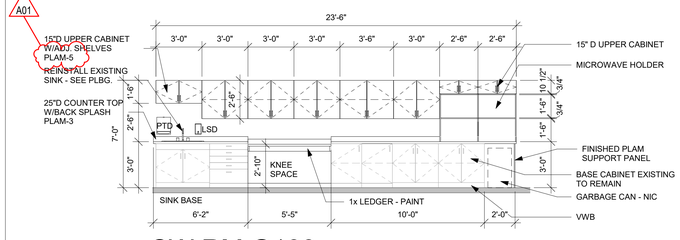

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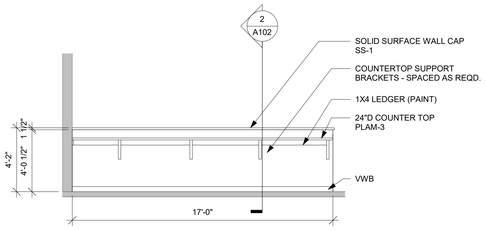

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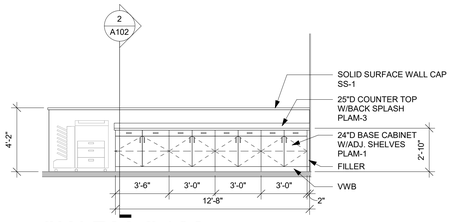

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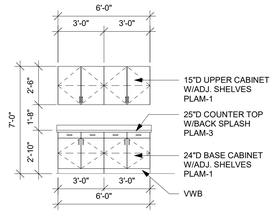

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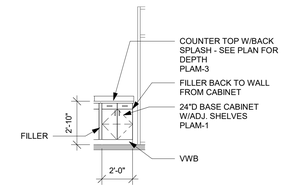

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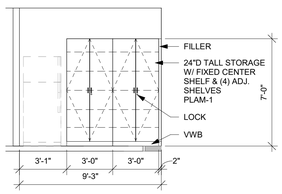

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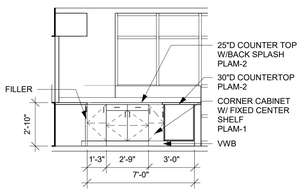

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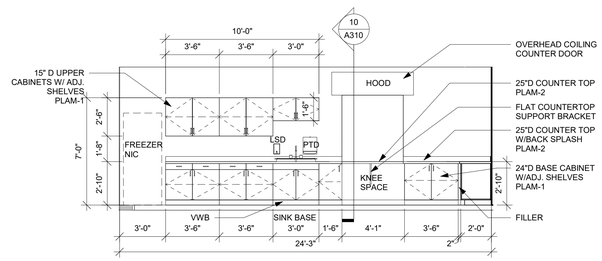

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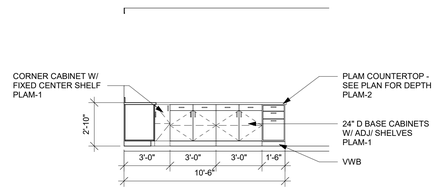

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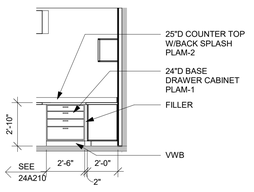

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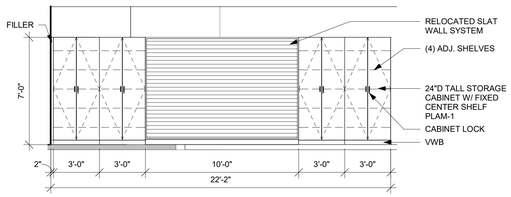

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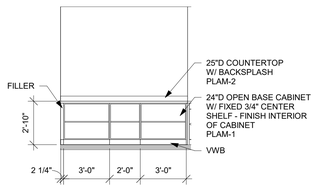

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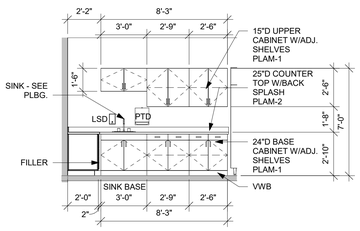

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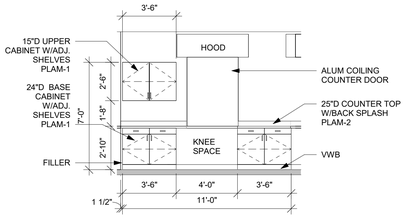

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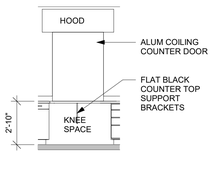

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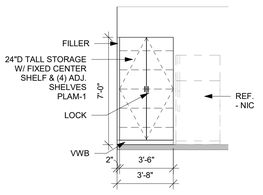

26 CW RM H102
1/4" = 1'-0"

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Consultant:

Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: CASEWORK ELEVATIONS

HSR Project Number: 18061

Project Date: FEBRUARY 2020

Drawn By: N.K/M.M

Key Plan:

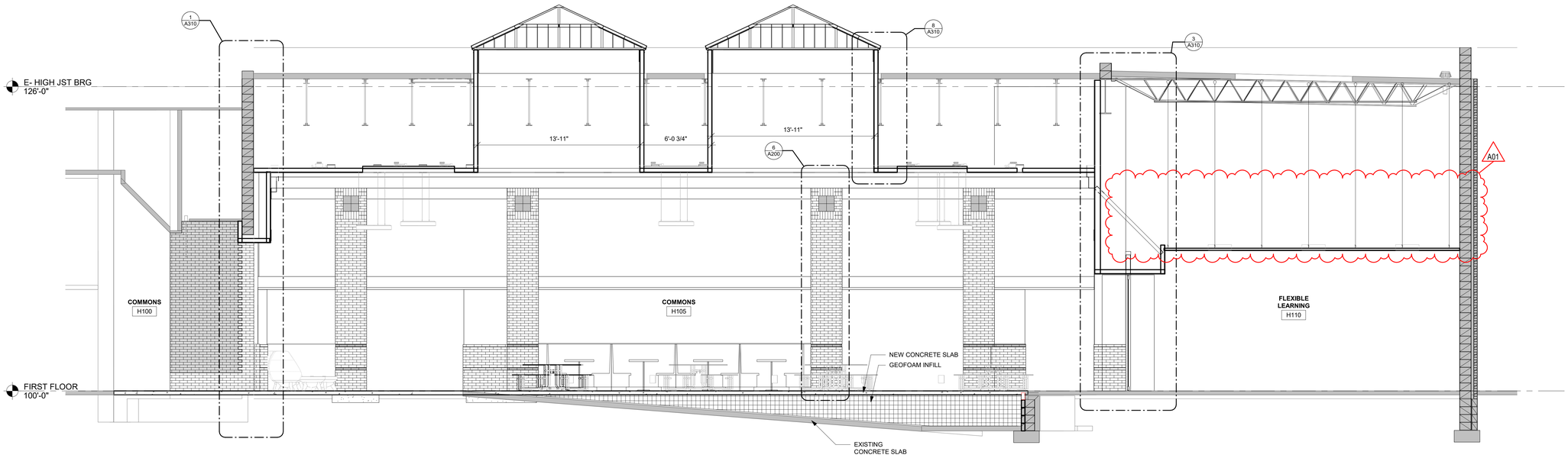
Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale: VARIES

Last Update: 3/13/2020 11:09:58 AM

A210



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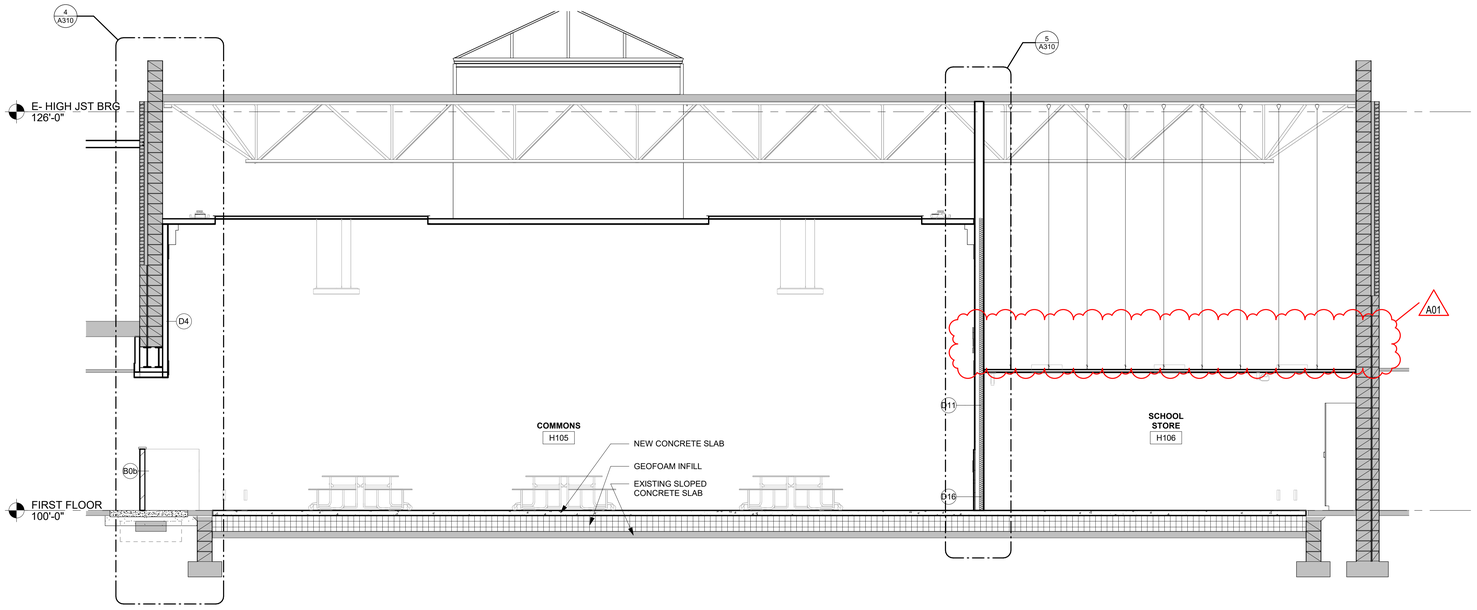

2 BUILDING SECTION 2

1/4" = 1'-0"

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **BUILDING SECTIONS**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **MPL**

Key Plan:

Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale: **VARIES**

Last Update: **3/12/2020 11:39:09 AM**

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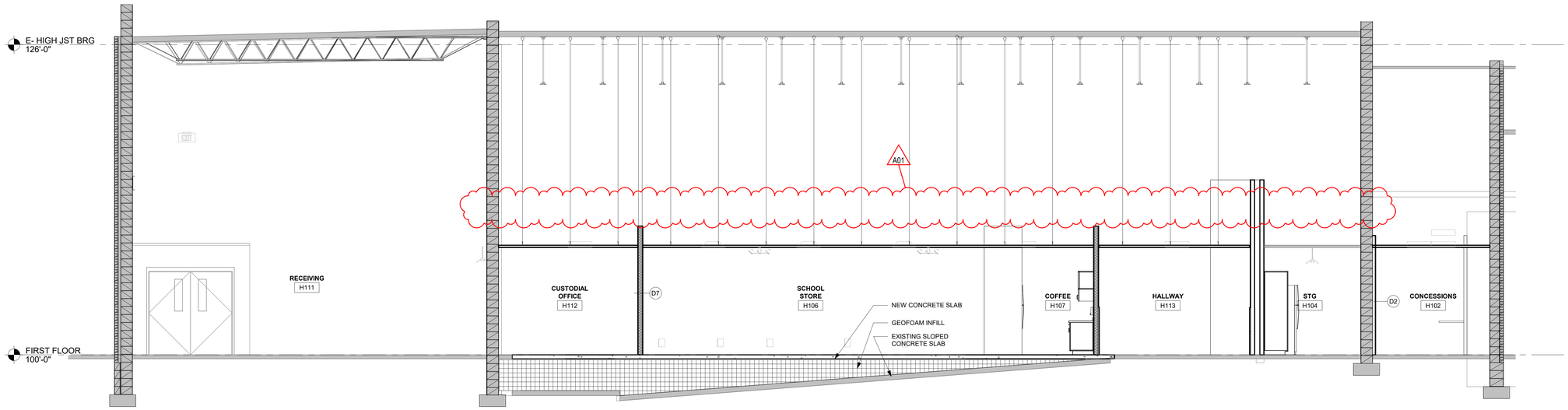

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Consultant:

Project Title:
SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location:
1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title:
BUILDING SECTIONS

HSR Project Number:
18061

Project Date:
FEBRUARY 2020

Drawn By:
MPL

Key Plan:

Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale:
VARIES

Last Update:
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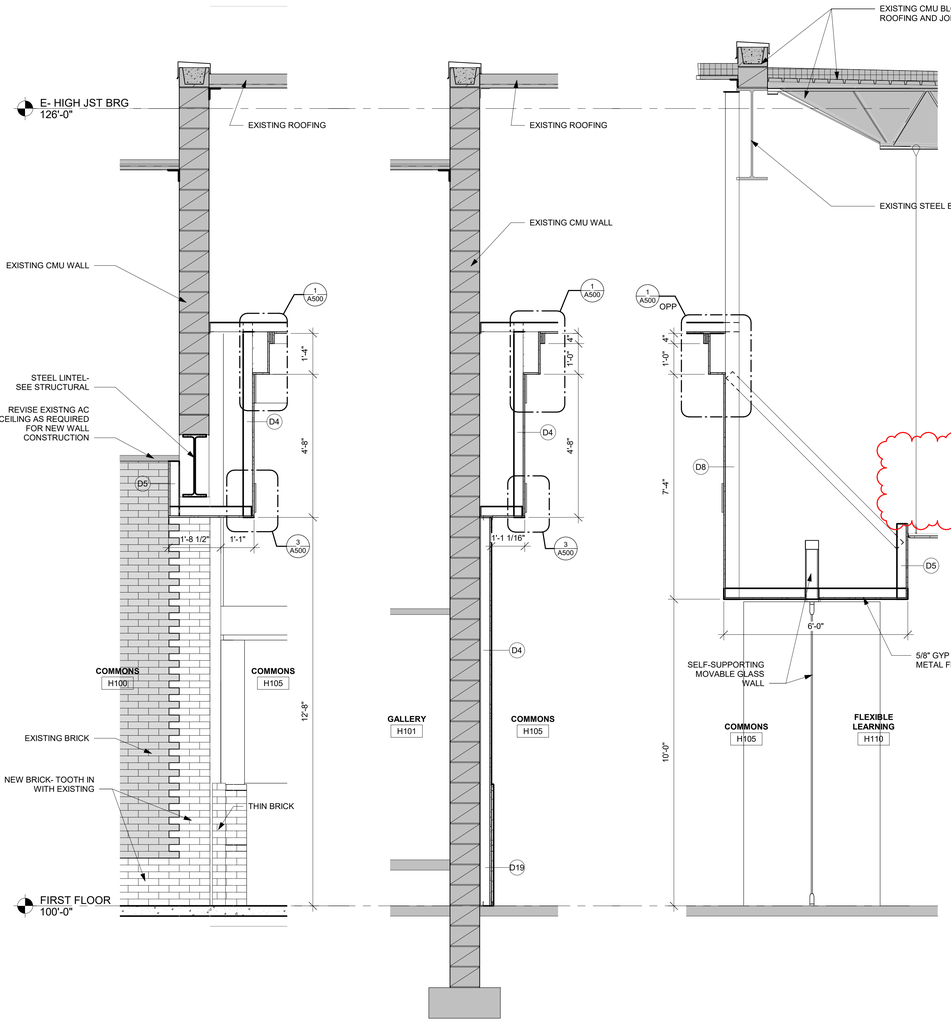
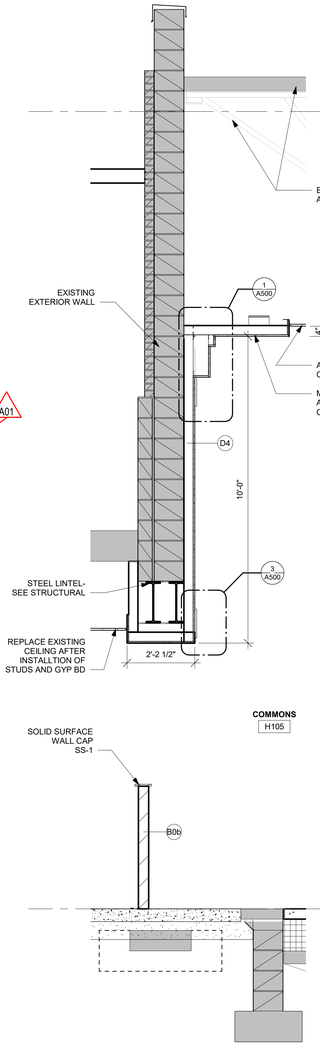


1 WALL SECTION
1/2" = 1'-0"

2 WALL SECTION
1/2" = 1'-0"

3 WALL SECTION
1/2" = 1'-0"



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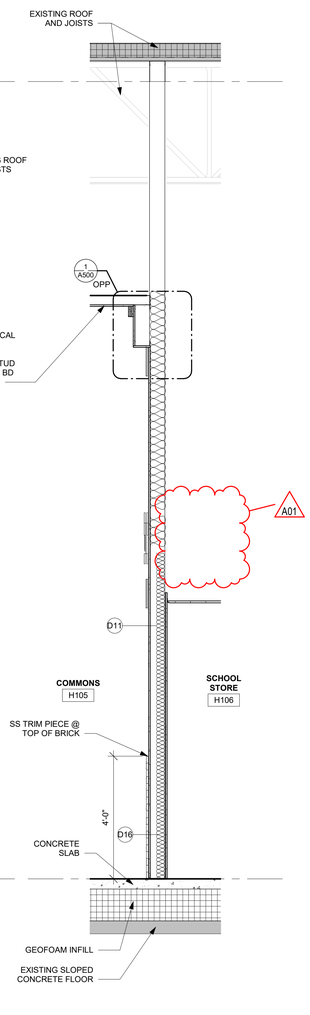

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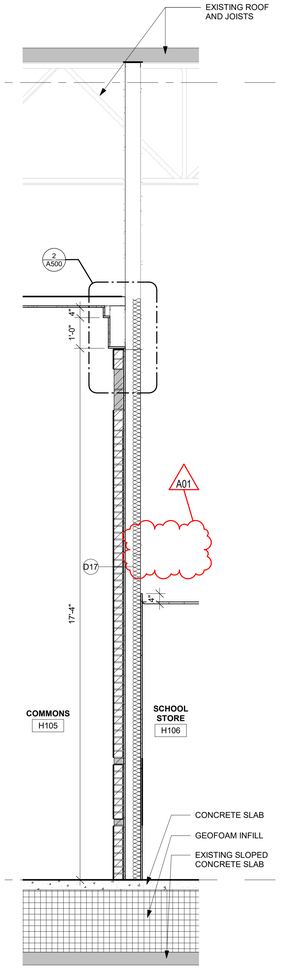

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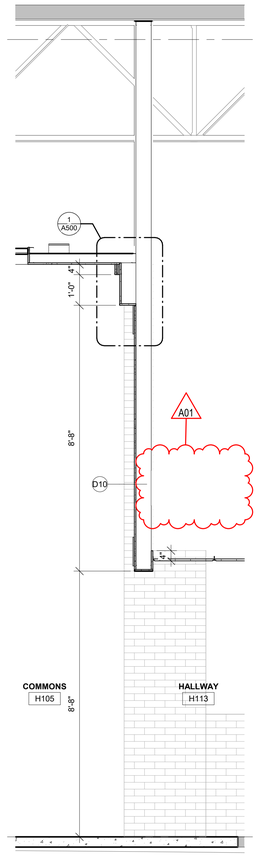

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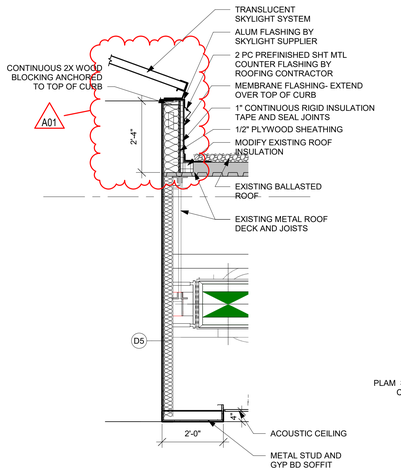

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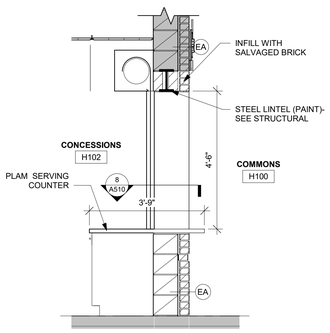

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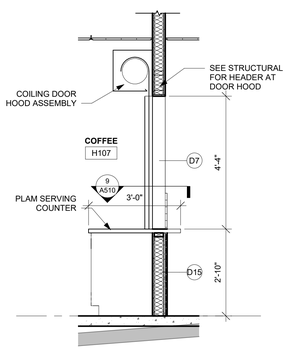

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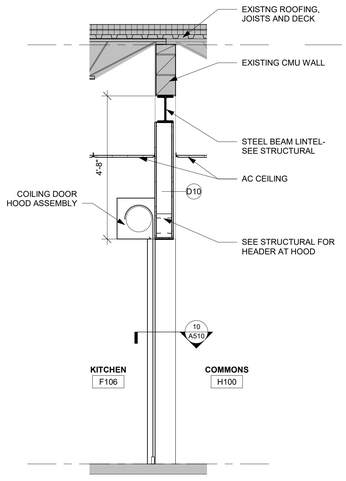

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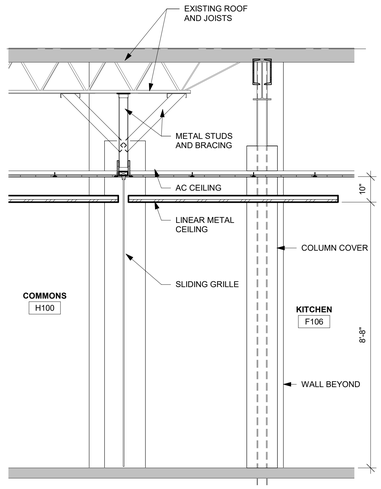

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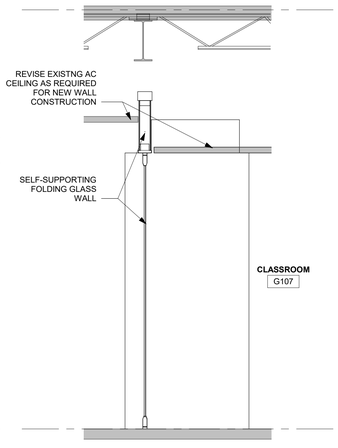

13 WALL SECTION
1/2" = 1'-0"

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Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: WALL SECTIONS

HSR Project Number: 18061

Project Date: FEBRUARY 2020

Drawn By: MPL

Key Plan:

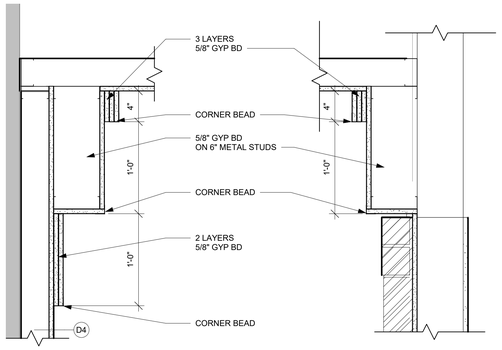
Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale: VARIES

Last Update: 3/12/2020 11:39:38 AM

A310



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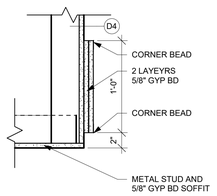
1 1/2" = 1'-0"



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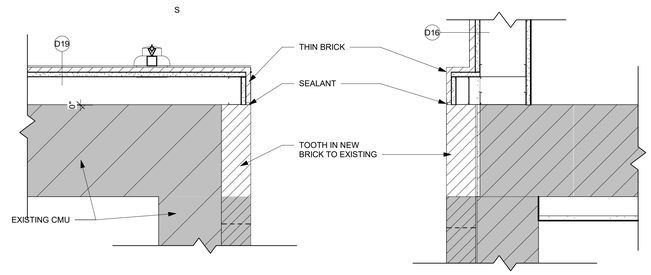
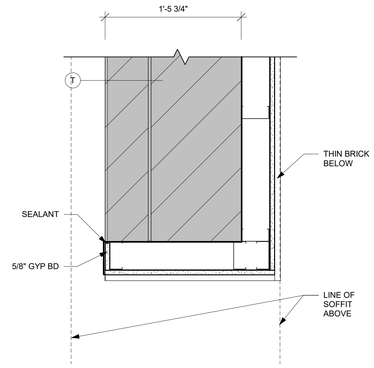


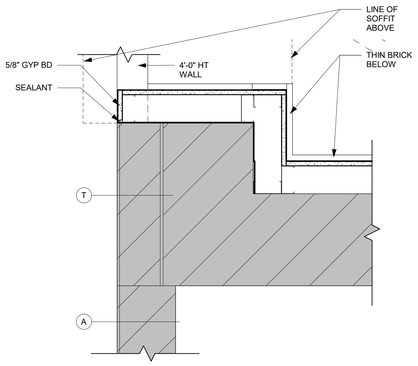
3 SOFFIT DETAIL
1 1/2" = 1'-0"

4 CORNER DETAIL
1 1/2" = 1'-0"

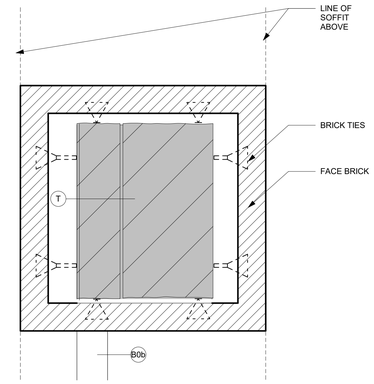


5 CORNER DETAIL
1 1/2" = 1'-0"

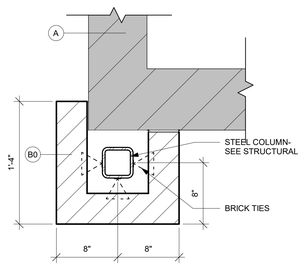
6 CORNER DETAIL
1 1/2" = 1'-0"



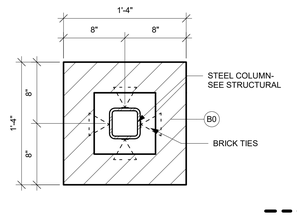
7 CORNER DETAIL
1 1/2" = 1'-0"



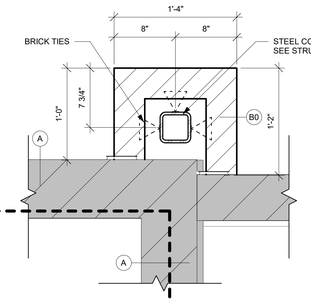
8 COLUMN DETAIL
1 1/2" = 1'-0"



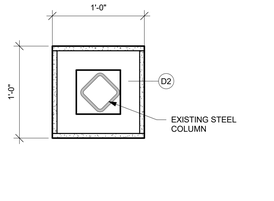
9 COLUMN DETAIL
1 1/2" = 1'-0"



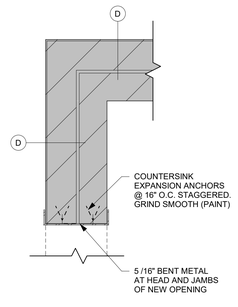
10 COLUMN DETAIL
1 1/2" = 1'-0"



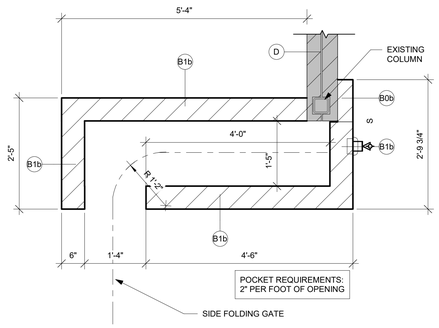
11 COLUMN DETAIL
1 1/2" = 1'-0"



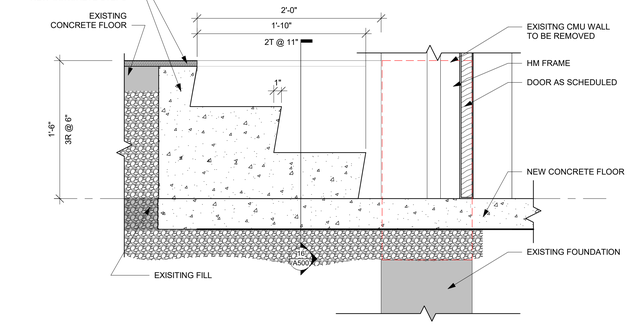
12 COLUMN DETAIL
1 1/2" = 1'-0"



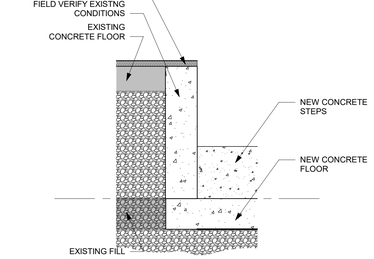
13 CORNER DETAIL
1 1/2" = 1'-0"



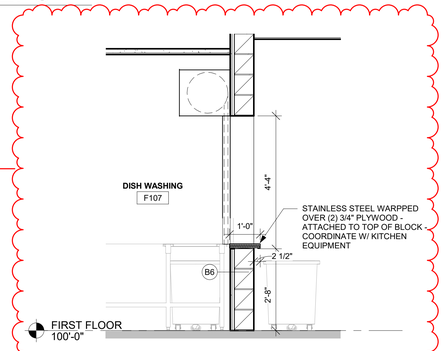
14 SLIDING GATE POCKET
3/4" = 1'-0"



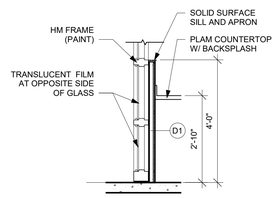
15 GALLERY STEPS
1 1/2" = 1'-0"



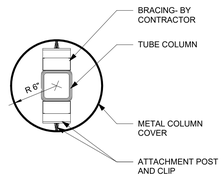
16 GALLERY STEPS
1 1/2" = 1'-0"



19 WALL SECTION
1/2" = 1'-0"



17 COUNTER WALL DETAIL
1/2" = 1'-0"



18 COLUMN ENCLOSURE DETAIL
1 1/2" = 1'-0"

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL ROOF REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **DETAILS**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **MPL**

Key Plan:

Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale: **VARIES**

Last Update: **3/12/2020 11:39:48 AM**

A500

DOOR SCHEDULE

DOOR NO.	DOOR SIZE W	DOOR SIZE H	DOOR SIZE T	DOOR MAT'L	DOOR TYPE	DOOR GLASS TYPE	DOOR U-CUTOUR LOUVER	FRAME MAT'L	FRAME ELEV	FRAME DEPTH	FRAME DETAILS HEAD	FRAME DETAILS JAMB	FRAME DETAILS SILL	FIRE LABEL	HDWR GROUP	REMARKS
F106A	4' - 0"	7' - 4"	0"	COILING ALUM	G										2	
F106B	48' - 0"	9' - 6"		Sliding Grille					Aluminum Series						1	3
F107	4' - 0"	4' - 4"	0"	COILING ALUM	H			STL			9A310 SIM	9A510 SIM			2	2
G101	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	GG	5 3/4"	1A510				3	
G103	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	GG	5 3/4"	1A510				3	
G104	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	GG	5 3/4"	1A510				3	
G105	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	GG	5 3/4"	1A510				3	
G106	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	GG	5 3/4"	1A510				3	
G107	11' - 3"	9' - 0"		FOLDING GLASS DOOR					GL1							
H101	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	BB	5 3/4"	6A510	7A510			4	
H102A	3' - 0"	7' - 0"	1 3/4"	SCWD	B	GLT-4		HM	BB	5 3/4"	6A510	7A510			5	
H102B	3' - 4"	4' - 6"	2"	COILING ALUM	H			STL			9A310	8A510			2	2
H102C	3' - 4"	4' - 6"	2"	COILING ALUM	H			STL			9A310	8A510			2	2
H106	3' - 0"	7' - 0"	1 3/4"	SCWD	E	GLT-4		HM	HH	8 1/4"	1A510				2	
H107	4' - 0"	4' - 4"	0"	COILING ALUM	H			STL			13A310	9A510			2	2
H109	6' - 0"	7' - 0"	1 3/4"	SCWD	C			HM	BB	5 3/4"	6A510 SIM				7	1
H110	38' - 0"	10' - 0"		FOLDING GLASS DOOR					GL2							
H111A	6' - 2"	7' - 0"	1 3/4"	SCWD	C			HM	EE	8 1/4"	1A510				8	1
H111B	7' - 4"	7' - 0"	1 3/4"	IHM	C			EXISTG							12	4
H112A	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	GG	5 3/4"	1A510				3	
H112B	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	BB	5 3/4"	4A510	5A510			3	
J100	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	BB	8 3/4"	2A510	3A510			10	
J101	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	BB	8 3/4"	2A510	3A510			10	
J103	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	BB	8 3/4"	2A510	3A510			9	
J104	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	BB	6 3/4"	2A510	3A510			11	
J105	3' - 0"	7' - 0"	1 3/4"	SCWD	A			HM	BB	6 3/4"	2A510	3A510			11	

A01

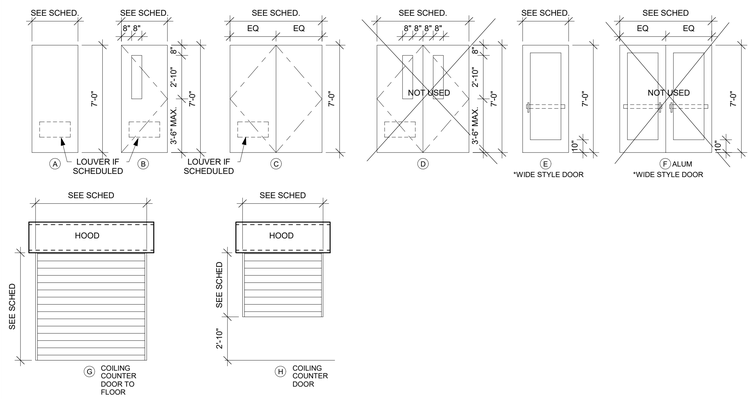
A01

DOOR SCHEDULE GENERAL NOTES

HM = HOLLOW METAL FBRGL = FIBERGLASS ALUM = ALUMINUM SCWD = SOLID CORE WOOD DOOR

A. SEE SPECIFICATIONS FOR DOOR HARDWARE GROUPS
B. ALL HM (HOLLOW METAL) AND IHM (INSULATED HOLLOW METAL) DOORS AND FRAMES SHALL BE PAINTED
C. ALL DOUBLE DOORS TO HAVE TWO EQUAL LEAFS UNLESS NOTED OTHERWISE

DOOR TYPES



DOOR SCHEDULE REMARKS

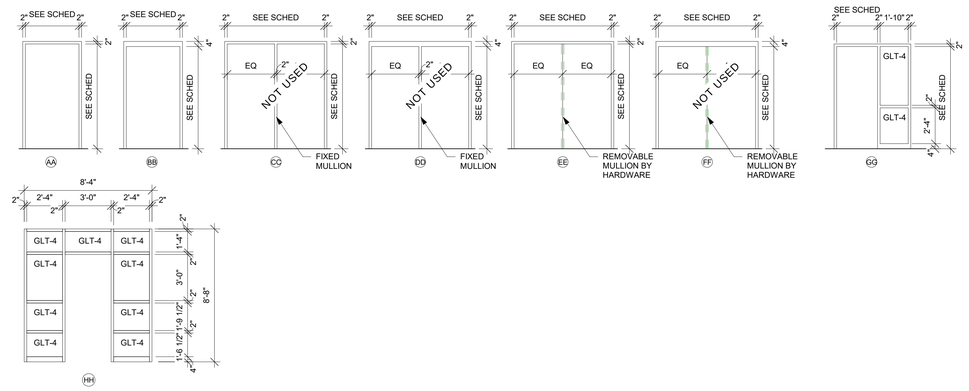
1. TWO EQUAL LEAF DOORS
2. MANUAL COILING COUNTER DOOR
3. BI-PARTING SIDE FOLDING GATE W/ LOCK CYLINDER
4. NEW DOORS IN EXISTING FRAME

DOOR FRAME GENERAL NOTES

HM = HOLLOW METAL IHM = INSULATED HOLLOW METAL ALUM = ALUMINUM STL = STEEL

A. SEE SHEET A600 FOR ADDITIONAL FRAME TYPES
B. ALL HM (HOLLOW METAL) AND IHM (INSULATED HOLLOW METAL) FRAMES SHALL BE PAINTED.

DOOR FRAME TYPES



ARCHITECTURE
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Consultant:

Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: DOOR SCHEDULE

HSR Project Number: 18061

Project Date: FEBRUARY 2020

Drawn By: M.MALAND/ MPL

Key Plan:

Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

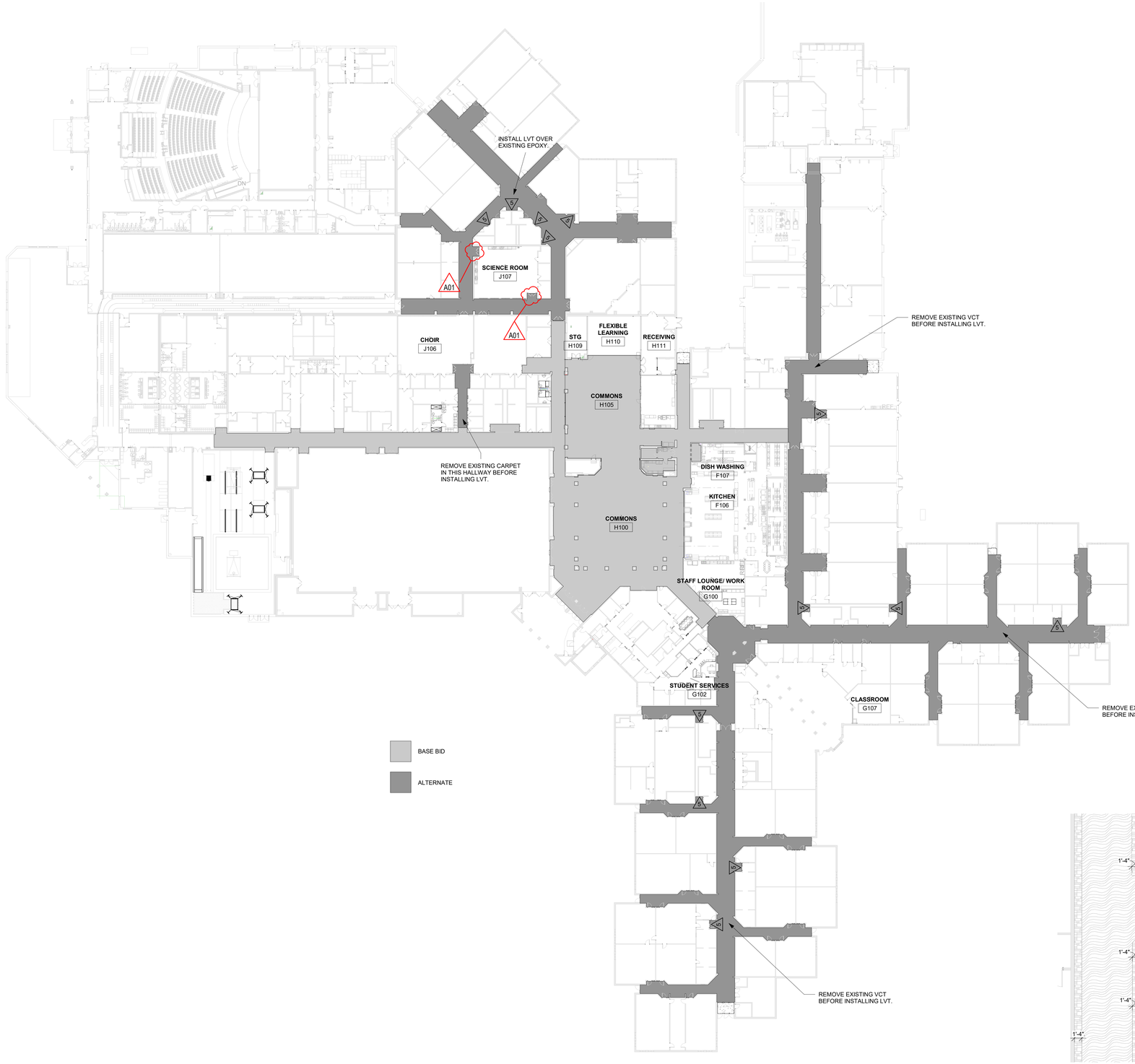
Graphic Scale: VARIES

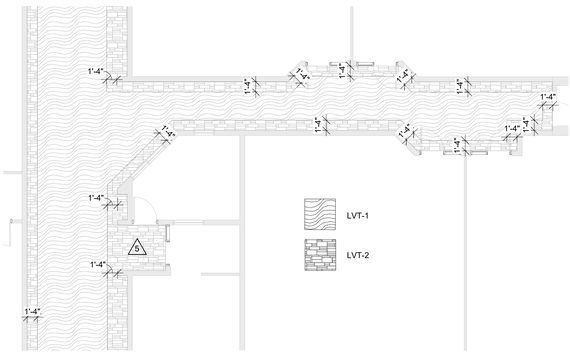
Last Update: 3/12/2020 11:39:57 AM

A601

ROOM FINISH REMARKS

1	PAINT ALL WALLS PNT-1 - ACCENT AS INDICATED ON PLANS. DO NOT PAINT BURNISHED BLOCK OR BRICK.
2	PAINT ALL WALLS EPOXY PNT-4
3	FULL HEIGHT TILE @ ALL WALLS. SEE TILE ELEVATION ON ID109.
4	FLOORING TO CONTINUE UNDER CASEWORK.
5	FILL ALCOVE WITH LVT-2. SEE EXAMPLE OF KEYNOTE AT 2ID105.
6	PAINT ALL WALLS EPOXY PNT-1 - ACCENT AS INDICATED ON PLANS. DO NOT PAINT BURNISHED BLOCK OR BRICK.
7	"HOLMEN" AND "VIKINGS" TO BE FONT ALGERION. SEE ID103 FOR LETTERING PLACEMENT AND SIZE. VERIFY BEFORE INSTALL.





1 OVERALL HALLWAY FLOOR PLAN

1/32" = 1'-0"

PROJECT NORTH

TRUE NORTH

2 OVERALL HALLWAY ENLARGED PATTERNING

1/8" = 1'-0"

PROJECT NORTH

TRUE NORTH

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **OVERALL INTERIOR PLAN**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **SB**

Key Plan:

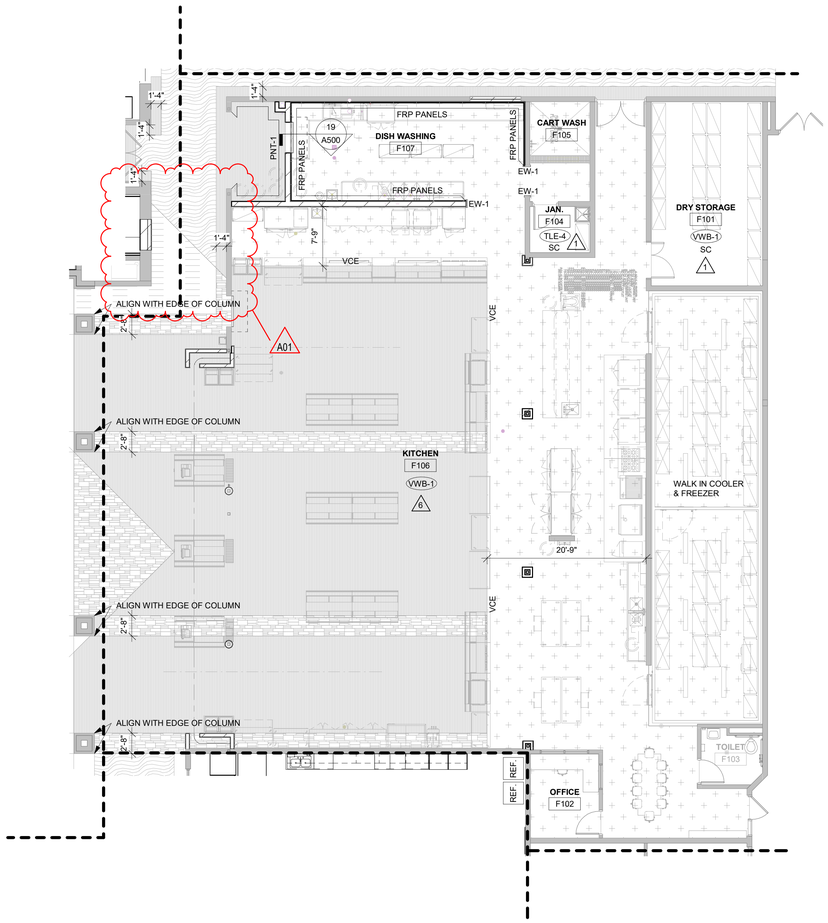
Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale: **VARIES**

Last Update: **3/13/2020 11:10:43 AM**

ID100



1 FIRST FLOOR SEGMENT F FINISH PLAN

1/8" = 1'-0"

PROJECT NORTH

TRUE NORTH

INTERIOR GENERAL NOTES:

A	REFERENCES TO PAINT PERTAIN TO COLOR ONLY; PAINT TYPE SHALL BE IDENTIFIED IN THE ARCHITECTURAL SPECIFICATIONS.
B	PNT-1 FIELD PAINT; ACCENT PAINT AS INDICATED. SEE ID SHEETS.
C	REFER TO MASTER COLOR SCHEDULE ON ID600 FOR MATERIAL FINISH SPECIFICATIONS, ANNOTATIONS, AND ADDITIONAL INFORMATION.
D	TOILET ROOM WALL AND FLOOR GROUT LINES SHALL ALIGN TO CONTINUE PATTERN THROUGHOUT. SEE ID104 FOR ELEVATED PATTERNING.
E	VINYL COMPOSITE EDGE (VCE) TO BE INSTALLED AT DISSIMILAR FINISH AREAS; REFER TO ID SHEETS. INSTALL APPROPRIATE EDGE PROFILE TO PROTECT FINISH EDGES. COLOR AS SELECTED BY A/E.
F	AT DISSIMILAR FLOORING FINISHES, SET JOINT OF MATERIALS AT CENTER OF DOOR. TRANSISITONS TO BE ADA COMPLIANT.
G	REFER TO PLUMBING FOR FLOOR DRAIN LOCATIONS

FINISH KEY PLAN:

- X — SEE ROOM FINISH REMARKS
- XXX — WALL BASE
- PNT-X — ACCENT PAINT

FINISH LEGEND:

- TLE-1
- TLE-2
- EPOXY W/ 6" INTEGRAL BASE SEE SPEC SECTION 09 67 00
- LVT-1
- LVT-2
- LVT-3
- LVT-4
- LVT-5
- CPT-1
- CPT-2
- WCPT-1
- WCPT-2

A01

ROOM FINISH REMARKS

1	PAINT ALL WALLS PNT-1 - ACCENT AS INDICATED ON PLANS. DO NOT PAINT BURNISHED BLOCK OR BRICK.
2	PAINT ALL WALLS EPOXY PNT-4
3	FULL HEIGHT TILE @ ALL WALLS. SEE TILE ELEVATION ON ID109.
4	FLOORING TO CONTINUE UNDER CASEWORK.
5	FILL ALCOVE WITH LVT-2. SEE EXAMPLE OF KEYNOTE AT 2ID105.
6	PAINT ALL WALLS EPOXY PNT-1 - ACCENT AS INDICATED ON PLANS. DO NOT PAINT BURNISHED BLOCK OR BRICK.
7	"HOLMEN" AND "VIKINGS" TO BE FONT ALGERIAN. SEE ID103 FOR LETTERING PLACEMENT AND SIZE. VERIFY BEFORE INSTALL.

A01

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Consultant:

Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: FINISH FLOOR PLAN - SEGMENT F

HSR Project Number: 18061

Project Date: FEBRUARY 2020

Drawn By: SB

Key Plan:

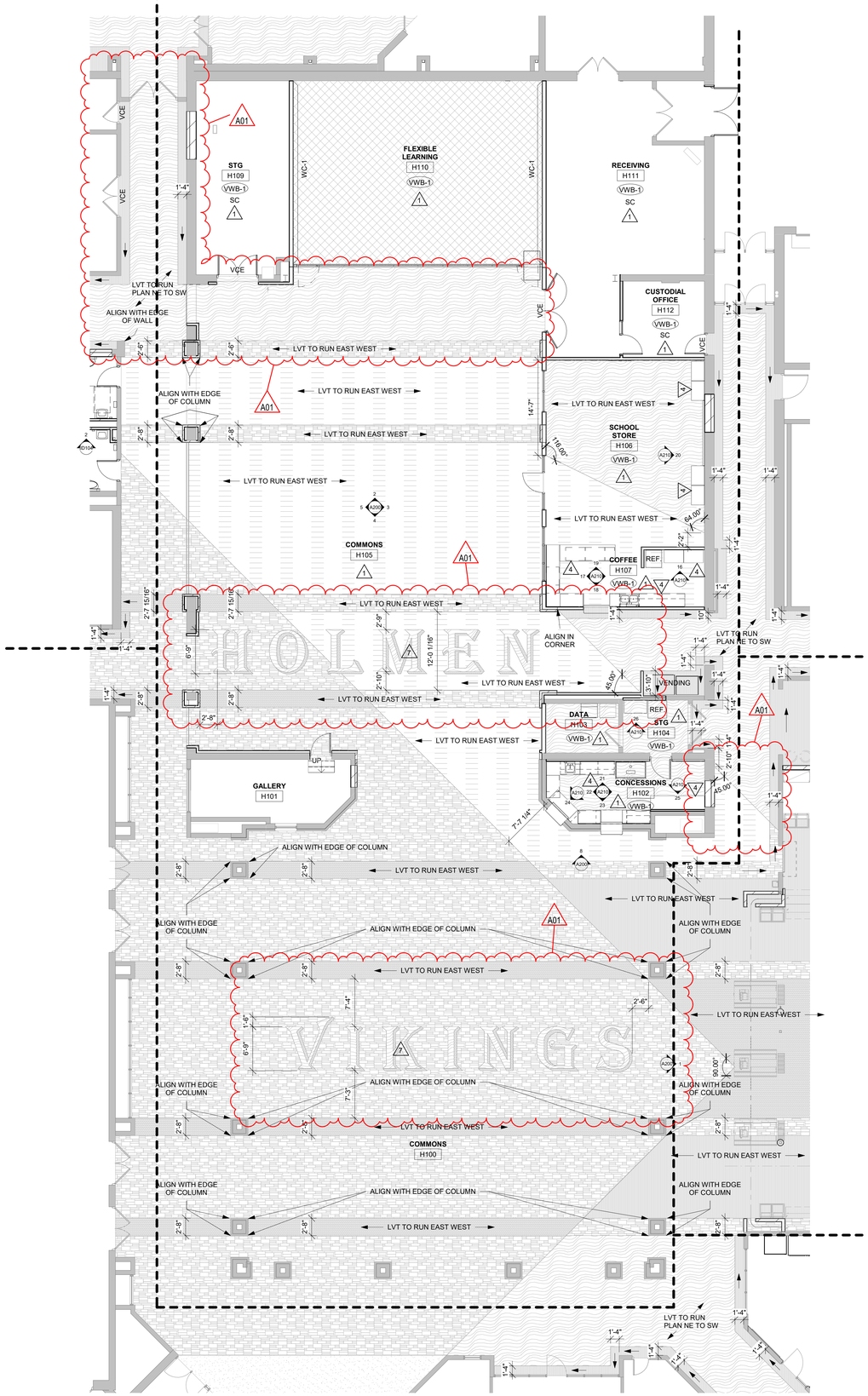
Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale: VARIES

Last Update: 3/13/2020 11:10:46 AM

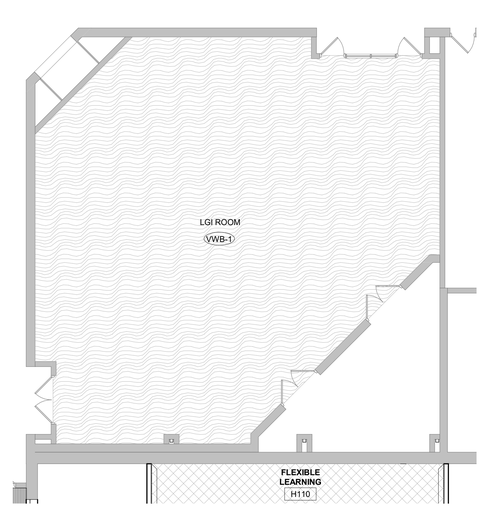
ID101



1 FIRST FLOOR SEGMENT H FINISH PLAN

1/8" = 1'-0"

PROJECT NORTH TRUE NORTH



2 FIRST FLOOR SEGMENT H FINISH PLAN LGI ROOM

1/8" = 1'-0"

PROJECT NORTH TRUE NORTH

INTERIOR GENERAL NOTES:

A	REFERENCES TO PAINT PERTAIN TO COLOR ONLY; PAINT TYPE SHALL BE IDENTIFIED IN THE ARCHITECTURAL SPECIFICATIONS.
B	PNT-1 FIELD PAINT; ACCENT PAINT AS INDICATED. SEE ID SHEETS.
C	REFER TO MASTER COLOR SCHEDULE ON ID600 FOR MATERIAL FINISH SPECIFICATIONS, ANNOTATIONS, AND ADDITIONAL INFORMATION.
D	TOILET ROOM WALL AND FLOOR GROUT LINES SHALL ALIGN TO CONTINUE PATTERN THROUGHOUT. SEE ID104 FOR ELEVATED PATTERNING.
E	VINYL COMPOSITE EDGE (VCE) TO BE INSTALLED AT DISSIMILAR FINISH AREAS; REFER TO ID SHEETS. INSTALL APPROPRIATE EDGE PROFILE TO PROTECT FINISH EDGES. COLOR AS SELECTED BY A/E.
F	AT DISSIMILAR FLOORING FINISHES, SET JOINT OF MATERIALS AT CENTER OF DOOR. TRANSISITONS TO BE ADA COMPLIANT.
G	REFER TO PLUMBING FOR FLOOR DRAIN LOCATIONS

FINISH KEY PLAN:

- A — SEE ROOM FINISH REMARKS
- XXX — WALL BASE
- PNT-X — ACCENT PAINT

FINISH LEGEND:

- TLE-1
- TLE-2
- EPOXY W/ 6" INTEGRAL BASE SEE SPEC SECTION 09 67 00
- LVT-1
- LVT-2
- LVT-3
- LVT-4
- LVT-5
- CPT-1
- CPT-2
- WCPT-1
- WCPT-2

A01

ROOM FINISH REMARKS

1	PAINT ALL WALLS PNT-1 - ACCENT AS INDICATED ON PLANS. DO NOT PAINT BURNISHED BLOCK OR BRICK.
2	PAINT ALL WALLS EPOXY PNT-4
3	FULL HEIGHT TILE @ ALL WALLS. SEE TILE ELEVATION ON ID109.
4	FLOORING TO CONTINUE UNDER CASEWORK.
5	FILL ALCOVE WITH LVT-2. SEE EXAMPLE OF KEYNOTE AT 2ID105.
6	PAINT ALL WALLS EPOXY PNT-1 - ACCENT AS INDICATED ON PLANS. DO NOT PAINT BURNISHED BLOCK OR BRICK.
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Consultant:

Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: FINISH FLOOR PLAN - SEGMENT H

HSR Project Number: 18061

Project Date: FEBRUARY 2020

Drawn By: SB

Key Plan:

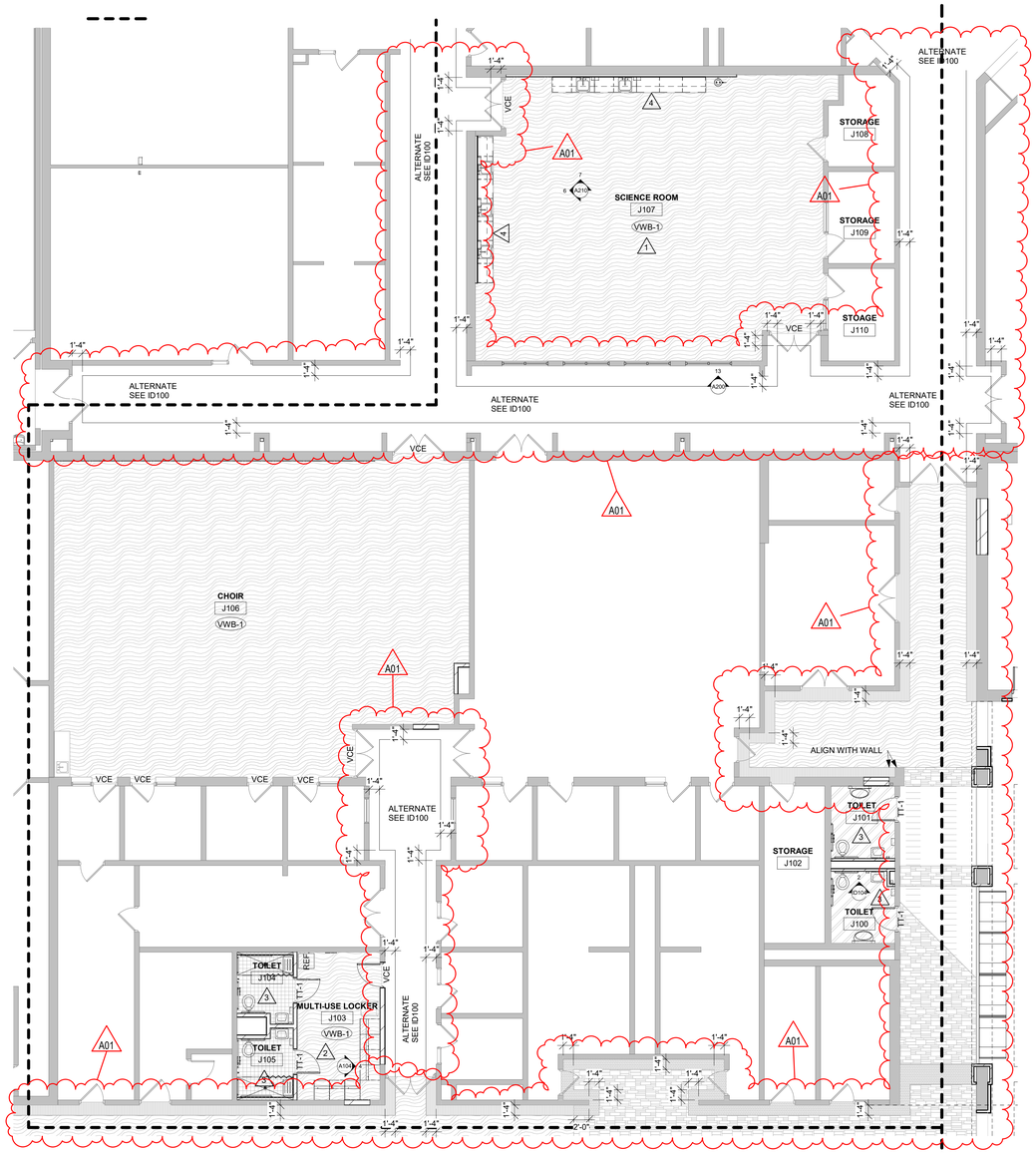
Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale: VARIES

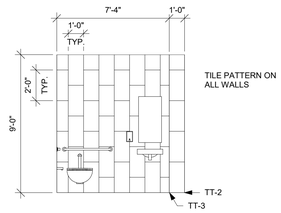
Last Update: 3/13/2020 11:10:47 AM

ID103



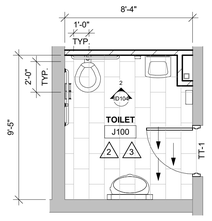
1 FIRST FLOOR SEGMENT J FINISH PLAN

1/8" = 1'-0"



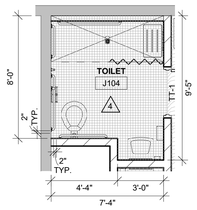
2 TILE ELEVATION

1/4" = 1'-0" J100, J101, J104, J105



3 ENLARGED TILE PATTERN

1/4" = 1'-0" J100, J101



4 ENLARGED TILE PATTERN

1/4" = 1'-0" J104, J105

INTERIOR GENERAL NOTES:

A	REFERENCES TO PAINT PERTAIN TO COLOR ONLY; PAINT TYPE SHALL BE IDENTIFIED IN THE ARCHITECTURAL SPECIFICATIONS.
B	PNT-1 FIELD PAINT; ACCENT PAINT AS INDICATED. SEE ID SHEETS.
C	REFER TO MASTER COLOR SCHEDULE ON ID600 FOR MATERIAL FINISH SPECIFICATIONS, ANNOTATIONS, AND ADDITIONAL INFORMATION.
D	TOILET ROOM WALL AND FLOOR GROUT LINES SHALL ALIGN TO CONTINUE PATTERN THROUGHOUT. SEE ID104 FOR ELEVATED PATTERNING.
E	VINYL COMPOSITE EDGE (VCE) TO BE INSTALLED AT DISSIMILAR FINISH AREAS; REFER TO ID SHEETS. INSTALL APPROPRIATE EDGE PROFILE TO PROTECT FINISH EDGES. COLOR AS SELECTED BY A/E.
F	AT DISSIMILAR FLOORING FINISHES, SET JOINT OF MATERIALS AT CENTER OF DOOR. TRANSISITONS TO BE ADA COMPLIANT.
G	REFER TO PLUMBING FOR FLOOR DRAIN LOCATIONS

FINISH KEY PLAN:

- X — SEE ROOM FINISH REMARKS
- XXX — WALL BASE
- PNT-X — ACCENT PAINT

FINISH LEGEND:

TLE-1, TLE-2, EPOXY W/ 6" INTEGRAL BASE SEE SPEC SECTION 09 67 00, LVT-1, LVT-2, LVT-3, LVT-4, LVT-5, CPT-1, CPT-2, WCPT-1, WCPT-2, A01

ROOM FINISH REMARKS

1	PAINT ALL WALLS PNT-1 - ACCENT AS INDICATED ON PLANS. DO NOT PAINT BURNISHED BLOCK OR BRICK.
2	PAINT ALL WALLS EPOXY PNT-4
3	FULL HEIGHT TILE @ ALL WALLS. SEE TILE ELEVATION ON ID109.
4	FLOORING TO CONTINUE UNDER CASEWORK.
5	FILL ALCOVE WITH LVT-2. SEE EXAMPLE OF KEYNOTE AT 2ID105.
6	PAINT ALL WALLS EPOXY PNT-1 - ACCENT AS INDICATED ON PLANS. DO NOT PAINT BURNISHED BLOCK OR BRICK.
7	"HOLMEN" AND "VIKINGS" TO BE FONT ALGERION. SEE ID103 FOR LETTERING PLACEMENT AND SIZE. VERIFY BEFORE INSTALL.

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Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: FINISH FLOOR PLAN - SEGMENT J

HSR Project Number: 18061

Project Date: FEBRUARY 2020

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ID104

MASTER COLOR SCHEDULE

MANUFACTURER / COLOR		GENERAL LOCATION	REMARKS
06 41 00 CUSTOM CABINETS			
PLAM-1 (Plastic Laminate)	Manufacturer: Nevamar Color: Clear Maple Finish: Armored Protection	Casework	Comparable Products... Prior Approval
PLAM-2	Manufacturer: Nevamar Color: Veto Proof Finish: Armored Protection	Countertops	Comparable Products... Prior Approval
PLAM-3	Manufacturer: Formica Color: White Twill Finish:	Countertops Staff Lounge/Work Room	Comparable Products... Prior Approval
PLAM-4	Manufacturer: Formica, Nevamar, Pionite, Wilsonart Color: As selected by A/E Finish:	Commons Signage See A200	Comparable Products... Prior Approval
PLAM-5	Manufacturer: Formica, Nevamar, Pionite, Wilsonart Color: MATCH EXISTING Finish:	Uppers on North wall of G100 MATCH EXISTING lower... See 10A210	Comparable Products... Prior Approval
06 61 00 SIMULATED STONE...			
SS-1 (Solid Surface)	Manufacturer: Avonite Color: Coastline Finish: Satin	Wall Cap in G100	Comparable Products... Prior Approval
09 30 00 TILE			
TLE-1 (Tile)	Manufacturer: Ceramic Tile Works Product: Modern Color: Dark Grey (Natural) Size: 12"x24" Installation: See ID Sheets	Floor Tile in Restrooms	Comparable Products... Prior Approval
TLE-2	Manufacturer: Ceramic Tile Works Product: Modern Color: Black Size: 2"x2"	Floor Tile In Shower Restrooms	Comparable Products... Prior Approval
TLE-3	Manufacturer: Virginia Tile Product: Run Color: Salt Size: 12"x24" Installation: See ID Sheets	Wall Tile Interior Elevations	Comparable Products... Prior Approval
TLE-4	Manufacturer: Ceramic Tile Works Product: Modern Color: Black Size: 6" high	Tile Base F104	Comparable Products... Prior Approval
TT-1 (Tile Trim)	Manufacturer: Schluter Systems Product: Edge-protection and transition profiles Style: Varies depending on location, see ID... Color: Brushed Stainless Steel	Apply to all tile transitions... otherwise noted	Comparable Products... Prior Approval
TT-2	Manufacturer: Schluter Systems Product: Cove Shaped Profile Style: DILEX-EHK Color: Brushed Stainless Steel		Comparable Products... Comparable Products... Prior Approval
TT-3	Manufacturer: Schluter Systems Product: Finishing and Edge Protection Style: Jolly Color: Brushed Stainless Steel	Wall corners Along top of 6" tile base	Comparable Products... Prior Approval

MANUFACTURER / COLOR		GENERAL LOCATION	REMARKS
09 65 00 RESILIENT FLOORING/BASE			
LVT-1 (Luxury Vinyl Tile)	Manufacturer: Shaw Style: Unveil Color: Bleached Size: 9x36" Thickness: 3mm Wear Layer: 30 mil Install: Ashlar	Field LVT Cafeteria	Comparable Products... Prior Approval
LVT-2	Manufacturer: Shaw Style: Unveil Color: Oxidize Size: 9x36" Thickness: 3mm Wear Layer: 30 mil Install: Ashlar	Hallway border Cafeteria Follow the direction of wall/hallway See ID sheets	Comparable Products... Prior Approval
LVT-3	Manufacturer: Shaw Style: Unveil Color: Grit Size: 9x36" Thickness: 3mm Wear Layer: 30 mil Install: Ashlar	Cafeteria	Comparable Products... Prior Approval
LVT-4	Manufacturer: Shaw Style: Unveil Color: Char Size: 9x36" Thickness: 3mm Wear Layer: 30 mil Install: Ashlar	Cafeteria	Comparable Products... Prior Approval
LVT-5	Manufacturer: Patcraft Collection: Typography - Letterpress Color: Shift Size: 60cm x 60cm Thickness: 2.5mm Wear Layer: 20 mil Install: Ashlar	Cafeteria	Comparable Products... Prior Approval
VWB-1 (Vinyl Wall Base)	Manufacturer: Johnsonite Size: 4" Color: Moonrock 29		Comparable Products... Prior Approval
VCE-1 (Vinyl Carpet...	Manufacturer: Johnsonite Product: Varies by location, see ID... Color: Moonrock 29		Comparable Products... Prior Approval

MANUFACTURER / COLOR		GENERAL LOCATION	REMARKS
09 68 50 CARPETING			
CPT-1 (Carpet Tile)	Manufacturer: Shaw Contract Style Name: Convene Tile Color Name: Dnamic Interaction Construction: Multi-level pattern loop Size: 12x48" Backing: synthetic Installation: Ashlar	Flexible Learning	Comparable Products... Prior Approval
CPT-2	Manufacturer: Mainstreet by... Style Name: Hook Up Color Name: Juice Construction: Size: 24x24" Installation: Match Existing	Student Services Area	Comparable Products... Prior Approval
WCPT-1 (Walk Off Carpet)	Manufacturer: Shaw Style Name: All Access - Portal Tile Color Name: Lava Construction: Multi-level pattern loop Size: 24"x24" Backing: Synthetic; ecoworx tile Installation: Monolithic	Entry	Comparable Products... Prior Approval
09 72 00 WALL COVERINGS			
WC-1 (Wallcovering)	Manufacturer: Koroseal Product: Nu-Vu-Rite White Color: White Product... NVXX-00	Flexible Learning	Comparable Products... Prior Approval
09 84 15 ACOUSTICAL WALL STRETCH...			
AWP-1 (Acoustical Wall Panel)	Manufacturer: Basis of Design Core Thickness: 2" Size: See A200 for dimensions FABRIC Manufacturer: Guilford of Maine Style: Anchorage Color: Mulberry 2044	Commons	Comparable Products... Prior Approval
AWP-2	Manufacturer: Basis of Design Core Thickness: 2" Size: See A200 for dimensions FABRIC Manufacturer: Guilford of Maine Style: Anchorage Color: As selected by A/E	Commons	Comparable Products... Prior Approval

MANUFACTURER / COLOR		GENERAL LOCATION	REMARKS
09 90 00 PAINTS AND COATINGS			
PNT-1 (Paint)	Manufacturer: Sherwin Williams Color: Perfect Greige (242-C3) Color Code: 6073	Field Paint	*or Equal
PNT-2	Manufacturer: Sherwin Williams Color: Spalding Gray (242-C5) Color Code: 6074	Accent Paint	*or Equal
PNT-3	Manufacturer: Pantone Color: Color Code: PMS1815	Accent Paint Fitness and Fine Arts	School Color
PNT-4	Manufacturer: Sherwin Williams Color: March Wind (282-C3) Color Code: 7668	Epoxy paint in locker...	*or Equal
PNT-5	Manufacturer: Sherwin Williams Color: Iron Ore (251-C7) Color Code: 7069	Hollow Metal Window and Door Frames	*or Equal
10 26 01 WALL AND DOOR PROTECTION			
CG-1 (Corner Guards)	Manufacturer: InPro Product: Corner Guard 160 Color: TBD Size: 4' high, 2" wing	See ID sheets Install on top of wall...	Comparable... by Approval
EW-1 (End Wall)	Manufacturer: InPro Product: Surface Mount End Wall... Color: Stainless Steel Size: 9' high, 2" wing	See ID sheets Install on top of wall...	Comparable... by Approval

A01

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ID600

► BUILDING CODES

● DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE 2015 WISCONSIN COMMERCIAL BUILDING CODE AS CONTAINED IN CHAPTERS SPS 361 TO 366 OF THE WISCONSIN ADMINISTRATIVE CODE.

RISK CATEGORY	III

► DESIGN LOADS AND DATA

● SOIL LOADS	
ACTIVE SOIL PRESSURE	30 PSF PER FOOT OF DEPTH
PASSIVE SOIL PRESSURE	250 PSF PER FOOT OF DEPTH
SURCHARGE LOAD	100 PSF
● SUPERIMPOSED LOADS	
TYPICAL FLOOR	
DEAD	
MISCELLANEOUS (HVAC, PIPING, LIGHTS, CEILING)	15 PSF
PARTITIONS	20 PSF
LIVE	100 PSF
STAGE LOADING BRIDGE	300 PSF
STAIR	
DEAD	5 PSF
LIVE	100 PSF
MECHANICAL ROOMS	
DEAD	
MISCELLANEOUS (HVAC, PIPING, LIGHTS, CEILING)	10 PSF
EQUIPMENT PADS WHERE SHOWN (3 1/2")	45 PSF
LIVE	80 PSF
ROOF LOADS	
DEAD	25 PSF
LIVE (SEE SNOW LOAD ALSO)	20 PSF
LIVE LOAD REDUCTION	NONE
● ROOF LOADS	
GROUND SNOW (p_g)	40 PSF
SNOW DENSITY	19.2 PCF
ROOF EXPOSURE	FULLY EXPOSED
SNOW IMPORTANCE FACTOR (I_s)	1.10
SNOW EXPOSURE FACTOR (C_e)	1.0
THERMAL FACTOR - BUILDING (C_t)	1.0
THERMAL FACTOR - CANOPY, MANSARDS (C_t)	1.2
FLAT ROOF SNOW LOAD (p_f)	30.8 PSF
DRIFT LOAD	AS NOTED ON DRAWINGS
MECHANICAL EQUIPMENT, PIPING AND ROOF TOP AHU'S	AS NOTED ON DRAWINGS
● WIND DATA	
ULTIMATE WIND SPEED	120 MPH
BUILDING ENCLOSURE	ENCLOSED
EXPOSURE	C
WIND IMPORTANCE FACTOR (I_w)	1.0
WIND DIRECTIONALITY FACTOR (K_d)	0.85
TOPOGRAPHIC FACTOR (K_{zt})	1.0
GUST FACTOR (BUILDING IS RIGID) (G)	0.85
INTERNAL PRESSURE COEFFICIENT (GC_{pi})	± 0.18
ANALYSIS PROCEDURE	CHAPTER 26
EDGE ZONE WIDTH (2a)	24.8 FT
MEAN ROOF HEIGHT (h)	31 FT
ROOF PLANE SLOPE (Θ)	1.2 DEGREES
COMPONENTS AND CLADDING	SEE ADJACENT TABLE
MINIMUM NET UPLIFT	
INTERIOR SPACES	10 PSF
EXTERIOR CANOPIES/SOFFITS	30 PSF
● SEISMIC DATA	
SEISMIC IMPORTANCE FACTOR	1.25
MAPPED SPECTRAL RESPONSE ACCELERATION FOR SHORT PERIODS (S_S)	0.052
MAPPED SPECTRAL RESPONSE ACCELERATION FOR 1 SECOND PERIOD (S_1)	0.035
SITE CLASS PER ASCE CHAPTER 20.1	D
DESIGN SPECTRAL RESPONSE ACCELERATION FOR SHORT PERIODS (S_{DS})	0.055
DESIGN SPECTRAL RESPONSE ACCELERATION FOR 1 SECOND PERIOD (S_{D1})	0.056
SEISMIC DESIGN CATEGORY	A
BASIC SEISMIC FORCE RESISTING SYSTEM AND PARAMETERS	
ORDINARY REINFORCED MASONRY SHEAR WALLS	
R = 3.0 Ω_O = 3.0 C_d = 2.5	
SEISMIC RESPONSE COEFFICIENT (C_s)	0.023
DESIGN BASE SHEAR	50 KIPS
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE

► MATERIAL STRENGTHS AND STANDARDS

THE MATERIAL STRENGTHS AND STANDARDS LISTED HERE REPRESENT A SELECTED SUMMARY OF THE REQUIREMENTS NOTED IN THE SPECIFICATIONS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION. IN CASE OF DISCREPANCY BETWEEN THESE NOTES AND THE SPECIFICATIONS, THESE NOTES SHALL GOVERN.

● SOILS	
DESIGN SOIL BEARING CAPACITY FOR SPREAD/STRIP FOOTINGS	3000 PSF
MODULUS OF SUB-GRADE REACTION	200 PCI
● CONCRETE (28 DAY STRENGTH)	
FOOTINGS,	f'_c = 3,000 PSI
FOUNDATION WALLS, INTEGRAL PIERS	f'_c = 4,000 PSI
ELEVATED CONCRETE SLABS, BEAMS, JOISTS, COLUMNS	f'_c = 4,000 PSI
CONCRETE SLAB ON METAL DECK	f'_c = 4,000 PSI
PRECAST CONCRETE TOPPING	f'_c = 4,000 PSI
INTERIOR SLAB-ON-GRADE	f'_c = 4,000 PSI
EXTERIOR SLAB-ON-GRADE	f'_c = 4,500 PSI
● REINFORCING STEEL	
WELDED WIRE FABRIC, PROVIDED IN FLAT SHEETS ONLY (ASTM A185)	f_y = 65,000 PSI
DEFORMED BARS (ASTM A615, GRADE 60)	f_y = 60,000 PSI
POST-TENSIONING STRAND (ASTM A416, LOW RELAXATION, GRADE 270)	f_{pu} = 270,000 PSI
● MASONRY	
CONCRETE MASONRY UNIT ASSEMBLY	f'_m = 2,250 PSI
CONCRETE MASONRY UNIT (ASTM C90 - LIGHTWEIGHT)	3,275 PSI
MORTAR (ASTM C270)	TYPE S
GROUT (ASTM C476)	f'_c = 3,000 PSI
ANCHOR RODS (ASTM F1554, GRADE 36)	f_y = 36,000 PSI
● STRUCTURAL STEEL (SHAPES)	
WF, WT SECTIONS (ASTM A992)	F_y = 50,000 PSI; F_u = 65,000 PSI
M, S, HP SECTIONS, CHANNELS, ANGLES, PLATES (ASTM A36)	F_y = 36,000 PSI; F_u = 58,000 PSI
HSS SHAPES – RECTANGULAR (ASTM A500, GRADE C)	F_y = 50,000 PSI; F_u = 62,000 PSI
HSS SHAPES – ROUND (ASTM A500, GRADE C)	F_y = 46,000 PSI; F_u = 62,000 PSI
STEEL PIPE (ASTM A53, GRADE B)	F_y = 35,000 PSI; F_u = 60,000 PSI
PLATES (ASTM A36)	F_y = 36,000 PSI; F_u = 58,000 PSI
● STRUCTURAL STEEL (CONNECTIONS)	
ANCHOR RODS (ASTM F1554, GRADE 36)	F_y = 36,000 PSI
HIGH STRENGTH BOLTS (1 1/2" MAXIMUM DIAMETER)	AS NOTED
TENSION CONTROL BOLTS	AS NOTED
WELDING ELECTRODES	E70XX
SHEAR STUD CONNECTORS (ASTM A108, GRADE 1010 THROUGH 1020)	F_y = 50,000 PSI
DOWEL BAR ANCHORS (ASTM A496)	F_y = 70,000 PSI
THREADED RODS (ASTM A36)	F_y = 36,000 PSI
GROUT (ASTM C1107)	f'_c = 5,000 PSI
● COLD-FORMED METAL FRAMING	
COLD-FORMED MATERIAL - 18 GAUGE AND THINNER (ASTM A653, GRADE 33)	f_y = 33,000 PSI
COLD-FORMED MATERIAL - 16 GAUGE AND THICKER (ASTM A653, GRADE 50)	f_y = 50,000 PSI
ANCHOR RODS (ASTM F1554, GRADE 36)	f_y = 36,000 PSI
CONNECTOR PLATES (ASTM A36)	f_y = 36,000 PSI
CONNECTOR BOLTS (ASTM A307, GRADE A)	F_u = 36,000 PSI
WELDING ELECTRODES	E60XX
GALVANIZING THICKNESS	G60

► GENERAL NOTES

● EXISTING CONDITIONS

DOCUMENTS FROM 1993 AND 1999 ARE AVAILABLE FOR REFERENCE.

INFORMATION PERTAINING TO EXISTING CONDITIONS GIVEN ON THE STRUCTURAL DRAWINGS REPRESENTS THE ACTUAL EXISTING FIELD CONDITION TO THE BEST OF OUR KNOWLEDGE. R.A. SMITH, INC. MAKES NO WARRANTY AS TO THEIR ACCURACY. CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS, DIMENSIONS AND BUILDING CONDITIONS AFFECTING THE WORK BY DIRECT SURVEY AND MEASUREMENT PRIOR TO THE FABRICATION, ERECTION OR CONSTRUCTION OF ANY ITEM IMPACTED BY EXISTING CONDITIONS. REPORT DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND FIELD CONDITIONS FOR REVIEW. ANY WORK PERFORMED PRIOR TO THE RESOLUTION OF THE DISCREPANCIES IS SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTORS EXPENSE.

EXISTING STRUCTURE TO REMAIN IS SHOWN WITH LIGHT GRAY LINES. EXISTING STRUCTURE TO BE REMOVED IS NOT GENERALLY SHOWN ON STRUCTURAL DRAWINGS - SEE ARCHITECTURAL DRAWINGS FOR DEMOLITION DRAWINGS.

ALL EXISTING STRUCTURE TO REMAIN TO BE SUPPORTED BY NEW CONSTRUCTION SHALL BE SHORED UNTIL NEW CONSTRUCTION IS IN PLACE, COMPLETED, AND CAPABLE OF SUPPORTING THE EXISTING STRUCTURE. EXISTING STRUCTURE TO REMAIN THAT IS AFFECTED, BUT NOT SUPPORTED, BY NEW CONSTRUCTION SHALL BE SHORED UNTIL IT IS NO LONGER AFFECTED BY CONSTRUCTION ACTIVITIES.

● CONSTRUCTION

UNLESS SPECIFICALLY NOTED OTHERWISE, BUILDING STRUCTURE HAS BEEN DESIGNED FOR THE FINAL COMPLETED CONDITION ONLY, AND HAS NOT BEEN ANALYZED, INVESTIGATED OR DESIGNED FOR OVERALL STRUCTURE, OR INDIVIDUAL MEMBER, STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY BRACING AND SUPPORTS FOR ALL STRUCTURAL ELEMENTS, BOTH INDIVIDUALLY AND COLLECTIVELY, AS REQUIRED AT EVERY STAGE OF CONSTRUCTION UNTIL THE FINAL COMPLETION OF THE STRUCTURE. NO PORTION OF THE BUILDING STRUCTURE, WHILE UNDER CONSTRUCTION IS INTENDED TO BE STABLE IN THE ABSENCE OF THE CONTRACTORS TEMPORARY BRACES AND SUPPORTS, WHICH SHALL ADDITIONALLY PROVIDE SUPPORT FOR ALL CONSTRUCTION LOADING. MATERIALS AND EQUIPMENT SHALL BE STORED, TRANSPORTED AND INSTALLED IN A MANNER THAT WILL NOT EXCEED THE DESIGN FLOOR LOADING.

CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, TEMPORARY BRACING, SUPPORTS, SHORING, FORMING TO SUPPORT IMPOSED CONSTRUCTION LOADS, AND OTHER SIMILAR ITEMS.

STRUCTURAL DOCUMENTS MAY REFER TO OSHA REQUIREMENTS. SUCH REFERENCES ARE INCIDENTAL, AND ARE NOT INTENDED TO IDENTIFY ALL APPLICABLE OSHA REQUIREMENTS.

► GENERAL NOTES (CONTINUED)

● COMPLETENESS

INFORMATION CONTAINED IN THE GENERAL NOTES IS ONLY A PARTIAL SUMMARY OF PROJECT REQUIREMENTS. SEE SPECIFICATIONS, PLANS AND DETAILS FOR ADDITIONAL REQUIREMENTS.

USE ONLY DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT MANUALLY SCALE THE DRAWINGS OR USE ANY DIMENSIONS MEASURED FROM ELECTRONIC DRAWING FILES.

UNLESS NOTED OTHERWISE, CENTERLINE OF FLOOR FRAMING ELEMENTS COINCIDES WITH COLUMN CENTERLINES, AND FRAMING ELEMENTS ARE EQUALLY SPACED BETWEEN ADJACENT COLUMN CENTERLINES.

MAJOR OPENING LOCATIONS AND SIZES ARE INDICATED ON THE STRUCTURAL DRAWINGS - SMALLER OPENINGS AND SLEEVES REQUIRED TO ACCOMMODATE VARIOUS BUILDING SERVICES MAY NOT BE NOTED. CONTRACTOR TO VERIFY THE SIZE AND LOCATION OF ALL ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING OPENINGS, INCLUDING CLEARANCE REQUIREMENTS CONTAINED IN THE RESPECTIVE DISCIPLINE DOCUMENTS FOR INSTALLATION AND IN-PLACE OPERATION OF THE RESPECTIVE EQUIPMENT OR ITEMS. UNDER NO CIRCUMSTANCES MAY PENETRATIONS BE MADE IN ANY STRUCTURAL ELEMENT AFTER FINAL PLACEMENT IN THE BUILDING STRUCTURE, WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

CONSULT ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS AND MANUFACTURERS SPEC SHEETS FOR LOCATIONS AND DIMENSIONS OF PADS, CURBS, EQUIPMENT SUPPORTS, DEPRESSIONS, INSERTS, DRIPS, REGLETS, REVEALS, FINISHES AND OTHER MISCELLANEOUS PROJECT REQUIREMENTS THAT NECESSITATE INCIDENTAL ACCOMMODATION BY THE BUILDING STRUCTURE BUT ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.

● GENERAL

THE STRUCTURE HAS BEEN DESIGNED AS UNRESTRAINED FOR THE PURPOSE OF FIRE RATING AND FIREPROOFING ASSEMBLY EVALUATIONS.

STRUCTURAL COMPONENTS HAVE NOT BEEN DESIGNED FOR VIBRATORY EQUIPMENT UNLESS NOTED OTHERWISE. PLACE VIBRATORY EQUIPMENT AND EQUIPMENT SENSITIVE TO VIBRATIONS ON VIBRATION ISOLATORS SPECIFICALLY DESIGNED FOR THE EQUIPMENT.

LATERAL BRACING FOR NON-STRUCTURAL ELEMENTS DESIGNED AND DETAILED BY COMPONENT SUPPLIERS SHALL BE DESIGNED TO APPLY LOADS DIRECTLY TO FLOOR OR ROOF DIAPHRAGMS. BRACES SHALL NOT ATTACH DIRECTLY TO BOTTOM FLANGES OF BEAMS OR BOTTOM CHORDS OF JOISTS UNLESS THE COMPONENT SUPPLIER PROVIDES ADDITIONAL BRACING FROM THOSE ELEMENTS TO THE FLOOR OR ROOF DIAPHRAGM AT EACH ATTACHMENT POINT.

HOLES, NOTCHES, BLOCK-OUTS AND OTHER SIMILAR FIELD MODIFICATIONS TO STRUCTURAL MEMBERS NOT SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS OR APPROVED SHOP DRAWINGS ARE NOT PERMITTED.

EXCEPT AS NOTED BELOW, ALL FUTURE EXPANSION IS ASSUMED TO BE COMPLETELY SELF SUPPORTING FOR BOTH GRAVITY AND LATERAL LOADS.

► SYSTEM NOTES

● FOUNDATIONS AND EARTHWORK

REMOVE EXISTING SURFICIAL TOP SOIL AND VEGETATION FROM WITHIN THE BUILDING AREA AND A MINIMUM OF TEN FEET BEYOND. EXCAVATE MATERIAL TO PROPOSED SLAB-ON-GRADE SUBGRADE. PROOFROLL WITH A HEAVY RUBBER TIRED VEHICLE. SOILS WHICH HEAVE, PUMP, OR DO NOT READILY COMPACT SHALL BE EXCAVATED AND REPLACED WITH ENGINEERED FILL.

SUBGRADE PREPARATION FOR FOOTINGS SHALL CONSIST OF EXCAVATION TO REQUIRED ALLOWABLE BEARING CAPACITY SOILS AT OR NEAR DESIGN FOOTING ELEVATIONS. WHERE UNSUITABLE SOIL IS ENCOUNTERED AT NOMINAL BEARINGDEPTH, SEE OVER EXCAVATION DETAIL.

ALL COMPACTION REQUIREMENTS REFER TO % OF MAXIMUM DRY DENSITY PER ASTM D-1557 MODIFIED PROCTOR. GRANULAR STRUCTURAL FILL BENEATH FOOTINGS SHALL BE PLACED IN LAYERS NO MORE THAN 8" THICK, AND EACH LAYER SHALL BE COMPACTED TO 95%. COHESIVE FILL APPROVED BY THE GEOTECHNICAL CONSULTANT SHALL BE PLACED IN LAYERS NO THICKER THAN 8", AND EACH LAYER SHALL BE COMPACTED TO 95%. MOISTURE CONDITION FILL MATERIALS AS REQUIRED TO OBTAIN PROPER COMPACTION. COHESIVE SOILS OR GRANULAR SOILS WITH A SIGNIFICANT PERCENT OF COHESIVE FINES SHALL BE CONDITIONED TO WITHIN 3% OF OPTIMUM MOISTURE CONTENT AT COMPACTION.

FOR GENERAL INFORMATION AND SPECIFIC RECOMMENDATIONS AND REQUIREMENTS PERTAINING TO THE PROJECT SITE, REFER TO THE PROJECT GEOTECHNICAL REPORT PREPARED BY BRAUN INTERTEC, JOB NUMBER B1901227, DATED MAY 16 2019.

ALL ACTIVITIES CONCERNING PREPARATION AND VERIFICATION OF BEARING SOILS FOR SLAB-ON-GRADE AND FOOTINGS SHALL BE SUPERVISED AND APPROVED BY A QUALIFIED GEOTECHNICAL ENGINEER.

COLUMNS, PIERS, AND SPREAD FOOTINGS ARE CENTERED ON GRIDLINES UNLESS NOTED OTHERWISE. CONTINUOUS FOOTINGS ARE CENTERED ON WALLS ABOVE UNLESS NOTED OTHERWISE.

BACKFILL UNIFORMLY ON EACH SIDE OF FOUNDATION WALLS, GRADE BEAMS AND OTHER SIMILAR ELEMENTS. DO NOT BACKFILL AGAINST ANY STRUCTURAL ELEMENT UNTIL THAT ELEMENT HAS ATTAINED FULL DESIGN STRENGTH. DO NOT BACKFILL AGAINST BASEMENT WALLS UNTIL TOP AND BOTTOM OF WALL IS BRACED BY FLOOR FRAMING AND SLAB-ON-GRADE.

TOP OF FOOTING ELEVATION NOTED ON DRAWINGS REPRESENT CONSIDERED ENGINEERING JUDGMENTS ABOUT PROTECTION FROM FROST AND MINIMUM DEPTH TO SOILS CAPABLE OF PROVIDING DESIGN SOIL BEARING CAPACITY. UNCERTAINTIES INHERENT IN DETERMINING THE ELEVATION OF SOILS ADEQUATE TO PROVIDE DESIGN BEARING CAPACITY MAY REQUIRE FOUNDATIONS TO BE LOWERED – IN NO CASE SHALL TOP OF FOOTING BE HIGHER THAN NOTED. A GEOTECHNICAL ENGINEER SHALL VERIFY THAT SOIL AT THE FOOTING BASE IS ADEQUATE TO PROVIDE THE REQUIRED DESIGN SOIL BEARING CAPACITY.

● CAST-IN-PLACE CONCRETE

DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF ACI 318 –11 05 EXCEPT WHERE MORE RESTRICTIVE REQUIREMENTS ARE NOTED.

REINFORCING CLEAR COVER SHALL BE AS NOTED BELOW UNLESS SPECIFICALLY NOTED OTHERWISE ON STRUCTURAL DRAWINGS.

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
CONCRETE EXPOSED TO EARTH OR WEATHER	
#3 - #5 BARS	1 1/2"
#6 - #18 BARS	2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER	
WALLS - #3 THRU #11 BARS	3/4"
WALLS - #14 THRU #18 BARS	1 1/2"
STRUCTURAL SLABS - TOP, BOTTOM	1"
JOIST TIES AND MAIN REINFORCING - TOP, BOTTOM , SIDES	1 1/2"
BEAM TIES - TOP, BOTTOM, SIDES	1 1/2"
BEAM MAIN REINFORCING - TOP, BOTTOM, SIDES	2"
COLUMN TIES	1 1/2"
COLUMN MAIN REINFORCING	2"

PROVIDE (2) #5 BARS AROUND ALL OPENINGS AND (2) #5 DIAGONAL BARS AT ALL OPENING AND RE-ENTRANT CORNERS. BARS SHALL EXTEND A MINIMUM OF 24" PAST OPENING.

ALL BAR SPLICES SHALL BE CONTACT LAP SPLICED USING CLASS B TENSION LAP LENGTHS, WITH ADJACENT LAPS STAGGERED A MINIMUM OF 3'-0" UNLESS DETAILED OTHERWISE.

FIELD WELDING OF ASTM A615 REINFORCING STEEL IS NOT PERMITTED. FIELD BENDING OF REINFORCING STEEL IS NOT PERMITTED EXCEPT WHERE SPECIFICALLY DETAILED ON STRUCTURAL DRAWINGS.

CORING OF COLUMNS, WALLS, BEAMS, JOISTS AND SLABS IS NOT PERMITTED. PROVIDE STEEL SLEEVES FOR ALL PENETRATIONS AT ALL LOCATIONS APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO PLACING CONCRETE.

● CONCRETE MASONRY

DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF ACI 530 -11 AND ACI 530.1 -11 EXCEPT WHERE MORE RESTRICTIVE REQUIREMENTS ARE NOTED.

ALL CMU SHALL BE PLACED IN RUNNING BOND. UNLESS NOTED OTHERWISE PROVIDE CONTINUOUS LADDER TYPE REINFORCEMENT WITH 9 GAUGE SIDE AND CROSS RODS AT 16" OC VERTICALLY IN ALL WALLS AND PIERS, AND AT 8" OC VERTICALLY AT PARAPETS. WHERE VERTICAL BARS ARE REQUIRED, CONSTRUCT CMU WALL TO PROVIDE A CONTINUOUS UNOBSTRUCTED CELL FROM BOTTOM TO TOP OF BAR. CELL CONTAINING A SINGLE BAR SHALL NOT BE LESS THAN 3" X 4" IN PLAN AREA.

PORTIONS OF CMU CONSTRUCTION REQUIRING STRUCTURAL FILL SHALL USE GROUT ONLY. USE OF CONCRETE FILL IN CMU CONSTRUCTION IS NOT PERMITTED. WHERE CLEARANCES AND CONGESTION PERMIT, USE COARSE GROUT WITH PEA GRAVEL AGGREGATE; OTHERWISE USE FINE GROUT.

REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL VERTICAL CONTROL JOINTS IN EXTERIOR WYTHES OF PERIMETER WALLS AND FOR EXTERIOR WALLS.

PROVIDE STEEL PIPE SLEEVES AT ALL LOCATIONS WHERE PIPING PASSES THROUGH CMU WALL.

WHERE BOND BEAMS INTERSECT AT WALL CORNERS AT DIFFERENT ELEVATIONS, RUN EACH BOND BEAM AROUND THE CORNER FOR A MINIMUM OF TWO FULL BLOCK LENGTHS BEFORE TERMINATING. WHERE BOND BEAMS ADJOIN ON THE SAME WALL AT DIFFERENT ELEVATIONS, RUN BOND BEAMS PAST ONE ANOTHER A MINIMUM OF FOUR FULL BLOCK LENGTHS BEFORE TERMINATING

► SYSTEM NOTES (CONTINUED)

● STRUCTURAL STEEL

DESIGN, DETAILING, AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS AISC 360 - 10, THE CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES AISC 303 - 10,AND THE STEEL CONSTRUCTION MANUAL FOURTEENTH EDITION.

TYPICAL DETAILS INDICATE GENERAL CRITERIA FOR DESIGN AND DETAILING OF CONNECTIONS. THEY ARE NOT INTENDED TO CONVEY COMPLETE INFORMATION CONCERNING SIZE AND QUANTITY OF CONNECTORS, PLATES, ANGLES, WELDS AND SIMILAR ITEMS THAT ARE DEVELOPED THROUGH THE DESIGN OF AN INDIVIDUAL CONNECTION FOR A SPECIFIC SET OF LOADS AND COMBINATIONS. DETAILS THAT CONVEY SPECIFIC COMPONENT INFORMATION ESTABLISH MINIMUM REQUIREMENTS AND ARE NOT INTENDED TO CONVEY A COMPLETE DESIGN UNLESS NOTED.

UNLESS OTHERWISE NOTED, ALL STEEL TO STEEL FRAMING HAS BEEN SELECTED ASSUMING ATTACHMENTS FOR SHEAR ONLY, USING DOUBLE ANGLE OR DOUBLE BENT PLATE CONNECTIONS SHOP WELDED TO FRAMING MEMBER AND FIELD BOLTED TO SUPPORTING MEMBER WITH HIGH STRENGTH BOLTS IN BEARING. CONNECTIONS SHALL BE SYMMETRICAL ABOUT THE BEAM WEB. FABRICATORS PROPOSING TO USE ALTERNATIVE METHODS OF ATTACHMENT NOT SPECIFICALLY DETAILED ON STRUCTURAL DRAWINGS SHALL SUBMIT ALTERNATIVE FOR CONSIDERATION DURING BIDDING, AND SHALL BEAR ALL COSTS ASSOCIATED WITH REVIEW, ENGINEERING REDESIGN, AND APPROVAL OF ALTERNATIVE CONNECTIONS

SINGLE PLATE SHEAR TAB CONNECTIONS MAY BE USED IN LIEU OF DOUBLE ANGLE OR DOUBLE BENT PLATE CONNECTIONS WHERE SPECIFICALLY NOTED ON DRAWINGS OR WHERE CONNECTION OF FRAMING MEMBER TO ONE SIDE OF A SUPPORT MEMBER IS MATCHED BY A SIMILAR CONNECTION ON THE OPPOSITE SIDE OF THE SAME SUPPORT MEMBER, AND WHERE BEAM SPANS DO NOT DIFFER BY MORE THAN 50% OF THE LARGER SPAN. SINGLE PLATE SHEAR TABS MAY NOT BE USED FOR CONNECTION OF FRAMING MEMBERS TO COLUMNS OR TO SPANDREL (EDGE) SUPPORT MEMBERS UNLESS SPECIFICALLY DETAILED ON DRAWINGS.

CONNECTIONS FOR ALL STRUCTURAL STEEL BEAMS AND GIRDERS NOT SHOWN OR COMPLETELY DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN THE STATE OF WISCONSIN AND RETAINED BY THE FABRICATOR, USING THE REACTIONS SHOWN. IF NO REACTION IS SHOWN, BEAM CONNECTIONS SHALL BE DESIGNED FOR 50 % OF THE TOTAL UNIFORM LOAD CAPACITY FOR THE GIVEN MEMBER SIZE, SPAN AND GRADE OF STEEL. IN NO CASE SHALL A CONNECTION BE DESIGNED FOR A REACTION LESS THAN 12 KIPS, OR SHALL A CONNECTION USE LESS THAN 2 BOLTS OR 3/16 FILLET WELDS.

ALL BRACED STEEL FRAME CONNECTIONS NOT COMPLETELY DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE DESIGNED AND DETAILED BY AN ENGINEER REGISTERED IN THE STATE OF [STATE] WISCONSIN AND RETAINED BY THE FABRICATOR, USING THE LOADS SHOWN. WORK POINTS OCCUR AT INTERSECTION OF MEMBER CENTERLINES UNLESS DETAILED OTHERWISE.

ALL MOMENT CONNECTIONS SHALL BE DESIGNED AND DETAILED BY AN ENGINEER REGISTERED IN THE STATE OF WISCONSIN AND RETAINED BY THE FABRICATOR, USING THE REACTIONS AND MOMENTS SHOWN. WHERE REACTIONS AND MOMENTS ARE NOT SHOWN, CONNECTION SHALL BE DESIGNED TO DEVELOP THE FULL CAPACITY OF THE BEAM IN MOMENT AND SHEAR.

DESIGN OF STAIRS, HANDRAILS AND GUARDRAILS SHALL BE BY THE STEEL SUPPLIER.

REFER TO ARCHITECTURAL DRAWINGS FOR MISCELLANEOUS STRUCTURAL STEEL NOT NOTED ON STRUCTURAL DRAWINGS.

PROVIDE CLEVISES, PINS, RODS AND TURNBUCKLES WITH CAPACITIES NOT LESS THAN THOSE LISTED IN THE AISC STEEL CONSTRUCTION MANUAL.

● METAL DECKING

PROVIDE ANGLE SUPPORTS FOR METAL DECK AT ALL COLUMN FACES WHERE SUPPORT IS REQUIRED, AND IS NOT PROVIDED BY MEMBERS FRAMING TO COLUMN. ANGLE FRAMING SHALL BE A MINIMUM OF L2x2x3/16.

NO LOADS FROM ARCHITECTURAL, MECHANICAL, ELECTRICAL OR PLUMBING ITEMS, SINGLY OR IN AGGREGATE, IN EXCESS OF 25 POUNDS SHALL BE HUNG FROM METAL ROOF DECK IN ANY 4 SQUARE FOOT AREA. LOADS EXCEEDING THIS LIMIT REQUIRE SUPPLEMENTAL FRAMING ATTACHED DIRECTLY TO STRUCTURAL FRAMING.

SPLICES AT CONTINUOUS DIAPHRAGM CHORD ANGLES SHALL BE FULL PENETRATION WELDS UNLESS NOTED.

● COLD-FORMED METAL FRAMING

COLD-FORMED METAL FRAMING IS PERFORMANCE BASED, AND SHALL BE COMPLETELY DESIGNED AND DETAILED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF [STATE] WISCONSIN AND RETAINED BY THE COLD-FORMED SUPPLIER. DESIGN SHALL BE SUBJECT TO THE LIMITATIONS NOTED. COLD-FORMED MEMBERS NOTED SHOULD BE CONSIDERED MINIMUM SIZES. CONNECTION DETAILS INDICATE INTENT FOR CONNECTION BEHAVIOR ONLY.

FOR RIGID VENEER, LIMIT THE MAXIMUM SIMPLE SPAN LATERAL DEFLECTION OF COLD-FORMED METAL PROVIDING LATERAL SUPPORT TO SPAN/720 - LIMIT THE MAXIMUM CANTILEVER LATERAL DEFLECTION TO CANTILEVER SPAN/360 AT THE WINDOW HEAD AND SILL. IN ALL CASES, THE COLD-FORMED METAL FRAMING ALONE SHALL TAKE ALL THE LATERAL LOAD – NO COMPOSITE ACTION WITH SHEATHING, BRICK, CMU, STONE, OR ANY RIGID VENEER MATERIAL IS PERMITTED.

FOR FLEXIBLE VENEER, LIMIT THE MAXIMUM SIMPLE SPAN LATERAL DEFLECTION OF COLD-FORMED METAL PROVIDING LATERAL SUPPORT TO SPAN/360 - LIMIT THE MAXIMUM CANTILEVER LATERAL DEFLECTION TO CANTILEVER SPAN/240 AT THE WINDOW HEAD AND SILL. IN ALL CASES, THE COLD-FORMED METAL FRAMING ALONE SHALL TAKE ALL THE LATERAL LOAD – NO COMPOSITE ACTION WITH SHEATHING MATERIAL IS PERMITTED.

LIMIT VERTICAL DEFLECTION OF STUD LINTEL ASSEMBLIES TO 1/8 INCH AT THE HEAD OF WINDOWS OR OPENINGS.

HEADERS AND JAMBS AT OPENING MAY CONSIST OF BUILT-UP COLD-FORMED METAL FRAMING OR HOT-ROLLED STEEL SECTIONS AS DETERMINED BY THE COLD-FORMED FRAMING DESIGNER. SOME CONDITIONS MAY NECESSITATE HOT-ROLLED SECTIONS, WHICH ARE TO BE SUPPLIED AND INSTALLED BY THE COLD-FORMED METAL CONTRACTOR.

● POST-INSTALLED ANCHORAGE

ALL POST-INSTALLED ANCHORS MUST BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS INCLUDING, BUT NOT LIMITED TO, DRILL TYPE, HOLE CLEANING, INSTALLATION TORQUE, AND TEMPERATURE CONSTRAINTS.

ALL PERSONNEL INSTALLING POST-INSTALLED ANCHORS SHALL BE TRAINED BY THE MANUFACTURER ON PROPER INSTALLATION TECHNIQUE. CONTRACTOR SHALL COORDINATE ANY ON-SITE TRAINING WITH THE ANCHOR MANUFACTURER. TRAINING DOCUMENTATION SHALL BE AVAILABLE UPON REQUEST.

WHEN A SPECIFIC PRODUCT AND MANUFACTURER IS REFERENCED IN THE CONTRACT DOCUMENTS, THAT SPECIFIC PRODUCT SHALL BE USED UNLESS NOTED OTHERWISE. BELOW CONTAINS A LIST OF PRE-APPROVED ANCHORS FOR USE AS AN EQUAL (WHERE "OR EQUAL" IS INDICATED) OR WHERE POST-INSTALLED ANCHORAGE IS REFERRED TO IN THE DOCUMENTS GENERICALLY (E.G. "ADHESIVE ANCHOR").

PROVIDE SPECIAL INSPECTION FOR ALL POST-INSTALLED ANCHORS PER THE EVALUATION REPORT OR AS INDICATED OTHERWISE. THE ANCHOR MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING THE INITIAL INSTALLATION OF EACH TYPE OF ANCHOR TO REVIEW AND APPROVE THE CONTRACTOR'S INSTALLATION PROCEDURES.

○ CONCRETE

PRIOR TO INSTALLING POST-INSTALLED ANCHORS, CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF OF 2,500 PSI AND BE 21 DAYS OLD. ADHERE TO MANUFACTURER'S REQUIREMENTS FOR REQUIRED INSTALLATION TEMPERATURES AND HOLE CONDITION (WET, DRY, SATURATED).

EXPANSION ANCHORS FOR USE IN CONCRETE INCLUDE:
HILTI: KWIK-BOLT TZ
SIMPSON STRONG-TIE: STRONG-BOLT 2
DEWALT/POWERS: POWER-STUD+SD2

SCREW ANCHORS FOR USE IN CONCRETE INCLUDE:
HILTI: HUS-EZ
SIMPSON STRONG-TIE: TITEN HD
DEWALT/POWERS: SCREW-BOLT+

ADHESIVE ANCHORS FOR USE IN CONCRETE INCLUDE:
HILTI: HIT-RE 500 V3 OR HIT-HY 200
SIMPSON STRONG-TIE: SET-XP OR AT-XP
DEWALT/POWERS: PURE110+ OR AC200+ GOLD

DO NOT USE ADHESIVE ANCHORS IN OVERHEAD APPLICATIONS UNLESS SPECIFICALLY INDICATED ON THE CONTRACT DOCUMENTS. FOR ADHESIVE ANCHORS INSTALLED HORIZONTALLY OR UPWARDLY INCLINED, INSTALLER SHALL HOLD AN ACTIVE ACI/CRSI ISSUED ADHESIVE ANCHOR INSTALLER CERTIFICATION IN ADDITION TO TRAINING BY THE ANCHOR MANUFACTURER. CONTINUOUS SPECIAL INSPECTION FOR ADHESIVE ANCHORS INSTALLED AT THESE ANGLES IS REQUIRED. THE SPECIAL INSPECTOR SHALL PROVIDE A REPORT TO THE STRUCTURAL ENGINEER OF RECORD INDICATING THAT THE MATERIALS USED AND INSTALLATION PROCEDURES CONFORM WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.

ALL OTHER POST-INSTALLED ANCHORS SHALL HAVE PERIODIC SPECIAL INSPECTION AT A MINIMUM UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED IN THE SPECIFIC ANCHOR'S EVALUATION REPORT.

○ MASONRY ANCHORS

INSTALLATION OF POST-INSTALLED ANCHORAGE INTO GROUTED CELLS SHALL BE MADE ONCE GROUT HAS REACHED A COMPRESSIVE STRENGTH OF 2,000 PSI.

PERIODIC SPECIAL INSPECTION IS REQUIRED FOR ALL POST-INSTALLED ANCHORAGE INTO MASONRY. IF MORE STRINGENT REQUIREMENTS ARE INDICATED IN THE SPECIFIC ANCHOR'S EVALUATION REPORT, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.

EXPANSION ANCHORS TO SOLID OR GROUTED CMU INCLUDE:
HILTI: KWIK-BOLT 3
SIMPSON STRONG-TIE: STRONG-BOLT 2
DEWALT/POWERS: POWER-STUD+SD1

SCREW ANCHORS TO SOLID OR GROUTED CMU INCLUDE:
HILTI: KWIK-HUS-EZ
SIMPSON STRONG-TIE: TITEN HD
DEWALT/POWERS: SCREW-BOLT+

ADHESIVE ANCHORS TO SOLID, GROUTED, OR HOLLOW CMU AND UNREINFORCED BRICK INCLUDE:
HILTI: HIT-HY 70
SIMPSON STRONG-TIE: SET-XP (CMU ONLY)
SIMPSON STRONG-TIE: AT (BRICK ONLY)
DEWALT/POWERS: AC100+ GOLD

STANDARD ABBREVIATIONS:

AB	ANCHOR BOLT (ROD)	LLBB	LONG LEG BACK TO BACK
AHU	AIR HANDLING UNIT	LLH	LONG LEG HORIZONTAL
ALT	ALTERNATE	LLV	LONG LEG VERTICAL
APPROX	APPROXIMATELY	LP	LOW POINT
ARCH	ARCHITECTURAL	LSB	CLASS 'B' BAR LAP
BF	BOTTOM OF FOOTING	LSL	LAMINATED STRAND LUMBER
BS	BOTTOM OF STEEL	LTWT	LIGHTWEIGHT
BC	BOTTOM CHORD	LVL	LAMINATED VENEER LUMBER
BLDG	BUILDING	LW	LONG WAY
BRG	BEARING	MAX	MAXIMUM
BTWN	BETWEEN	MECH	MECHANICAL
CB	CATCH BASIN	MFR	MANUFACTURER
CIP	CAST-IN-PLACE	MIN	MINIMUM
CJ	CONTROL JOINT	MISC	MISCELLANEOUS
CL	CENTER LINE	MO	MASONRY OPENING
CLR	CLEAR (DISTANCE)	MS	MIDDLE STRIP
CMU	CONCRETE MASONRY UNIT	NA	NOT APPLICABLE
COL	COLUMN	NIC	NOT IN CONTRACT
CONC	CONCRETE	NOM	NOMINAL
CONT	CONTINUOUS	NTS	NOT TO SCALE
CS	COLUMN STRIP	OC	ON CENTER
DBA	DEFORMED BAR ANCHOR	OD	OUTSIDE DIAMETER
	OR DECK BEARING ANGLE	OF	OUTSIDE FACE
DBE	DECK BEARING ELEVATION	OPNG	OPENING
DEMO	DEMOLITION / DEMOLISH	OPP	OPPOSITE
DIA	DIAMETER	OSL	OUTSTANDING LEG
DL	DEAD LOAD	PC	PRECAST / PRESTRESSED
DWG	DRAWING	PCI	POUNDS PER CUBIC INCH
EOD	EDGE OF DECK	PDF	POUNDS PER CUBIC FOOT
EOS	EDGE OF SLAB	PL	PLATE
EF	EACH FACE	PLBG	PLUMBING
EJ	EXPANSION JOINT	PLF	POUNDS PER LINEAR FOOT
EL	ELEVATION	PROJ	PROJECTION
ELEC	ELECTRICAL	PSF	POUNDS PER CUBIC FOOT
ENG	ENGINEER	PSI	POUNDS PER SQUARE INCH
EQ	EQUAL	PT	PRE (POST) -TENSIONED
ES	EDGE STRIP	RD	ROOF DRAIN
EW	EACH WAY	REF	REFERENCE
EWEF	EACH WAY EACH FACE	REINF	REINFORCE(D)
EXP	EXPANSION	REM	REMAINDER
EXT	EXTERIOR	RTU	ROOF TOP UNIT
EXTG or (e)	EXISTING	SC	SLIP CRITICAL
FD	FLOOR DRAIN	SCHED	SCHEDULE
FLG	FLANGE	SHT	SHEET
FLR	FLOOR	SIM	SIMILAR
FND	FOUNDATION	SL	SNOW LOAD
FTG	FOOTING	SLBB	SHORT LEGS BACK TO BACK
FRMG	FRAMING	SOG	SLAB-ON-GRADE
FUT	FUTURE	SPA	SPAC(ES)(ED)(ING)
FV	FIELD VERIFY	SPEC	SPECIFICATION(S)
GA	GAUGE	SQ	SQUARE
GALV	GALVANIZED	SS	STAINLESS STEEL
GC	GENERAL CONTRACTOR	STD	STANDARD
GLULAM	GLUE-LAMINATED BEAM(S)	SW	SHORT WAY
GT	GIRDER TRUSS	TF	TOP OF FOOTING
HK	HOOK	TL	TOP OF LEDGE
HORIZ	HORIZONTAL	TP	TOP OF PIER
HP	HIGH POINT	TS	TOP OF STEEL
HVAC	HEATING, VENTILATING,	TW	TOP OF WALL
	AND AIR CONDITIONING	TC	TENSION CONTROL
HWS	HEADED WELDED STUD(S)	TC	TOP CHORD
ID	INSIDE DIAMETER	THK	THICK (NESS) (ENED)
IF	INSIDE FACE	TL	TOTAL LOAD
INT	INTERIOR	TYP	TYPICAL
JBE	JOIST BEARING ELEVATION	UNO	UNLESS NOTED OTHERWISE
K	KIP	VERT	VERTICAL
KO	KNOCKOUT PANEL	VIF	VERIFY IN FIELD
KSI	KIPS PER SQUARE INCH	VWA	VERIFY WITH ARCHITECT
L	ANGLE	WL	WIND LOAD
LB	POUNDS	WP	WORKING POINT
LL	LIVE LOAD	WWF	WELDED WIRE FABRIC

STRUCTURAL SHEET INDEX

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Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
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Sheet Title: STRUCTURAL NOTES

HSR Project Number: 18061

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Drawn By: raSmith

Key Plan:

Revisions:

No.	Description	Date

Graphic Scale: VARIES

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S001

MASONRY PIER SCHEDULE

MARK	PIER DIMENSIONS	PIER TYPE	REINFORCEMENT		REMARKS
			VERTICAL	TIES	
MP1	18" x 24"				3/S800

ISOLATED FOOTING SCHEDULE

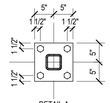
MARK	ISOLATED FOOTING DIMENSIONS			FOOTING REINFORCEMENT	REMARKS
	LENGTH	WIDTH	THICKNESS		
F6X4	4'-0"	6'-0"	12"	U-BAR (4) #6; B S-BAR (6) #6 BOT	2/S800
F6X6	6'-0"	6'-0"	12"	U-BAR (6) #6; B S-BAR (6) #6; B	2/S800
F30	3'-0"	3'-0"	12"	(4) #4; B, EW, DOWELS	
F40	4'-0"	4'-0"	16"	(4) #5; B, EW, DOWELS	4/S800

NOTES:

1. B = BOTTOM, T = TOP, LW = LONG WAY, SW = SHORT WAY, EW = EACH WAY.
2. ALL REINFORCEMENT BARS TO BE BOTTOM BARS UNLESS NOTED OTHERWISE.

BASE PLATE SCHEDULE

MARK	SIZE	ANCHOR ROD	NOTES
BP1	3/4"x10"x0'-10"	(4) 3/4" DIA RODS	1 1/2" GROUT DETAIL A



DETAIL A

LOOSE STEEL LINTEL SCHEDULE (SEE NOTE 1)

WALL THICKNESS	CLEAR MASONRY OPENING WIDTH	SECTION
ALL	AT FIRE EXTINGUISHER CABS AND DRINKING FOUNTAINS	1/4" PL
4"	TO 5'-0"	ST 3 X 6.25
4"	TO 7'-0"	PL 3/8 X 6 1/2 ON PL 3/8 X 3 1/2
4"	TO 9'-0"	PL 3/8 X 7 1/2 ON PL 3/8 X 3 1/2
6"	TO 5'-0"	(2) L 3 1/2 X 2 1/2 X 1/4 LLV
6"	TO 7'-0"	WT 4 X 10.5
6"	TO 9'-0"	WT 7 X 11
8"	TO 5'-0"	(2) L 3 1/2 X 3 1/2 X 1/4
8"	TO 7'-0"	(2) L 4 X 3 1/2 X 5/16 LLV
8"	TO 9'-0"	WT 7 X 15
10"	TO 7'-0"	W8 X 10 WITH PL 5/16 X 9
10"	TO 10'-0"	W8 X 15 WITH PL 5/16 X 9
12"	TO 5'-0"	(3) L 3 1/2 X 3 1/2 X 1/4
12"	TO 7'-0"	W8 X 10 WITH PL 5/16 X 11
12"	TO 10'-0"	W8 X 15 WITH PL 5/16 X 11

LINTEL NOTES:

1. LINTELS CALLED OUT IN THIS SCHEDULE ARE FOR NON-LOAD BEARING MASONRY WALL AND FOR LOAD BEARING WALLS WHERE LOAD IS INTRODUCED ABOVE THE LINTEL AT A DISTANCE GREATER THAN THE LINTEL SPAN.
2. PROVIDE MINIMUM 8" BEARING AT EACH END OF LINTEL.
3. CENTER LINTELS IN WALL UNLESS NOTED OTHERWISE.
4. BOTTOM PLATES UNDER WIDE FLANGE SHAPES SHALL BE EXTENDED FULL LENGTH OF LINTEL.
5. WELD LINTEL COMPONENTS INTO SINGLE UNIT.
6. NO LINTELS REQUIRED FOR 4" AND 6" NON-LOAD BEARING MASONRY WALLS WHERE GROUTED HOLLOW METAL FRAMES HAVE A HEADSPAN OF 4'-0" OR LESS.
7. PROVIDE THESE LINTELS WHERE OTHER LINTELS ARE NOT SPECIFICALLY DETAILED.
8. GROUT BLOCK CORES SOLID MINIMUM (3) COURSES BELOW LINTEL BEARING.

LINTEL SCHEDULE

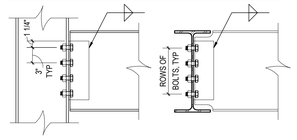
LINTEL MARK	DESCRIPTION	SECTION	END BEARING PLATES	REMARKS
L1	(2) W8x21 W/ PL 3/8x1-5"; T&B	3" 5" 1/4 3-9	PL 3/8x8"x1'-5" W/ (2) 1/2"x4" HWS	1-6, 10
L2	(2) W16x31 W/ PL 3/8x1-5"; T&B	3" 5" 1/4 3-9	PL 3/8x8"x1'-5" W/ (2) 1/2"x4" HWS	1-6, 10
L3	(2) W24x94 W/ PL 3/8x1-5"; T&B	1/4 3-9	PL 3/8x8"x1'-5" W/ (2) 1/2"x4" HWS	1-6, 10
L4	W24x94 W/ PL 3/8x11";B	EQ EQ	PL 3/8x8"x11" W/ (2) 1/2"x6" HWS	1-6, 10
L5	W8x21 W/ PL 3/8x7";B	EQ EQ	PL 3/8x7"x7" W/ (2) 1/2"x6" HWS	1-6, 10
L6	W16x31 W/ PL 3/8x7";B	EQ EQ	PL 3/8x7"x7" W/ (2) 1/2"x6" HWS	1-6, 10

NOTES:

1. REFERENCE DETAIL 10,13/S811 FOR TYPICAL LINTEL BEARING REQUIREMENTS.
2. TYPICAL NOTES THAT APPLY UNLESS NOTED OTHERWISE:
   a) PROVIDE MINIMUM 8" BEARING AT EACH END OF LINTEL.
   b) CENTER LINTELS IN WALL UNLESS NOTED OTHERWISE.
   c) BOTTOM PLATES WHERE CALLED FOR SHALL EXTEND FULL LENGTH OF LINTEL.
   d) REFERENCE DETAIL X/SXXX FOR TYPICAL CMU WALL OPENING REINFORCEMENT REQUIREMENTS
   e) REFERENCE DETAILS XS/XXX FOR TYPICAL CMU CONTROL JOINT REQUIREMENTS
3. NOTCH FACE SHELL AS REQUIRED TO PLACE CMU.
4. PROVIDE 1/2" DIA x 6" LONG HEADED WELDED STUDS (HWS) AT 24" OC ON TOP OF LINTEL. GROUT CMU CORE SOLID 8" (MIN) ABOVE TOP OF LINTEL AT HWS LOCATIONS.
5. PROVIDE ADJUSTABLE MASONRY ANCHORS AT 16" OC EACH SIDE OF WEB.
6. ALL EXTERIOR LINTELS (INCLUDING BOTTOM PLATES) TO BE HOT-DIPPED GALVANIZED.
7. WIDTH OF BOND BEAM TO MATCH WIDTH OF WALL.
8. PROVIDE 1" BOTTOM CLEAR COVER.
9. SEE MISCELLANEOUS LINTEL SCHEDULE FOR BRICK SUPPORT IN FRONT OF CMU LINTELS.
10. VERIFY ALL WALL WIDTH BEFORE FABRICATION AND INFORM A/E OF DISCREPANCIES

DOUBLE ANGLE CONNECTION SCHEDULE

BEAM SIZE	ROWS OF BOLTS	REMARKS
W8; W10	2	
W12; W14	3	
W16	4	
W18	5	
W21; W24	6	
W27	7	
W30; W33	8	



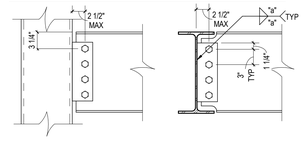
BEAM TO COLUMN BEAM TO BEAM

DOUBLE ANGLE CONNECTION NOTES:

1. ALL BOLTS TO BE 3/4" DIA A325.
2. ANGLE LEGS TO BE A MIN OF 5/16" THICK.
3. SEE PLAN FOR COLUMN ORIENTATION.
4. CONNECTIONS SHOWN ARE MINIMUM CONNECTIONS UNLESS NOTED OTHERWISE.
5. CONNECTION ANGLES SHALL BE 36 ksi MININUM.
6. ALL STEEL EXPOSED TO EXTERIOR CONDITIONS SHALL BE GALVANIZED.
7. ALL STANDARD DOUBLE ANGLE CONNECTION SHALL BE IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL, 13th EDITION & SHALL BE TYPE 2 FRAMING, UNO.

SINGLE PLATE SHEAR CONNECTION SCHEDULE

BEAM SIZE	ROWS OF BOLTS	PLATE THICKNESS	WELD SIZE (a)
W8; W10	2	3/8"	5/16"
W12; W14	3	3/8"	5/16"
W16	4	3/8"	5/16"
W18	5	3/8"	5/16"
W21; W24	6	3/8"	5/16"
W27	7	3/8"	5/16"
W30; W33	8	3/8"	5/16"



BEAM TO COLUMN BEAM TO BEAM

SINGLE PLATE SHEAR CONNECTION NOTES:

1. ALL BOLTS TO BE 3/4" DIA A325.
2. CONNECTIONS SHOWN ARE MINIMUM CONNECTIONS UNLESS NOTED OTHERWISE.
3. ALL STEEL EXPOSED TO EXTERIOR CONDITIONS SHALL BE GALVANIZED.

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Madison, WI 53718-8345
(608) 467-3054
rasmith.com

project number: 1191214

Contractors are responsible for the means, methods, techniques, sequences and procedures of construction including, but not limited to, temporary supports, shoring, forming to support imposed loads and other similar items.

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **STRUCTURAL SCHEDULES**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **raSMITH**

Key Plan:

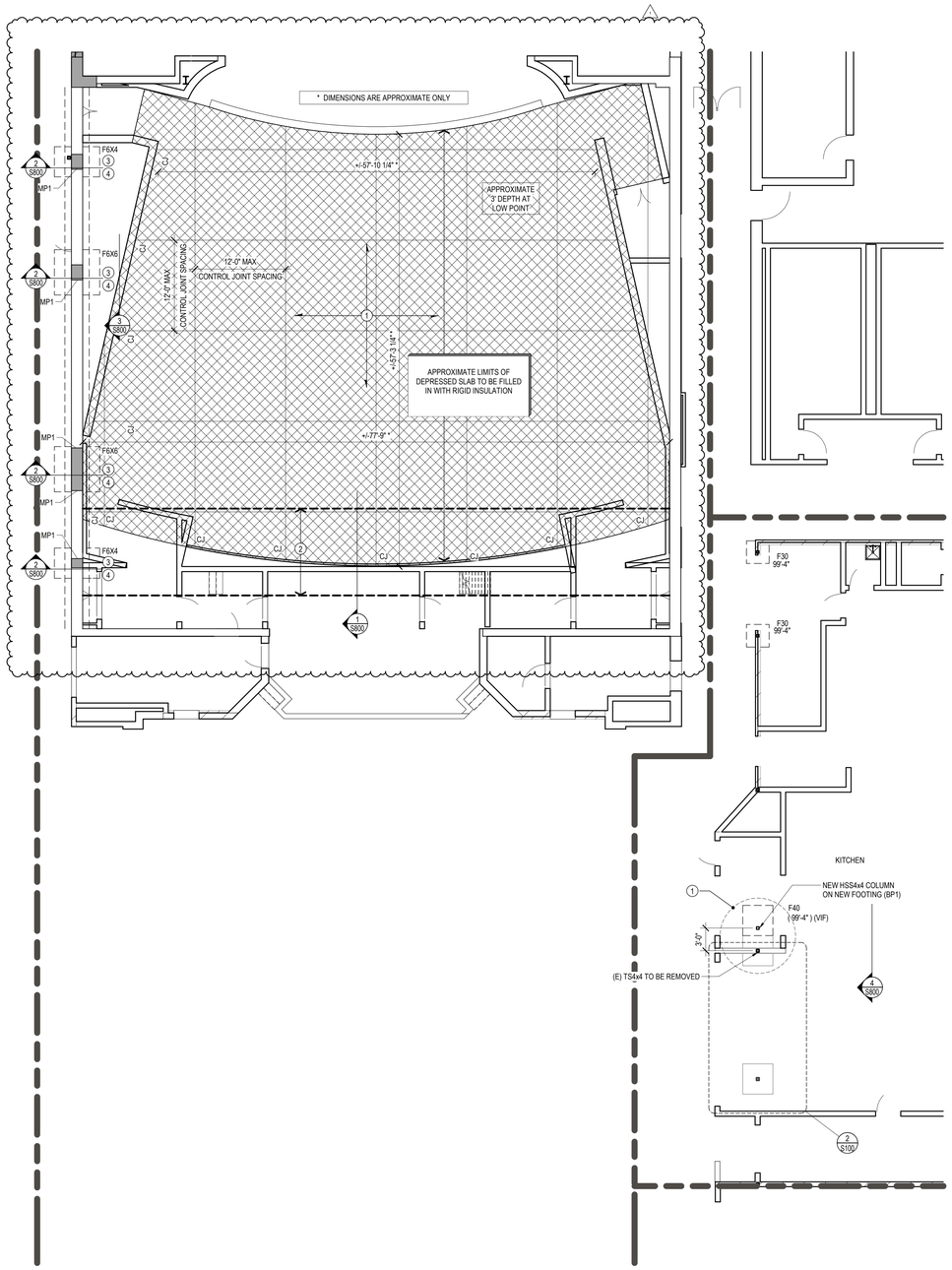
Revisions:

No.	Description	Date

Graphic Scale: **VARIES**

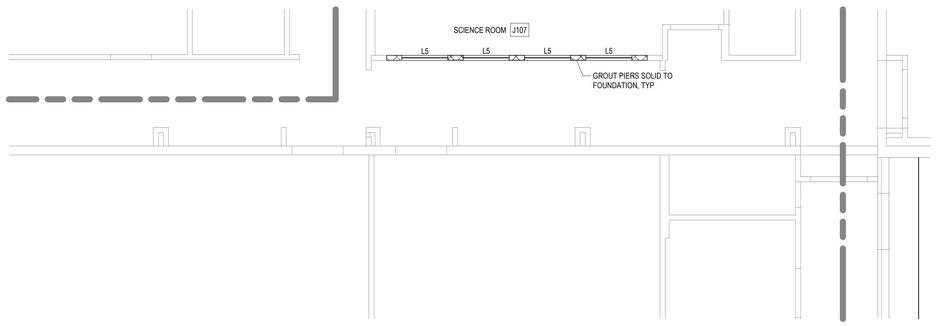
Last Update: **3/13/2020 9:45:20 AM**

S002



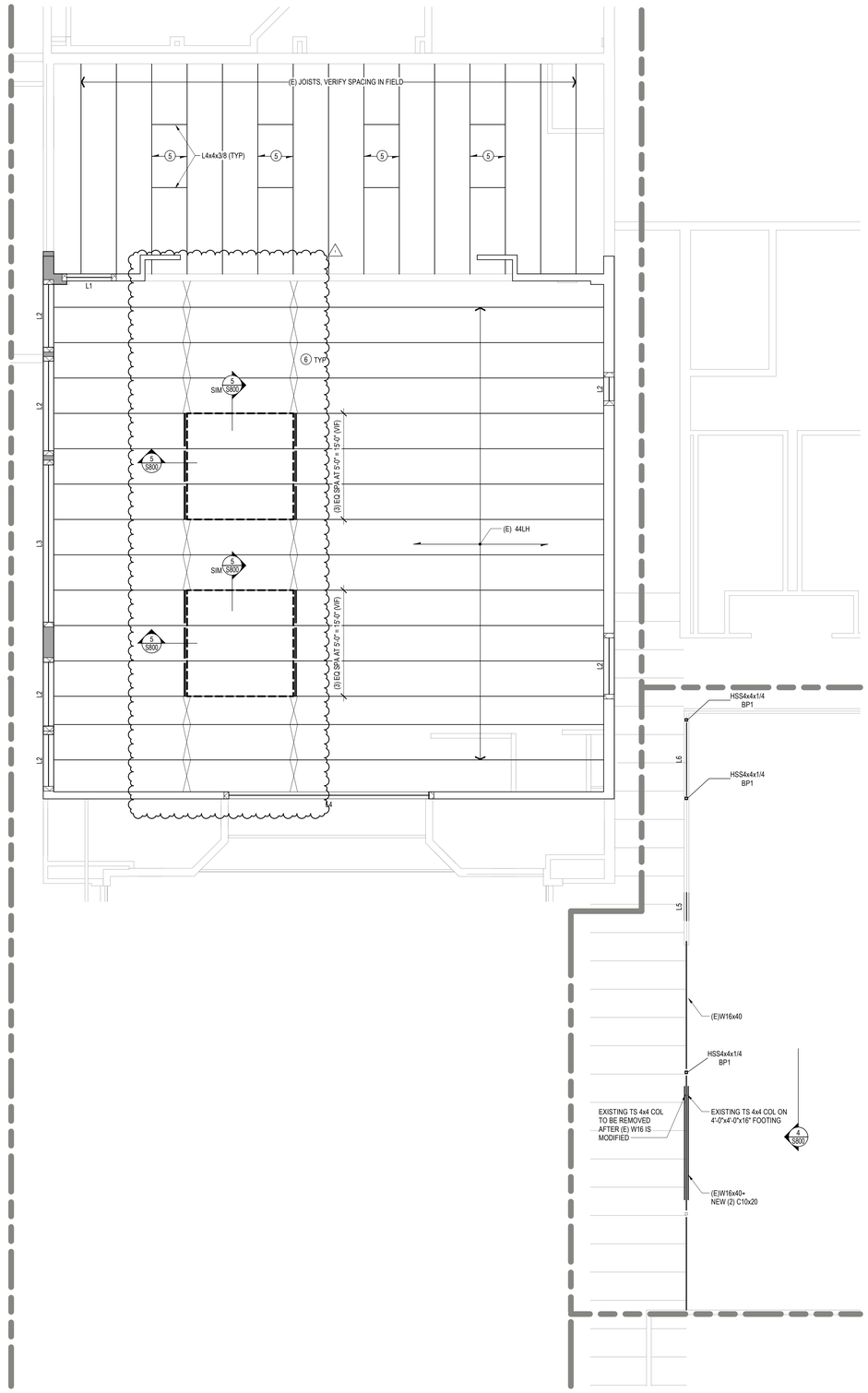
1 S100 FIRST FLOOR PLAN (AREA H)

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



3 S100 ROOF FRAMING PLAN (AREA J)

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



2 S100 ROOF FRAMING PLAN (AREA H)

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

KEY NOTES

1. 4" SLAB ON GRADE W/ SYNTHETIC FIBERS (REFER TO SPECIFICATIONS) OVER RIGID INSULATION
2. APPROXIMATE LIMITS OF DEMO (E) SLAB
3. CONSTRUCT FOOTINGS BEFORE PIER CONSTRUCTION AND WALL DEMO
4. FOOTING ELEVATION TO BE VERIFIED - (E) PLANS INDICATE (E) FTG = 96'-8" AT ONE LOCATION
5. TYPE B-WIDERIB, NON-COMPOSITE FLUTED STEEL SHEET DECK; 1 1/2" - 20GA PAINTED ROOF DECK - 1 1/2" BEARING ON EXISTING ROOF FRAMING WELD DOWN AT EACH FLUTE
   I_P = 0.0201 I_N = 0.222
   S_P = 0.234 S_N = 0.247
6. X-BRACE (1 1/2x1 1/2x3/16) FROM SKYLIGHT TO MASONRY WALL.

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project number: 1191214

Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: FOUNDATION/FRAMING PLANS

HSR Project Number: 18061

Project Date: FEBRUARY 2020

Drawn By: raSMITH

Key Plan:

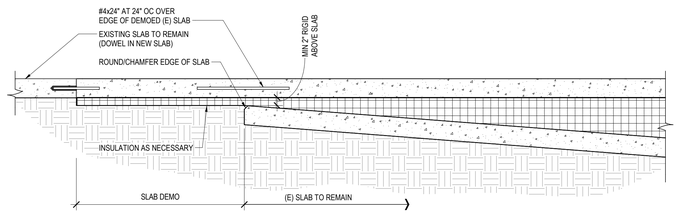
Revisions:

No.	Description	Date
1	ADDENDUM #1	03/13/2020

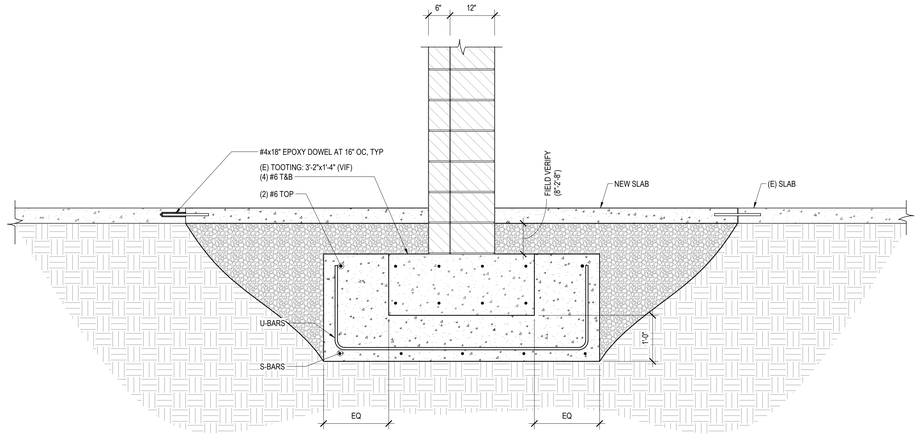
Graphic Scale: VARIES

Last Update: 3/13/2020 9:45:21 AM

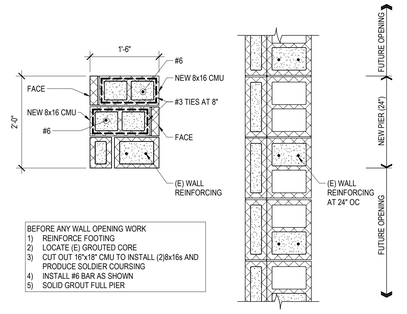
S100



1 S800 SECTION AT AUDITORIUM FLOOR
SCALE: 3/4" = 1'-0"

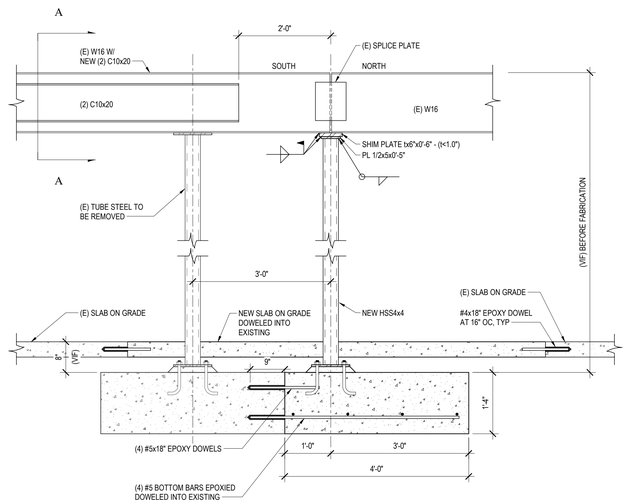


2 S800 SECTION AT AUDITORIUM FLOOR
SCALE: 3/4" = 1'-0"

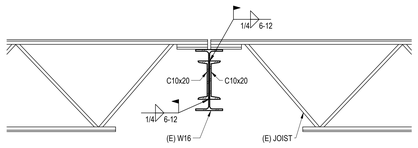


BEFORE ANY WALL OPENING WORK
1) REINFORCE FOOTING
2) LOCATE (E) GROUTED CORE
3) CUT OUT 16"x18" CMU TO INSTALL (2)8x16s AND PRODUCE SOLDIER COURSING
4) INSTALL #6 BAR AS SHOWN
5) SOLID GROUT FULL PIER

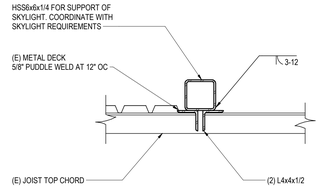
3 S800 MASONRY PIER DETAIL (MP1)
SCALE: 3/4" = 1'-0"

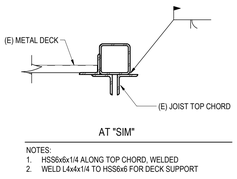


4 S800 SEG H - KITCHEN COLUMN RELOCATION
SCALE: 3/4" = 1'-0"



A-A SECTION

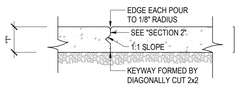




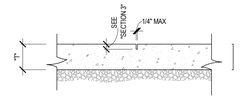
AT "SIM"

NOTES:
1. HSS6x6x1/4 ALONG TOP CHORD, WELDED
2. WELD L4x4x1/4 TO HSS6x6 FOR DECK SUPPORT

5 S800 SECTION AT SKYLIGHT SUPPORT
SCALE: 1" = 1'-0"



CONSTRUCTION JOINT



CONTROL JOINT

SECTION 1: SLAB-ON-GRADE NOTES
- SLAB-ON-GRADE CONSTRUCTION SHOULD CONFORM WITH THE RECOMMENDATIONS AND REQUIREMENTS SET FORTH IN THE LATEST RELEASE OF ACI 302 GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION.
- REFER TO THE GENERAL NOTES, THE SPECIFICATIONS, AND THE DRAWINGS FOR SUB-FLOOR DRAINAGE SYSTEM, SUBGRADE PREPARATION, AND/OR MUD SLAB AND VAPOR RETARDER REQUIREMENTS.
- THE SUBGRADE SHALL BE FREE OF STANDING WATER AT THE TIME OF CONCRETE PLACEMENT.
- REFER TO PLANS FOR SLAB THICKNESS ("T") AND REINFORCEMENT (WWF OR REINFORCEMENT BARS). REFER TO SPECIFICATIONS FOR FIBER REINFORCEMENT TO BE INCORPORATED IN CONCRETE MIX, IF ANY. WHERE PRESENT, REINFORCING BARS SHALL BE CHAIRED BY SOIL SUPPORTED SLAB BOLSTERS.
- PROVIDE (2) #5 x6'-0" AT ALL RE-ENTRANT CORNERS AND OTHER SIMILAR SLAB DISCONTINUITIES.
- UNLESS SHOWN OTHERWISE ON THE DRAWINGS, PROVIDE CONTROL AND/OR CONSTRUCTION JOINTS AT EVERY COLUMN LINE AND IN BETWEEN THE COLUMNS SUCH THAT THE JOINT SPACING DOES NOT EXCEED 36x("T") UNO. THE RESULTING PANELS SHOULD BE APPROXIMATELY SQUARE.

SECTION 2: CONTRUCTION JOINT NOTES
- BREAK THE BOND BETWEEN NEW AND PREVIOUSLY PLACED SLABS BY SPRAYING OR BY PAINTING THE EXPOSED SIDE OF THE JOINT WITH A CURING COMPOUND, ASPHALTIC EMULSION, OR FORM OIL.

SECTION 3: CONTROL JOINT NOTES
- FOR SAW-CUT CONTROL JOINTS, MAKE THE SAW-CUT AS SOON AS THE SLAB IS ABLE TO SUPPORT THE WEIGHT OF WORKERS AND SAWING EQUIPMENT WITHOUT DAMAGE TO THE FINISHED SURFACE OF THE SLAB, BUT WITHIN 24 HOURS.
- DEPTH OF SAW-CUT SHOULD BE 1-1/4" IF PRODUCED USING THE EARLY ENTRY DRY-CUT PROCESS AND "T"/4 (1" MIN) IF PRODUCED USING THE CONVENTIONAL WET-CUT PROCESS.
- REFER TO SPECIFICATIONS REGARDING EPOXY RESIN OR ELASTOMERIC SEALANT REQUIREMENTS FILL CONTROL JOINTS.

SECTION 4: FORMED CONTROL JOINT OPTION NOTES
- FORM CONTROL JOINTS BY INSERTING A PRE-MOLDED STRIP INTO THE FRESH CONCRETE UNTIL THE TOP SURFACE OF THE STRIP IS FLUSH WITH THE TOP SURFACE OF THE SLAB.
- TOOL THE SLAB EDGES ROUND ON EACH SIDE OF THE INSERT, 1/8" MAX RADIUS.
- AFTER THE CONCRETE HAS CURED, REMOVE THE INSERTS AND CLEAN THE GROOVE OF LOOSE DEBRIS.

6 S800 TYP SLAB-ON-GRADE CONSTRUCTION & CONTROL JOINT
SCALE: 1" = 1'-0"

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project number: 1191214

Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: DETAILS

HSR Project Number: 18061

Project Date: FEBRUARY 2020

Drawn By: raSMITH

Key Plan:

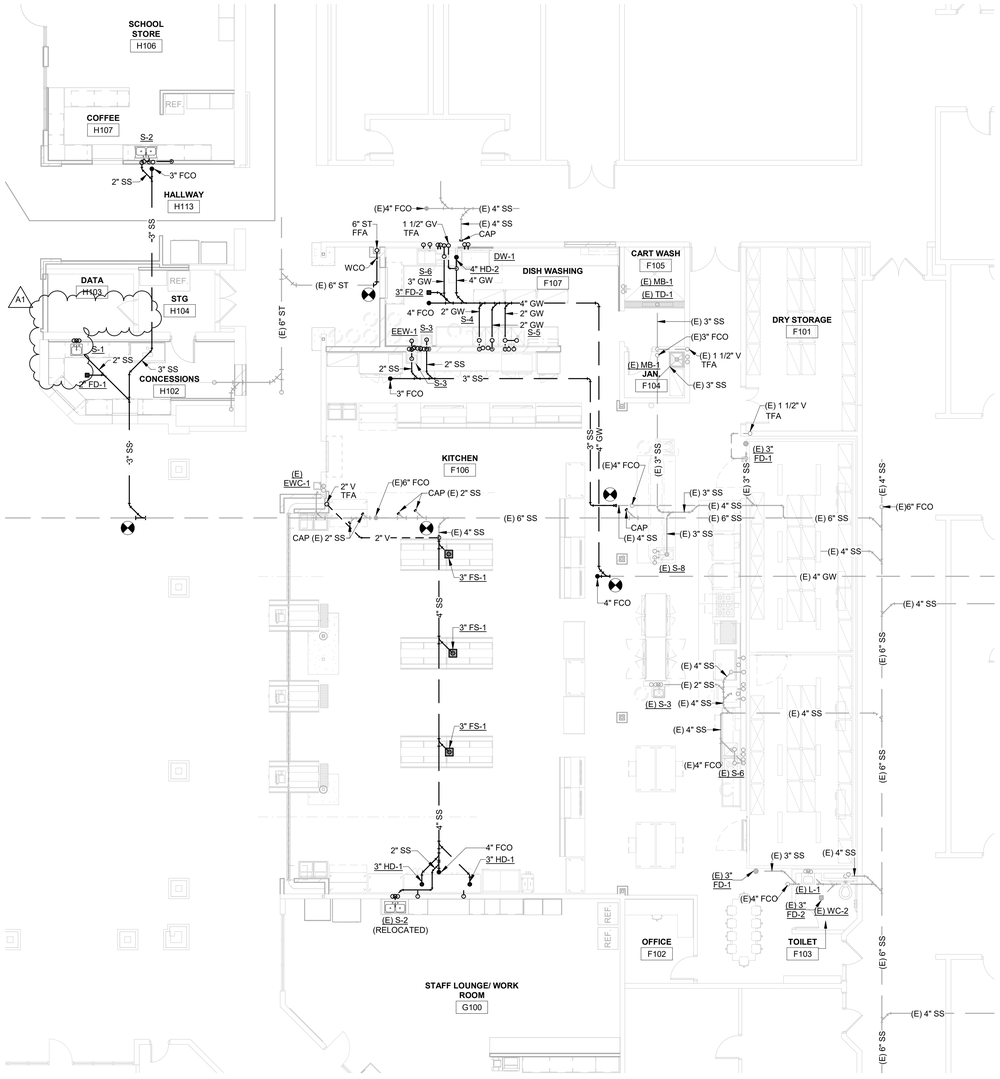
Revisions:

No.	Description	Date

Graphic Scale: VARIES

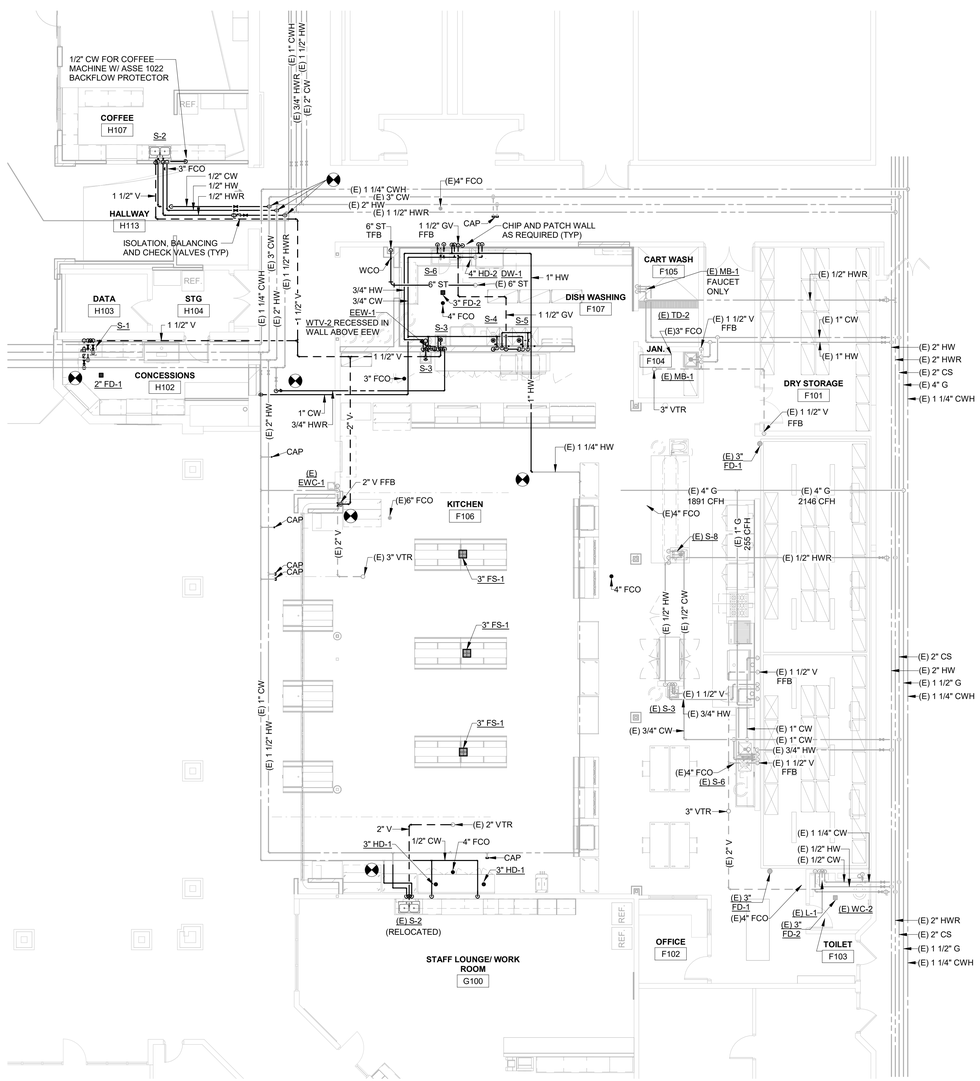
Last Update: 3/13/2020 9:45:22 AM

S800



1 UNDERFLOOR PLAN - SEG. F & H

1/8" = 1'-0"



2 FIRST FLOOR PLAN - SEG. F & H

1/8" = 1'-0"

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **PLUMBING PLANS - SEGMENT F & H**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **ATR/RGJ**

Key Plan:

KEY PLAN
PROJECT NORTH
TRUE NORTH

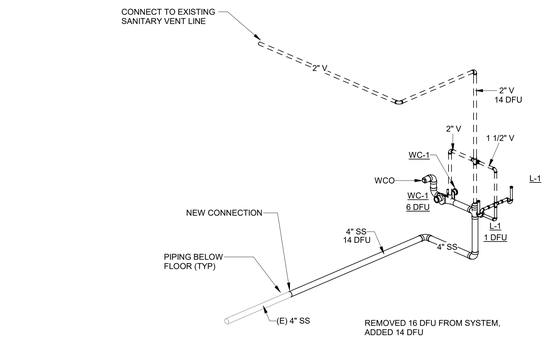
Revisions:

No.	Description	Date
A1	Addendum #1	3/13/2020

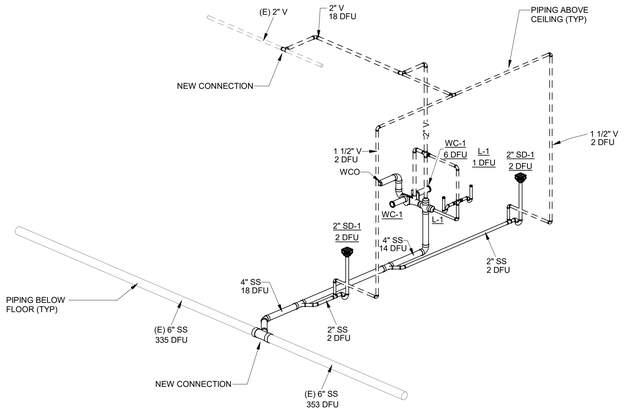
Graphic Scale: 0' 2' 4' 8' 12'

Last Update: **3/12/2020 2:15:31 PM**

P101

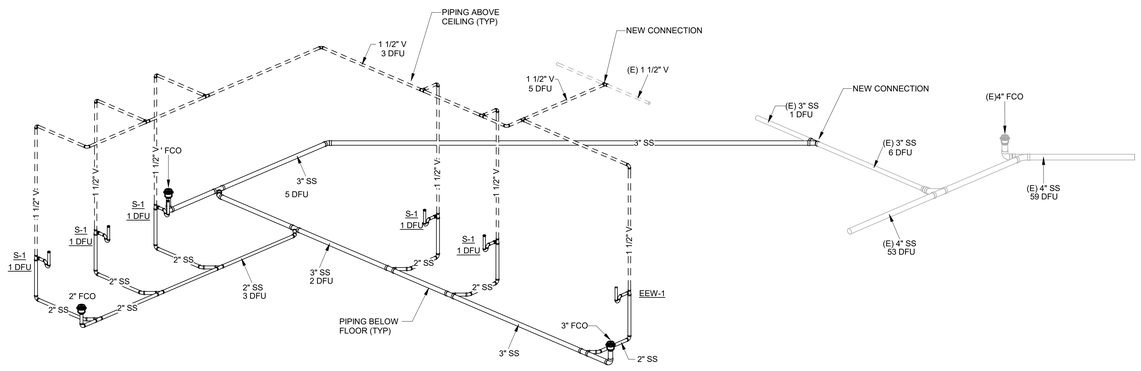


1 DWV RISER DIAGRAM - TOILET J100/101



2 DWV RISER DIAGRAM - TOILET J104/105

4 DWV RISER DIAGRAM SEG F & H



3 DWV RISER DIAGRAM SCIENCE J107

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

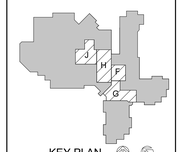
Sheet Title: **DWV RISER ISOMETRIC**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **ATR/RGJ**

Key Plan:



KEY PLAN

Revisions:

No.	Description	Date
A1	Addendum #1	3/13/2020

Graphic Scale: **VARIES**

Last Update: **3/12/2020 2:15:41 PM**

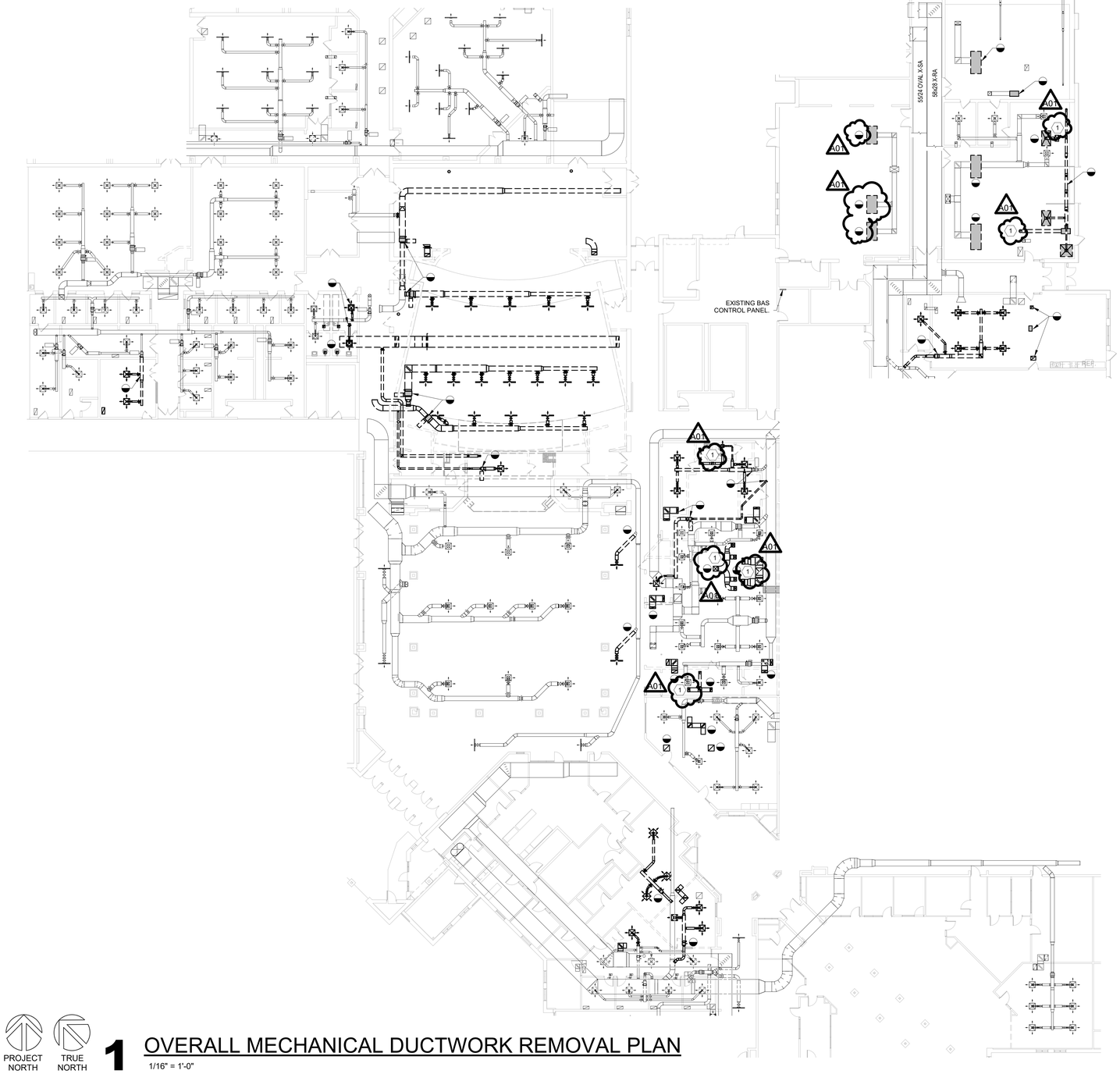
P200

KEYNOTES - M090

Keynote Number	Keynote Description
1	EXISTING CURB SHALL REMAIN IN PLACE. ADD INSULATED CAP WITH TAPER TOP LAYER TO ALLOW WATER TO DRAIN AWAY AND A SHEET METAL CAP FINISH. FLASH APPROPPRIATELY TO MAINTAIN ROOF WARRANTY.

ALL REMOVED ITEMS THAT THE OWNER WANTS SHALL BE REMOVED AND TURNED OVER TO THE OWNER AT A DESIGNATED STORACE SPACE ON SITE. ALL REMAINING ITEMS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.

A01



PROJECT NORTH

TRUE NORTH

1 OVERALL MECHANICAL DUCTWORK REMOVAL PLAN

1/16" = 1'-0"

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL ROOF REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **OVERALL DUCTWORK REMOVAL PLAN**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **Lescher**

Key Plan:

KEY PLAN — PROJECT NORTH — TRUE NORTH

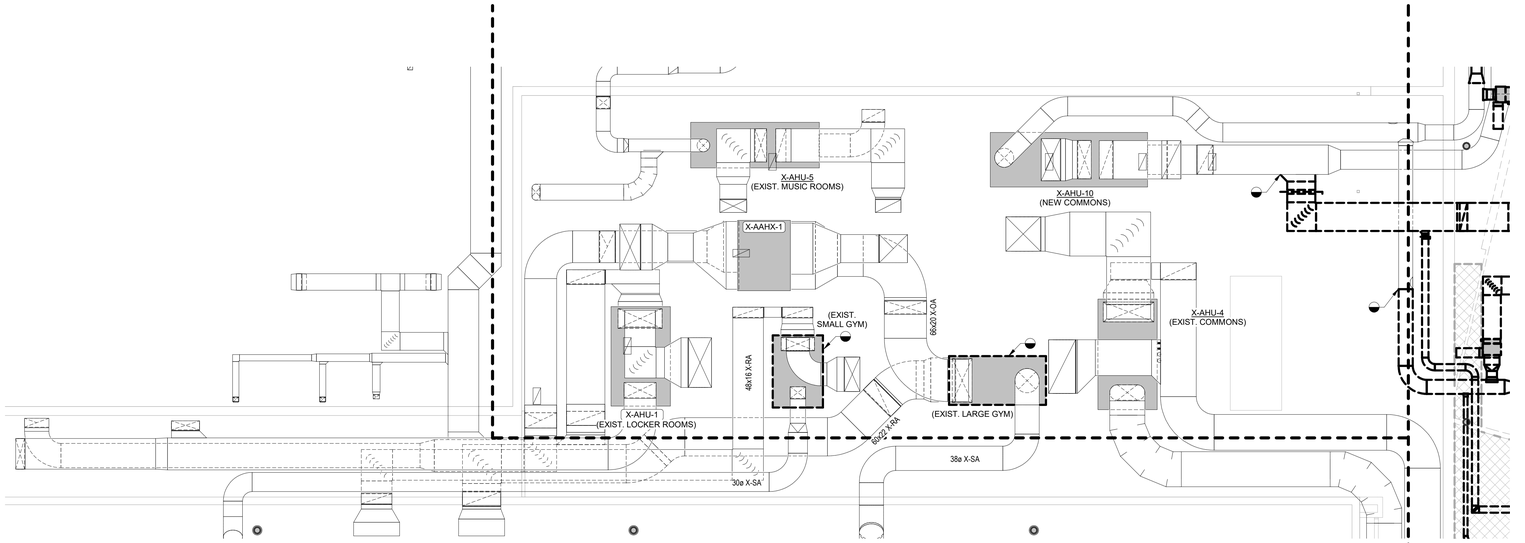
Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale: 0' 4' 8' 16' 24'

Last Update: **3/13/2020 8:17:41 AM**

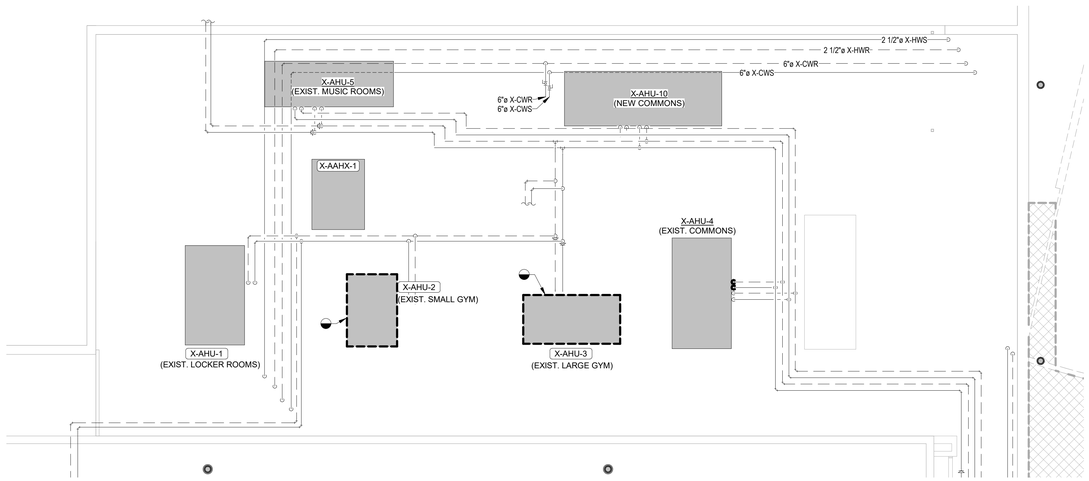
M090



PROJECT NORTH TRUE NORTH

1 MEZZANINE DUCTWORK REMOVAL PLAN

1/8" = 1'-0"



PROJECT NORTH TRUE NORTH

2 MEZZANINE PIPING REMOVAL PLAN

1/8" = 1'-0"

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **ENLARGED MEZZANINE REMOVAL PLAN**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **LESCHER**

Key Plan:

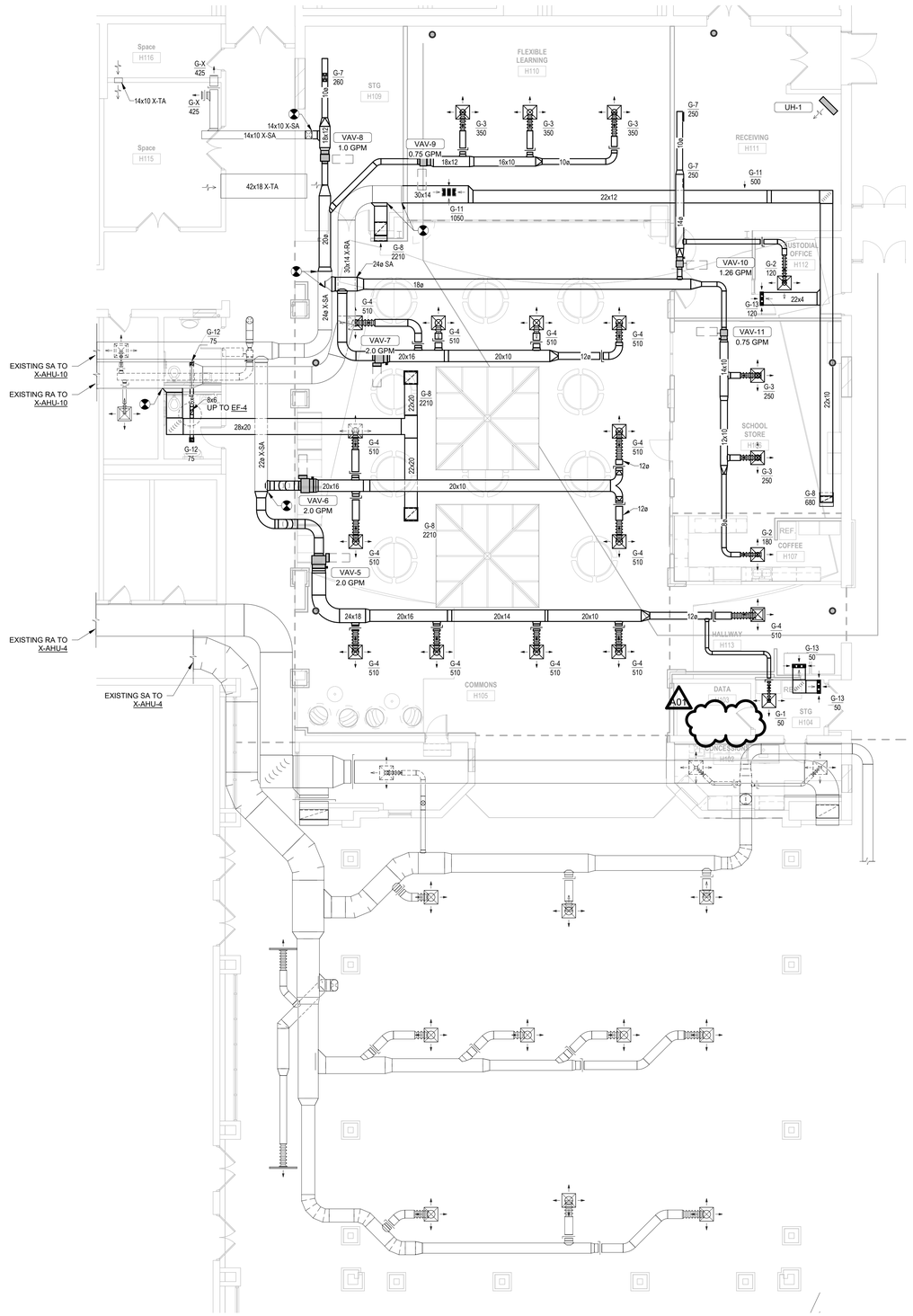
Revisions:

No.	Description	Date

Graphic Scale: 0' 2' 4' 8' 12'

Last Update: **3/13/2020 8:46:08 AM**

M092



PROJECT NORTH TRUE NORTH

1 DUCTWORK REMODEL PLAN - SEG. 'H'

1/8" = 1'-0"

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INTERIOR DESIGN

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **MECHANICAL DUCT REMODEL PLAN - SEG. 'H'**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **Lescher**

Key Plan:

KEY PLAN PROJECT NORTH TRUE NORTH

Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

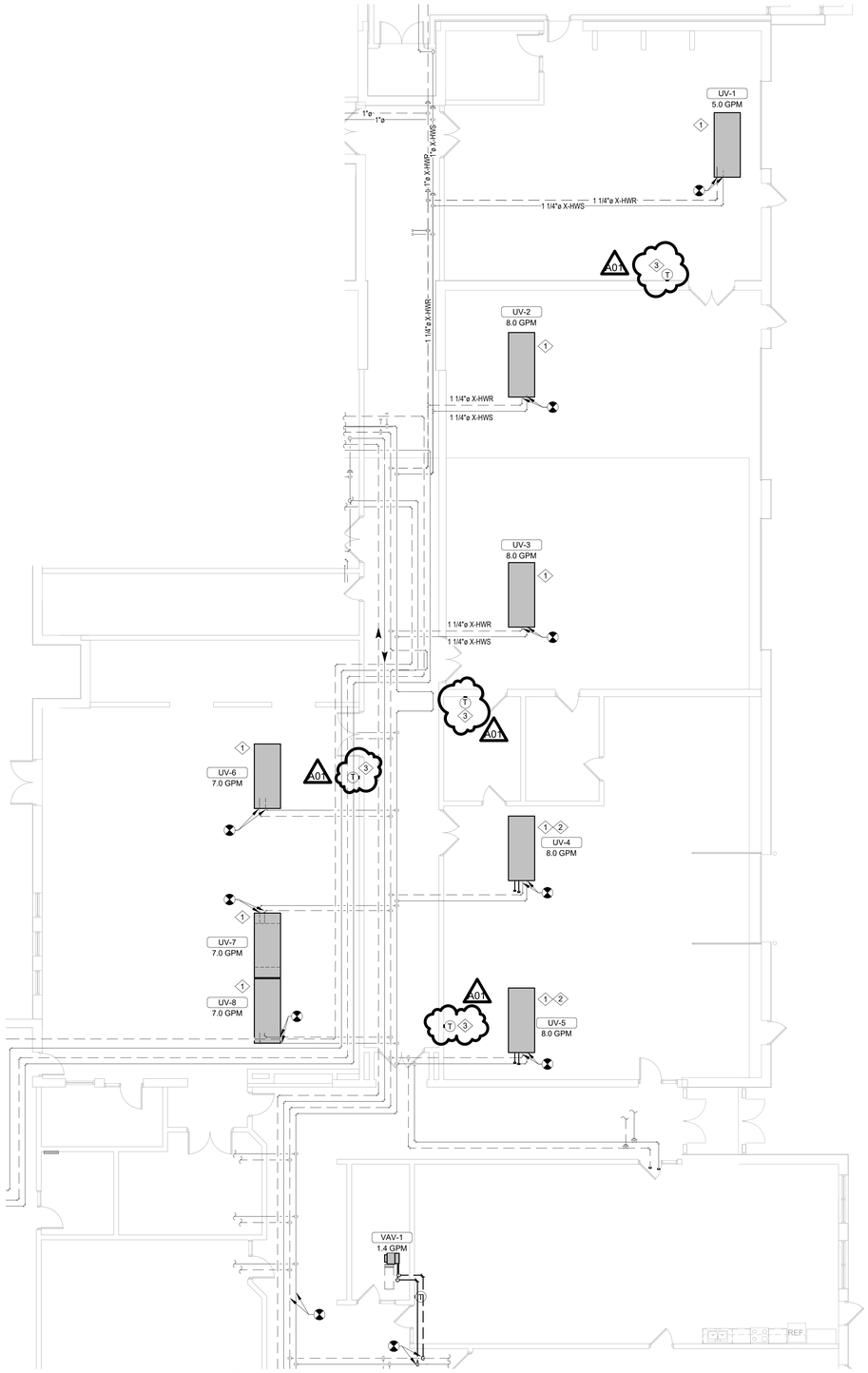
Graphic Scale: 0' 2' 4' 8' 12'

Last Update: **3/13/2020 8:17:49 AM**

M103

KEYNOTES - M105

Keynote Number	Keynote Description
1	NEW UNIT VENTILATORS TO BE INSTALLED. RECONNECT TO EXISTING PIPING.
2	CAP NEW CWS&R COILS FOR FUTURE COOLING.
3	NEW THERMOSTAT SHALL BE PROVIDED WITH UPDRAGED DDC CONTROLS TO UNIT VENTILATORS.



PROJECT NORTH TRUE NORTH

1 PIPING REMODEL PLAN - SEG. 'E'

1/8" = 1'-0"

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **MECHANICAL PIPING REMODEL PLAN - SEG. 'E'**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **Lescher**

Key Plan:

KEY PLAN PROJECT NORTH TRUE NORTH

Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

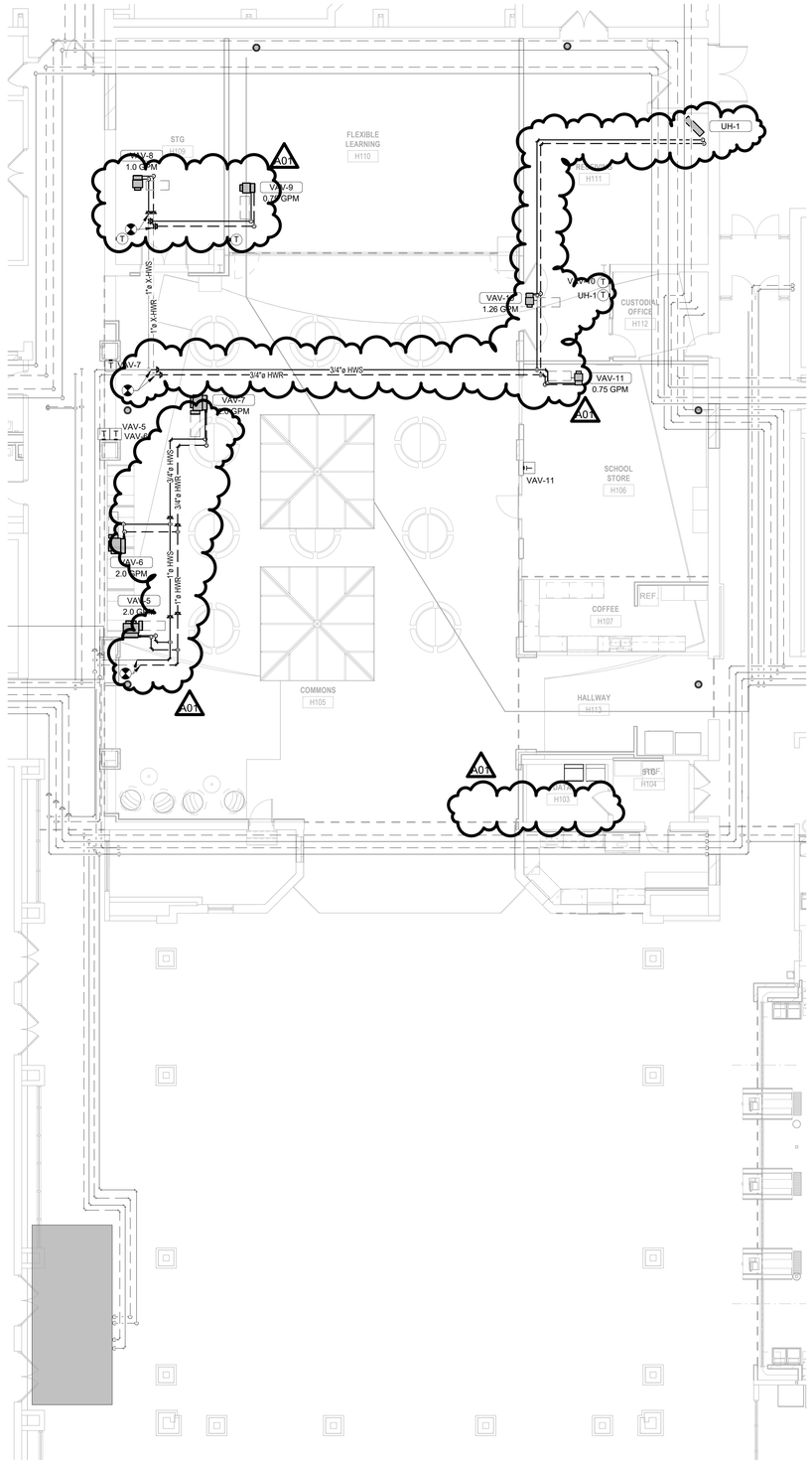
Graphic Scale: 0' 2' 4' 8' 12'

Last Update: **3/13/2020 8:17:58 AM**

M105

REFRIGERANT EVACUATION SYSTEM NOTE:

DATA H103 AREA 85 FT² x 9 FT = 765 FT³ / 1,000 FT³ = 0.765
2 LBS 14 OX. OF R-410A REFRIGERANT IN MINI SPLIT / 0.765 = 3.8 LBS / 1,000 FT³.
AMOUNT OF REFRIGERANT ALLOWED = 25 LBS / 1,000 FT
* NO EVACUATION SYSTEM REQUIRED.



PROJECT NORTH
TRUE NORTH

1 PIPING REMODEL PLAN - SEG. 'H'

1/8" = 1'-0"

ARCHITECTURE
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INTERIOR DESIGN

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Consultant:

Project Title:
SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location:
1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title:
MECHANICAL PIPING REMODEL PLAN - SEG. 'H'

HSR Project Number:
18061

Project Date:
FEBRUARY 2020

Drawn By:
Lescher

Key Plan:

KEY PLAN PROJECT NORTH TRUE NORTH

Revisions:

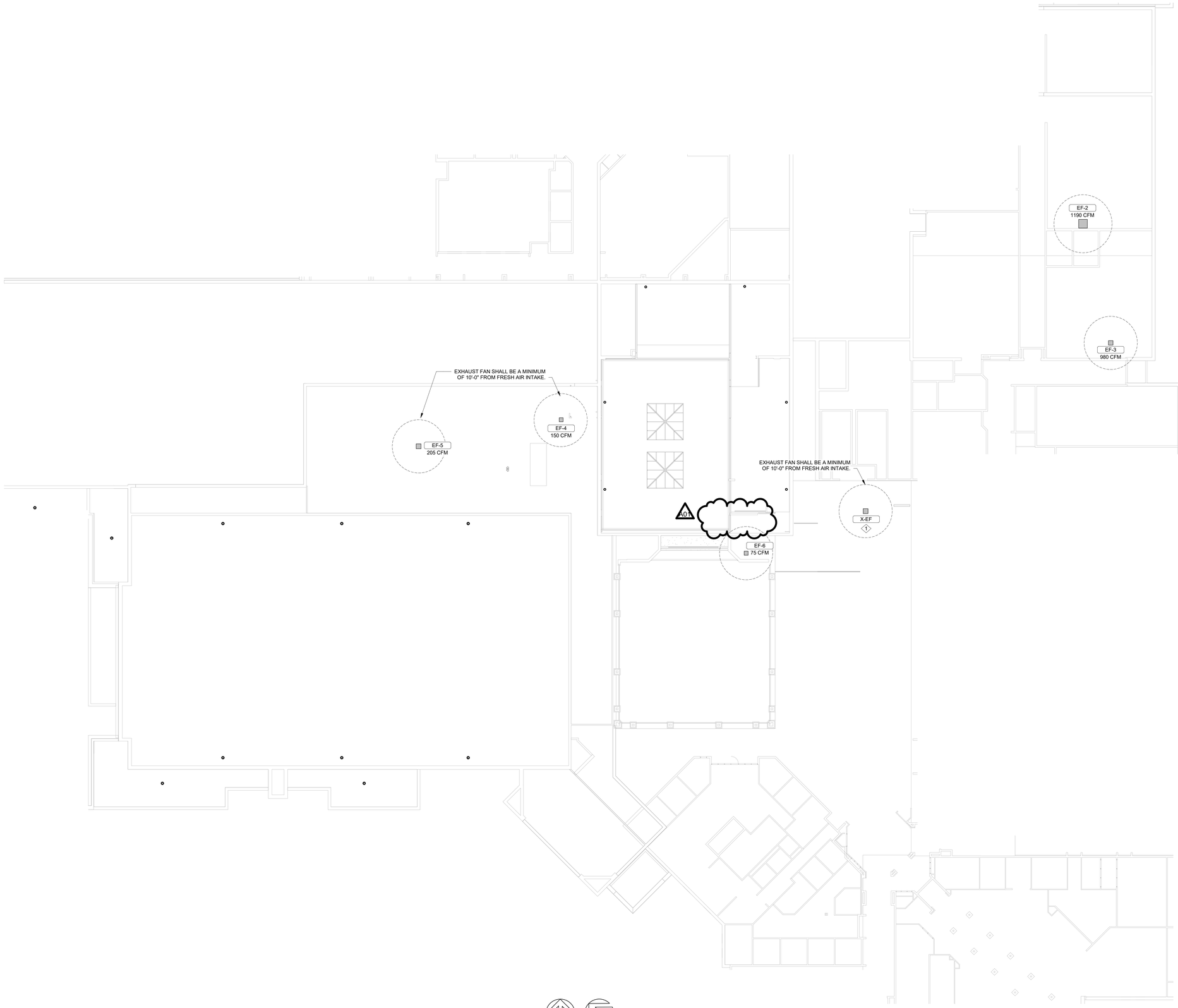
No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale:
0' 2' 4' 8' 12'

Last Update:
3/13/2020 8:18:01 AM

M107

KEYNOTES - M108	
Keynote Number	**Keynote Description**
1	EXISTING DISHWASHER EXHAUST FAN TO BE RELOCATED. CONNECT WITH NEW DISHWASHER EXHAUST DUCT.



PROJECT NORTH TRUE NORTH

1 ROOF PLAN OVERALL

1/16" = 1'-0"

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

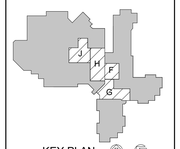
Sheet Title: **MECHANICAL ROOF PLAN**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **Lescher**

Key Plan:



KEY PLAN PROJECT NORTH TRUE NORTH

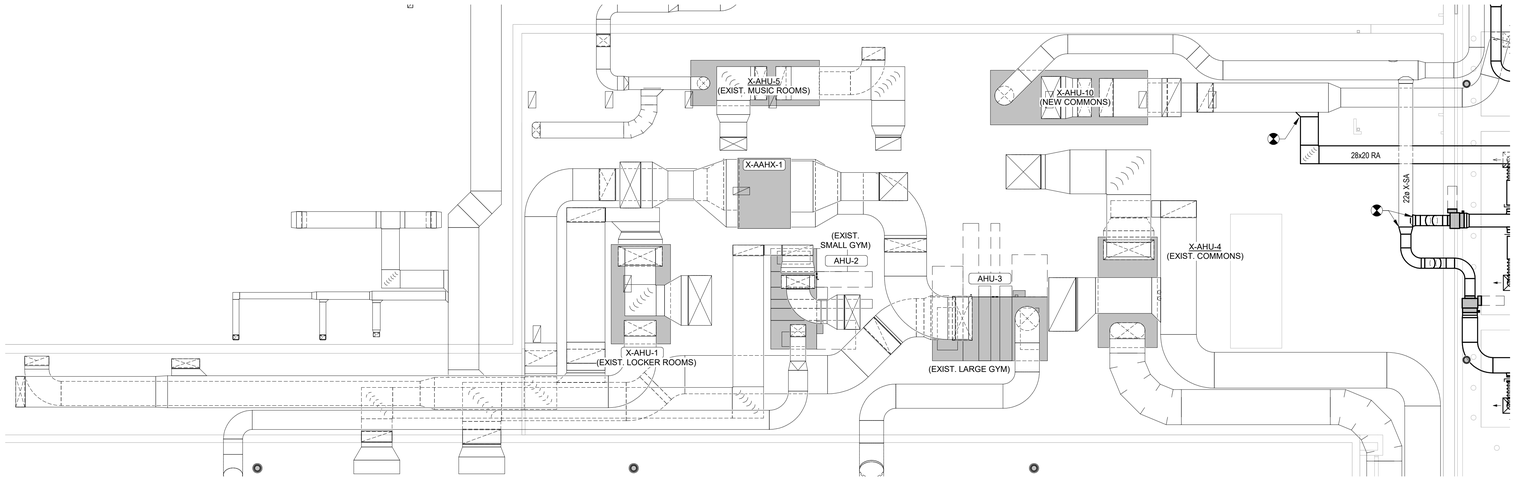
Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale: **VARIES**

Last Update: **3/13/2020 8:18:05 AM**

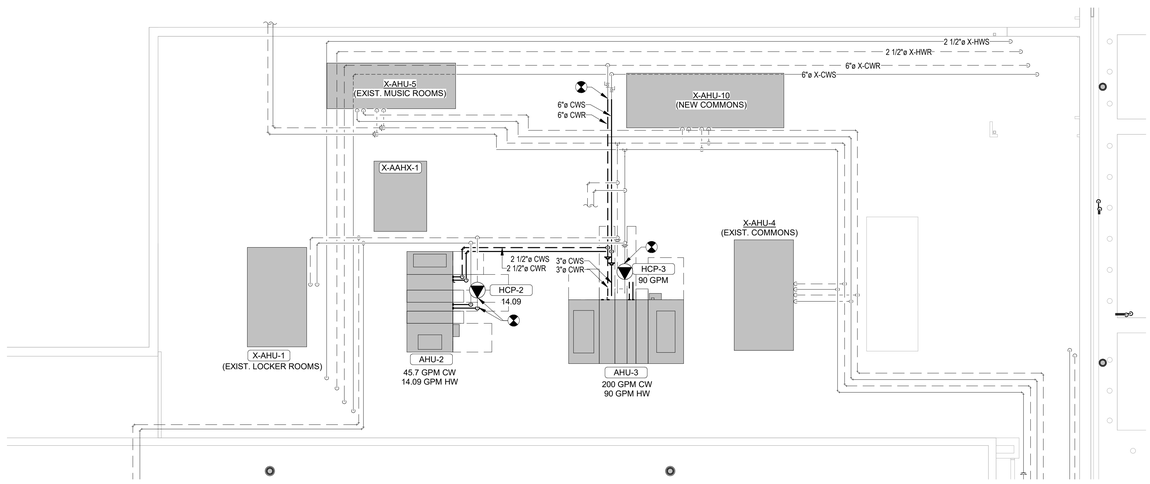
M108



PROJECT NORTH TRUE NORTH

1 MECHANICAL DUCTWORK MEZZANINE ROOM

1/8" = 1'-0"



PROJECT NORTH TRUE NORTH

2 MECHANICAL PIPING MEZZANINE ROOM

1/8" = 1'-0"

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODEL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

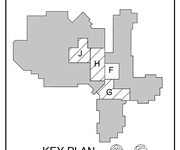
Sheet Title: **ENLARGED MEZZANINE ROOM - DUCTWORK**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **Lescher**

Key Plan:



KEY PLAN PROJECT NORTH TRUE NORTH

Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

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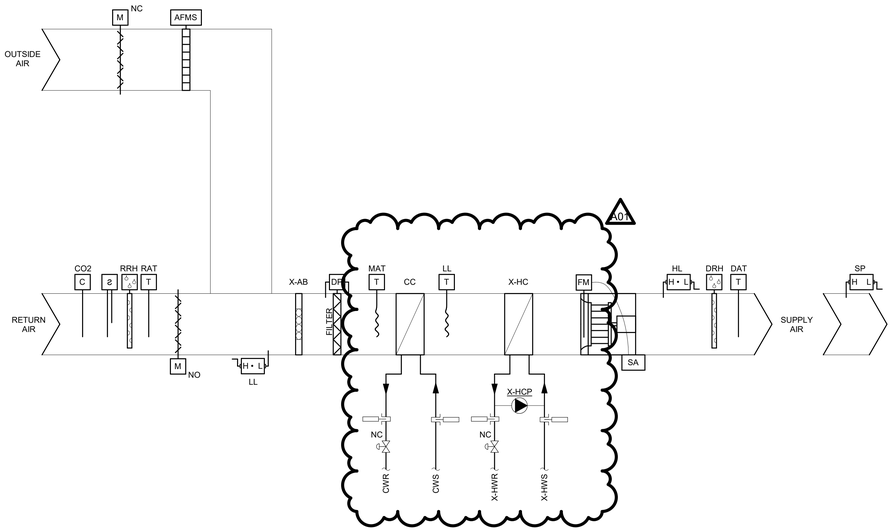
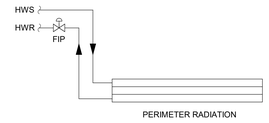
Last Update: **3/13/2020 8:48:41 AM**

M200



1 AHU-2 & 3 CONTROL SCHEMATIC

N.T.S.



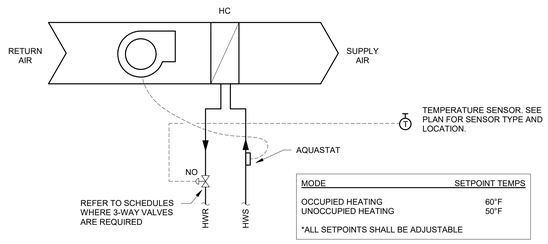
MODE	SETPOINT TEMPS	MIN. AIRFLOW
OCCUPIED COOLING	75°F	SCHEDULE
OCCUPIED HEATING	70°F	SCHEDULE
OCCUPIED COOLING - STANDBY	78°F	0
OCCUPIED HEATING - STANDBY	67°F	0
UNOCCUPIED COOLING	85°F	0
UNOCCUPIED HEATING	60°F	0

*ALL SETPOINTS SHALL BE ADJUSTABLE

*IF MULTIPLE VAV BOXES OR MULTIPLE SPACE TEMPERATURE SENSORS ARE SHOWN SERVING THE SAME SPACE, ALL VAV'S SHALL RESET THEIR RESPECTIVE HEAT/COIL OUTPUTS IN TANDEM, BASED ON THE SPACE TEMPERATURE FURTHEST FROM SETPOINT AND CONTROL TO A SINGLE SET OF HEAT/COIL SETPOINTS

2 VAV BOX CONTROL SCHEMATIC

N.T.S.



MODE	SETPOINT TEMPS
OCCUPIED HEATING	60°F
UNOCCUPIED HEATING	50°F

*ALL SETPOINTS SHALL BE ADJUSTABLE

3 UNIT HEATER CONTROL SCHEMATIC

N.T.S.

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Consultant:

Project Title:
SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location:
1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title:
CONTROL SCHEMATICS

HSR Project Number:
18061

Project Date:
FEBRUARY 2020

Drawn By:
Lescher

Key Plan:

Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

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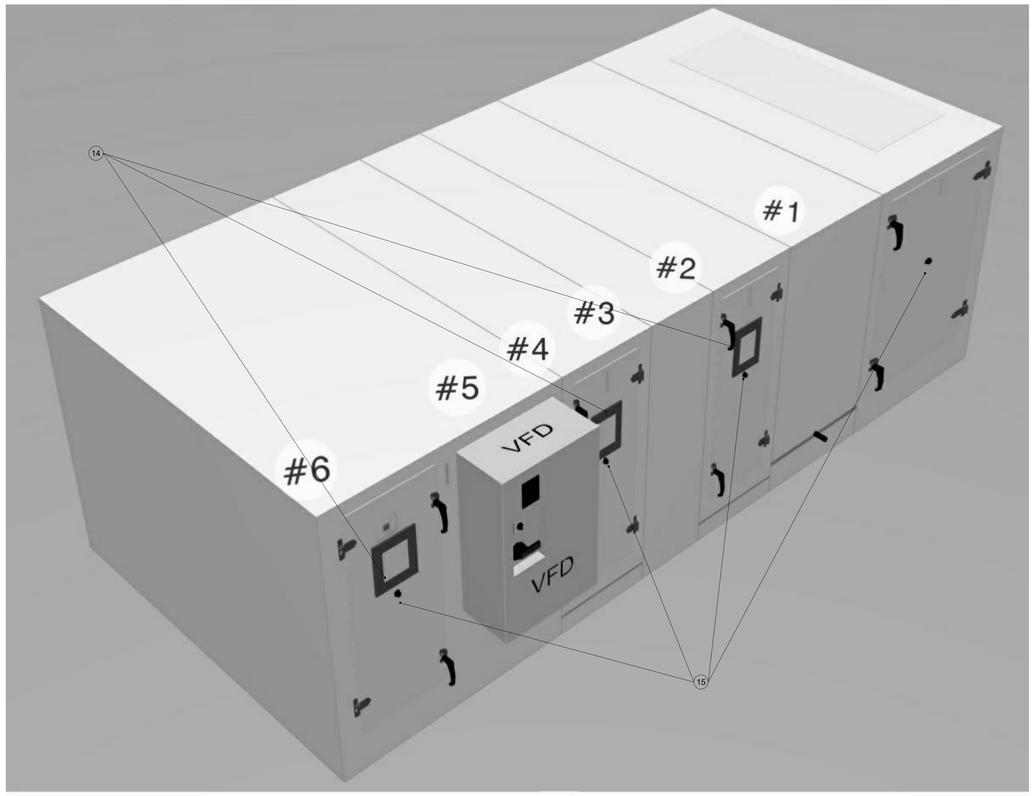
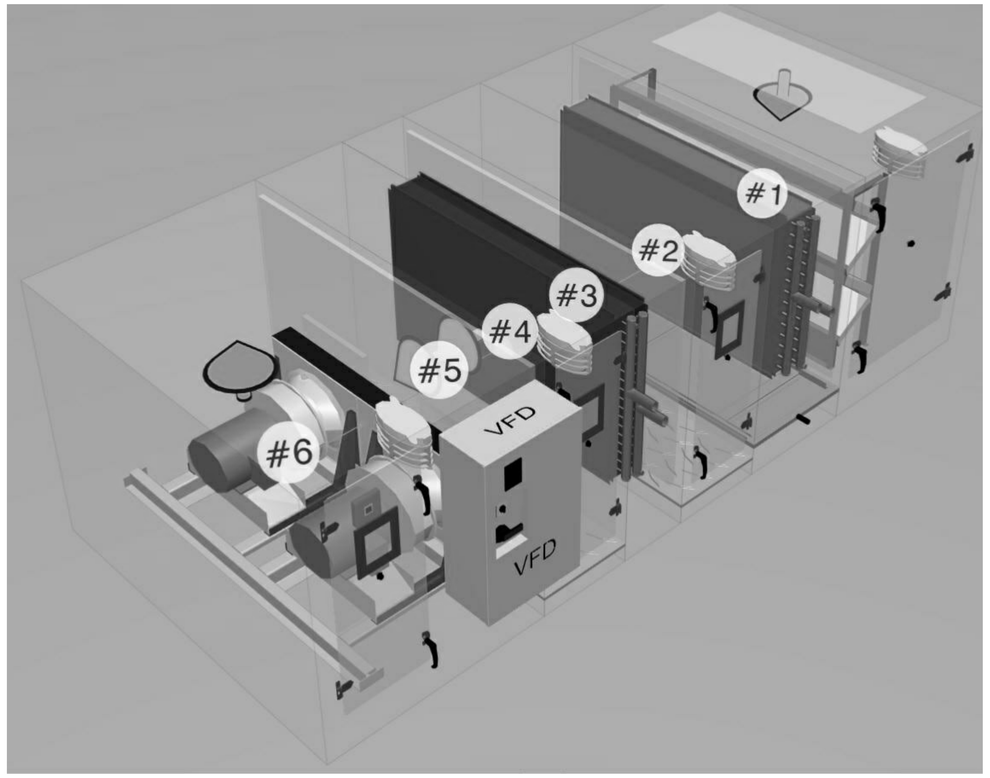
M400



AHU-2 MODULE DETAIL

Keynote Number	Keynote Description
1	AIR MIXING MODULE WITH ANGLED FILTER RACK
2	CHILLED WATER COIL MODULE WITH STAINLESS STEEL DRAIN PAN AND EXTENDED DRAIN AND VENT CONNECTION
3	ACCESS MODULE
4	HOT WATER COIL MODULE WITH EXTENDED DRAIN AND VENT CONNECTIONS
5	ACCESS MODULE
6	SUPPLY FAN ARRAY MODULE WITH INLET BELL SOUND ATTENUATORS & PERFORATED PANELS. EACH FAN TO HAVE SHAFT GROUNDING & AIRFLOW MEASUREMENT TIED INTO A SINGLE TRANSMITTER MOUNTED ON AHU EXTERIOR & TIED INTO BAS. PROVIDE BLOCKOFF PLATES FOR SERVICING.
7	SUPPLY FAN VFD PANEL. EACH FAN SHALL HAVE FACTORY WIRED VFD SIZED FOR MOTOR FLA. VFD PANEL SHALL HAVE COMMON DISCONNECT THAT IS ACCESSIBLE FROM OUTSIDE OF UNIT. FACTORY WIRED FOR SINGLE POINT FIELD CONNECTION.
8	AHU LIGHT SWITCH - FACTORY WIRED FOR SINGLE POINT FIELD CONNECTION
9	CONDENSATE CONNECTION WITH STAINLESS STEEL DRAIN PAN. TRAP CONDENSATE PER TYPICAL DETAIL.
10	6" BASERAIL
11	TOP SUPPLY AIR DISCHARGE OPENING
12	MARINE LED LIGHT - FACTORY WIRED
13	TOP MIXED AIR ENTERING OPENING
14	DOOR VIEWING WINDOW
15	TEST PORT
16	BACK RETURN AIR OPENING
17	



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Consultant:

Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: AHU-2 DETAILS

HSR Project Number: 18061

Project Date: FEBRUARY 2020

Drawn By: LESCHER

Key Plan:

Revisions:

No.	Description	Date

Graphic Scale: VARIES

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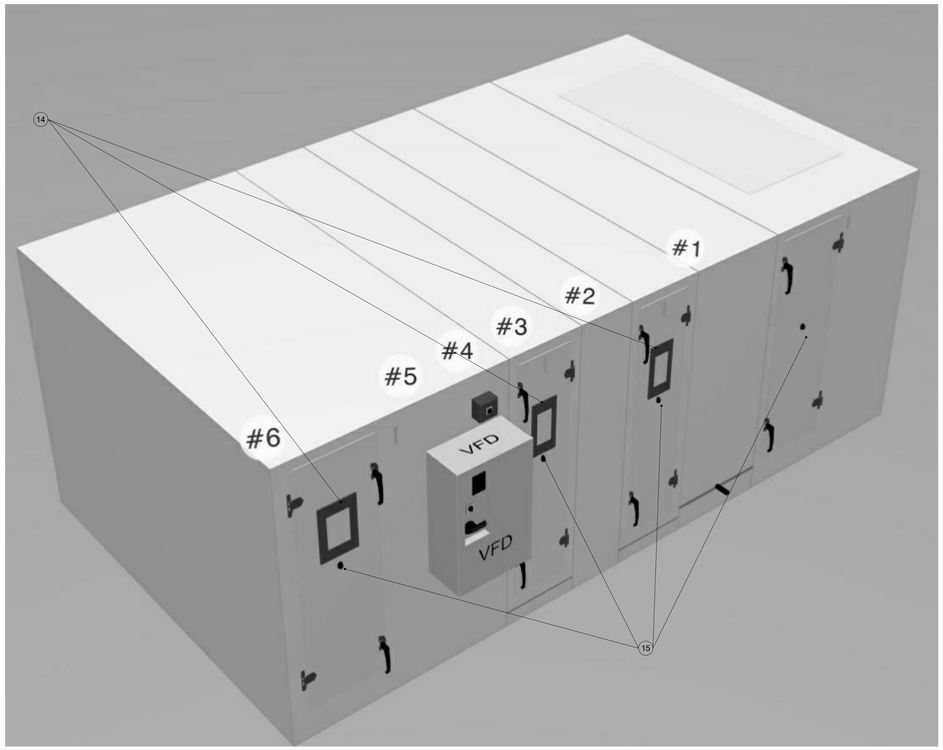
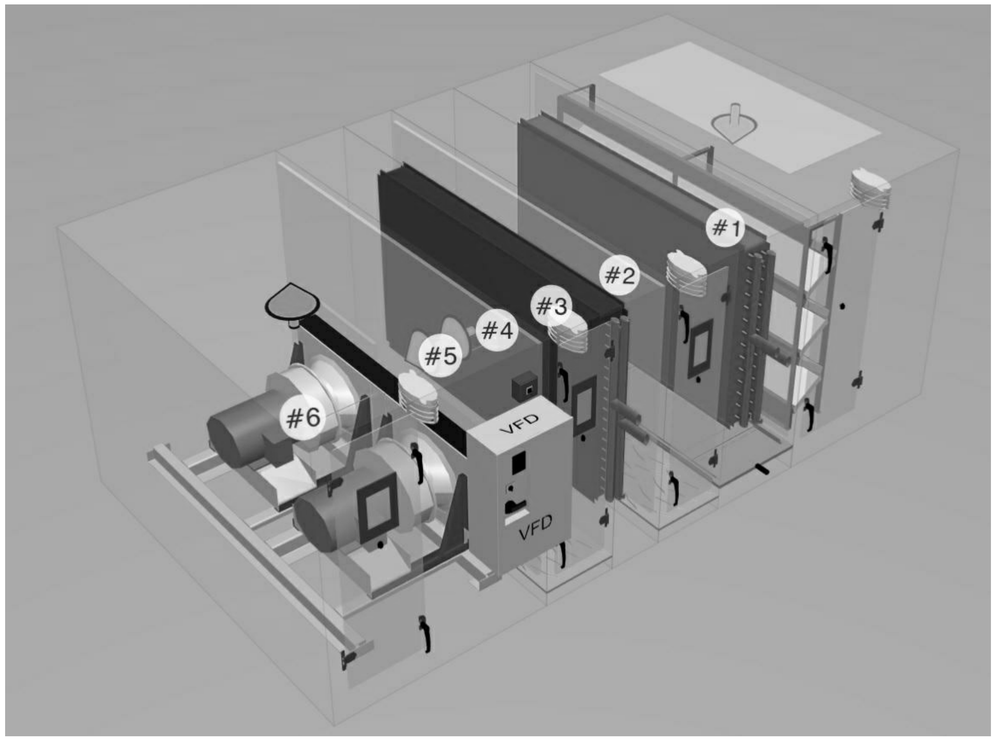
M401



AHU-3 MODULE DETAIL

Keynote Number	Keynote Description
1	AIR MIXING MODULE WITH ANGLED FILTER RACK
2	CHILLED WATER COIL MODULE WITH STAINLESS STEEL DRAIN PAN AND EXTENDED DRAIN AND VENT CONNECTION
3	ACCESS MODULE
4	HOT WATER COIL MODULE WITH EXTENDED DRAIN AND VENT CONNECTIONS
5	ACCESS MODULE
6	SUPPLY FAN ARRAY MODULE WITH INLET BELL SOUND ATTENUATORS & PERFORATED PANELS. EACH FAN TO HAVE SHAFT GROUNDING & AIRFLOW MEASUREMENT TIED INTO A SINGLE TRANSMITTER MOUNTED ON AHU EXTERIOR & TIED INTO BAS. PROVIDE BLOCKOFF PLATES FOR SERVICING.
7	SUPPLY FAN VFD PANEL. EACH FAN SHALL HAVE FACTORY WIRED VFD SIZED FOR MOTOR FLA. VFD PANEL SHALL HAVE COMMON DISCONNECT THAT IS ACCESSIBLE FROM OUTSIDE OF UNIT. FACTORY WIRED FOR SINGLE POINT FIELD CONNECTION.
8	AHU LIGHT SWITCH - FACTORY WIRED FOR SINGLE POINT FIELD CONNECTION
9	CONDENSATE CONNECTION WITH STAINLESS STEEL DRAIN PAN. TRAP CONDENSATE PER TYPICAL DETAIL.
10	6" BASERAIL
11	TOP SUPPLY AIR DISCHARGE OPENING
12	MARINE LED LIGHT - FACTORY WIRED
13	TOP MIXED AIR ENTERING OPENING
14	DOOR VIEWING WINDOW
15	TEST PORT
16	BACK RETURN AIR OPENING
17	



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Consultant:

Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: AHU-3 DETAILS

HSR Project Number: 18061

Project Date: FEBRUARY 2020

Drawn By: LESCHER

Key Plan:

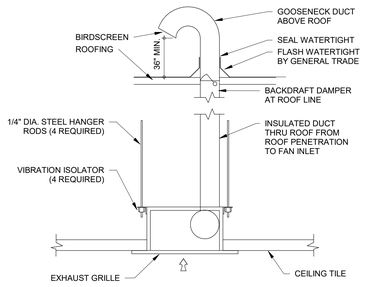
Revisions:

No.	Description	Date

Graphic Scale: VARIES

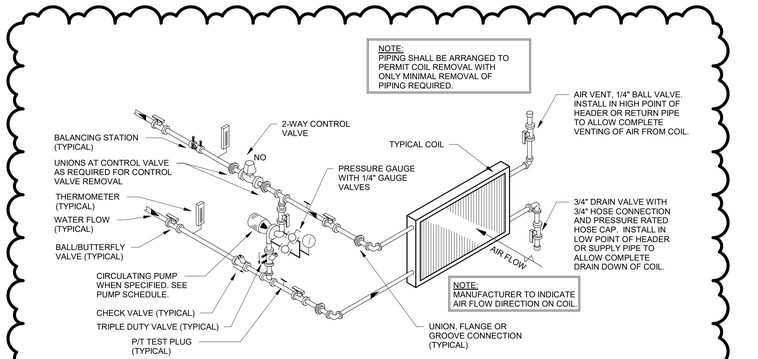
Last Update: 3/13/2020 9:06:39 AM

M402



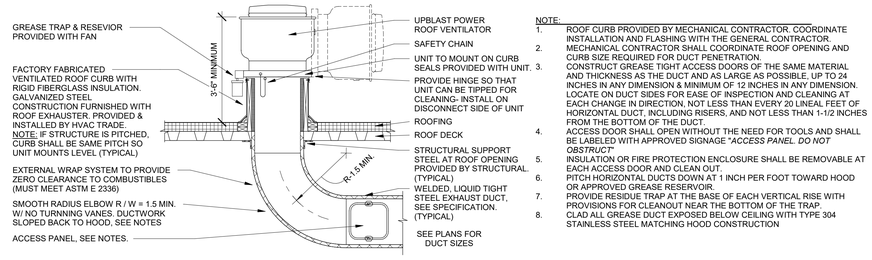
1 CEILING EXHAUST FAN DETAIL

N.T.S.



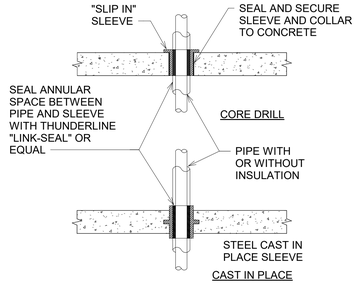
2 HOT WATER COIL DETAIL 2-WAY CIRC PUMP

N.T.S.



3 DISHWASHER EXHAUST DETAIL

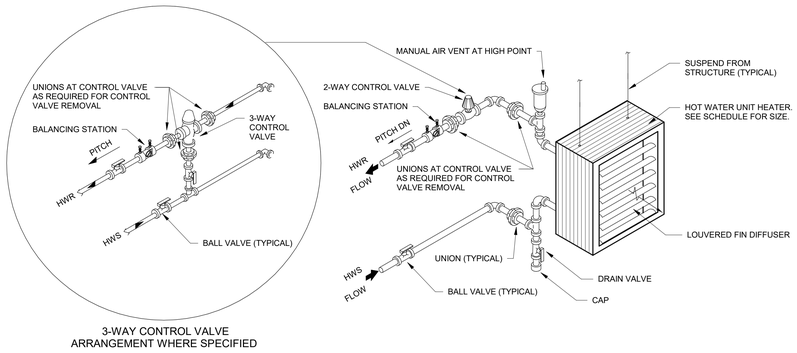
N.T.S.



NOTES:
1. TYPICAL FOR NON-INSULATE PIPE AND CONDUIT
2. FOR FLOOR PENETRACTIONS WITH FIRE RATING GREATER THAN (1) HOUR, USE THUNDERLINE "PYRO-PAC" SEALS OR EQUAL.
3. WHERE PIPING IS EXPOSED AT FINISHED FLOORS, FLUSH MOUNT SLEEVE AND PROVIDE ESCUTCHEON PLATE.

4 PIPE PENETRATION THRU CONCRETE SLAB

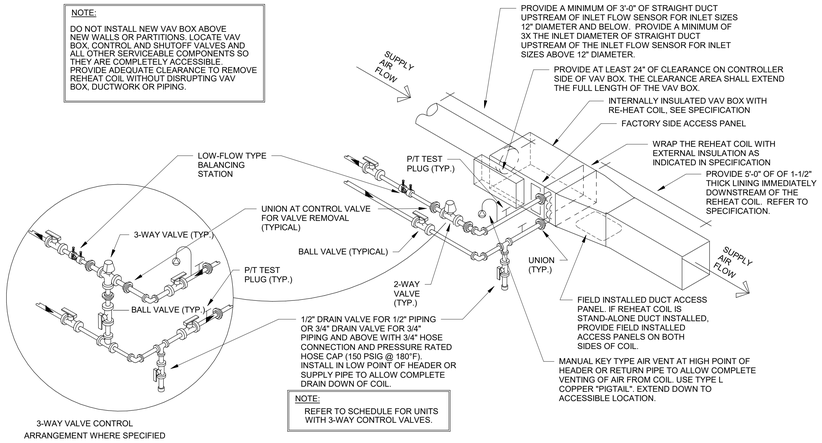
N.T.S.



3-WAY CONTROL VALVE
ARRANGEMENT WHERE SPECIFIED

5 HOT WATER UNIT HEATER DETAIL

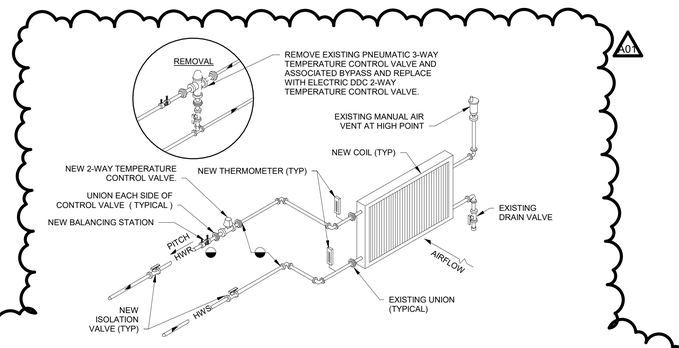
N.T.S.



3-WAY VALVE CONTROL
ARRANGEMENT WHERE SPECIFIED

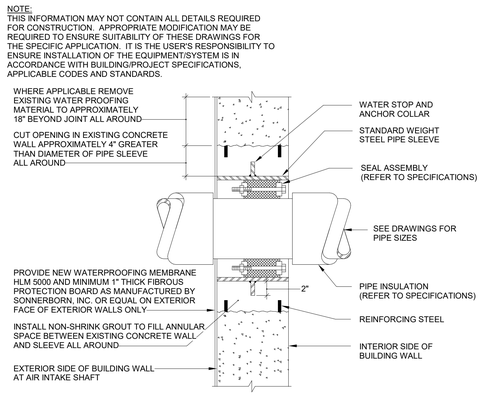
6 DETAIL @ TYPICAL TAKE-OFF TO VAV BOX

N.T.S.



7 DDC CONTROL VALVE REPLACEMENT - UNIT VENTILATOR

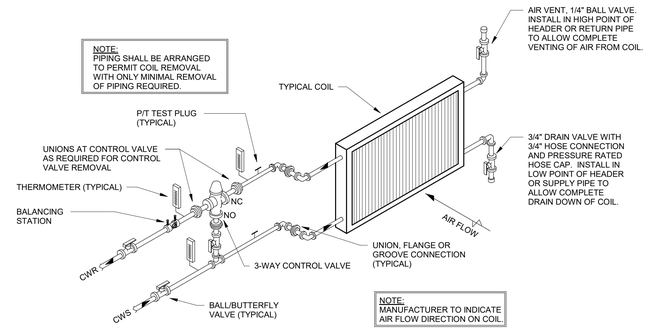
N.T.S.



NOTES:
1. SLEEVES SHALL GENERALLY BE CAST IN-PLACE DURING THE CONSTRUCTION PROCESS. WHEN NOT INSTALLED AS WALLS ARE POURED, CUT OPENING AS DEFINED ON DETAIL.
2. WHERE WATERTIGHT SLEEVES OCCUR IN A FIRE RATED WALL, CONTRACTOR SHALL PACK SLEEVE WITH 3M FIRE DAM 150 3 HOUR RATED CAULK OR EQUAL, MINIMUM 25mm DEEP. WATERTIGHT ASSEMBLY SHALL BE INSTALLED ON ACCESSIBLE SIDE OF SLEEVE INSTALLATION.

8 WATER TIGHT SLEEVE DETAIL

N.T.S.



9 CHILLED WATER COIL DETAIL 3-WAY

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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN**
HIGH SCHOOL REMODELING PH. 2

Project Location: **1001 McHUGH RD**
HOLMEN, WI 54636

Sheet Title: **HVAC DETAILS**

HSR Project Number: **18061**

Project Date: **FEBRUARY 2020**

Drawn By: **Lescher**

Key Plan:

Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale:

Last Update: **3/13/2020 8:18:13 AM**

M501

EXHAUST FANS

UNIT NO.	SERVES ROOM	LOCATION	Manufacturer	MODEL	FAN DIAMETER	SOUND LEVEL MAX SPEED	CFM	S.P. DROP INCHES W.G.	FULL LOAD AMPS	HP (VOLT/PHASE)	WEIGHT
EF-1	AUTO SHOP E111	INDOOR/WALL	GREENHECK	USF-12			1750	2.5	3	1-1/2 (460V/3PH)	105 LBS
EF-2	AUTO SHOP E111	ROOF	GREENHECK	CUBE-240XP-15			1190	2.5	3	1-1/2 (460V/3PH)	167 LBS
EF-3	AG SCIENCE LAB E114	ROOF	GREENHECK	CUE-095-VG			980	1.0	1.3	1/6 (208V/1PH)	36 LBS
EF-4	TOILET ROOMS	ROOF	GREENHECK	CUE-070-VG			150	0.25	1.3	1/15 (115V/1PH)	24 LBS
EF-5	TOILETS AND LOCKER	ROOF	GREENHECK	CUE-070-VG			205	0.3	1.3	1/15 (115V/1PH)	24 LBS
EF-6	CONCESSIONS H102	INDOOR	GREENHECK	SQ-60-D			150	0.25	-	1/40 (115V/1PH)	33 LBS

HOT WATER UNIT HEATERS

Mark	ROOM NUMBER	QUANTITY	INSTALLED MBH	TYPE	MODEL NUMBER	LOUVER FIN. DIFF.	CFM	ENTERING WATER TEMPERATURE (°F)	WATER TEMPERATURE DROP	GPM	ENTERING AIR TEMPERATURE (DRY BULB)	HORSEPOWER MOTOR / VOLT/PHASE	TEMPERATURE CONTROL	REMARKS
UH-1	RECEIVING H111	1	8.0		S-A08		245	140°F	20°F	0.80	60°F	16 W (115/1)	T-STAT	

VAV BOXES (HOT WATER REHEAT)

									COIL SIZING AND CAPACITY DATA						
Mark	SERVES ROOM	MODEL NO.	MAX CFM	MINIMUM COOLING CFM	MINIMUM HEATING CFM	APD COOLINIG AIRFLOW (IN H20)	INLET DUCT SIZE	NC LEVEL (BOX) RADIATED	COIL TYPE	MAX GPM	COIL PRESSURE DROP	ENTERING HOT WATER TEMPERATURE	ENTERING AIR TEMPERATURE (DRY BULB)	TOTAL MBH INSTALLED	REMARKS
VAV-1	AG CLASSROOM E115	VCWF12	1470	505	505	0.49	12"Ø	27	2-ROW	1.46	0.13	140°F	55°F	19.81	2-WAY VALVE
VAV-2	OFFICE G103	VCWF08	100	60	100	0.20	6"Ø	24	1-ROW	0.50	0.51	140°F	55°F	3.99	2-WAY VALVE
VAV-3	REFER TO PLAN M103	VCWF08	415	125	130	0.11	8"Ø	21	1-ROW	0.50	0.68	140°F	55°F	5.16	2-WAY VALVE
VAV-4	CONFERENCE G101	VCWF06	250	75	100	0.12	6"Ø	26	1-ROW	0.50	0.51	140°F	55°F	3.99	2-WAY VALVE
VAV-5	COMMONS H105	VCWF16	2600	765	850	0.48	16"Ø	34	2-ROW	2.00	0.20	140°F	55°F	32.89	2-WAY VALVE
VAV-6	COMMONS H105	VCWF16	2040	620	825	0.31	16"Ø	30	2-ROW	2.00	0.20	140°F	55°F	32.53	2-WAY VALVE
VAV-7	COMMONS H105	VCWF16	2040	620	825	0.31	16"Ø	30	2-ROW	2.00	0.20	140°F	55°F	32.53	2-WAY VALVE
VAV-8	REFER TO PLAN M104	VCWF10	1110	340	400	0.45	10"Ø	29	2-ROW	1.00	0.18	140°F	55°F	15.43	2-WAY VALVE
VAV-9	FLEXIBLE LEARNING H110	VCWF10	1050	315	315	0.41	10"Ø	27	2-ROW	0.75	0.11	140°F	55°F	12.23	2-WAY VALVE
VAV-10	RECEIVING H111	VCWF08	670	205	300	0.43	8"Ø	25	2-ROW	1.26	0.14	140°F	55°F	11.83	2-WAY VALVE
VAV-11	REFER TO PLAN M104	VCWF08	680	205	215	0.42	8"Ø	26	2-ROW	0.75	0.05	140°F	55°F	8.21	3-WAY VALVE

AIR HANDLING UNIT SCHEDULE

	LOCATION							SUPPLY FAN									FILTERS				CHILLED WATER COOLING COIL																HOT WATER HEATING COIL													ELECTRICAL							
															MOTOR		PRE-FILTER				AIRSIDE									CHILLED WATER							AIRSIDE						HOT WATER						CIRCUIT 1 - SUPPLY FANS				CIRCUIT 2 - LIGHTS			
UNIT NO.	ROOM	NUMBER	MANUFACTURER	MODEL NO.	TYPE	ARRANGEMENT	OUTDOOR AIRFLOW	AIRFLOW	TYPE	EXT. STATIC PRESS.	TOTAL STATIC PRESS.	FAN BRAKE POWER	FAN RPM	DRIVE TYPE	QTY.	POWER PER FAN	TYPE	AREA	EFFICIENCY	PRESSURE DROP MID-LIFE	TOTAL CLG. CAP.	SENSIBLE CLG. CAP.	EAT DB	EAT WB	LAT DB	LAT WB	FACE VELOCITY	PRESS. DROP	ROWS	FLOW	EWT	LWT	PRESS. DROP	GLYCOL TYPE	GLYCOL	HEATING CAP.	EAT DB	LAT DB	FACE VELOCITY	PRESS. DROP	ROWS	FLOW	EWT	LWT	PRESS. DROP	GLYCOL TYPE	UNIT WEIGHT	MCA	MOP	VOLTAGE	PHASE	MCA	VOLTAGE	PHASE	REMARKS
AHU-2			Trane	CSAA017		HORIZONTAL	1500 CFM	7200 CFM		1.5	3.18	5.634	2382	DIRECT	2	10 HP	MERV 8	28.89		0.556	270.05 MBH	198.42 MBH	80°F	68°F	55°F	55°F	428 FPM	0.685	8	45.7 GPM	45°F	58°F	6.37	PROPYLENE	35%	351.38 MBH	50°F	95°F	461 FPM	0.254	4	14 GPM	140°F	90°F	0.68	NONE	2798 LBS	31.5	45	460	3	3.26	115	1	
AHU-3			Trane	CSAA035						2.5	4.27	14.63	1838	DIRECT	2	15 HP	MERV 8	63.33		0.548	1180.0 MBH	641.2 MBH	95°F	78°F	55°F	55°F	429 FPM	0.833	8	200 GPM	45°F	58°F	11.8	PROPYLENE	35%	1795.9 MBH	-20°F	95°F	429 FPM	0.238	4	90 GPM	140°F	100°F	4.09	NONE	6065 LBS	47.25	60	460	3	3.26	115	1	

AHU-2

Unit Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K
Supply top:	82 dB	79 dB	85 dB	82 dB	77 dB	75 dB	72 dB	64 dB
Return:	70 dB	68 dB	77 dB	73 dB	68 dB	68 dB	62 dB	53 dB
Casing:	77 dB	75 dB	79 dB	77 dB	74 dB	52 dB	47 dB	35 dB

AHU-3

Unit Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K
Supply top:	82 dB	80 dB	86 dB	84 dB	77 dB	72 dB	68 dB	64 dB
Return:	71 dB	74 dB	83 dB	82 dB	71 dB	69 dB	62 dB	58 dB
Casing:	81 dB	79 dB	81 dB	79 dB	77 dB	69 dB	52 dB	43 dB

A01

UNIT VENTILATORS

					HEATING COIL					COOLING COIL				ELECTRICAL		
Mark	ROOM NUMBER	QUANTITY	MODEL NUMBER	CFM	ENTERING AIR TEMPERATURE (DRY BULB)	ENTERING WATER TEMPERATURE	MBH	GPM	FLUID TYPE	ENTERING AIR TEMPERATURE (WET BULB)	ENTERING WATER TEMPERATURE (°F)	GPM	FLUID TYPE	MOTOR HORSEPOWER	VOLT / PHASE	REMARKS
UV-1	E109	1	HUVC2002	2000	60°F	140°F	90.95	5.0	WATER	NONE	NONE	NONE	NONE	1.0	208/60/1	1, 2, 4
UV-2	E111	1	HUVC2002	2000	60°F	140°F	101.36	8.0	WATER	NONE	NONE	NONE	NONE	1.0	208/60/1	1, 2, 4
UV-3	E111	1	HUVC2002	2000	60°F	140°F	101.36	8.0	WATER	NONE	NONE	NONE	NONE	1.0	208/60/1	1, 2, 4
UV-4	E114	1	HUVC2002	2000	60°F	140°F	101.36	8.0	WATER	80°F	45°F	3.40	PROPYLENE 35%	1.0	208/60/1	1, 2, 3, 4
UV-5	E114	1	HUVC2002	2000	60°F	140°F	101.36	8.0	WATER	80°F	45°F	3.40	PROPYLENE 35%	1.0	208/60/1	1, 2, 3, 4
UV-6	E112	1	HUVC2002	2000	60°F	140°F	98.78	7.0	WATER	NONE	NONE	NONE	NONE	1.0	208/60/1	1, 2, 4
UV-7	E112	1	HUVC2002	2000	60°F	140°F	98.78	7.0	WATER	NONE	NONE	NONE	NONE	1.0	208/60/1	1, 2, 4
UV-8	E112	1	HUVC2002	2000	60°F	140°F	98.78	7.0	WATER	NONE	NONE	NONE	NONE	1.0	208/60/1	1, 2, 4

REMARKS:
1. SELECTIONS BASED OFF PRODUCT BY TRANE.
2. UNIT VENTILATORS TO BE HORIZONTAL CONFIGURATION WITH SAFETY CHAIN INSTALL ON ACCESS PANELS.
3. UNIT VENTILATORS SHALL HAVE CHILLED WATER COILS THAT ARE CAPPED FOR FUTURE CONNECTION.
4. UNIT VENTILATORS SHALL BE TIED INTO BAS. ALL EXISTING PNEUMATIC COMPONENTS SHALL BE CONVERTED TO DDC ACTUATION.

A01

A01

AIR DISTRIBUTION DEVICES

UNIT NO.	SYSEM CLASSIFICATION	SIZES	LOCATION	DAMPER	INLET SIZE	MODEL NUMBER	MOUNTING	COMMENTS
G-1	Supply Air	24"x24"	CEILING	-	6"Ø	SERIES PLQ 4-WAY	LAY-IN	1
G-2	Supply Air		CEILING	-	8"Ø	SERIES PLQ 4-WAY	LAY-IN	1
G-3	Supply Air	24"x24"	CEILING	-	10"Ø	SERIES PLQ 4-WAY	LAY-IN	1
G-4	Supply Air	24"x24"	CEILING	-	12"Ø	SERIES PLQ 4-WAY	LAY-IN	1
G-5	Supply Air	60"	CEILING	-	12"Ø	DFL-25-1	SURFACE MOUNT	1 & 2
G-6	Supply Air	10"x10"	SIDEWALL	OBD	8"x8"	580H 3/4" SINGLE DEFLECT	SCREW/DUCT	1
G-7	Supply Air	14"x6"	DUCT	-	14"x6"	DMGDR	DUCT MOUNTED	1
G-8	Return Air	24"x24"	CEILING	-	22"x22"	S80	SURFACE / LAY-IN	1
G-9	Return Air	24"x6"	CEILING	-	22"X4"	EGC-5 1/2" EGG CRATE	LAY-IN	1
G-10	Return Air	24"x12"	CEILING	-	22"x10"	EGC-5 1/2" EGG CRATE	LAY-IN	1
G-11	Return Air	24"x14"	CEILING	-	22"x12"	S80H 3/4" 35 DEGREE FIXED DEFLECT	LAY-IN / SCREW	1
G-12	Exhaust Air	8"x8"	CEILING	-	6"x6"	S80H	LAY-IN	1
G-13	Return Air	24"x6"	CEILING	-	22"x4"	S80H 3/4" 35 DEGREE FIXED DEFLECT	LAY-IN	1

REMARKS:
1. SELECTIONS BASED OFF PRODUCT BY KRUEGER.
2. LINEAR SLOT DIFFUSER TO BE PRIME COATED. DIFFUSER COLOR TO BE COORDINATED WITH USG PARALINE LINEAR METAL SYSTEM.

A01

CIRCULATING PUMP SCHEDULE

	LOCATION					PUMP								FLUID PROPERTIES			ELECTRICAL		REFERENCE	
											MOTOR									
UNIT NO.	ROOM	NUMBER	MANUFACTURER	MODEL NO.	SYSTEM	FLOW	TYPE	HEAD	PUMP EFFICIENCY	IMPELLER DIA.	QUANTITY	POWER	RPM	TYPE	GLYCOL %	UNIT WEIGHT	VOLTAGE	PHASE	DETAIL NO.	REMARKS
HCP-2			Grundfos	MAGNA3 32-60 F	HOT WATER	14 GPM	Canned rotor circulator pump	5 ftH2O	0.0%		1	0.14 hp	0	WATER	0	17.30 lbf	115 V	1	2M501	
HCP-3			Grundfos	MAGNA3 50-80 F	HOT WATER	90 GPM	Canned rotor circulator pump	10 ftH2O	0.0%		1	0.46 hp	0	WATER	0	45.10 lbf	115 V	1	2M501	

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Consultant:

Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODELING PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: HVAC SCHEDULES

HSR Project Number: 18061

Project Date: FEBRUARY 2020

Drawn By: Lescher

Key Plan:

Revisions:

No.	Description	Date
A01	Addendum 1	3/13/2020

Graphic Scale: VARIES

Last Update: 3/13/2020 8:18:19 AM

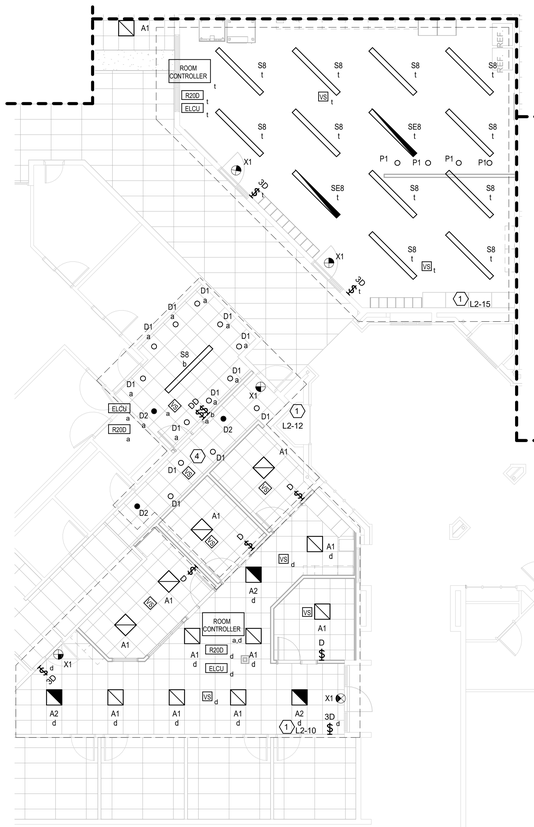
M600

GENERAL NOTES :

A	PROVIDE GROUND CONDUCTOR IN ALL RACEWAYS.
B	PROVIDE FIRE STOPPING AND SMOKE DRAFT STOPPING AT ALL CONDUIT PENETRATIONS. REFER TO SPECIFICATION SECTION 07 84 00 FOR FIRE RESISTIVE AND NON-FIRE RESISTIVE ASSEMBLIES.
C	THE WORD "PROVIDE" MEANS TO FURNISH AND INSTALL
D	CIRCUIT NUMBERS INDICATED ON DRAWINGS ARE FOR REFERENCE. ELECTRICAL CONTRACTOR TO ARRANGE BRANCH CIRCUITS AS REQUIRED FOR WIRING AND LOAD BALANCING. INDICATE ACTUAL PANELBOARD CIRCUIT NUMBERS ON AS-BUILT DRAWINGS.
E	SEE ARCHITECTURAL SHEETS FOR RELEVANT INTERIOR ELEVATIONS, SECTIONS AND MISCELLANEOUS BUILDING INFORMATION REQUIRED TO COMPLETE THE ELECTRICAL INSTALLATION.
F	NOTE: SEE SHEET E700 FOR LOW VOLTAGE LIGHTING RELAY CONTROL SCHEDULES.
G	CONNECT BATTERY EXIT SIGNS AND EGRESS LIGHTING TO ADJACENT EMERGENCY LIGHTING CIRCUIT AHEAD OF ALL SWITCHING.
H	ALL RECESSED FIXTURES WHICH PENETRATE THE BUILDING ENVELOPE (FROM HEATED SPACE TO A NON HEATED SPACE) SHALL BE PROPERLY SEALED OR BOXED OUT TO ELIMINATE AIR PASSING THROUGH TO ANOTHER SPACE.
I	PROVIDE AUXILIARY RELAY FOR ALL OCCUPANCY SENSOR FOR VENTILATION/EXHAUST FANS. REFER TO MECHANICAL.
J	PROVIDE A CONTINUOUS LENS FOR ALL RECTANGULAR FIXTURES.

KEY NOTES : (#)

1.	EXISTING CIRCUIT. PER 1993 AND 1999 PLANS E.C. TO FIELD VARIFY.
2.	REPLACE FIXTURES THIS AREA WITH UPDATED FIXTURE AS NOTED.
3.	PANEL LOCATED IN MECHANICAL MEZZANINE.
4.	PRESERVE CIRCUIT AND CONTROLS THIS AREA. UNLESS NOTED OTHERWISE.
5.	EXTEND LIGHTING CONTROLS AND CIRCUIT FROM HALLWAY THIS AREA.



1 LIGHTING PLAN SEGMENT 'G'

1/8" = 1'-0"

PROJECT NORTH TRUE NORTH

GENERAL NOTES :

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H	ALL 20 AMP, 125 AND 250 VOLT NONLOCKING TYPE RECEPTACLE SHALL BE LISTED TAMPER-RESISTANT RECEPTACLE.
I	ALL DATA OUTLETS 2 PORT CAT 6 RAN TO DATA RACK. UNLESS OTHERWISE NOTED WITH "PP" POINT TO POINT.
J	ALL SECURITY TO BE CONTRACTED/ CORRIDATED BY OWNER.
K	E.C. TO ROUGH IN ALL DATA AND SECURITY TO INCLUDE CONDUIT RUNS AND BACK BOXES. ALL WIRING RUNS AND DEVICES TO BE PROVIDED BY E.C.
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M	ALL HVAC MOTORS BEING REPLACED ONE FOR ONE REFER TO MECHANICAL PLANS. REUSE CIRCUIT AND CONTROLS UNLESS NOTED OTHERWISE. MODIFY AS NEEDED.

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1.	FIELD VERIFY LOCATION AND PLACEMENT WITH OWNER.
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5.	CIRCUIT THIS AREA TO NEW K1 ACCORDINGLY.
6.	UPDATE AND CONNECT TO EXISTING FIRE ALARM SYSTEM.
7.	POINT TO POINT SYSTEM WITH NETWORK ACCESS.
8.	EXISTING AV CONTROL TO BE LOWERED 46" AFF AND PUT IN A RECESSED ENCLOSURE.
9.	ALL SPEAKER TO BE CEILING MOUNTED UNLESS NOTED OTHERWISE. (A - PUBLIC ADDRESS (TANNOY CVS6) B- LOCAL AUDIO(QSC MODEL AD-C6T WITH 10' SERVICE LOOP AT EACH) TAPPED AT 70V, C- LOCAL AUDIO KITCHEN (TANNOY CVS6)) E.C. TO PROVIDE DEVICES UNLESS NOTED OTHERWISE.
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12.	REINSTALL THEATRE PROJECTION AND POWER SCREEN SYSTEM AS NOTED.
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14.	TYP . 108" AFF (1) SAMSUNG QND-6012R
15.	FLOOR MOUNTED DEVICES WITH FLUSH MOUNTED WET LOCATION ENCLOSURE THIS AREA.
16.	E.C. TO PROVIDE 30' EXTRA CAT6 ON THE RUN TO THIS DEVICE COILED AND SECURED FOR FUTURE RELOCATION.
17.	EXISTING WASH AREA FAN TO BE REINSTALLED FROM OLD WASH AREA. PRESERVE CIRCUIT , CONTROLS AND EXTEND.
18.	NEW CIRCUITS TO BE FEED FROM PANEL R4R FOR HVAC MOTORS/LOADS AS NOTED.
19.	ALL PA, AUDIO AND VIDEO CABLING TO TERMINATE IN H103 FOR THIS SHEET VIEW.
20.	REFER TO E701 (6) FOR ROUGH IN DETAILS.
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2 POWER PLAN SEGMENT 'G'

1/8" = 1'-0"

PROJECT NORTH TRUE NORTH

ARCHITECTURE
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Consultant:

Project Title: **SCHOOL DISTRICT OF HOLMEN HIGH SCHOOL REMODEL PH. 2**

Project Location: **1001 McHUGH RD HOLMEN, WI 54636**

Sheet Title: **PLAN SEGMENT 'G'**

HSR Project Number: **18061**

Project Date: **FEBUARY 2020**

Drawn By: **C. CRANDALL**

Key Plan:

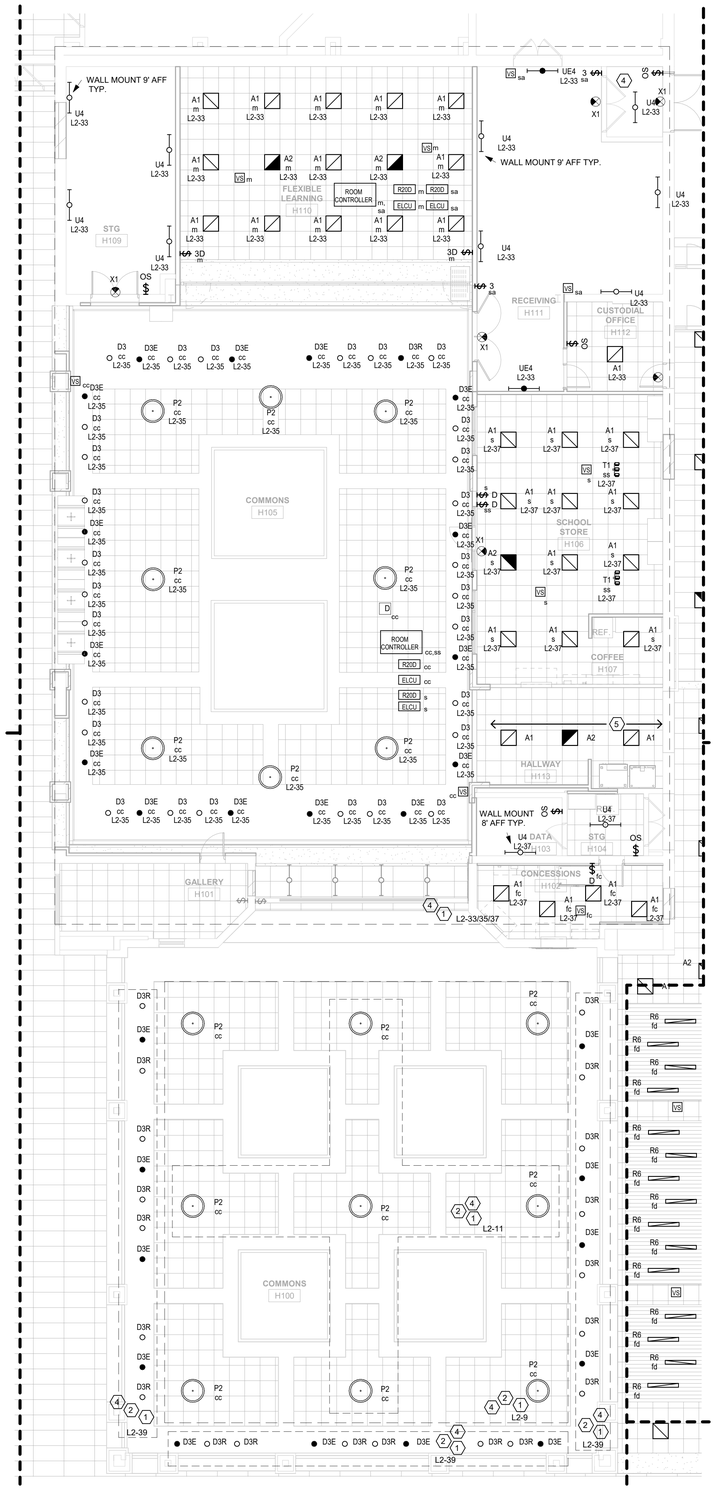
Revisions:

No.	Description	Date
AD01	AD01	2020MAR

Graphic Scale: **VARIES**

Last Update: **3/13/2020 9:53:06 AM**

E102



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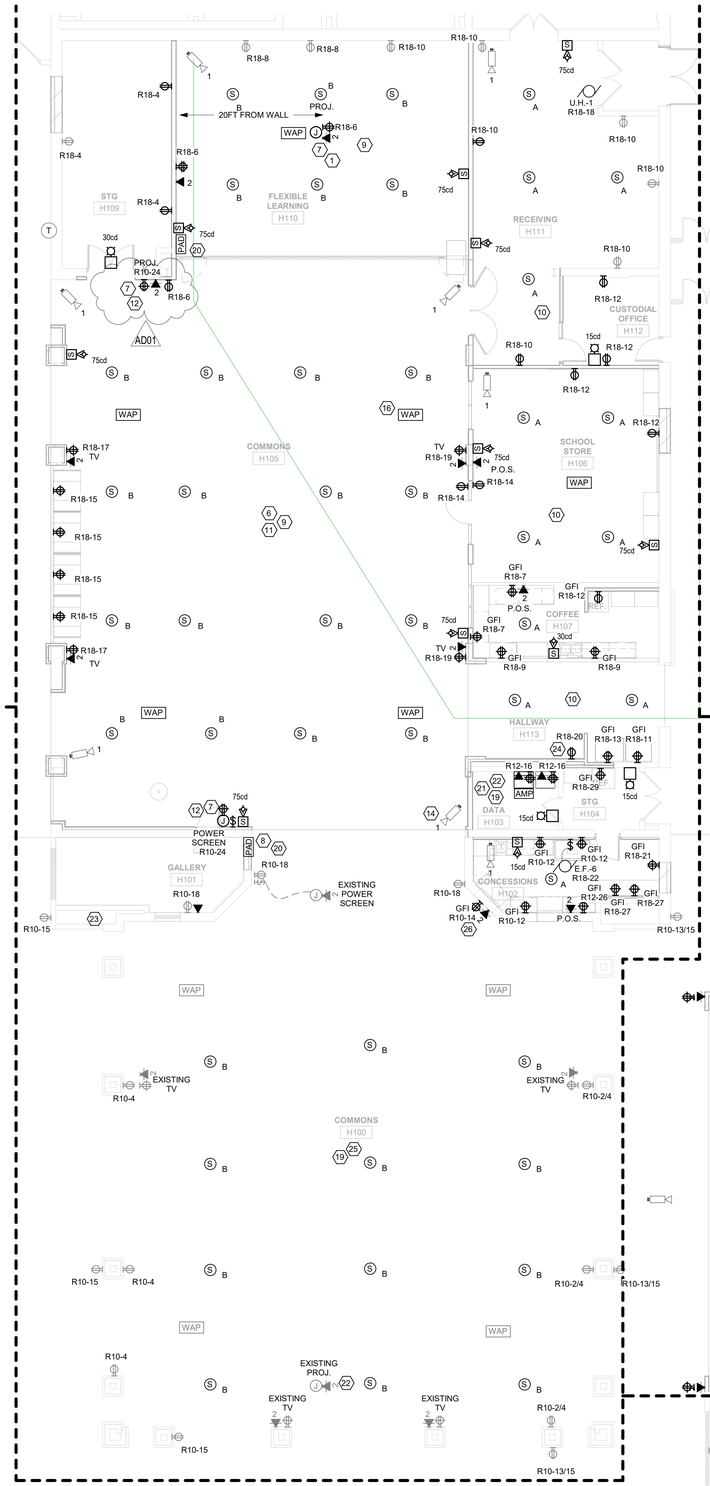

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LOW VOLTAGE CABLING SHEDULE

DEVICE	CABLING	TERMINATE	REMARKS
TELEVISION (TV)	(1) CAT6 SHIELDED + (1) CAT6	H103	3,4
SPEAKERS (S)	(1) 16/2	H103	2
TOUCH PAD (TP)	(1) CAT6	H103	3
VIDEO INPUT (V)	(1) CAT6 SHIELDED	H103	4
BLUETOOTH (BT)	(1) CAT6 SHIELDED	H103	4
XLR	(2) 22/2	H103	1
PROJ.	(1) 22/2 + (1) CAT6 SHEILDED + (1) CAT6	H103	1,3,4
PROJ. SCREEN	(1) 22/2	H103	1
EX. SUB	(1) 12/2	H103	5
EX. SPEAKERS	(1) 16/2	H103	2
WAP	(1) CAT6 SHIELDED	H103	4

REMARKS

1. WEST PENN PLENUM 25291 OR SIMILAR.
2. WEST PENN PLENUM RATED 25225 OR SIMILAR. PROVIDE 10' SERVICE LOOP AT EACH DEVICE.
3. WEST PENN PLENUM RATED 254246 OR SIMILAR.
4. WEST PENN PLENUM RATED 254246F OR SIMILAR.
5. WEST PENN PLENUM RATED 25227 OR SIMILAR.

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Project Title: SCHOOL DISTRICT OF HOLMEN HIGH SCHOOL REMODEL PH. 2

Project Location: 1001 McHUGH RD HOLMEN, WI 54636

Sheet Title: PLAN SEGMENT 'H'

HSR Project Number: 18061

Project Date: FEBUARY 2020

Drawn By: C. CRANDALL

Key Plan:

Revisions:

No.	Description	Date
AD01	AD01	2020MAR

Graphic Scale: VARIES

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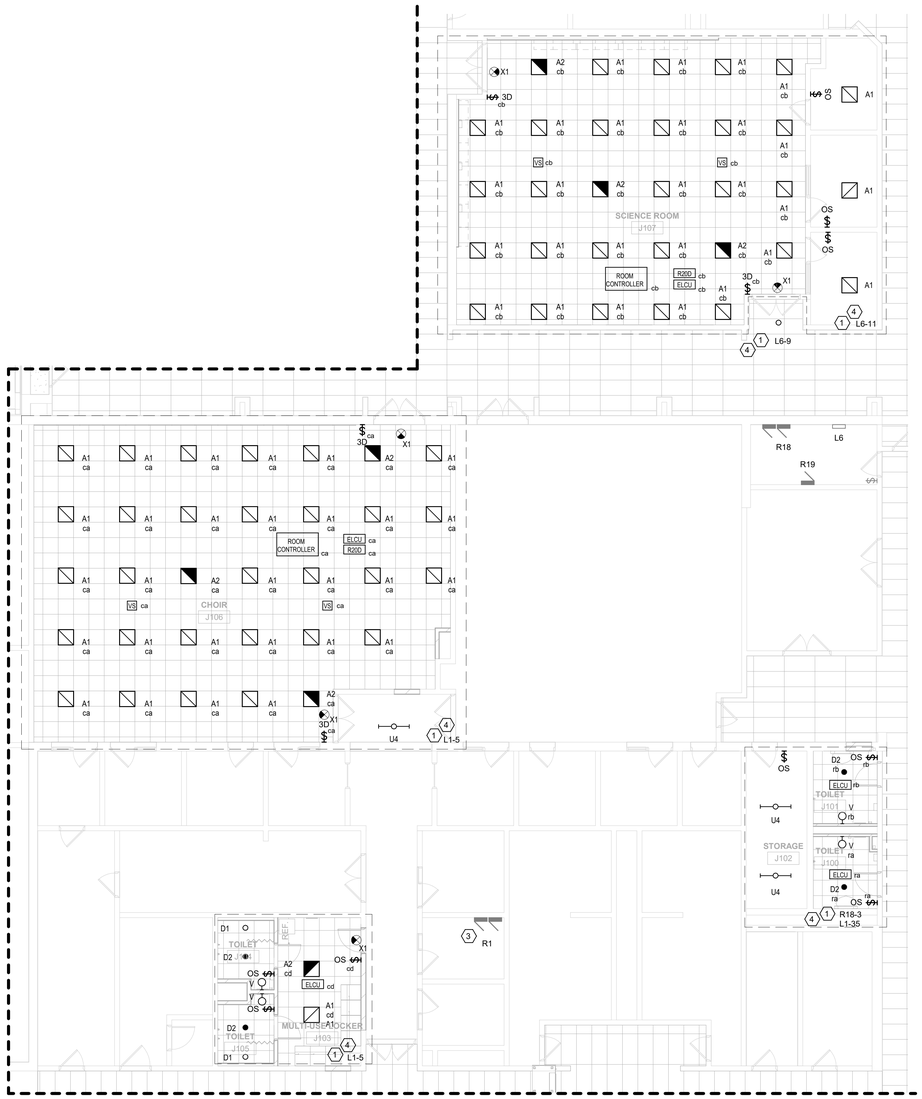
E103



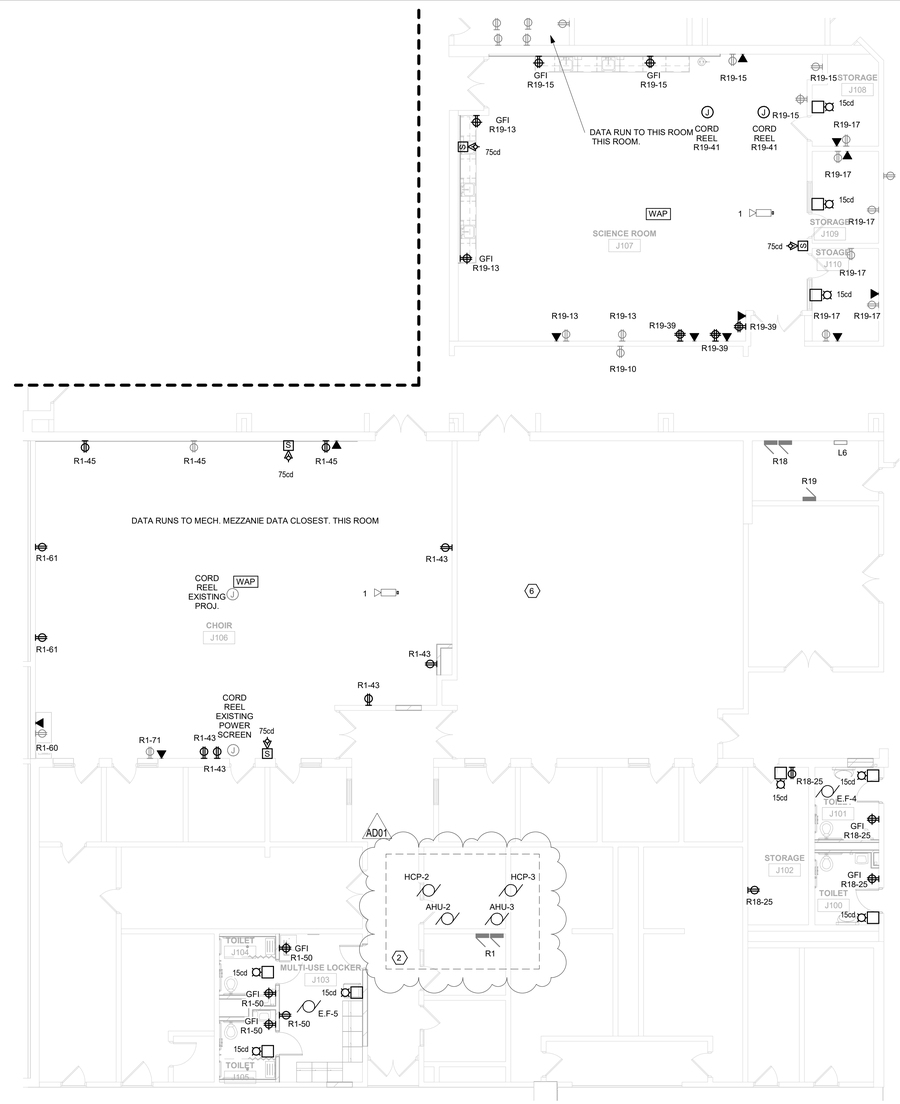
1 LIGHTING PLAN SEGMENT 'J'

1/8" = 1'-0"

PROJECT NORTH TRUE NORTH

GENERAL NOTES :	
A	PROVIDE GROUND CONDUCTOR IN ALL RACEWAYS.
B	PROVIDE FIRE STOPPING AND SMOKE DRAFT STOPPING AT ALL CONDUIT PENETRATIONS. REFER TO SPECIFICATION SECTION 07 84 00 FOR FIRE RESISTIVE AND NON-FIRE RESISTIVE ASSEMBLIES.
C	THE WORD "PROVIDE" MEANS TO FURNISH AND INSTALL
D	CIRCUIT NUMBERS INDICATED ON DRAWINGS ARE FOR REFERENCE. ELECTRICAL CONTRACTOR TO ARRANGE BRANCH CIRCUITS AS REQUIRED FOR WIRING AND LOAD BALANCING. INDICATE ACTUAL PANELBOARD CIRCUIT NUMBERS ON AS-BUILT DRAWINGS.
E	SEE ARCHITECTURAL SHEETS FOR RELEVANT INTERIOR ELEVATIONS, SECTIONS AND MISCELLANEOUS BUILDING INFORMATION REQUIRED TO COMPLETE THE ELECTRICAL INSTALLATION.
F	NOTE: SEE SHEET E700 FOR LOW VOLTAGE LIGHTING RELAY CONTROL SCHEDULES.
G	CONNECT BATTERY EXIT SIGNS AND EGRESS LIGHTING TO ADJACENT EMERGENCY LIGHTING CIRCUIT AHEAD OF ALL SWITCHING.
H	ALL RECESSED FIXTURES WHICH PENETRATE THE BUILDING ENVELOPE (FROM HEATED SPACE TO A NON HEATED SPACE) SHALL BE PROPERLY SEALED OR BOXED OUT TO ELIMINATE AIR PASSING THROUGH TO ANOTHER SPACE.
I	PROVIDE AUXILIARY RELAY FOR ALL OCCUPANCY SENSOR FOR VENTILATION/EXHAUST FANS. REFER TO MECHANICAL.
J	PROVIDE A CONTINUOUS LENS FOR ALL RECTANGULAR FIXTURES.

KEY NOTES : (#)	
1.	EXISTING CIRCUIT. PER 1993 AND 1999 PLANS E.C. TO FIELD VARIFY.
2.	REPLACE FIXTURES THIS AREA WITH UPDATED FIXTURE AS NOTED.
3.	PANEL LOCATED IN MECHANICAL MEZZANINE.
4.	PRESERVE CIRCUIT AND CONTROLS THIS AREA. UNLESS NOTED OTHERWISE.
5.	EXTEND LIGHTING CONTROLS AND CIRCUIT FROM HALLWAY THIS AREA.



2 POWER PLAN SEGMENT 'J'

1/8" = 1'-0"

PROJECT NORTH TRUE NORTH

POWER KEY NOTES : (#)	
1.	FIELD VERIFY LOCATION AND PLACEMENT WITH OWNER.
2.	PANEL LOCATED IN MECH MEZZANIE.
3.	PROVIDED DEDICATED CIRCUIT.
4.	REFER TO FOOD SERVICE PLANS FOR LOCATIONS, ADDITIONAL EQUIPMENT REQUIREMENTS, AND CONNECTIONS.
5.	CIRCUIT THIS AREA TO NEW K1 ACCORDINGLY.
6.	UPDATE AND CONNECT TO EXISTING FIRE ALARM SYSTEM.
7.	POINT TO POINT SYSTEM WITH NETWORK ACCESS.
8.	EXISTING AV CONTROL TO BE LOWERED 46" AFF AND PUT IN A RECESSED ENCLOSURE.
9.	ALL SPEAKER TO BE CEILING MOUNTED UNLESS NOTED OTHERWISE. (A - PUBLIC ADDRESS (TANNOY CVS6) B-LOCAL AUDIO/QSC MODEL AD-C6T WITH 10' SERVICE LOOP AT EACH) TAPPED AT 70V, C- LOCAL AUDIO KITCHEN (TANNOY CVS6)) E.C. TO PROVIDE DEVICES UNLESS NOTED OTHERWISE.
10.	MODIFY AND CONNECT PA TO EXISTING PUBLIC ADDRESS SYSTEM ACCORDINGLY.
11.	TV's AND PROJECTION TO BE CONNECTED TO LOCAL AUDIO SYSTEM.
12.	REINSTALL THEATRE PROJECTION AND POWER SCREEN SYSTEM AS NOTED.
13.	MOUNT EXISTING AMP 72" AFF. FOR KITCHEN LOCAL AUDIO (SPEAKERS "C") OWNER PROVIDE (3) SPEAKERS AND E.C TO PROVIDE (3) SPEAKERS TAPPED AT 60WATTS. INSTALL SINGLE GANG BOX 50" AFF WITH ATI AS-100 INLINE VOLUME CONTROLLER.
14.	TYP . 108" AFF (1) SAMSUNG QND-8012R
15.	FLOOR MOUNTED DEVICES WITH FLUSH MOUNTED WET LOCATION ENCLOSURE THIS AREA.
16.	E.C. TO PROVIDE 30' EXTRA CAT6 ON THE RUN TO THIS DEVICE COILED AND SECURED FOR FUTURE RELOCATION.
17.	EXISTING WASH AREA FAN TO BE REINSTALLED FROM OLD WASH AREA. PRESERVE CIRCUIT , CONTROLS AND EXTEND.
18.	NEW CIRCUITS TO BE FEED FROM PANEL R4R FOR HVAC MOTORS/LOADS AS NOTED.
19.	ALL PA, AUDIO AND VIDEO CABLING TO TERMINATE IN H103 FOR THIS SHEET VIEW.
20.	REFER TO E701 (6) FOR ROUGH IN DETAILS.
21.	RUN (2) CAT6 TO TRIANGLE CLOSET IN EXISTING COMMONS.
22.	RUN (1) CAT6 TO EXISTING PROJECT IN EXISITING COMMONS.
23.	EXISTING SUB WOOFER.
24.	ATM OWNER SUPPLIED. DEDICATED CIRCUIT.
25.	REPLACE SPEAKERS IN THIS AREA AS NOTED. TERMINATE CABLING IN H103.
26.	MOUNT BACK BOXES 24" ABOVE WINDOW CENTERED.
27.	PANEL K1 WAS INSTALLED IN PHASE 1 WORK ALONG WITH BRANCH CIRCUIT BREAKERS. E.C. TO PROVIDE ALL BRANCH CIRCUIT WIRING AND RECEPTACLES TO EQUIPMENT.
28.	ALL DATA RUNS TO TERMINATE IN 202A MAIN DATA CLOSEST THIS SHEET VIEW.

GENERAL NOTES :	
A	PROVIDE GROUND CONDUCTOR IN ALL RACEWAYS.
B	PROVIDE SEPARATE NEUTRAL CONDUCTORS FOR EACH BRANCH CIRCUIT.
C	THE WORD "PROVIDE" MEANS TO FURNISH AND INSTALL
D	SEE MOTOR, EQUIPMENT, HEAT PUMP SCHEDULES SHEET E600 FOR ALL PANEL DESIGNATIONS, AND CIRCUIT NUMBERS, AND BREAKER SIZES.
E	CIRCUIT NUMBERS INDICATED ON DRAWINGS ARE FOR REFERENCE. ELECTRICAL CONTRACTOR TO ARRANGE BRANCH CIRCUITS AS REQUIRED FOR WIRING AND LOAD BALANCING. INDICATE ACTUAL PANELBOARD CIRCUIT NUMBERS ON AS-BUILT DRAWINGS.
F	SEE ARCHITECTURAL SHEETS FOR RELEVANT INTERIOR ELEVATIONS, SECTIONS AND MISCELLANEOUS BUILDING INFORMATION REQUIRED TO COMPLETE THE ELECTRICAL INSTALLATION.
G	COORDINATE ALL HVAC WITH MECHANICAL CONTRACTOR REFERENCE HVAC DRAWINGS.
H	ALL 20 AMP, 125 AND 250 VOLT NONLOCKING TYPE RECEPTACLE SHALL BE LISTED TAMPER-RESISTANT RECEPTACLE.
I	ALL DATA OUTLETS 2 PORT CAT 6 RAN TO DATA RACK, UNLESS OTHERWISE NOTED WITH "PP" POINT TO POINT.
J	ALL SECURITY TO BE CONTRACTED/ CORRIDATED BY OWNER.
K	E.C. TO ROUGH IN ALL DATA AND SECURITY TO INCLUDE CONDUIT RUNS AND BACK BOXES. ALL WIRING RUNS AND DEVICES TO BE PROVIDED BY E.C.
L	E.C. TO CONNECT FIRE ALARM DEVICES TO EXISTING MODIFY AS NEEDED.
M	ALL HVAC MOTORS BEING REPLACED ONE FOR ONE REFER TO MECHANICAL PLANS. REUSE CIRCUIT AND CONTROLS UNLESS NOTED OTHERWISE. MODIFY AS NEEDED.

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Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODEL PH. 2

Project Location: 1001 McHUGH RD
HOLMEN, WI 54636

Sheet Title: PLAN SEGMENT 'J'

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E104

LIGHT FIXTURE SCHEDULE

Type	Manufacturer	Catalog	Description	Voltage	Mounting** F	S	P	O	Lamp	Remark*
A1	Columbia Lighting	CFP22-4140	Recessed Troffer LED - 2' x 2'	277	X				LED	a
A2	Columbia Lighting	CFP22-4140	Recessed Troffer LED - 2' x 2' EM BATTERY	277	X				LED	a
D1	PRESCOLITE	LTR-6RD-H-SL-15L-DM01-LV-IC-LTR-6RD-T-SL-40K-8-MD-S-PW-WT-WF-AM-FMR6-R	Recessed LED Downlight 6in - 1500 Lumen	277	X				LED	a
D2	PRESCOLITE	LTR-6RD-H-SL-15L-DM01-LV-EMR-LTR-6RD-T-SL-40K-8-MD-S-PW-WT-WF-AM-FMR6-R	Recessed LED Downlight 6in - 1500 Lumen EM BATTERY	277	X				LED	a
D3	PRESCOLITE	LTR-6RD-H-HL-45L-DM01-LV-IC-LTR-6RD-T-HL-40K-8-MD-S-PW-WT-WF-AM-FMR6-R	Recessed LED Downlight 6in - 4500 Lumen	277	X				LED	a
D3E	PRESCOLITE	LTR-6RD-H-HL-45L-DM01-LV-EMR-LTR-6RD-T-HL-40K-8-MD-S-PW-WT-WF-AM-FMR6-R	Recessed LED Downlight 6in - 4500 Lumen EM BATTERY	277	X				LED	a
D3R	PRESCOLITE	LTR-6RD-RFH-HL-45L-DM01-LV-IC-LTR-6RD-T-HL-40K-8-MD-S-PW-WT-WF-AM-FMR6-R	Recessed LED Downlight 6in - 4500 Lumen RETRO FIT	277	X				LED	a
P1	BRUCK	320-300-MC-ECOSV	ZATA Pendant Lighting Fixture with White LED Direct Illumination	277			X		LED	a
P2	Beta-Calco	97 0040-D40-S1-WH-PR1-DL	48" TIMPANI RD Pendant 25000 Lumen	277				X	LED	a
R8	FOCAL POINT	FSM6L-FL-1000L-40K-IC-UNV-L11-XFN-WH	Recessed Linear LED 6" x 48"	277	X				LED	a
S8	Beta-Calco	AT8-J4-U1-D2-F1-LO	Suspended Linear LED 8ft	277	X				LED	a
SE8	Beta-Calco	AT8-J4-U1-D2-F1-LO	Suspended Linear LED 8ft EM BATTERY	277	X				LED	a
T1	Cooper Industries, Inc.	L2G805LRGFL840MB277	TRACK LIGHTING	277		X			LED	a,b
U4	Columbia Lighting	RLW4-40MW-FAW-EDU	UTILITY 4FT	277	X				LED	a
UE4	Columbia Lighting	RLW4-40MW-FAW-EDU-ELL14	UTILITY 4FT EM BATTERY	277	X				LED	a
X1	DUAL LITE	LX-U-R-W-E-I	EXIT LIGHT RED	UNI		X			LED	a

* SEE REMARKS
** (F) FLUSH MOUNT; (S) SURFACE MOUNT; (P) PENDANT HUNG; (O) OTHER-SEE REMARKS IN REGARDS TO FIXTURE MOUNTING.

EQUAL FIXTURES:

a. FIXTURES EQUAL IN ALL RESPECTS TO THE SPECIFIED FIXTURES MANUFACTURED BY, PHILIPS, NUVOLIGHTING, COOPER LIGHTING, LITHONIA, COLUMBIA, HUBBELL, & DAYBRITE SHALL BE CONSIDERED AS EQUAL.
b. SUPPLY TRACK FOR FIXTURE.

Motor Schedule

PLBG/HVAC EQUIP. No.	Equipment Description	Location	Motor Rating Power/AMP	Volt	PH.	Disconnect By MECH.	ELEC.	** TYPE	Starter By MECH.	ELEC.	*** TYPE	Control Wiring By MECH.	ELEC.	Wiring Size Conductors	EGC	Remark Number
AHU-2	AIR HANDLING UNIT 2		45AMP	480	3		X	CS		X	CS		X	3#12	#12	
AHU-3	AIR HANDLING UNIT 3		60AMP	480	3		X	CS		X	CS		X	3#12	#12	
E.F-4	EXHAUST FAN 4	TOILET J101	1/15HP	120	1		X	TG	X				X	2#12	#12	
E.F-5	EXHAUST FAN 5	MULTI-USE LOCKER J103	1/15HP	120	1		X	TG	X				X	2#12	#12	
E.F.-6	EXHAUST FAN 6	CONCESSIONS H102	1/20HP	120	1		X	TG	X				X	2#12	#12	
E.F.-X	EXISTING WASH AREA FAN	DISH WASHING F107	EXISTING	480	3		X	EXISTING	X		EXISTING		X	3#12	#12	2
EF-1	EXHAUST FAN 1		1 1/2HP	208	3		X	CS		X	CS		X	3#12	#12	3,4
EF-2	EXHAUST FAN 2		1.1/2HP	480	3		X	CS		X	CS		X	3#12	#12	3,5
EF-3	EXHAUST FAN 3		1/6HP	208	1		X	TG	X			X		2#12	#12	
HCP-2	CIRCULATING PUMP 2		1/4HP	120	1		X	TG	X			X		2#12	#12	
HCP-3	CIRCULATING PUMP 3		1/6HP	120	1		X	TG	X			X		2#12	#12	
U.H.-1	UNIT HEATER 1	RECEIVING H111	1/16HP	120	1		X	TG	X			X		2#12	#12	
UV-1	UNIT VENTILATOR 1		7.0AMP	208	1		X	TG	X			X		2#12	#12	
UV-2	UNIT VENTILATOR 2		7.0AMP	208	1		X	TG	X			X		2#12	#12	
UV-3	UNIT VENTILATOR 3		7.0AMP	208	1		X	TG	X			X		2#12	#12	
UV-4	UNIT VENTILATOR 4		7.0AMP	208	1		X	TG	X			X		2#12	#12	
UV-5	UNIT VENTILATOR 5		7.0AMP	208	1		X	TG	X			X		2#12	#12	
UV-6	UNIT VENTILATOR 6		7.0AMP	208	1		X	TG	X			X		2#12	#12	
UV-7	UNIT VENTILATOR 7		7.0AMP	208	1		X	TG	X			X		2#12	#12	
UV-8	UNIT VENTILATOR 8		7.0AMP	208	1		X	TG	X			X		2#12	#12	

AD01
AD01

SEE REMARKS
*** (CB) CIRCUIT BREAKER; (CS) COMBINATION STARTER/DISCONNECT; (F) FUSED SAFETY SWITCH; (NF) NOT FUSED SAFETY SWITCH; (TG) TOGGLE SWITCH(FVNR) FULL VOLTAGE NON-REVERSING MAGNETIC STARTER; (FVR) FULL VOLTAGE REVERSING MAGNETIC STARTER; (MS) MANUAL STARTER-WITH OVERLOAD PROTECTION; (MSW) MANUAL SWITCH-WITHOUT OVERLOAD PROTECTION; (MCC) MOTOR CONTROL CENTER; (PB) PUSH BUTTON STARTER; (VFD) VARIABLE FREQUENCY DRIVE

MOTOR SCHEDULE REMARKS:

1. UNIT IS FURNISHED DISCONNECT, PROVIDE SINGLE POINT ELECTRICAL CONNECTION.
2. EXTEND CIRCUIT, CONTROLS AND RE-INSTALL PER MANUFACTURE SPEC.
3. PROVIDE COMBINATION STARTER/DISCONNECT.
4. PROVIDE MANUAL SWITCH TO CONTROL ON/OFF.
5. UNIT IS INTERLOCKED WITH AIR HANDLER BY MECHANICAL CONTRACTOR.

PANEL SCHEDULE

PANEL: R18

LOCATION		ELEC. SERVICE	120V/208Y 3PH 4W
MFGR	SQ-D	MAIN RATING	225AMP
TYPE		MAIN TYPE	
SIZE WIDTH		MOUNTING	SURFACE
SIZE DEPTH			

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	POLES	TRIP	CIRCUIT DESCRIPTION	CKT
1		20	1	1	20		2
3	SCHOOL STO TRACK REC. H106	20	1	1	20	STORAGE H109	4
5		20	1	1	20	FLEXIBLE LEARNING PROJ. H110	6
7	COFFEE POS. REC. H107	20	1	1	20	FLEXIBLE LEARNING H110	8
9	COFFEE REC. H107	20	1	1	20	RECEIVING H111	10
11	HALLWAY H113 VENDING	20	1	1	20	CUST. OFF. H112, SCH. STO. N. WALL H106	12
13	HALLWAY H113 VENDING	20	1	1	20	SCH. STO. W. WALL POS H106	14
15	COMMONS REC. H105	20	1	1	20	CONC. H102, STOR H103, DATA H104 LIGHTS	16
17	COMMONS EAST WALL TV. H105	20	1	1	20	U.H.-1 RECEIVING H11	18
19	COMMONS WEST WALL TV. H105	20	1	1	20	HALLWAY ATM H113	20
21	CONCESSIONS COOLER H105	20	1	1	20	CONC. E.F.-6 H113	22
23	CONCESSIONS E.F.-6 H105	20	1	1	20		24
25	STO J102, TOILETS J100 AND J101	20	1	1	20		26
27	CONCESSIONS H105	20	1	1	20		28
29	STO REF. H104	20	1	1	20		30
31		20	1	1	20		32
33		20	1	1	20		34
35		20	1	1	20		36
37		20	1	1	20		38
39		20	1	1	20		40
41		20	1	1	20		42

NOTES:
EXISTING CIRCUITS

PANEL SCHEDULE

PANEL: R19

LOCATION		ELEC. SERVICE	120V/208Y 3PH 4W
MFGR	SQ-D	MAIN RATING	225AMP
TYPE		MAIN TYPE	
SIZE WIDTH		MOUNTING	SURFACE
SIZE DEPTH			

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	POLES	TRIP	CIRCUIT DESCRIPTION	CKT
1		20	1	1	20		2
3		20	1	1	20		4
5		20	1	1	20		6
7		20	1	1	20		8
9		20	1	1	20		10
11		20	1	1	20		12
13	SCIENCE E. AND S. WALL J107	20	1	1	20		14
15	SCIENCE N.WALL J107	20	1	1	20		16
17	STORAGE J108, J109, J110	20	1	1	20		18
19		20	1	1	20		20
21		20	1	1	20		22
23		20	1	1	20		24
25		20	1	1	20		26
27		20	1	1	20		28
29		20	1	1	20		30
31		20	1	1	20		32
33		20	1	1	20		34
35		20	1	1	20		36
37		20	1	1	20		38
39	SCI J107 COMP S. WALL R19 RIGHT	20	1	1	20		40
41	SCI J107 CORD REELS R19 RIGHT	20	1	1	20		42

NOTES:
EXISTING CIRCUITS

PANEL SCHEDULE

PANEL: R10

LOCATION		ELEC. SERVICE	120V/208Y 3PH 4W
MFGR	SQ-D	MAIN RATING	225AMP
TYPE		MAIN TYPE	
SIZE WIDTH		MOUNTING	SURFACE
SIZE DEPTH			

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	POLES	TRIP	CIRCUIT DESCRIPTION	CKT
1		20	1	1	20	EXISTING COMMONS W. H100	2
3		20	1	1	20	EXISTING COMMONS E. AND S. H100	4
5		20	1	1	20		6
7		20	1	1	20		8
9		20	1	1	20		10
11		20	1	1	20	CONCESSIONS H102	12
13		20	1	1	20	CONCESSIONS TV H102	14
15		20	1	1	20	EXISTING COMMONS N. STAGE FLOOR H100,	16
17		20	1	1	20	EXISTING COMMONS N. H100, GALLERY H101	18
19		20	1	1	20	EXISTING COMMONS TVS H100	20
21		20	1	1	20	NEW COMMONS LIGHTS H105	22
23		20	1	1	20	NEW COMMONS PROJ. H105	24
25		20	1	1	20		26
27		20	1	1	20		28
29		20	1	1	20		30
31		20	1	1	20		32
33		20	1	1	20		34
35		20	1	1	20		36
37		20	1	1	20		38
39		20	1	1	20		40
41		20	1	1	20		42

NOTES:
EXISTING CIRCUITS

PANEL SCHEDULE

PANEL: R1

LOCATION		ELEC. SERVICE	120V/208Y 3PH 4W
MFGR	SQ-D	MAIN RATING	225AMP
TYPE		MAIN TYPE	
SIZE WIDTH		MOUNTING	SURFACE
SIZE DEPTH			

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	POLES	TRIP	CIRCUIT DESCRIPTION	CKT
43	CHOIR S. AND W. WALL J106	20	1	1	20		44
45	CHOIR N. WALL J106	20	1	1	20		46
47		20	1	1	20		48
49		20	1	1	20	MULTI-USE LOOKERS J103, J04, J105	50
51		20	1	1	20		52
53		20	1	1	20		54
55		20	1	1	20		56
57		20	1	1	20		58
59		20	1	1	20	CHOIR E. WALL J106	60
61	CHOIR E. WALL J106	20	1	1	20		62
63		20	1	1	20		64
65		20	1	1	20		66
67		20	1	1	20		68
69		20	1	1	20		70
71	CHOIR S. WALL J106	20	1	1	20		72
73		20	1	1	20		74
75		20	1	1	20		78
77		20	1	1	20		78
79		20	1	1	20		80
81		20	1	1	20		82
83		20	1	1	20		84

NOTES:
EXISTING CIRCUITS

PANEL SCHEDULE

PANEL: L2

LOCATION		ELEC. SERVICE	277V/480Y 3PH 4W
MFGR	SQ-D	MAIN RATING	225AMP
TYPE		MAIN TYPE	
SIZE WIDTH		MOUNTING	SURFACE
SIZE DEPTH			

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	POLES	TRIP	CIRCUIT DESCRIPTION	CKT
1	BOILER AND ELECTRICAL LIGHTS	20	1	1	20	WOOD SHOP LIGHTS	2
3	CORRIDOR C TO D KITCHEN LIGHTS	20	1	1	20	AUTO SHOP LIGHTS	4
5	RECEVING AND RM 317 LIGHTS	20	1	1	20	METAL SHOP LIGHTS	6
7	EAST AND WEST COMMONS LIGHTS	20	1	1	20	D126,D130-133 LIGHTS EAST	8
9	COMMONS DIMMING PEDANTS LIGHTS	20	1	1	20	D27-129 LIGHTS EAST	10
11	COMMONS DIMMING PEDANTS LIGHTS	20	1	1	20	D135 LIGHTS EAST	12
13	AREA D NORTWEST LIGHTS	20	1	1	20	D137-139 LIGHTS SOUTHEAST	14
15	AREA D SOUTHWEST LIGHTS	20	1	1	20	D141-143 LIGHTS SOUTHEAST	16
17	CORRIDOR D TO G & G N. AND S. LIGHTS	20	1	1	20	EXTERIOR WALL PACK AREA C WEST	18
19	COMMONS DIMMING PEDANTS LIGHTS	20	1	1	20	EXTERIOR WALL PACK AREA C N. AND E.	20
21	S. CLASSROOM LIGHTS	20	1	1	20	KITCHEN NORTH AND SOUTH	22
23	331 SHOP LIGHTS	20	1	1	20	KITCHEN CENTER	24
25		20	1	1	20	BACK PARKING LOT WEST LIGHTS	26
27		20	1	1	20	BACK PARKING LOT EAST LIGHTS	28
29		20	1	1	20	BACK PARKING LOT EAST LIGHTS	30
31		20	1	1	20		32
33	STO H106, FLE H110, REC H111, H112, LIGHT	20	1	1	20		34
35	NEW COMMONS PEDANTS AND CANS	20	1	1	20		36
37	SCH H11, H103, STO H104, CON H102 LIGHTS	20	1	1	20		38
39	EXISTING COMMONS CANS	20	1	1	20		40
41		20	1	1	20		42

NOTES:
EXISTING CIRCUITS

PANEL SCHEDULE

PANEL: R12

LOCATION		ELEC. SERVICE	120V/208Y 3PH 4W
MFGR	SQ-D	MAIN RATING	225AMP
TYPE		MAIN TYPE	
SIZE WIDTH		MOUNTING	SURFACE
SIZE DEPTH			

CKT	CIRCUIT DESCRIPTION	TRIP	POLES	POLES	TRIP	CIRCUIT DESCRIPTION	CKT
1		20	1	1	20		2
3		20	1	1	20		4
5		20	1	1	20		6
7		20	1	1	20		8
9		20	1	1	20		10
11		20	1	1	20		12
13		20	1	1	20		14
15		20	1	1	20	DATA H103	16
17		20	1	1	20		18
19		20	1	1	20		20
21		20	1	1	20		22
23		20	1	1	20		24
25		20	1	1	20	CONCESSIONS H102	26
27		20	1	1	20		28
29		20	1	1	20		30
31		20	1	1	20		32
33		20	1	1	20		34
35		20	1	1	20		36
37		20	1	1	20		38
39		20	1	1	20		40
41		20	1	1	20		42

NOTES:
EXISTING CIRCUITS

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN

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Project Title: SCHOOL DISTRICT OF HOLMEN
HIGH SCHOOL REMODEL PH. 2

Project Location: 1001 McHUGH RD
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Sheet Title: LIGHTING, MOTOR AND PANELBOARD SCHEDULES

HSR Project Number: 18061

Project Date: FEBUARY 2020

Drawn By: C. CRANDALL

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No.	Description	Date
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