

SECTION 00 91 10

ADDENDUM NUMBER 1

PARTICULARS

- 1.01 DATE: MAY 14, 2018**
- 1.02 PROJECT: AUSTIN HIGH SCHOOL CAREER TECH CENTER**
- 1.03 PROJECT NUMBER: B. C. NO. 2018112**
- 1.04 OWNER: DECATUR CITY SCHOOLS**
- 1.05 ARCHITECT: NOLA | VAN PEURSEM ARCHITECTS, PC**

TO PROSPECTIVE BIDDERS

- 2.01 THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS AND MODIFIES THE BIDDING DOCUMENTS DATED APRIL 25, 2018, WITH AMENDMENTS AND ADDITIONS NOTED BELOW.**
- 2.02 ACKNOWLEDGE RECEIPT OF THIS ADDENDUM IN THE SPACE PROVIDED IN THE PROPOSAL FORM. FAILURE TO DO SO MAY DISQUALIFY THE BIDDER.**
- 2.03 THIS ADDENDUM CONSISTS OF 55 PAGES.**

CHANGES TO THE PROJECT MANUAL

3.01 SECTION 00 22 00-OWNER'S SUPPLEMENTARY INSTRUCTIONS TO BIDDERS:

- A. Paragraph 1.03.A – Change paragraph to read as follows, “All sealed bids containing two copies of the Proposal Form, two copies of the Bid Bond, and one copy of Supplement C - List of Alternates (Section 00 43 23) will be received by 2:00 p.m. CDT on May 22, 2018. Upon receipt of these documents the bids will be publicly opened and read aloud. Supplement A – List of Subcontractors (section 00 43 21) is to be hand delivered or emailed to the Architect within 24 hours after receipt of bids. No changes to the base bid will be allowed after 2:00 p.m.

3.02 SECTION 01 10 00-SUMMARY:

- A. Paragraph 1.03.A: Attached herewith are the minutes of the Pre Bid Conference held on May 10, 2018

3.03 SECTION 09 68 13-TILE CARPETING:

- A. Add this section in its entirety.

3.04 SECTION 22 42 10-PLUMBING FIXTURES:

- A. Paragraph 2.02.P-5 – Change paragraph to read as follows, “Sink: Existing two compartment sink with faucet to be removed from the existing countertop and relocated. Furnished and installed in the new location shall be Kohler K-8801 strainer with tail piece, 17-gauge cast brass chrome plated trap with cleanout & Zurn Z-8804-LR-LK supplies with stops. Coordinate hub connection for connection to the PVC to be tight to the wall for concealment by the bell escutcheon.”

3.05 SECTION 23 05 36-EQUIPMENT CURBS:

- A. Replace this section in its entirety.

3.06 DIVISION 26 - ELECTRICAL:

- A. See attached addendum from The EE Group, Inc. dated May 11, 2018.

3.07 SECTION 32 31 13- CHAIN LINK FENCES AND GATES:

- A. Add this section in its entirety.

CHANGES TO THE DRAWINGS

4.01 SHEET A-0.1 - DEMOLITION FLOOR PLAN:

- A. Replace this sheet in its entirety, the list of changes are as follows:
1. Demolition Contractor Notes 9 and 10 changed to “Not Used.”
 2. Construction Contractor Notes “A. Existing flooring to be removed” and “B. Existing sidewalk to be removed” have been added.
 3. Locations for Construction Contractor Notes have been added.
 4. Existing carpet in Foyer SPA. 101 to be removed.

4.02 SHEET A-1.2 - FIRST FLOOR PLAN:

- A. Replace this sheet in its entirety, the list of changes are as follows:
1. Concrete pad for on-grade HVAC unit has been added on to the north side of the building.
 2. The sidewalk on the south side of the building has been modified to include a ramp.
 3. The sidewalk on the west side of the building has been reworked to include ramps.
 4. The note “Protect existing equipment during construction” has been added in the Health Assist. Lab SPA 117B.
 5. The note “New drinking fountain A7” in Foyer SPA. 101 has been edited to read “New drinking fountain fixture A7 – Existing fixture to be turned over to owner.”
 6. Add note 10 under “General Notes” to address all conditions where existing walls are to be fire rated.
 7. The sink in Health Assist. Lab SPA 117B has been moved east 4 ft. The sink chase wall has been extended 4 ft. to accommodate moving the sink.
 8. The note “Repair CMU and grind smooth where existing wing wall was removed” has been added for existing wing walls in Health Assist. Lab SPA 117B and Health Assist. Lab SPA 120.
 9. Fencing around mechanical units on the north and south side of the building has been added.

4.03 SHEET A-2.1 - DOOR SCHEDULE, FINISH SCHEDULE, MISC. DETAILS:

- A. Detail 7: Revise note reading "New Concrete Walkway" to read "New Concrete Walkway, 4 inch thick, 3000 PSI Concrete."
- B. Add Detail 11, per Attachment AD1-A2.1-01, for use at all existing walls shown to be 1 HR rated fire walls.

4.04 SHEET A-3.1 - REFLECTED CEILING PLAN & FINISH FLOOR PLAN:

- A. Change the extent of the carpet installed to include the area in the Foyer SPA 101 where the existing carpet has been removed.

4.05 SHEET A-4.1 - ROOF PLAN & DETAILS:

- A. Details 3 and 4: Revise notes referencing SBS Modified roof system to read, "New Membrane Curb Flashing as Required (to be installed by Owner's Contractor)."

4.06 SHEET P-1.1 - PLUMBING DEMOLITION FLOOR PLAN:

- A. Replace this sheet in its entirety, the list of changes are as follows:
 - 1. Key plans have been re-labeled, re-positioned and the area of the work highlighted.
 - 2. Decatur HS plan scale has been increased to represent the actual listed scale.
 - 3. Two compartment sink with Key Note D is to be changed from to be demolished to be relocated.

4.07 SHEET P-2.1 - PLUMBING RENOVATION FLOOR PLAN:

- A. Replace this sheet in its entirety, the list of changes are as follows:
 - 1. P-21 Roof Hydrant has been clarified by note to coordinate the roof penetration with the Owners Roofing Contractor.
 - 2. A Key Plan has been added to the sheet.
 - 3. P-19 Exterior Wall Hydrant on the south side of the building has been changed. The pipe tie-in will be on the new water line close to the boiler room. The actual drop location will be inside the boiler room for easy access. The P-19 service valve will be exposed in the boiler room within easy reach.
- B. P-6 Sink in Health Assist. Lab SPA.117B shall be moved east on the wall approximately 4'. See the Architectural Drawings for the exact location. The water piping will be adjusted accordingly to the new drop location. The floor shall be cut as necessary for the new connection to the existing waste pipe.

4.08 SHEET P-2.2 - PLUMBING ENLARGED RENOVATION FLOOR PLAN:

- A. Replace this sheet in its entirety, the list of changes are as follows:
 - 1. Underfloor waste has been changed on the icemaker P-14 Floor Sink. The waste will be PVC and will extend to the exterior of the building and connect downstream of the P-18 Grease Tank.
 - 2. The required Sample Well Detail has been added.
 - 3. A Key Plan has been added to the sheet.

4.09 SHEET P-3.1 - PLUMBING SCHEDULES:

- A. Replace this sheet in its entirety, the list of changes are as follows:

1. Fixture Connection fixture P-5 has been changed to existing sink and faucet to be relocated.
2. Fixture Connection Schedule P-9 Disposer has added Note 1 for reference.

4.10 SHEET P-5.1 - COLD WATER RISER DIAGRAMS:

- A. Replace this sheet in its entirety, the list of changes are as follows:
1. The P-19 Exterior Wall Hydrant on the south wall has been moved. The Cold Water Diagram has been changed to match the change on the floor plan.

4.11 SHEET P-6.1 - WASTE & VENT DIAGRAM:

- A. On the Waste and Vent Diagram, the waste has been changed on the icemaker P-14 floor sink. The waste will be PVC and will extend to the exterior of the building and connect downstream of the P-18 Grease Tank, per Attachment AD-1-P-6.1.01.

4.12 SHEET P-7.1 - PLUMBING DETAILS:

- A. Delete the Backwater Valve Detail from the sheet. This is not required on this project.

4.13 SHEET M-1.1 - MECHANICAL DEMOLITION ROOF PLAN:

- A. See Attachment AD1-M-1.1-01 for the following revisions:
1. Exhaust fans on the roof that are hatched to be demolished over the toilets, conference room and electrical room labeled with Key Note "G" have been changed to Key Note "C".
 2. Demolition Notes have been changed.

4.14 SHEET M-1.2 - MECHANICAL DEMOLITION FLOOR PLANS:

- A. Replace this sheet in its entirety, the list of changes are as follows:
1. Decatur HS Culinary plans have changed. Scale has been increased and the Key Note items have been identified on the plans.
 2. The roof plan has been changed to show the existing H & V unit to remain and Key Note "J" shown.
 3. Key Note "F" has been identified on the floor plan.
 4. Hydronic hot water piping exiting the boiler room and at the removed H & V Unit Key Noted "B" has added piping shown to be removed as necessary for the installation of the new bypass assemblies shown on the Mechanical Floor Plans.
 5. Key plans have been re-labeled, re-positioned and the area of the work highlighted.
 6. North arrows have been corrected to depict true north on the plans.

4.15 SHEET M-2.1 - MECHANICAL ROOF PLAN:

- A. Replace this sheet in its entirety, the list of changes are as follows:
1. Condensate drains from CP-1 and both MAU's have been shown extending to the existing gutter system on the west side of the building.
 2. Exhaust fans over the Cosmetology are have changed.
 3. Unit tags for LPH-1 & 2 have changed to VRC-1 & 2.

4.16 SHEET M-2.2 - MECHANICAL RENOVATION FLOOR PLAN:

- A. Replace this sheet in its entirety, the list of changes are as follows:
1. An MCU has been added and the numbering system has changed.
 2. Transfer grilles and ducts have been added to Cosmetology and Barber Rooms.
 3. MAU system diffusers have been shifted to accommodate the transfer grilles.

4. Indoor unit IU-106 has been added to the plans.
5. Compressed air has been shown dropping down to the 3D printer filtration system.
6. CP-1 discharge has been changed. The drain now extends up through the roof and is continued on sheet M-2.1. CP-1 will be mounted as high as possible but allowing for the correct slope of condensate drains extending to it.
7. CP-2 has been shown on the drawings. The pump will be located on the floor below the compressed air filtration system.
8. VRC-1 has been shown for relief in Cyber Security. A motorized control damper will be installed in the duct between the ceiling grille and roof deck.
9. The LPH shown in Culinary has been changed. The device tag shall be VRC-2.

4.17 SHEET M-3.1 - MECHANICAL SCHEDULES:

- A. Replace this sheet in its entirety, the list of changes are as follows:
 1. All Mechanical Equipment Schedules except the Grille Schedule and Gas Regulator have changed.

4.18 SHEET M-3.2 - MECHANICAL SCHEDULES:

- A. Replace this sheet in its entirety, the list of changes are as follows:
 1. Mechanical Devices and Notes, Sequence of Control & Control Monitoring Points have been modified. Owner Provided Equipment – Contractor Installed Notes has been added.

4.19 SHEET M-4.1 - MECHANICAL DETAILS:

- A. Add Roof Equipment Attachment Detail which shows the coordination and installation requirements for the unit roof curbs on structural steel and unit attachment to the curb, per Attachment AD-1-M-4-1.01.

4.20 ELECTRICAL:

- A. See attached addendum from The EE Group, Inc. dated May 11, 2018.

END OF ADDENDUM NUMBER 1

**Austin High School Career Tech Center
Decatur City Schools
PRE-BID CONFERENCE AGENDA MINUTES
May 10, 2018, 11:00 AM**

Introduction

Christine Kirchberg Jones introduced herself and Stephen Wank of N | VP, Lee Edminson of Decatur City Schools, and Kevin Mims with Mims Engineering.

Sign-In Sheet

All attendees were asked to sign in. A copy of the sign-in sheet is attached.

Bid Date, Location and Procedures

Include all properly executed forms including Supplement A: List of Subcontractors and Supplement C: List of Alternates. Contractors may not qualify bids.

The Bid will take place at 2:00 p.m. CDT on May 22, 2018 at Decatur City Schools' main office, located at 302 Fourth Avenue, Decatur, Alabama.

Project Funding Source

- Local and QZAB
- No Davis Bacon or Buy American stipulations

Tax Exempt Status – Include tax in bid. Materials are to be purchased by Owner and amount of tax is to be deducted at end of project by change order.

Allowances

- Contingency allowance of \$40,000
- Whatever allowance that is not used will be deducted by change order plus a minimum of 2% for profit and overhead.

Alternates

- Alternate #1 – amount to be added to base bid if new three phase transformer pad and new electrical service entrance are included in contract. Refer to the electrical drawings for scope of work.

Contract Schedule

- Substantial Completion: See spec section 01 10 00

Liquidated Damages

Noted in Appendix C – Supplementary Conditions of the Contract

- A charge of \$1,000 per day will be made against the General Contractor for not meeting the Date of Substantial Completion

Permit Requirements

- Alabama Building Commission Permit & Fees are required as noted in the specifications.
- A building permit is not required by the City of Decatur. Decatur Fire Marshal and the Alabama Building Commission will review.

Site Conditions

- Scope of Project was reviewed and is as follows:
 - This is a renovation project of approximately half of an existing building on the old Austin High School campus. This project will consist of new architectural, mechanical, electrical, and plumbing upgrades for the Career Tech Center.

- Demolition Package completed prior to this contract by another contractor
 - Existing ceiling wires may remain in place
 - Some demo work will be by the construction contractor. This will be clarified by addendum.
- Protect existing teaching equipment, such as ambulance simulator and hospital beds.
- Use of site / Keeping roads clean
- Working in an existing campus. Although there will be no summer classes, students will return in August and occupy parts of the building where work does not occur.
- Smoking, tobacco, fire arms, and drugs are not allowed on site
- The construction contractor will be responsible for moving some existing equipment from old Decatur High School
 - All other teaching equipment is by owner

Contract Considerations

- Background Checks / E-Verify
- Fire alarm is by owner's contractor
- Roofing repair by owner's subcontractor – The contractor is to provide 1-week notice for roofing tie-in.
- Mechanical rooftop units are by owner
- Pre-installation meetings required for all major trades

Owner/Engineer Comments

Mims Engineering:

- *Lead time on make-up units will be approximately 6-8 weeks*
- *Refrigerate lines and copper to be installed by construction contractor.*
- *The construction contractor is to disconnect and move existing equipment and cap connections at old Decatur High School. The construction contractor will not be responsible for patching or painting where equipment is located. The time is to be coordinated with owner.*
- *The construction contractor will be responsible for demolition of existing duct work as noted on the drawings.*
- *The construction contractor is to protect the communication service running from boiler room to classrooms that are not in scope.*

Owner:

- *The owner's contractor (John Bramlett) will be responsible for final connections for security and fire alarm.*
- *The construction contractor will be responsible for demolition of existing VCT floors. This will be clarified by addendum.*
- *Job site fencing is not required.*
- *The fire alarm will be a stand-alone system.*
- *This contractor will be responsible for removing any remaining low-voltage wires.*

Upcoming Addenda

- Addendum #1 is anticipated to be issued May 14, 2018
- Demo work to be carried out by contractor will be clarified.
- Sidewalk on south side and fencing around mechanical units
- Pre-bid meeting minutes and sign-in
- Submit all questions by Friday, May 18th, before bid.

Questions – Send to Nola Van Peurse Architects:

- Melinda Brooks: melinda@nvparchitects.com
- Christine Kirchberg Jones: christine@nvparchitects.com
- Stephen Wank: stephen@nvparchitects.com

Q1) What is the scope of Alternate #1?

Switchgear is included in the base bid, however, the transclosure and electrical service as shown on the electrical drawings will be included in the alternate.

Q2) Will there be any problems with asbestos mastic below the VCT?

The owner has already had this tested and there was no asbestos found.

Q3) Will school have concluded for the summer?

Yes, school will have ended by the award of contract.

Q4) Where should parking and staging take place?

The General Contractor is to let the owner know of any parking requirements and/or schedule requirements. Parking and lay-down will be staged in the parking lots to the east and west of the building.

Q5) Will the GC have to turn in a list of subcontractors once they are informed they are the low bid?

The GC will have 24 hours after the bid is announced to provide their sub contractor list. All general contractors are required to submit a sub contractor list, not just the low bidder.

Q6) When is the contract expected to be awarded?

Decatur City Schools anticipates holding a board meeting as soon as bids are received and issuing a Notice to Proceed to begin submittals while contracts are sent to the State Building Commission.

Sign In Sheet

Name (Please Print)	Company (Please Print)	Phone / Fax No.	E-mail Address
Michael Bayett	Bayett Const Inc.	256/974/6750	Abayett@bayettconstruction.net
AUDIE LAYTON	MCDONALD RICHARD	256/355/4771	mcDONALD@ATT.NET
Wesley Perry	Perry Company	256-341-9944-9946	perrycompanychellsultra
John Penne	Penne Const.	256-537-2116	j.penne@penneconstruction
Doug Hasting	PSI	256-232-2092	doug@premierstructures.net
TYCE HUDSON	TURNER	256-461-6700	THUDSON@TCCO.com
Brandon Rie	Rie Const Assoc.	206-351-2222	bca@vca-inc.com
Kevin Mims	Mims Eng	256-891-4126	km@mimseng
Lee Edmiston	DCS	256-260-5075	Lee.Edmiston@dcscd.com
RYAN FINLEN	CONSOLIDATED	256-534-2356	Bid1@CONSOLIDATEDCONSTRUCTION.COM
Ken Edwards	CCC	256-754-1085	Bid1@CONSOLIDATEDCONSTRUCTION.COM
SCOTT Northington	PETUS Plumbing Piping HVAC	256-389-8181	BR@PETUSHVAC.COM
MARK SKAGGS	BSC	931-766-5151	chris@bradslaterconstruction.com
Casey Willett	EE group	256-413-7717	Casey@eesginc.com
Metani Maples	DCS		
STEPHEN WANK	N/VP	256-533-6617	STEPHEN@NVPARCHITECTS.COM
CHRISTINE KIRCHBERG JONES	N/VP		

SECTION 09 68 13

TILE CARPETING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Carpet tile, fully adhered.

1.02 RELATED REQUIREMENTS

- A. Section 03 30 00 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors.

1.03 REFERENCE STANDARDS

- A. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials; 2006 (Reapproved 2011).
- B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2014c.
- C. CRI (CIS) - Carpet Installation Standard; Carpet and Rug Institute; 2009.
- D. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2015.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- C. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.
- D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

1.05 FIELD CONDITIONS

- A. Store materials in area of installation for minimum period of 24 hours prior to installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Other Acceptable Manufacturers:
 - 1. Bentley Mills, Inc.
 - 2. Lees Carpets: www.leescarpets.com.
 - 3. Patcraft Commercial Carpet.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 MATERIALS

- A. Carpet Tile Type CPT-1: multi-level pattern loop, manufactured in one color dye lot.

1. Product: Direction Tile manufactured by Shaw Contract.
 - a. Warranty: Lifetime Commercial Warranty to include Abrasive Wear, Static Protection, Stain Warranty, Colorfastness to Light and Atmospheric Contaminants.
2. Tile Size: 24 x 24 inch, nominal.
3. Color: To be selected.
4. Tufted Weight: 15 oz. per yard.
5. Fiber: Eco Solution Q or equal.
6. Protective Treatments: SSP Shaw soil protection.
 - a. Protective stain properties to be part of the fiber prior to fiber being adhered to backing.
7. Dye Method: 100% solution dyed
8. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
9. Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").
10. Secondary Backing Material: Ecoworx Tile.
 - a. Warranty: Lifetime Commercial Warranty to include the following:
 - 1) Fiber:
 - (a) Abrasive Wear
 - (b) Static Protection
 - 2) Backing:
 - (a) Tuftbind/Sippering
 - (b) Edge Ravel
 - (c) Integrity/Delamination
 - (d) Integrity/Dimensional Stability

2.03 ACCESSORIES

- A. Edge Strips: Rubber, color as selected.
- B. Adhesives:
 1. Acceptable to carpet tile manufacturer, compatible with materials being adhered; maximum VOC of 50 g/L; CRI Green Label certified; in lieu of labeled product, independent test report showing compliance is acceptable.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive carpet tile.
- B. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to sub-floor surfaces.
- C. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for flooring installation by testing for moisture and pH.

3.02 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.
- B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.

3.03 INSTALLATION

- A. Starting installation constitutes acceptance of sub-floor conditions.
- B. Install carpet tile in accordance with manufacturer's instructions and CRI Carpet Installation Standard.
- C. Blend carpet from different cartons to ensure minimal variation in color match.
- D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- E. Lay carpet tile in patterns as noted on finish plans and as directed by architect, with pile direction parallel to next unit, set parallel to building lines.
- F. Fully adhere carpet tile to substrate.
- G. Trim carpet tile neatly at walls and around interruptions.
- H. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING

- A. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- B. Clean and vacuum carpet surfaces.

END OF SECTION

SECTION 23 05 36

EQUIPMENT CURBS

PART 1 - GENERAL

1.01 WORK INCLUDED:

- A. Provide manufactured equipment curbs for all roof mounted equipment which is not provided with its own curb.
- B. Coordinate with General Contractor for the required steel installed below the curbs. Installation requirements of the curb to the steel shall be provided by the curb manufacturer on the roof curb shop drawings. Installation shall be done by the Mechanical Contractor.
- C. Coordinate with roof design and where sloped steel is provided, sloped curbs shall be submitted and installed.
- D. Final roofing and flashing shall be done by the Roofing Contractor.

1.02 SUBMITTALS

- A. Provide manufacturer's product data and cut sheets.
- B. Shop drawing submittal:
 - 1. Provide shop drawings showing the physical size and/or slope of each curb.
 - 2. For curbs supporting multiple pieces of equipment, the shop drawings shall also show where each piece of equipment will be mounted and the clearances between them. The equipment shown, shall be the actual equipment being installed, with the dimensions from the shop drawings used for layout.
 - 3. The shop drawings shall indicate the curbs relationship to supporting walls and beams below along with sufficient data to accurately locate the curb on the roof.

PART 2 - PRODUCTS

2.01 EQUIPMENT CURBS

- A. The equipment curbs shall be constructed of reinforced galvanized steel with all welded components and four mitered corners.
- B. The curbs shall be flat sided without a cant strip. Curbs shall have a mounting flange for attaching to the roof.
- C. The curbs shall have factory installed 1 1/2" thick rigid fiberglass board insulation.
- D. The curbs shall have 3" flanges and no wood nailer. Foam gasket shall be provided with the curb.
- E. The curbs shall have an attached solid top and flashing cap extending to the flange of the curb. The top shall be reinforced as necessary to secure the equipment being provided. Details, shop drawings and certifications of the top will be required by the curb manufacturer.
- F. The curbs shall be designed to support the weight and size of the equipment shown on the drawings. When attached to the roof deck the curb shall extend a minimum of 12 inches above the roof surface.
- G. If indicated on drawings, the equipment curb cap shall include pipe curbs (Refer to section 23 05 37).
- H. When indicated on the plans the curbs shall be factory painted, color to be selected by architect.
- I. Curb shall be certified as a seismic curb. Curbs shall be secured to the perimeter structural steel on all sides. Self-tapping screws, placement and spacing will be determined by the equipment manufacturers' Engineered shop drawings and details to achieve all requirements for IBC 1609 Wind Loading installation. All equipment shop drawings and calculations must be prepared by the manufacturers licensed Engineer for the construction requirements of the project. Shop drawings, details and calculations must bear the Engineers seal with signature and date.
- J. The equipment curbs shall be Pate Model PC-2-SFCS (sloped curb similar) Equal curbs by Creative Metals will be considered.

PART 3 - EXECUTION

3.01 EQUIPMENT CURBS

- A. Contractor shall determine the location for the installation of the curbs for

installation by the roofing contractor.

- B. Contractor shall be responsible for determining the overall height of the curb to be provided for each location. Minimum curb height shall be 12”.
- C. Equipment curbs shall be installed level and in such a manner to prevent racking, twisting or other deformation.
- D. Equipment curbs shall be fully supported along their perimeter and at any cross bracing meant to be supported by the roof.
- E. Piping curbs, when indicated on the drawings, shall be installed in accordance with the manufacturer's recommendations and shall be completely sealed to prevent leaks.

- END OF SECTION -

The EE Group Inc.

71 Thunderbird Lane
Gadsden, AL 35904

Attention: Christine Jones
Date: 5/11/18
Regarding: Austin Career Tech

Christine,

Please include the following in your next addendum.

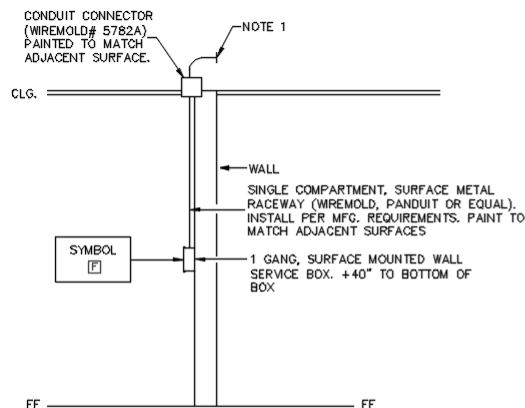
ELECTRICAL Addendum Items:

1 Sheet E-0.1:

- (A) Fire Alarm Note 7.1 – Change International building code reference from 2014 to 2015.
- (B) Fire Alarm System Legend modifications - See revised Sheet E-0.1.
- (C) Electrical Note 2 - Delete note 2. See revised Sheet E-0.1.
- (D) Panel Schedule – See revised breakers in panel RPN4. See new panel RPN4A. See revised Sheet E-0.1
- (E) Light Fixture Schedule – Add Fixture “X1” to schedule. See revised sheet E-0.1

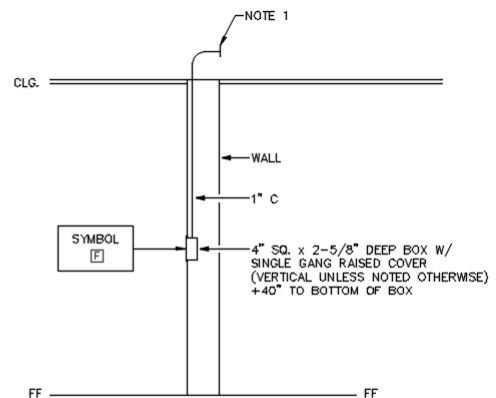
2 Sheet E-0.2:

- (A) Add the following Details to the Contract documents:



DETAIL: FAS PULL STATION

SURFACE MOUNTED WHERE SHOWN ON EXISTING WALL TO REMAIN
NOT TO SCALE

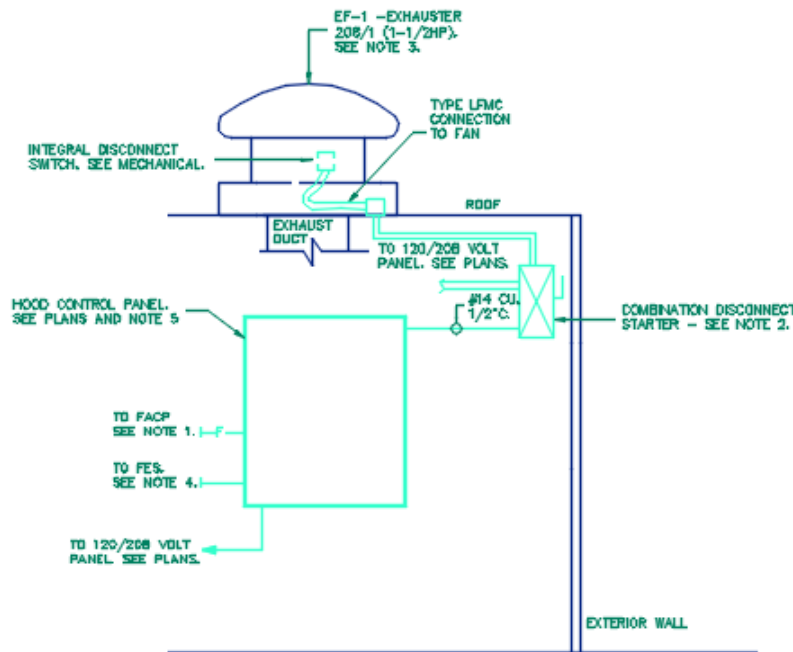


DETAIL: FAS PULL STATION

FLUSH MOUNTED WHERE SHOWN ON NEW WALL
NOT TO SCALE

3 Sheet E-0.3:

- (A) See below revised Hood and Exhauster detail:



DETAIL: HOOD AND EXHAUSTER

NOT-TO-SCALE

(HOOD, EF-1)

DETAIL NOTES:

1. PROVIDE CONNECTION TO FACP. UPON ACTIVATION OF HOOD EXTINGUISHING FACP WILL ACTIVATE.
2. COMBINATION NON-FUSED SAFETY SWITCH/NEMA SIZE 1 FVNR STARTER W/120VAC COILS IN NEMA 4XSS ENCLOSURE COMPLETE WITH THERMAL OVERLOAD UNITS. COORDINATE WITH HOOD SUPPLIER/INSTALLER FOR MOUNTING STARTERS TO HOOD STRUCTURE. VERIFY COIL VOLTAGE REQUIRED PRIOR TO ORDERING SWITCH.
3. COORDINATE ALL ASPECTS OF EXHAUST FAN ROUGHING W/ APPROVED SHOP DRAWINGS PRIOR TO ANY ROUGHING. FURNISH AND INSTALL ANY/ALL MATERIALS AND CONNECTIONS REQUIRED FOR A FULL FUNCTIONING HOOD AS SPECIFIED.
4. COORDINATE EXACT LOCATIONS, ELECTRICAL REQUIREMENTS, ROUGHING AND TERMINATIONS FOR NEW HOOD EXTINGUISHING SYSTEM WITH APPROVED EQUIPMENT SUBMITTALS AND INSTALLING CONTRACTOR PRIOR TO ANY ROUGHING AND/OR ORDERING MATERIALS.

4 Sheet E-0.4:

- (A) See revised panel tag information. See revised sheet E-0.4
- (B) Add F-225/3 to Conductor/Conduit schedule. See revised plans. See revised sheet E-0.4.
- (C) Add panel RPN2A. See revised sheet E-0.4

5 Sheet E-1.0:

- (A) Auxiliary Backboard tag – Delete reference to note 2.
- (B) Change Demolition note 3 to read as follows:

Existing switchboard to be demolished complete. Disconnect existing switchboard from existing transclosure. Prepare existing feeder branch circuits and extend to new panel. see single line diagram for required work. Electrical contractor to provide and install new galvanized pull box with screw fastened cover size as required. Extend panel ground to existing conduit ground and connect with approved hardware.

- (C) Change Demolition note 5 to read as follows:

Disconnect and remove existing feeder branch circuits. Prepare and extend to new panel pp. see riser diagram. Remove existing panel "b" interior and use as pull box. Electrical contractor to fabricate screw fastened stainless cover as required. Extend panel ground to existing conduit ground and connect with approved hardware.

- (D) Add Demolition note 14 to read as follows:

General note - in all areas that receive demo and wall demo. Disconnect and remove old wall clock. Remove box, conduit and branch circuit to nearest junction box and make safe. Reconnect any/all loads isolated by demolition.

6 Sheet E-3.0:

- (A) Refrigerator and Freezer circuit breakers changed to GFCI type. Oven Control receptacle change to GFCI type. See revised sheet E-3.0.
- (B) See revised plan for new voice evacuation plan. See revised sheet E-3.0.
- (C) Add Pull stations to the following exits Classrooms 132, 134, Health Assist Lab 117B, Hall 121 and Cafe 133. See revised Sheet E-3.0.
- (D) Replace smoke detector with heat/CO detector in Manicure SPA 135A. See Revised Sheet E-3.0.
- (E) Provide fire alarm strobe in TLT 138 and 166. See revised Sheet E-3.0.

7 Sheet E-3.0:

- (A) See revised exhaust fan layout. See revised plan E-4.0.

8 Specifications:

- (A) Section 26 01 01 – Basic Electrical Requirements: Part 1.1.A: Effective Change reference to 2015 International Building Code, 2015 International Fire Code, ASHRAE Standard 90.1 - 2013 Energy Standard for Buildings and 2014 National Electrical Code (NEC).
- (B) Section 26 65 20 – Fire Alarm System Extension: Replace this section in its entirety with attached section 26 65 20 – Digital Addressable Fire Alarm System.

SECTION 26 65 20

DIGITAL ADDRESSABLE FIRE ALARM SYSTEM

PART 1 - GENERAL



1.1 DESCRIPTION:

- A. **Contractor Qualifications/Certifications:** The fire detection and alarm system controls contractor shall hold a permit from the Alabama State Fire Marshal. The fire alarm system contractor shall provide a copy of the State Fire Marshal's permit to the owner and engineer so that the Engineer may review the contractor's qualifications prior to any work taking place. SEE SPECIFICATIONS SECTION 28 31 11, APPENDIX FOR COPY OF STATE REQUIREMENTS FOR FIRE ALARM CONTRACTOR.
- B. NEW FIRE ALARM SYSTEM (FIRE ALARM CONTROL PANEL, FIRE ALARM DEVICES, FIRE ALARM CABLING, FIRE ALARM SYSTEM SET-UP AND PROGRAMMING) TO BE FURNISHED AND INSTALLED BY OWNER'S STATE CERTIFIED FIRE ALARM CONTRACTOR, NOT IN CONTRACT. ALL ROUGH-IN FOR NEW FIRE ALARM SYSTEM TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR UNDER PROJECT BID. OWNER'S FIRE ALARM CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL ROUGH-IN AND POWER REQUIREMENTS. NEW FIRE ALARM SYSTEM TO BE INSTALLED CONCURRENT WITH OTHER RENOVATION WORK.
- C. This section of the specification includes the furnishing, installation, connection and testing of the microprocessor controlled, intelligent reporting fire alarm equipment required to form a complete, operative, coordinated system. It shall include, but not be limited to, alarm initiating devices, alarm notification appliances, Fire Alarm Control Panel (FACP), auxiliary control devices, annunciators, and wiring as shown on the drawings and specified herein.
- D. The fire alarm system shall comply with requirements of IFC 2015 and NFPA Standard 72 for Protected Premises Signaling Systems except as modified and supplemented by this specification. The system shall be electrically supervised and monitor the integrity of all conductors.
- E. The fire alarm system shall be manufactured by an ISO 9001 certified company and meet the requirements of BS EN9001: ANSI/ASQC Q9001-1994.
- F. The FACP and peripheral devices shall be manufactured 100% by a single U.S. manufacturer (or division thereof).
- G. The system and its components shall be Underwriters Laboratories, Inc. listed under the appropriate UL testing standard as listed herein for fire alarm applications and the installation shall be in compliance with the UL listing.
- H. The installing company shall employ NICET (minimum Level II Fire Alarm Technology) technicians on site to guide the final checkout and to ensure the systems integrity.

1.2 SCOPE:

- A. A new intelligent reporting, microprocessor controlled fire detection system shall be installed for the renovated buildings in accordance to the project specifications and drawings.

1.3 BASIC PERFORMANCE:

- A. Alarm, trouble and supervisory signals from all intelligent reporting devices shall be encoded on NFPA Style 4 (Class B) Signaling Line Circuits (SLC).
- B. Initiation Device Circuits (IDC) shall be wired Class A (NFPA Style D) as part of an addressable device connected by the SLC Circuit.
- C. Notification Appliance Circuits (NAC) shall be wired Class A (NFPA Style Z) as part of an addressable device connected by the SLC Circuit.
- D. On Style 6 or 7 (Class A) configurations a single ground fault or open circuit on the system Signaling Line Circuit shall not cause system malfunction, loss of operating power or the ability to report an alarm.
- E. Alarm signals arriving at the FACP shall not be lost following a primary power failure (or outage) until the alarm signal is processed and recorded.
- F. Where required, two-way telephone communication circuits shall be supervised for open and short circuit conditions.

1.4 BASIC SYSTEM FUNCTIONAL OPERATION

- A. When a fire alarm condition is detected and reported by the system initiating devices, the following functions shall immediately occur:
 - 1. The system alarm LED on the system display shall flash.
 - 2. A local piezo electric signal in the control panel shall sound.
 - 3. A backlit LCD display shall indicate all information associated with the fire alarm condition, including the type of alarm point and its location within the protected premises.
 - 4. Printing and history storage equipment shall log the information associated each new fire alarm control panel condition, along with time and date of occurrence.
 - 5. All system output programs assigned via control-by-event interlock programming to be activated by the particular point in alarm shall be executed, and the associated system outputs (notification appliances and/or relays) shall be activated.

1.5 SUBMITTALS

- A. Two copies of all submittals shall be submitted to the Architect/Engineer for review.
- B. All references to manufacturer's model numbers and other pertinent information herein is intended to establish minimum standards of performance, function and quality. Equivalent compatible UL-listed equipment from other manufacturers may be substituted for the specified equipment as long as the minimum standards are met.
- C. For equipment other than that specified, the contractor shall supply proof that such substitute equipment equals or exceeds the features, functions, performance, and quality of the specified equipment.
 - 1. Sufficient information, clearly presented, shall be included to determine compliance with drawings and specifications.
 - 2. Include manufacturer's name(s), model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts.
 - 3. Show annunciator layout, configurations, and terminations.
 - 4. Submit simultaneously with the shop drawings, complete operating and maintenance manuals listing the manufacturer's name(s), including technical data sheets.

5. Wiring diagrams shall indicate internal wiring for each device and the interconnections between the items of equipment.
6. Provide a clear and concise description of operation that gives, in detail, the information required to properly operate the equipment and system.

1.6 SOFTWARE MODIFICATIONS

- A. Provide the services of a factory trained and authorized technician to perform all system software modifications, upgrades or changes. Response time of the technician to the site shall not exceed 4 hours.
- B. Provide all hardware, software, programming tools and documentation necessary to modify the fire alarm system on site. Modification includes addition and deletion of devices, circuits, zones and changes to system operation and custom label changes for devices or zones. The system structure and software shall place no limit on the type or extent of software modifications on-site.

1.7 CERTIFICATIONS

- A. Together with the shop drawing submittal, submit a certification from the major equipment manufacturer indicating that the proposed supervisor of the installation and the proposed performer of contract maintenance is an authorized representative of the major equipment manufacturer. Include names and addresses in the certification.

1.8 GUARANTY

- A. All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance. The full cost of maintenance, labor and materials required to correct any defect during this one year period shall be included in the submittal.

1.9 POST CONTRACT MAINTENANCE

- A. Complete maintenance and repair service for the fire alarm system shall be available from a factory trained authorized representative of the manufacturer of the major equipment for a period of five (5) years after expiration of the guaranty.
- B. As part of the submittal, include a quote for a maintenance contract to provide all maintenance, tests, and repairs described below. Include also a quote for unscheduled maintenance/repairs, including hourly rates for technicians trained on this equipment, and response travel costs for each year of the maintenance period. Submittals that do not identify all post contract maintenance costs will not be accepted. Rates and costs shall be valid for the period of five (5) years after expiration of the guaranty.
- C. Maintenance and testing shall be on a semiannual basis or as required by the AHJ. A preventive maintenance schedule shall be provided by the contractor describing the protocol for preventive maintenance. The schedule shall include:
- D. Systematic examination, adjustment and cleaning of all detectors, manual fire alarm stations, control panels, power supplies, relays, waterflow switches and all accessories of the fire alarm system.
- E. Each circuit in the fire alarm system shall be tested semiannually.
- F. Each smoke detector shall be tested in accordance with the requirements of NFPA 72 Chapter 7.

1.10 POST CONTRACT EXPANSIONS

- A. The contractor shall have the ability to provide parts and labor to expand the system specified, if so requested, for a period of five (5) years from the date of acceptance.

- B. As part of the submittal, include a quotation for all parts and material, and all installation and test labor as needed to increase the number of intelligent or addressable devices by ten percent (10%). This quotation shall include intelligent smoke detectors, intelligent heat detectors, addressable manual stations, addressable monitor modules and addressable modules equal in number to one tenth of the number required to meet this specification (list actual quantity of each type).
- C. The quotation shall include installation, test labor, and labor to reprogram the system for this 10% expansion. If additional FACP hardware is required, include the material and labor necessary to install this hardware.
- D. Submittals that do not include this estimate of post contract expansion cost will not be accepted.

1.11 APPLICABLE STANDARDS AND SPECIFICATIONS:

- A. The specifications and standards listed below form a part of this specification. The system shall fully comply with the latest issue of these standards, if applicable.
 - 1. International Building Code 2015
 - 2. International Fire Code 2015
 - 3. National Fire Protection Association (NFPA) - USA:
 - a. No. 13 Sprinkler Systems
 - b. No. 15 Water Spray Systems
 - c. No. 17 Dry Chemical Extinguishing Systems
 - d. No. 72 National Fire Alarm Code
 - e. No. 101 Life Safety Code
 - f. Underwriters Laboratories Inc. (UL) - USA:
 - g. No. 268 Smoke Detectors for Fire Protective Signaling Systems
 - h. No. 864 Control Units for Fire Protective Signaling Systems
 - i. No. 268A Smoke Detectors for Duct Applications
 - j. No. 521 Heat Detectors for Fire Protective Signaling Systems
 - k. No. 464 Audible Signaling Appliances
 - l. No. 38 Manually Actuated Signaling Boxes
 - m. No. 346 Waterflow Indicators for Fire Protective Signaling Systems
 - n. No. 1076 Control Units for Burglar Alarm Proprietary Protective Signaling Systems
 - o. No. 1971 Visual Notification Appliances
 - 4. Local and State Building Codes.
 - 5. All requirements of the Authority Having Jurisdiction (AHJ).

1.12 APPROVALS

- A. The system shall have proper listing and/or approval from the following nationally recognized agencies:
 - 1. UL Underwriters Laboratories Inc
- B. The fire alarm control panel shall meet UL Standard 864 (Control Units) and UL Standard 1076 (Proprietary Burglar Alarm Systems).

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Edwards United Technologies

- B. Substitute equipment proposed as equal to equipment specified shall meet or exceed requirements of this section. For equipment other than that specified proof that such substitute equipment equals or exceeds features, functions, performance, and quality of specified equipment shall be provided. This proof shall be provided by submission of a copy of specification with each copy of the submittals that has had each paragraph marked as either compliant or non-compliant along with a letter from engineering manager or product manager at factory that certifies information presented as either compliant or non-compliant including a detailed explanation of each paragraph identified as non-compliant. In order to ensure that the Owner is provided with a system that incorporates required survivability features, this letter shall also specifically certify that the system is capable of complying with the test requirements of this section.

2.2 FIRE ALARM SYSTEM

- A. Fire Alarm System: Edwards Vigilant VS2 Fire Alarm/ voice evacuation System.

2.3 CONTROL PANEL HARDWARE

- A. Intelligent Control Panel: Supply user interface, including LCD or touch-screen 1/4 VGA display Intelligent Loop Interface Modules (ILI-MB-E3), manual switching, Control Panel shall consist of the following units and components:
 - 1. System Cabinet (B-, C-, or D-Size Cabinet) with associated inner door.
 - 2. Power Supply Module (PM-9) with batteries.
 - 3. 80-Character LCD Display (LCD-E3).
 - 4. Intelligent Loop Main Board Interface (ILI-MB-E3).
 - 5. Intelligent Loop Supplemental Interface (ILI-S-E3).
 - 6. DACT (DACT-E3).
 - 7. 1/4 VGA touch-screen display (NGA).
 - 8. Auxiliary Switch Module (ASM-16).
- B. System Cabinet:
 - 1. Surface or semi-flush mounted with texture finish.
 - 2. Consist of back box, inner door, and door.
 - 3. Available in at least 3 sizes to best fit project configuration.
 - 4. Houses 1 or more PM-9 Power Supply Modules, 1 or more ILI-MB-E3 or ILI-S-E3 assemblies, and other optional modules as specified.
 - 5. Construction: Dead-front steel construction with inner door to conceal internal circuitry and wiring.
 - 6. Wiring: Terminated on removable terminal blocks to allow field servicing of modules without disrupting system wiring.
- C. Power Supply Module (PM-9): Use latest technologies to provide power to the Control Panel and incorporate the following features:
 - 1. Power-saving switching technology using no step-down transformers.
 - 2. 9-amp continuous-rated output to supply up to all power necessary under normal and emergency conditions.
 - 3. Integral battery charger with capacity to charge up to 55 amp-hour batteries while under full load.

D. Batteries:

1. Sufficient capacity to provide power for entire system upon loss of normal AC power for a period of 24 hours with 15 minutes of alarm signaling at end of this 24-hour period, as required by NFPA 72, Local Systems.

E. LCD Display Module (LCD-E3):

1. LCD Display: 80-character RS-485 based textual annunciator with capability of being mounted locally or remotely. Provides audible and visual annunciation of all alarms and trouble signals. Provide dedicated LEDs for:
 - a. AC Power On: Green.
 - b. Alarm: Red.
 - c. Supervisory: Yellow.
 - d. System Trouble: Yellow.
 - e. Power Fault: Yellow.
 - f. Ground Fault: Yellow.
 - g. System Silenced: Yellow.
2. 80-Character Alphanumeric Display: Provide status of all analog/addressable sensors, monitor and control modules. Display shall be liquid crystal type (LCD), clearly visible in dark and under all light conditions.
3. Panel shall contain 4 functional keys:
 - a. Alarm Acknowledge.
 - b. Trouble Acknowledge.
 - c. Signal Silence.
 - d. System Reset/Lamp Test.
4. Panel shall contain 3 configuration buttons:
 - a. Menu/Back.
 - b. Back Space/Edit.
 - c. OK/Enter.
5. Panel shall have 12-key telephone-style keypad to permit selection of functions.

F. Intelligent Loop Interface (ILI-MB-E3): System shall be of multiprocessor design to allow maximum flexibility of capabilities and operation. Intelligent Loop Interface shall be capable of mounting in stand-alone enclosure as specified.

1. Field Programmable: System shall be capable of being programmed by Field Configuration Program (FCP), allowing programming to be downloaded via portable computer from any node on network.
2. RS-232C Serial Output: Supervised RS-232C serial port shall be provided to operate remote printers and/or video terminals, accept downloaded program from portable computer, or provide 80-column readout of all alarms, troubles, location descriptions, time, and date. Communication shall be standard ASCII code operating from 1,200 to 115,200 baud rate.
3. RS-485 Serial Output: Each ILI-MB-E3 shall incorporate RS-485 bus via ribbon harness for connection of modules inside same cabinet, and via 4-wire quick connector for connection of modules up to 3,000 feet from cabinet. Each ILI-MB-E3's RS-485 bus shall support up to 16 ASM-16 auxiliary switch modules, 6 LCD-E3 main annunciators, and 5

LCD-7100 annunciators.

4. Peer-to-Peer Panel Configuration: All Loop Interface Modules shall incorporate own programming, log functions, Central Processor Unit, and control-by-event (CBE) programming. If any loop driver becomes disabled, each remaining loop driver shall continue to communicate with remainder of network and maintain normal operation.
5. Control-by-Event (CBE) Program: ILI-MB-E3 shall be capable of programming using Boolean logic including AND, OR, NOT, and TIMING functions to provide complete programming flexibility.
6. Alarm Verification: Smoke detector alarm verification shall be standard option while allowing other devices such as manual stations and sprinkler flow to create immediate alarm. This feature shall be selectable for smoke sensors that are installed in environments prone to nuisance or unwanted alarms.
7. Alarm Signals: All alarm signals shall be automatically latched or "locked in" at control panel until operated device is returned to normal and control panel is manually reset. When used for sprinkler flow, "SIGNAL SILENCE" switch may be bypassed, if required by AHJ.
8. Electrically Supervised:
 - a. Each SLC and NAC circuit shall be electrically supervised for opens, shorts, and ground faults. Occurrence of fault shall activate system trouble circuitry, but shall not interfere with proper operation of other circuits.
 - b. Yellow "SYSTEM TROUBLE" LEDs shall light and system audible sounder shall steadily sound when trouble is detected in system. Failure of power, open or short circuits on SLC or NAC circuits, disarrangement in system wiring, failure of microprocessor or any identification module, or system ground faults shall activate this trouble circuit. Trouble signal shall be acknowledged by operating "TROUBLE ACKNOWLEDGE" switch. This shall silence sounder. If subsequent trouble conditions occur, trouble circuitry shall resound. During alarm, all trouble signals shall be suppressed with exception of lighting yellow "SYSTEM TROUBLE" LEDs.
9. Drift Compensation - Analog Smoke Sensors: System software shall automatically adjust each analog smoke sensor approximately once each week for changes in sensitivity due to effects of component aging or environment, including dust. Each sensor shall maintain its actual sensitivity under adverse conditions to respond to alarm conditions while ignoring factors which generally contribute to nuisance alarms. System trouble circuitry shall activate, display units that requires maintenance.
10. Analog Smoke Sensor Test: System software shall automatically test each analog smoke sensor a minimum of 3 times daily. Test shall be recognized functional test of each photocell (analog photoelectric sensors) and ionization chamber (analog ionization sensors) as required annually by NFPA 72. Failure of sensor shall activate system trouble circuitry, display "Test Failed" indication, and identify individual device that failed.
11. Off-Premises Connection:
 - a. Fire Alarm System: Connect via Digital Alarm Communicator Transmitter (DACT) and telephone lines to central station or remote station. Panel shall contain disconnect switch to allow testing of system without notifying fire department.
12. Central Station Option: Fire alarm control panel shall provide integral Digital Alarm Communicator Transmitter (DACT) for signaling to central station. DACT shall contain "Dialer-Runaway" feature preventing unnecessary transmissions as result of intermittent faults in system and shall be Carrier Access Code (CAC) compliant, accepting up to 20-digit central station telephone numbers. Fire department shall be consulted as to authorized central station companies serving municipality. Fire alarm system shall transmit both alarm and trouble signals, with alarm having priority over trouble signal.

Contractor shall be responsible for all installation charges and Owner will be responsible for line lease charges.

13. Network Annunciator Option: Each ILI-MB-E3 and associated display shall provide option of being configured as network annunciator. Options for annunciation shall default as regional annunciator with capability of selecting global annunciation to provide system-wide protection and Acknowledge, Silence, and Reset capabilities.
14. Redundant History Log: Each ILI-MB-E3 shall contain full 4100 event history log supporting local and network functions. If a main processor or network node is lost the entire log shall be accessible at any other Loop Interface board. This shall be demonstrated by removing power followed by extraction of history log from any loop driver location.
15. LEDs Indicator and Outputs: Each ILI-MB-E3 Loop Interface shall incorporate as a minimum the following diagnostic LED indicators:
 - a. Power: Green.
 - b. Alarm: Red.
 - c. Supervisory: Yellow.
 - d. General Trouble: Yellow.
 - e. Ground Fault: Yellow.
 - f. Transmit: Green.
 - g. Receive: Green.
16. Auxiliary Power Outputs: Each ILI-MB-E3 Loop Interface shall provide the following supply outputs:
 - a. 24 VDC non-resettable, 1 amp. maximum, power limited.
 - b. 24 VDC resettable, 1 amp. maximum, power limited.
17. Microprocessor: Loop interface shall incorporate 32-bit RISC processor. Isolated "watchdog" circuit shall monitor microprocessor and upon failure shall activate system trouble circuits on display. Microprocessor shall access system program for all control-by-event (CBE) functions. System program shall not be lost upon failure of both primary and secondary power. Programming shall support Boolean logic including AND, OR, NOT, TIME DELAY functions for maximum flexibility.
18. Auto Programming: System shall provide for all SLC devices on any SLC loop to be pre-programmed into system. Upon activation of auto programming, only devices that are present shall activate. This allows for system to be commissioned in phases without need of additional downloads.
19. Environmental Drift Compensation: System shall provide for setting Environmental Drift Compensation by device. When detector accumulates dust in chamber and reaches unacceptable level but yet still below allowed limit, control panel shall indicate maintenance alert warning. When detector accumulates dust in chamber above allowed limit, control panel shall indicate maintenance urgent warning.
20. NON-FIRE Alarm Module Reporting: Non-reporting type ID shall be available for use for energy management or other non-fire situations. NON-FIRE point operation shall not affect control panel operation nor shall it display message at panel LDC. Activation of NON-FIRE point shall activate control by event logic, but shall not cause indication on control panel.
21. 1-Man Walk Test:
 - a. System shall provide both basic and advanced walk test for testing entire fire alarm

system. Basic walk test shall allow single operator to run audible tests on panel. All logic equation automation shall be suspended during test and while annunciators can be enabled for test, all shall default to disabled state. During advanced walk test, field-supplied output point programming shall react to input stimuli, such as CBE and logic equations. When points are activated in advanced test mode, each initiating event shall latch input. Advanced test shall be audible and shall be used for pull station verification, magnet activated tests on input devices, input and output device, and wiring operation/verification.

- b. Test feature is intended to provide for certain random spot testing of system and is not intended to comply with requirements of testing fire alarm systems in accordance with NFPA 72, as it is impossible to test all functions and verify items such as annunciation with only 1 person.
- 22. Signaling Line Circuits: Each ILI-MB-E3 module shall provide communication with analog/addressable (initiation/control) devices via 2 signaling line circuits. Each signaling line circuit shall be capable of being wired Class B, Style 4 or Class A, Style 6. Circuits shall be capable of operating in NFPA Style 7 configuration when equipped with isolator modules between each module type device and isolator sensor bases. Each circuit shall communicate with a maximum of 159 analog sensors and 159 addressable monitor/control devices. Unique 40-character identifier shall be available for each device. Devices shall be of the Velocity series with capability to poll 10 devices at a time with a maximum polling time of 2 seconds when both SLCs are fully loaded.
- 23. Notification Appliance Circuits: 2 independent NAC circuits shall be provided on ILI-MB, polarized and rated at 2 amperes DC per circuit, individually over current protected and supervised for opens, grounds, and short circuits. They shall be capable of being wired Class B, Style Y or Class A, Style Z.
- 24. Alarm Dry Contacts: Provide alarm dry contacts (Form C) rated 2 amps at 30 VDC (resistive) and transfer whenever system alarm occurs.
- 25. Supervisory Dry Contacts: Provide supervisory dry contacts (Form C) rated 2 amps at 30 VDC (resistive) and transfer whenever system supervisory condition occurs.
- 26. Trouble Dry Contacts: Provide trouble dry contacts (Form C) rated 2 amps at 30 VDC (resistive) and transfer whenever system trouble occurs.
- G. Auxiliary Switch Module (ASM-16):
 - 1. Each ASM-16 has 16 programmable push-button switches.
 - 2. Each push-button switch has 3 associated status LEDs (red, yellow, and green), configurable to indicate any combination of functions.
 - 3. Flexible switch configurations to allow flexible set-up of phone, speaker, and auxiliary function circuits.
 - 4. An insertable label to identify function of each switch and LEDs combination.
 - 5. Provide capability to communicate with up to 16 ASM-16 modules locally, or up to 3,000 feet from the Control Panel.
- H. Remote Network Graphic Annunciator (NGA): Network able, 1/4 VGA, touch-screen annunciator with the following characteristics:
 - 1. Custom Graphics: Panel shall permit uploading of custom bit-mapped graphic to display screen. Graphic shall display when all systems are normal.
 - 2. Intuitive Functions: In alarm or trouble condition, annunciator shall display only information pertaining to event, including control switches.
 - a. Trouble Condition: Display shall indicate cause of trouble. Only controls available to operator shall be Acknowledge and Reset functions.

- b. Alarm Condition: Display shall indicate cause of alarm. Only controls available to operator shall be Acknowledge, Silence, and Reset functions.

2.4 SYSTEM PERIPHERALS

A. Addressable Devices - General:

1. Provide address-setting means using rotary-decimal switches.
2. Use simple to install and maintain decade-type (numbered 0 to 9) address switches by using standard screwdriver to rotate 2 dials on device to set address. Devices which use binary address set via dipswitch packages, handheld device programmer, or other special tools for setting device address shall not be acceptable.
3. Detectors: Analog and addressable. Connect to fire alarm control panel's Signaling Line Circuits.
4. Addressable Thermal and Smoke Detectors: Provide 2 status LEDs. Both LEDs shall flash under normal conditions, indicating detector is operational and in regular communication with control panel, and both LEDs shall be placed into steady illumination by control panel, indicating alarm condition has been detected. If required, flashing mode operation of detector LEDs can be programmed off via fire control panel program.
5. Fire Alarm Control Panel: Permit detector sensitivity adjustment through field programming of system. Sensitivity can be automatically adjusted by panel on time-of-day basis.
6. Using software in INCC Command Center, detectors shall automatically compensate for dust accumulation and other slow environmental changes that may affect their performance. Detectors shall be listed by UL as meeting calibrated sensitivity test requirements of NFPA 72, Chapter 7.
7. Detectors shall be ceiling-mounted and shall include separate twist-lock base with tamper-proof feature.
8. Following bases and auxiliary functions shall be available:
 - a. Standard base with remote LED output.
 - b. Sounder base rated at 85 dBA minimum.
 - c. Form-C relay base rated 30 VDC, 2.0 A.
 - d. Isolator base.
9. Detectors shall provide test means whereby they will simulate alarm condition and report that condition to control panel. Such test shall be initiated at detector itself by activating magnetic switch or initiated remotely on command from control panel.
10. Detectors shall store internal identifying type code that control panel shall use to identify type of device (ION, PHOTO, THERMAL).

B. Addressable Manual Stations:

1. Manual Fire Alarm Stations: Non-code, non-break glass type, equipped with key lock so they may be tested without operating handle.
2. Operated Station: Visually apparent, as operated, at a minimum distance of 100 feet (30.5 m) from front or side.
3. Stations shall be designed so after actual activation, they cannot be restored to normal except by key reset.
4. Manual stations shall be constructed of Lexan with clearly visible operating instructions provided on cover. The word FIRE shall appear on front of stations in raised letters, 1.75 inches (44 mm) or larger.

5. Addressable manual stations shall, on command from control panel, send data to panel representing state of manual switch and addressable communication module status.
- C. Intelligent Thermal Detectors: Intelligent addressable devices rated at 135 degrees F (58 degrees C) and have rate-of-rise element rated at 15 degrees F (9.4 degrees C) per minute. Connect via 2 wires to fire alarm control panel signaling line circuit.
- D. Intelligent Photoelectric Smoke Detectors with CO sensor: Use photoelectric (light-scattering) principal to measure smoke density and shall, on command from control panel, send data to panel representing analog level of smoke density.
- E. Intelligent Ionization Smoke Detectors with CO sensor: Use dual-chamber ionization principal to measure products of combustion and shall, on command from control panel, send data to panel representing analog level of products of combustion.
- F. Intelligent Duct Smoke Detectors:
 1. In-Duct Smoke Detector Housing: Use on-board intelligent photoelectric detector, which provides continuous analog monitoring and alarm verification from panel.
 2. When sufficient smoke is sensed, alarm signal is initiated, and appropriate action taken to shut down or change over air handling systems to help prevent rapid distribution of toxic smoke and fire gases throughout areas served by duct system.
 3. Duct Smoke Detectors Mounted Above Ceiling or Otherwise Obstructed from Normal View: Provide with remote alarm indicator.
 4. Each Detector: Install in either supply side or return side duct in accordance with local mechanical code.
- G. Addressable Dry Contact Monitor Modules:
 1. Provide to connect 1 supervised IDC zone of conventional alarm initiating devices (any N.O. dry contact device) to 1 of the fire alarm control panel SLCs.
 2. Mount in standard deep electrical box.
 3. IDC Zone: Suitable for Style B operation.
- H. Addressable Dry Contact Monitor Modules:
 1. Provide to connect 1 supervised IDC zone of conventional alarm initiating devices (any N.O. dry contact device) to 1 of the fire alarm control panel SLCs.
 2. Mount in 4-inch (102-mm) square, 2-1/8-inch (54-mm) deep electrical box.
 3. IDC Zone: Suitable for Style D or Style B operation.
 4. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.
- I. Addressable Dry Contact Monitor Modules:
 1. Provide to connect 2 supervised IDC zones of conventional alarm initiating devices (any N.O. dry contact device) to 1 of the fire alarm control panel SLCs.
 2. Mount in 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box.
 3. IDC Zones: Suitable for Style B operation.
 4. LEDs: Flash under normal conditions, indicating monitor module is operational and in regular communication with control panel.
- J. Addressable Control Modules:
 1. Provide to supervise and control operation of 1 conventional NAC of compatible, 24-VDC powered, polarized audio/visual notification appliances or UL-listed polarized relays for fan shutdown and other auxiliary control functions.

2. Mount in standard 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box or to surface-mounted back box.
 3. Control Module NAC: Wire for Style Z or Style Y (Class A/B) with up to 1 amp of inductive signal or 2 amps of resistive signal operation. Relay coil shall be magnetically latched to reduce wiring connection requirements and to ensure 100 percent of all auxiliary relay or NACs shall be energized at same time on same pair of wires.
 4. Audio/Visual Power: Provide by separate supervised power circuit from main fire alarm control panel or from supervised, UL-listed remote power supply.
- K. Addressable Relay Modules:
1. Available for HVAC control and other building functions. Relay shall have 2 Form C sets of contacts that operate in tandem and are rated for a minimum of 2.0 amps resistive or 1.0 amps inductive. Relay coil shall be magnetically latched to reduce wiring connection requirements and to ensure 100 percent of all auxiliary relay or NACs shall be energized at same time on same pair of wires.
 2. Mount in standard 4-inch (101.6-mm) square, 2-1/8-inch (54-mm) deep electrical box or to surface-mounted back box.
- L. Isolator Modules:
1. Provide to automatically isolate wire-to-wire short circuits on SLC Class A or Class B branch. Isolator module shall limit number of modules or detectors that may be rendered inoperative by short-circuit fault on SLC loop segment or branch. At least 1 isolator module shall be provided for each floor or protected zone of building. No more than 25 devices shall be connected to 1 isolator module.
 2. If wire-to-wire short occurs, isolator module shall automatically open-circuit (disconnect) SLC. When short-circuit condition is corrected, isolator module shall automatically reconnect isolated section.
 3. Does not require address-setting, and its operations shall be totally automatic. Not necessary to replace or reset isolator module after normal operation.
 4. Mount in standard 4-inch (101.6-mm) deep electrical box or in surface-mounted back box.
 5. Single LED: Flash to indicate isolator is operational and illuminate steadily to indicate short-circuit condition has been detected and isolated.
- M. Notification appliances
1. General Requirements for Notification Appliances: Connected to notification appliance signal circuits, zoned as indicated, equipped for mounting as indicated and with screw terminals for system connections.
 2. Combination Devices: Factory-integrated audible and visible devices in a single-mounting assembly, equipped for mounting as indicated and with screw terminals for system connections.
 3. Horns: Electric-vibrating-polarized type, 24-V dc; with provision for housing the operating mechanism behind a grille. Comply with UL 464. Horns shall produce a sound-pressure level of 90 dBA, measured **10 feet** from the horn, using the coded signal prescribed in UL 464 test protocol.
 4. Visible Notification Appliances: Xenon strobe lights comply with UL 1971, with clear or nominal white polycarbonate lens mounted on an aluminum faceplate. The word "FIRE" is engraved in minimum **1-inch**- high letters on the lens.
 - a. Rated Light Output:
 - 1) 15/30/75/110 cd, selectable in the field.

- b. Mounting: Wall mounted unless otherwise indicated.
 - c. For units with guards to prevent physical damage, light output ratings shall be determined with guards in place.
 - d. Flashing shall be in a temporal pattern, synchronized with other units.
 - e. Strobe Leads: Factory connected to screw terminals.
 - f. Mounting Faceplate: Factory finished, red.
5. Voice/Tone Notification Appliances:
- a. Appliances shall comply with UL 1480 and shall be listed and labeled by an NRTL.
 - b. High-Range Units: Rated 2 to 15 W.
 - c. Low-Range Units: Rated 1 to 2 W.
 - d. Mounting: semirecessed.
 - e. Matching Transformers: Tap range matched to acoustical environment of speaker location.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Installation shall be in accordance with the NEC, NFPA 72, local and state codes, as shown on the drawings, and as recommended by the major equipment manufacturer. ***Fire alarm system cabling, where routed above accessible ceilings, may be supported with j-hooks and cable tray.***
- B. All conduit, junction boxes, conduit supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas. Smoke detectors shall not be installed prior to the system programming and test period. If construction is ongoing during this period, measures shall be taken to protect smoke detectors from contamination and physical damage.
- C. All fire detection and alarm system devices, control panels and remote annunciators shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas.
- D. Manual fire alarm boxes shall be suitable for surface mounting or semi-flush mounting as shown on the plans, and shall be installed not less than 42 inches (1067 mm), nor more than 48 inches (122 mm) above the finished floor.

3.2 TEST

- A. The service of a competent, factory-trained engineer or technician authorized by the manufacturer of the fire alarm equipment shall be provided to technically supervise and participate during all of the adjustments and tests for the system. All testing shall be in accordance with NFPA 72, Chapter 7.
- B. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.
- C. Close each sprinkler system flow valve and verify proper supervisory alarm at the FACP.
- D. Verify activation of all waterflow switches.
- E. Open initiating device circuits and verify that the trouble signal actuates.
- F. Open and short signaling line circuits and verify that the trouble signal actuates.
- G. Open and short notification appliance circuits and verify that trouble signal actuates.
- H. Ground all circuits and verify response of trouble signals.
- I. Check presence and audibility of tone at all alarm notification devices.
- J. Check installation, supervision, and operation of all intelligent smoke detectors using the walk test.

- K. Each of the alarm conditions that the system is required to detect should be introduced on the system. Verify the proper receipt and the proper processing of the signal at the FACP and the correct activation of the control points.
- L. When the system is equipped with optional features, the manufacturer's manual shall be consulted to determine the proper testing procedures. This is intended to address such items as verifying controls performed by individually addressed or grouped devices, sensitivity monitoring, verification functionality and similar.

3.3 FINAL OBSERVATION

- A. At the final inspection, a factory-trained representative of the manufacturer of the major equipment shall demonstrate that the system functions properly in every respect.
- B. Provide NFPA Form 72C Completion Form for the new fire alarm system installation.

3.4 SYSTEM INSTRUCTION

- A. Instruction shall be provided as required for operating the system. Hands-on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.
- B. The contractor and/or the systems manufacturer's representatives shall provide a typewritten "Sequence of Operation."

END OF SECTION

SECTION 32 31 13

CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fence framework, fabric, and accessories.
- B. Excavation for post bases; concrete foundation for posts.
- C. Manual gates and related hardware.

1.02 RELATED REQUIREMENTS

- A. Section 03 30 00 - Cast-in-Place Concrete: Concrete anchorage for posts.

1.03 REFERENCE STANDARDS

- A. ASTM A121 - Standard Specification for Metallic-Coated Carbon Steel Barbed Wire; 2013.
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2009.
- C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- D. ASTM A392 - Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric; 2011.
- E. ASTM A428/A428M - Standard Test Method for Weight (Mass) of Coating on Aluminum-Coated Iron or Steel Articles; 2010.
- F. ASTM A491 - Standard Specification for Aluminum-Coated Steel Chain-Link Fence Fabric; 2010.
- G. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2010.
- H. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2010.
- I. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2011.
- J. ASTM F567 - Standard Practice for Installation of Chain-Link Fence; 2011.
- K. ASTM F668 - Standard Specification for Polyvinyl Chloride (PVC) and Other Organic Polymer-Coated Steel Chain-Link Fence Fabric; 2007.
- L. ASTM F1043 - Standard Specification for Strength and Protective Coatings on Steel Industrial Chain Link Fence Framework; 2011.
- M. ASTM F1083 - Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures; 2010.
- N. ASTM F1665 - Standard Specification for Poly(Vinyl Chloride)(PVC) and Other Conforming Organic Polymer-Coated Steel Barbed Wire Used with Chain-Link Fence; 2008.
- O. CLFMI CLF 2445 - Product Manual; Chain Link Fence Manufacturers Institute; 1997.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on fabric, posts, accessories, fittings and hardware.
- C. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, and schedule of components.
- D. Samples: Submit two samples of fence fabric, 24 inch by 24 inch in size illustrating construction and colored finish.
- E. Project Record Documents: Accurately record actual locations of property perimeter posts relative to property lines and easements.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

PART 2 PRODUCTS

2.01 MATERIALS AND COMPONENTS

- A. Materials and Components: Conform to CLFMI Product Manual.
- B. Fabric Size: CLFMI Standard Commercial, Industrial, Residential service, 2", 9 gage core, 6 gage extruded Vinyl Coated finish.
- C. Intermediate Posts: Type I round.
- D. Terminal, Corner, Rail, Brace, and Gate Posts: Type I round.
- E. Gates: Fabric and framing to match intended service rating..

2.02 FINISHES

- A. Components (Other than Fabric): Galvanized in accordance with ASTM A123/A123M, at 1.7 oz/sq ft.
- B. Components (Other than Fabric): Aluminum coated at 0.40 oz/sq ft, when measured in accordance with ASTM A428/A428M.
- C. Components and Fabric: Vinyl coating, black color as selected over coating of 1.8 oz/sq ft galvanizing.
- D. Hardware: Hot-dip galvanized to weight required by ASTM A153/A153M.
- E. Accessories: Same finish as framing.

PART 3 EXECUTION

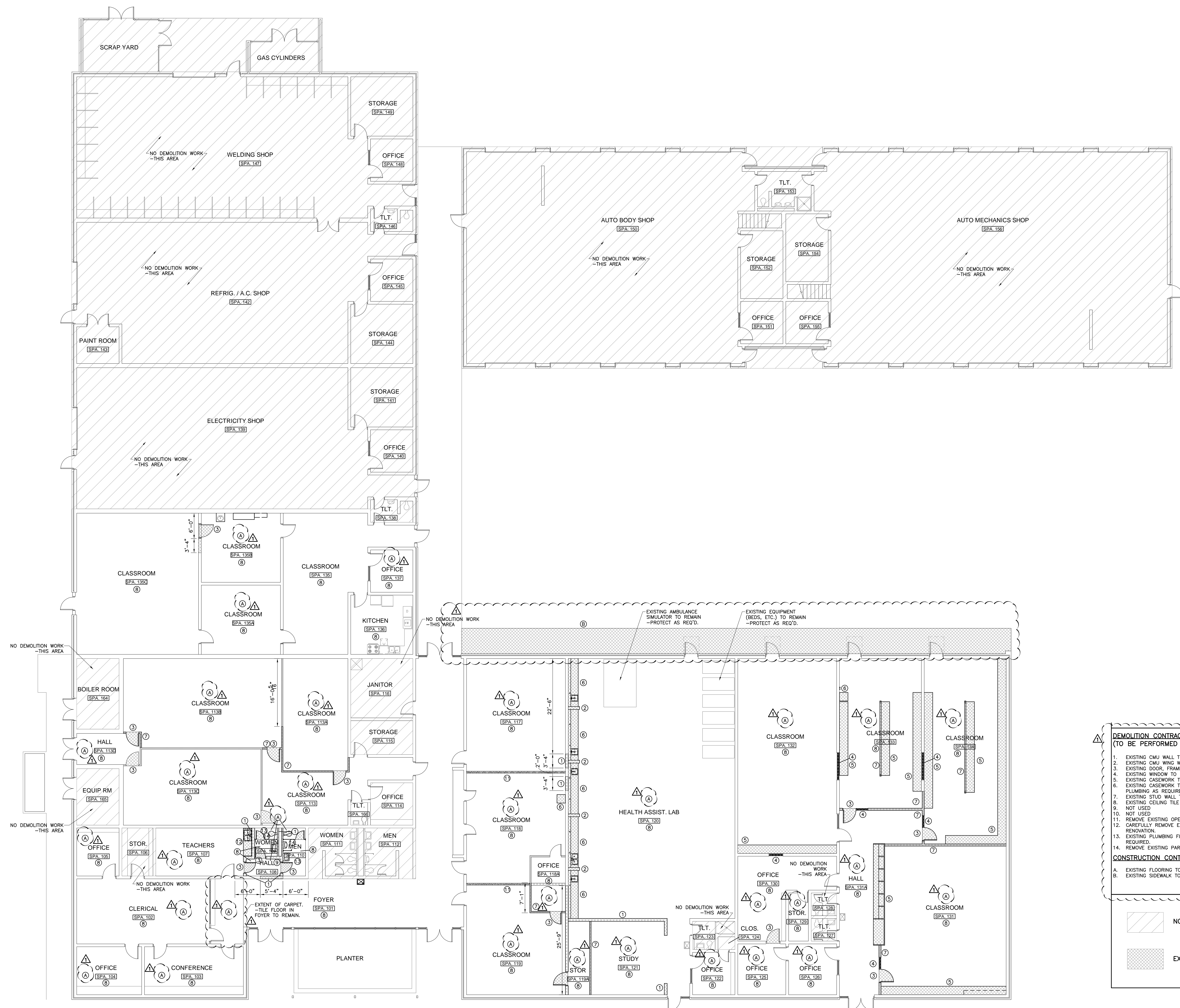
3.01 INSTALLATION

- A. Install framework, fabric, accessories and gates in accordance with ASTM F567.

3.02 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch.
- B. Maximum Offset From True Position: 1 inch.
- C. Components shall not infringe adjacent property lines.

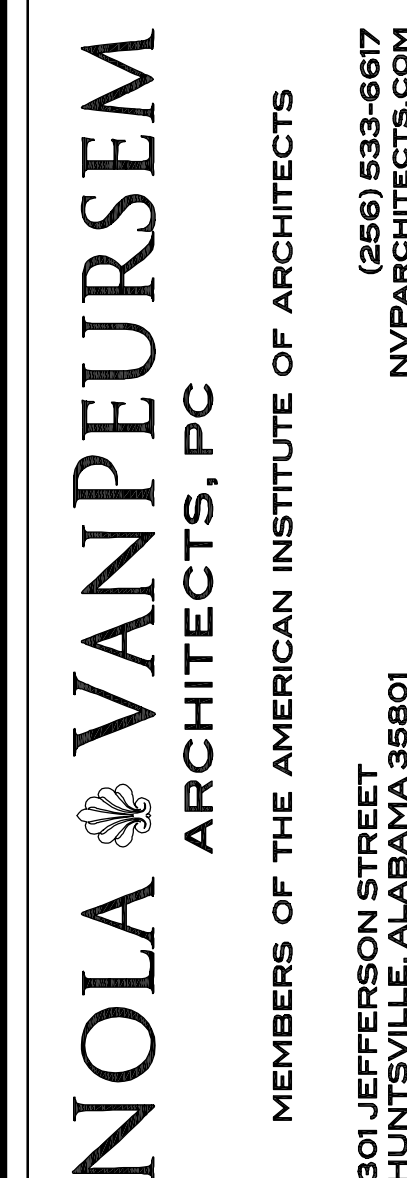
END OF SECTION



DEMOLITION CONTRACTOR NOTES: (TO BE PERFORMED UNDER ANOTHER CONTRACT)	
1.	EXISTING CMU WALL TO BE REMOVED.
2.	EXISTING CMU WING WALL TO BE REMOVED.
3.	EXISTING DOOR, FRAME, AND HARDWARE TO BE REMOVED.
4.	EXISTING WINDOW TO BE REMOVED.
5.	EXISTING CASEWORK TO BE REMOVED.
6.	EXISTING CASEWORK TO BE REMOVED. CAP ELECTRICAL, GAS & PLUMBING AS REQUIRED.
7.	EXISTING STUD WALL TO BE REMOVED.
8.	EXISTING CEILING TILE & GRID TO BE REMOVED.
9.	NOT USED
10.	NOT USED
11.	REMOVE EXISTING OPERABLE PARTITION AND TRACK.
12.	CAREFULLY REMOVE EXISTING CASEWORK. TO BE RELOCATED DURING RENOVATION.
13.	EXISTING PLUMBING FIXTURES TO BE REMOVED. CAP PLUMBING AS REQUIRED.
14.	REMOVE EXISTING PARTITIONS.
CONSTRUCTION CONTRACTOR DEMOLITION NOTES:	
A.	EXISTING FLOORING TO BE REMOVED.
B.	EXISTING SIDEWALK TO BE REMOVED.

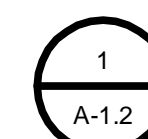
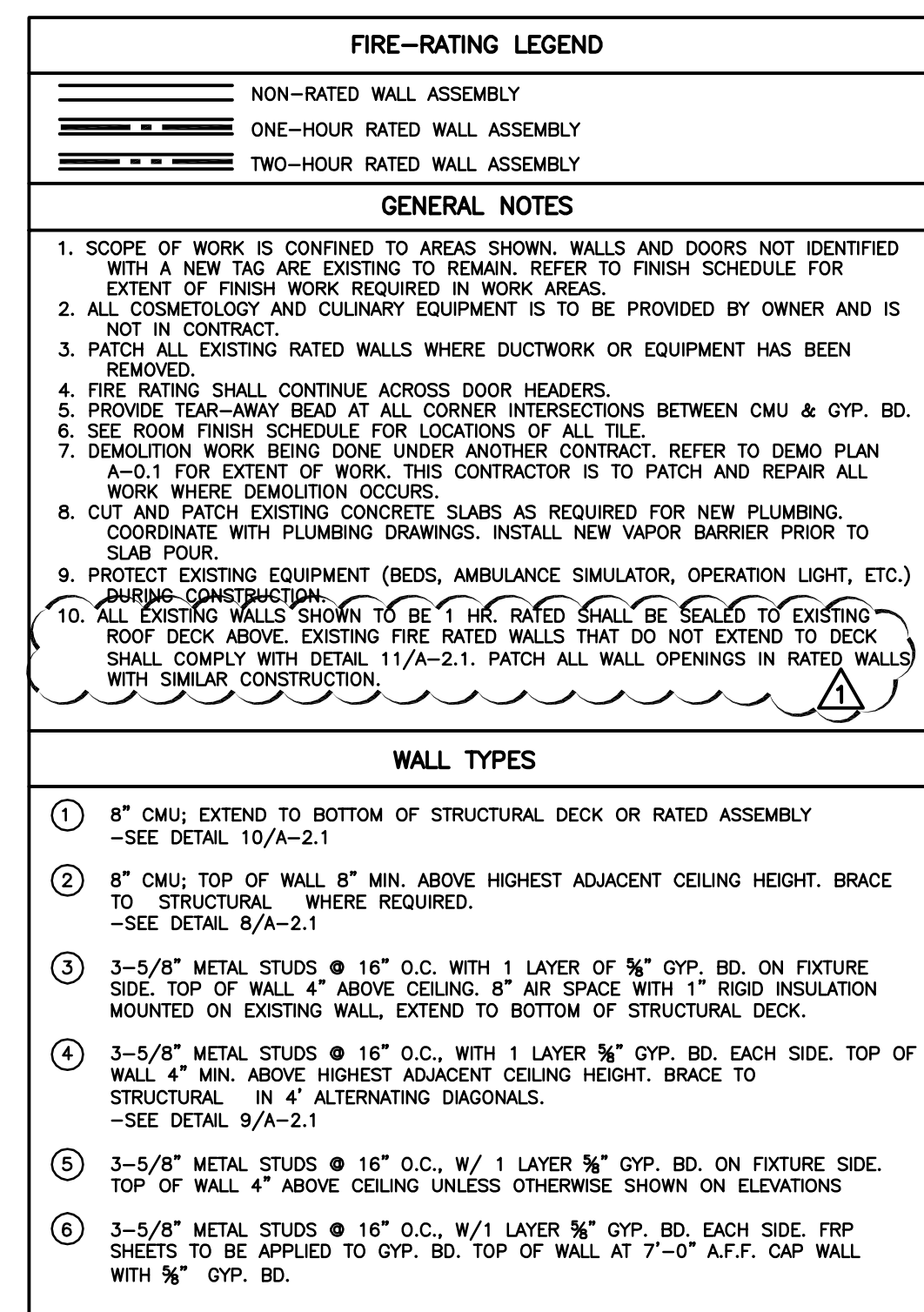
NO WORK DONE

EXTENT OF ITEM(S) TO BE REMOVED

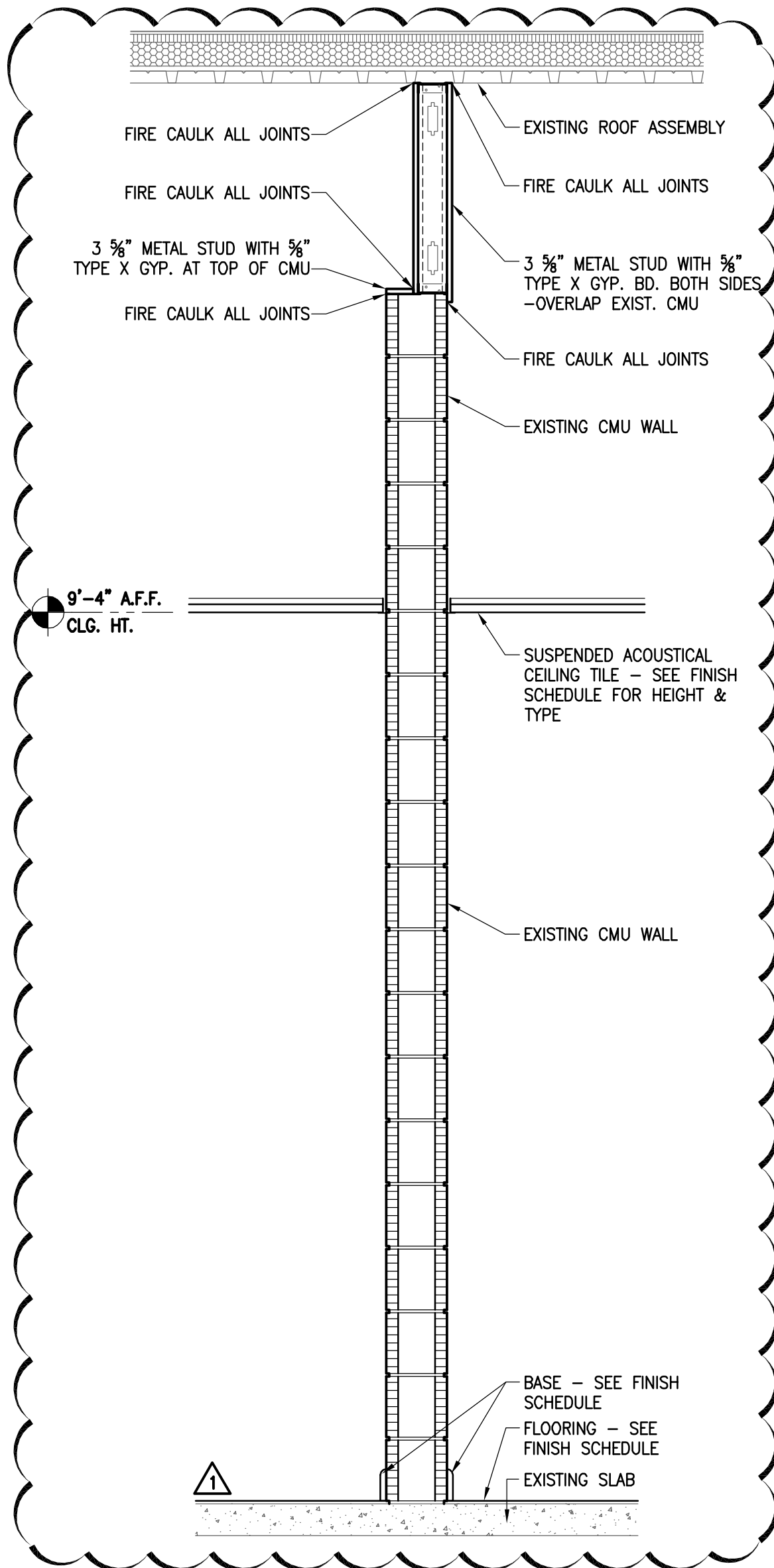


DECATUR CITY SCHOOLS
 AUSTIN HIGH SCHOOL
 CAREER TECH CENTER
 DECATUR, ALABAMA

OF



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



11
A-2.1

WALL SECTION

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



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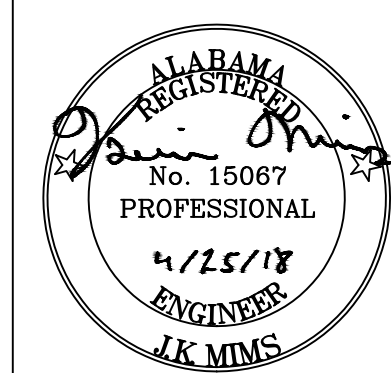
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CAREER TECH CENTER**
DECATUR, ALABAMA

JOB NUMBER
17922

ZWW/JSD / JRM / 04-25-2018
DRAWN - CHECKED - DATE

REVISIONS
ADJ 1 05-14-2018

SHEET TITLE

**PLUMBING
DEMOLITION
FLOOR PLAN**

SHEET NUMBER

P-1.1
OF
8

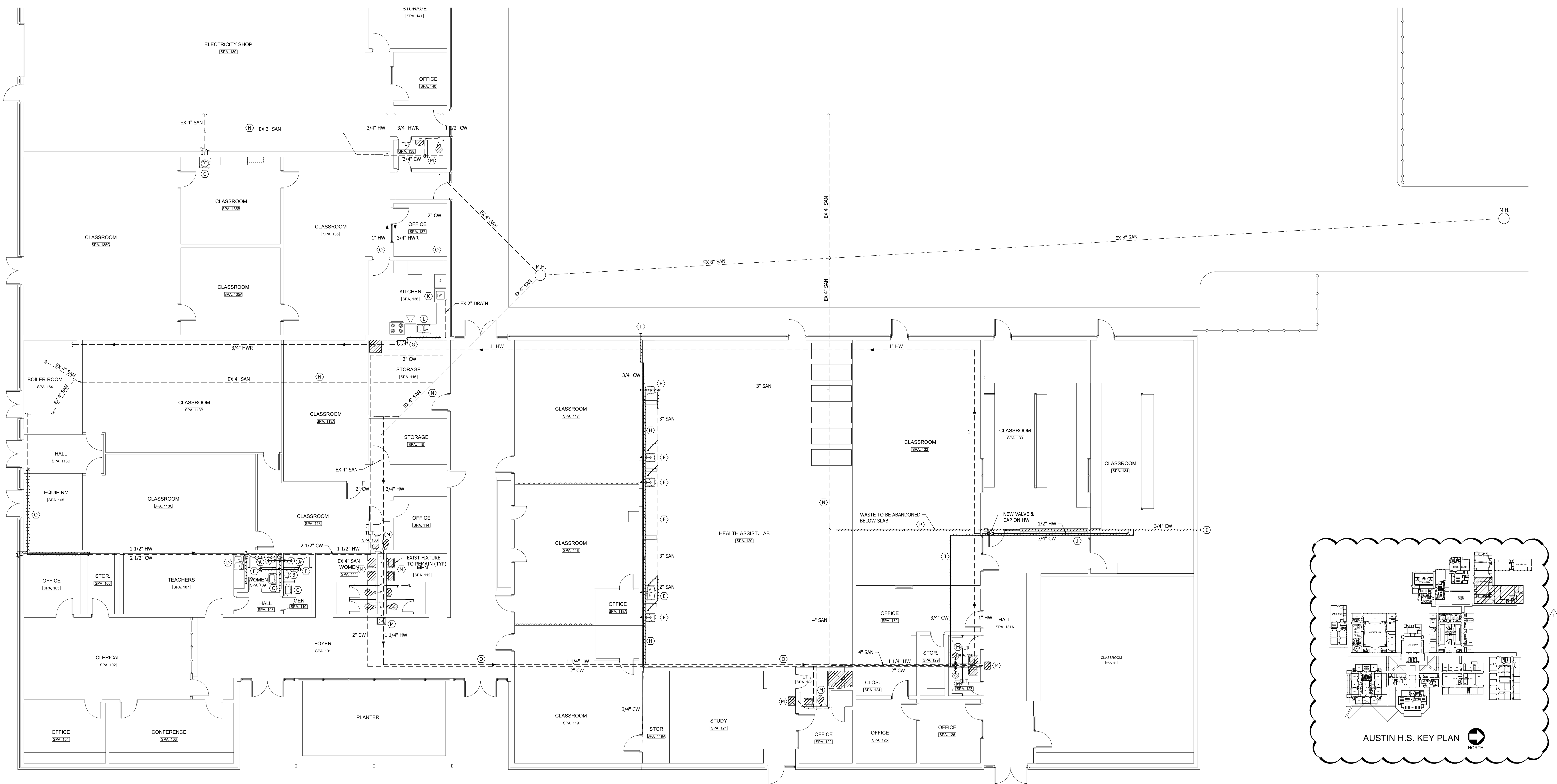
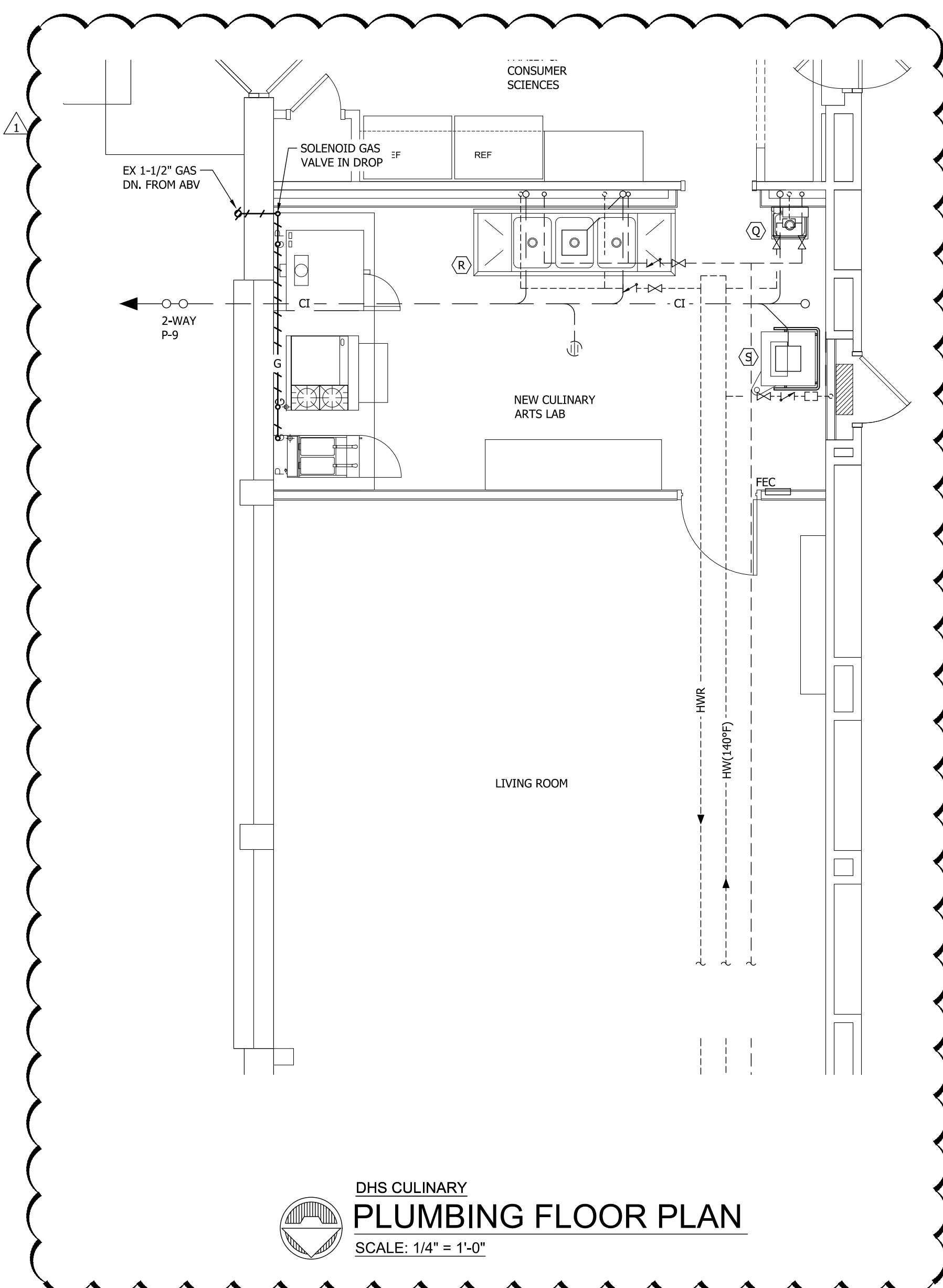
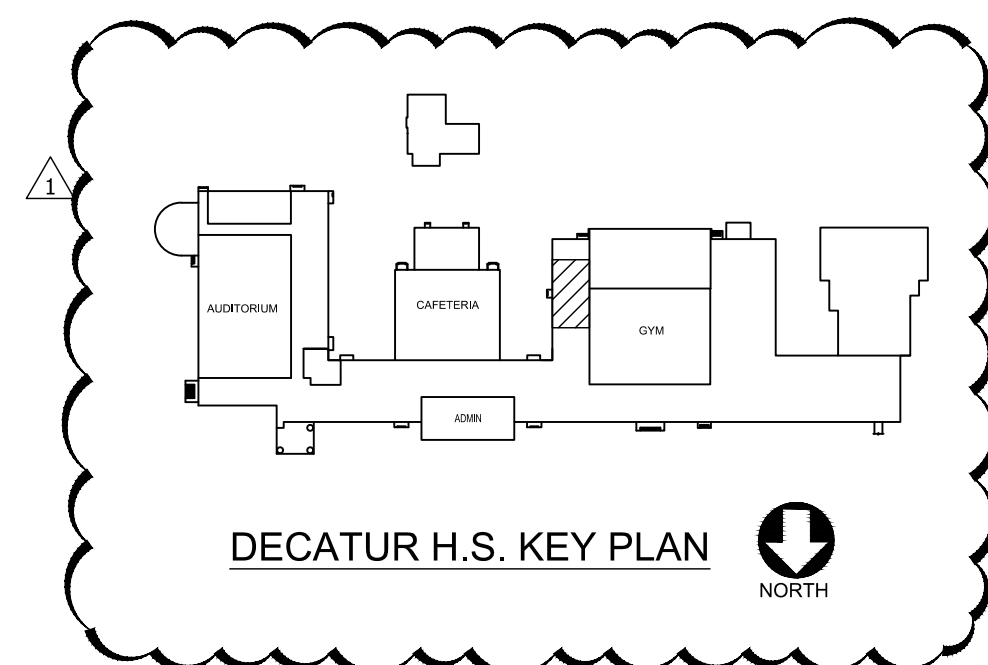
M E MIMS ENGINEERING INC.
CONSULTING ENGINEERS
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PHONE: 256-891-4120
WWW.MIMSENGINEERING.COM

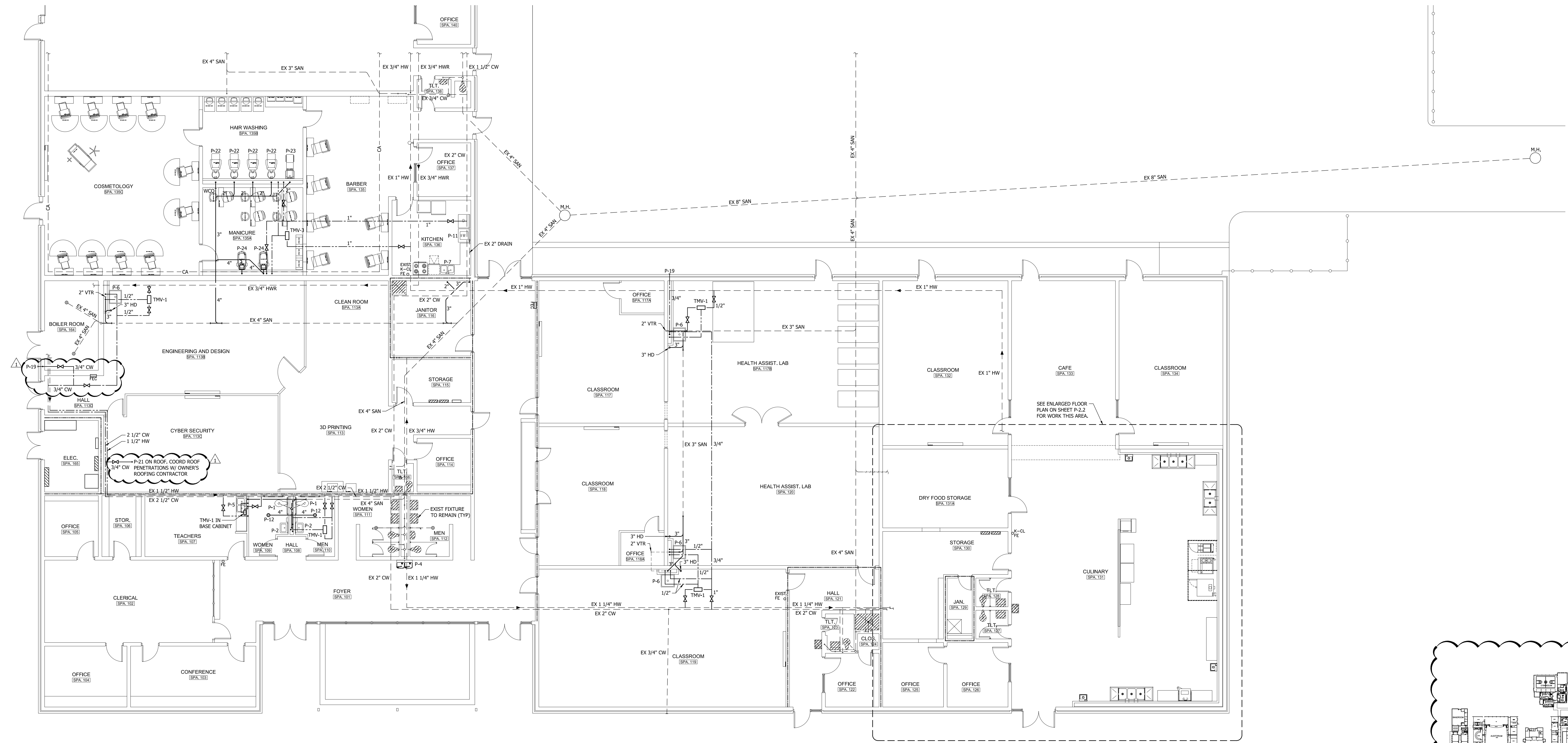
PLUMBING DEMOLITION NOTES CAREER TECH BUILDING

- A Existing water closet to be removed. Removal shall include all below floor waste, vent pipe system, water piping and flush valve. Cap the water piping at the main above the ceiling. Coordinate with the General Contractor for floor repairs.
- B Existing urinal to be removed. Removal shall include the carrier, above and below floor waste and vent pipe system, water piping and flush valve. Cap the water piping at the main above the ceiling. Coordinate with the General Contractor for floor repairs.
- C Existing lavatory to be removed. Removal shall include the carrier, above and below floor waste and vent pipe system, hot and cold water piping and trim. Cap the water piping at the mains above the ceiling. Coordinate with the General Contractor for floor repairs.
- D Existing counter mounted sink to be removed and relocated where indicated on sheet P-2.1. The existing vent riser, waste to below the floor and water drops are to be removed. Cap the water pipes at the main. Cap the waste below the slab. Coordinate with the General Contractor for floor repairs.
- E Existing Lab counter mounted sink to be removed. Removal shall include the above and below floor waste and vent pipe system, hot and cold water piping and trim. Cap the waste pipe system below the floor. Cap the water piping at the mains above the ceiling. Coordinate with the General Contractor for floor repairs. Where new fixtures are shown to be connected to the existing waste, the connection shall be below the floor.
- F Existing floor drain to be removed. Removal shall include the trap and all above and below floor waste and vent system. Cap the water piping at the mains above the ceiling. Coordinate with the General Contractor for floor repairs.
- G Existing waste water pump to be removed. Removal shall include the inlet and discharge waste pipe system. The pump shall be turned over to the Owner.
- H Existing Lab water piping to be removed. Removal shall include all piping above the ceiling, drops down and piping routed inside the base cabinet.
- I Existing wall hydrant to be removed. Removal shall include all water piping back to the main. Cap the water piping at the main.
- J Piping from a previously demolished sink is to be removed. Removal shall include the water piping back to the main. Any waste stub up through the floor shall be removed to below the floor and permanently capped. Cap the water piping at the mains.
- K Existing kitchen sink to be remain. The existing waste below the cabinet that extends to the pump as identified in note G shall be removed.
- L Existing washer connection to remain. The waste piping below the countertop shall be reused. Demolish the pipe as shown on the drawings and prepare the pipe for reconnection and extension though the wall as indicated.
- M Existing fixtures to remain.
- N Existing waste piping to remain. Coordinate with new fixture connections where the floor is to be cut, the pipe exposed and new fittings installed for the fixtures.
- O Existing water piping to remain. Coordinate with the new fixture connections for required tees and new piping runouts to the fixtures.
- P Existing below floor waste from a previously demolished fixture to be abandoned below the floor.

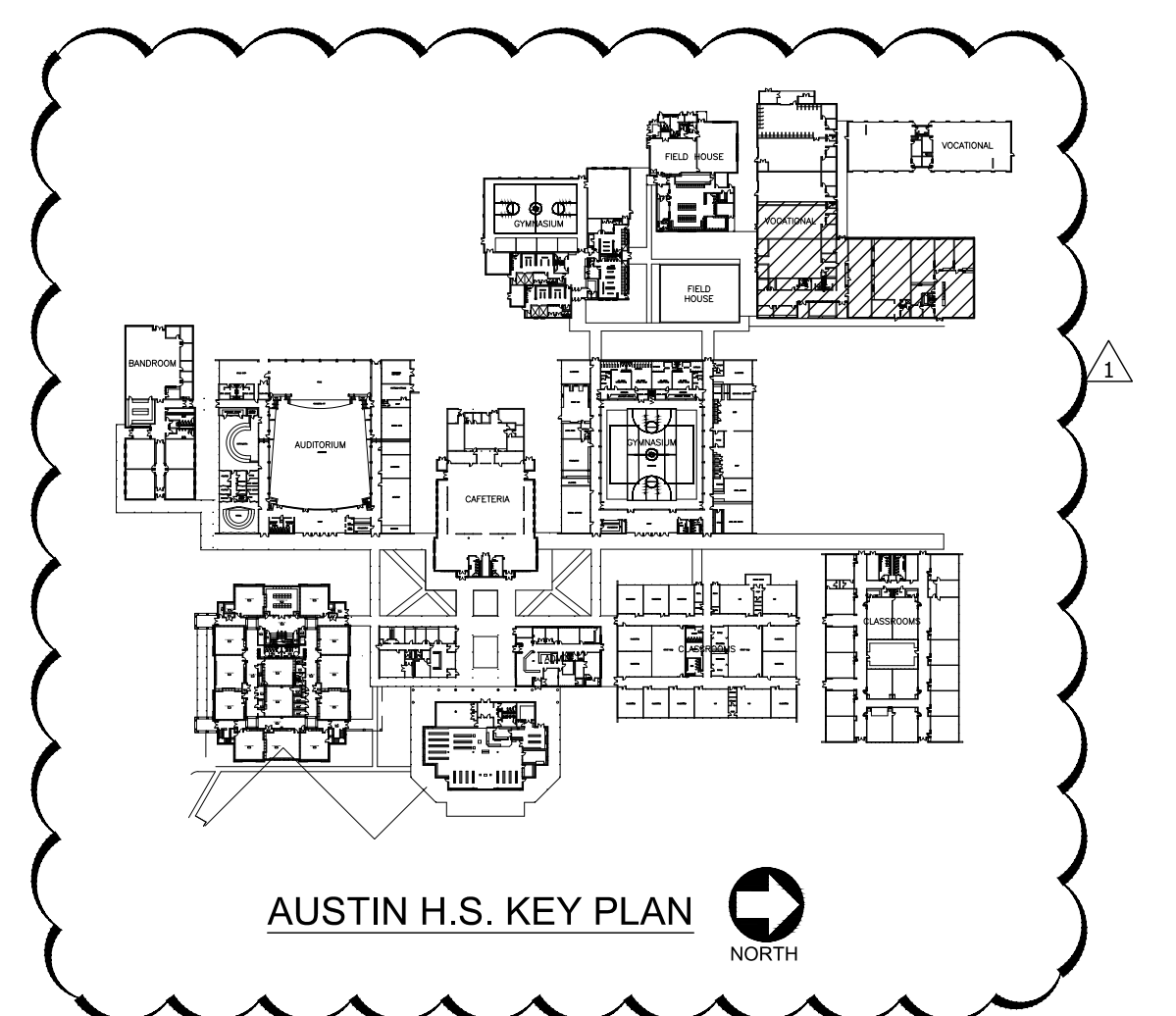
PLUMBING DEMOLITION NOTES DECATUR HS CULINARY CLASSROOM

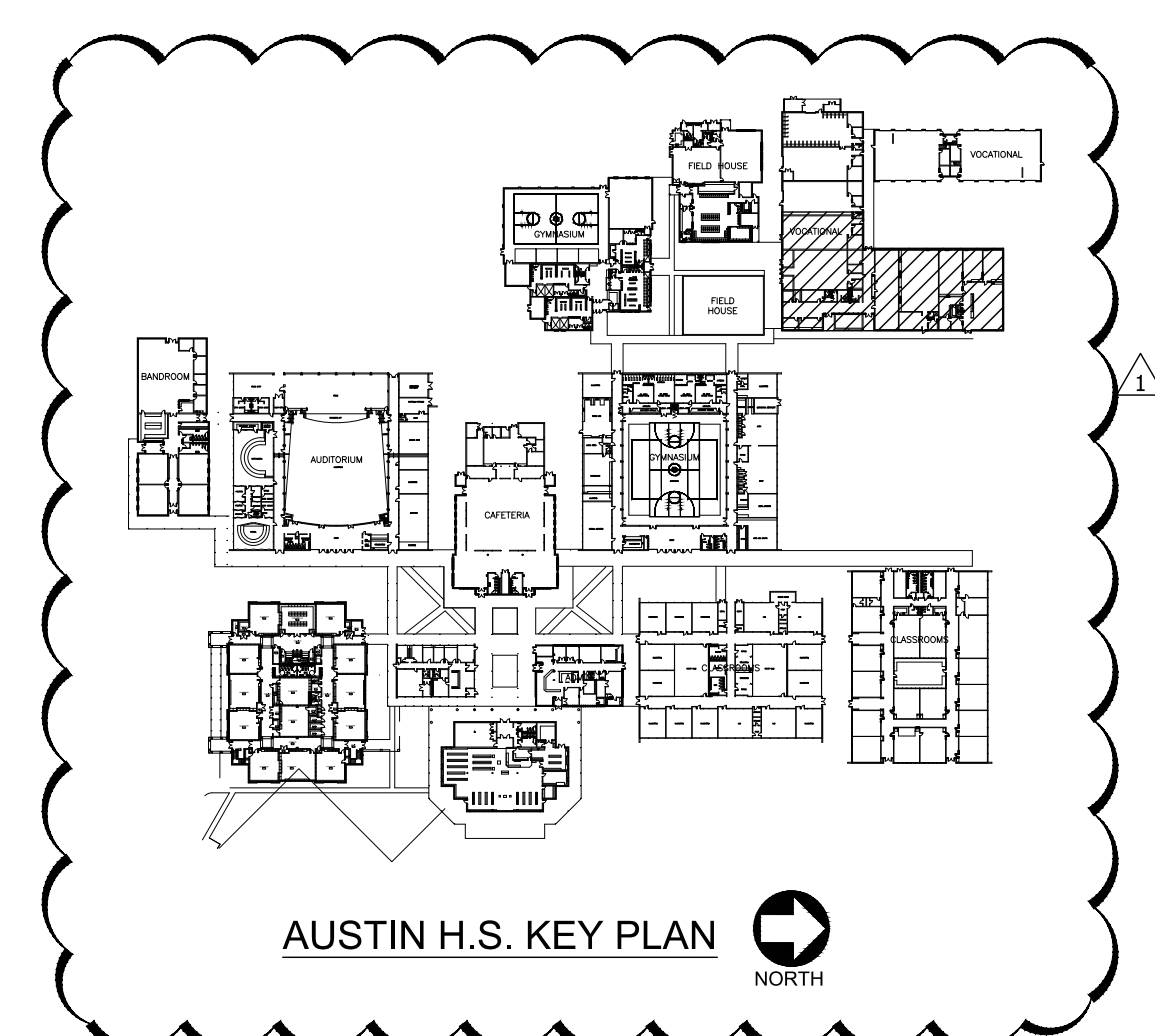
- Q The existing stainless steel handwash lavatory shall be removed and relocated at the Austin Career Tech site. When removed, the existing faucet shall be removed and replaced with a sensor faucet. The existing hot and cold supplies to be removed back to the stops. Permanent caps shall be installed over the water supply threaded connection. The waste extension through the wall shall be permanently capped close to the wall. Hot and cold water valves above the ceiling shall be closed.
- R The existing stainless steel three compartment sink shall be removed and relocated at the Austin Career Tech site. All components, including the disposer faucet and all integral piping between the cold water supplies and faucet bowl wash. The existing water lines shall be removed back to the wall and permanently capped. The waste piping connecting the bowls to the floor sink shall be removed and replaced at the new installation site. The wall connection waste from the disposer shall be permanently capped at close to the wall. The floor sink shall have an expansion waste fitting installed to block the waste pipe opening. A blowup ball shall not be used. Hot and cold water valves above the ceiling shall be closed.
- S The existing stainless dishwasher shall be removed and relocated at the Austin Career Tech site. The existing hot water pipe shall be removed back to the wall and permanently capped. The valve above the ceiling shall be closed. The waste pipe from the dishwasher to the floor sink shall be removed and replaced at the new installation site.





RENOVATION
PLUMBING FLOOR PLAN
SCALE: 1/8" = 1'-0"





PLUMBING FIXTURE CONNECTION SCHEDULE									
Fixture Symbol	Type of Fixture	Connection sizes					Reference Note	Remarks	
		Waste	Vent	CW	HW	HWR			
P-1	Water Closet	4"	2"	1 1/4"				ADA Accessible Floor Mounted, Manually Operated Flush Valve.	
P-2	Lavatory (Teacher Accessible)	2"	1-1/2"	1/2"	1/2"			ADA Accessible Wall Mounted Vitroneo China With Single Lever Faucet & Floor Mounted Carrier	
P-3A	Handwash Lavatory (Culinary - Relocated)	2"	1-1/2"	1/2"	1/2"		1	Existing ADA Accessible Wall Mounted Stainless Steel With New Sensor Faucet & New Trim	
P-3B	Handwash Lavatory (Culinary - New)	2"	1-1/2"	1/2"	1/2"			ADA Accessible Wall Mounted Stainless Steel Sink With Sensor Faucet and Trim	
P-4	Electric Water Cooler	2"	1-1/2"	1/2"				ADA Accessible, Dual Hot/Cold Operation With Right/Left Floor Mounted Carrier, 120 Volt, 370-Watt	
P-5	Sink (Teachers Rm.)	2"	1-1/2"	1/2"	1/2"			Existing Two Compartment Stainless Steel Drop-in Sink & Faucet To Relocate. See Specifications for New Trim Requirements.	
P-6	Sink (Classroom)	2"	1-1/2"	1/2"	1/2"			Wall Mounted Carrier, Two With Sensor Faucet, One With Single Lever Faucet	
P-7	Sink (Kitchen SPA-136)	2"	1-1/2"	1/2"	1/2"			Existing Two Compartment Stainless Steel Drop-in Sink With Gooseneck Faucet. Re-pipe As Indicated.	
P-8	Culinary Two Compartment Sink (Relocated)	2"Indirect		3/4"	3/4"		2	Existing Two Compartment Stainless Steel Floor Mounted With Two Sideboards & Service Faucet. Trim Shall Be New As Specified.	
P-9	Culinary Three Compartment Sink (Relocated)	2"Indirect		3/4"	3/4"			Existing Stainless Steel Free-standing Three Compartment. Stainless Steel Sink With Service Faucet, Disposer Bowl Spray Faucet & 2 HP Stainless Steel Disposer.	
P-9	Disposer	3	2	1/2"				Wall Connected Waste & Cold Water For Basin Wash.	
P-10	Culinary Three Compartment Sink (Relocated)	2"Indirect		3/4"	3/4"			Existing Three Compartment Stainless Steel Floor Mounted With Two Sideboards & Service Faucet. Trim Shall Be New As Specified.	
P-11	Washing Machine Supply & Drain	2"	2"	3/4"	3/4"			Surface Mounted Wall Box With Waste & 1-1/4" Turn Valves With Integral Water Hammer Arrestors	
P-12	Floor Drain (Toilets)	4"	2"					With 7" Nickel Bronze Strainer, Construction Cover & Trap Guard	
P-13	Floor Drain (Culinary)	4"	2"					With 7" Stainless Steel Strainer, Construction Cover & Trap Guard	
P-14	Floor Sink	4"	2"					Cast Iron Porcelain Coated Recessed Floor Sink With Center Opening Grate & Trap Guard	
P-15	Dishwasher	2"Indirect			3/4"		1 / 6	Existing Dishwasher To Be Set In Position & Piped By The Plumbing Contractor. See Specifications For Piping Requirements.	
P-16	Water Heater					3/4"		Natural Gas Fired, Sealed Combustion, 199,000 BTU/HR, 100 Gallon, 120 Volt Circuit With Floor Stand, Thermal Expansion Tank & Concentric Intake/Vent Roof Cap	
P-17	Hot Water Circulation Pump					3/4"		5 GPM @ 10' Head, 1/12 HP, 115 Volt. Install With Sensor Well. Coordinate Well Type With Mechanical Contractor.	
P-18	Grease Tank (Culinary)	4"	3"					Underground Fiberglass Tank With Solids Separator Chamber & Grease Chamber, With H2O Loaded Manway & Anti Floation Sab	
P-19	Exterior Wall Hydrant			3/4"				Freeze Proof, Anti-Siphon, Rough Bronze Finish In Recessed Locking Wall Box	
P-20	Interior Wall Hydrant			3/4"				Anti-Siphon, Rough Bronze Finish In Recessed Locking Wall Box	
P-21	Roof Hydrant			3/4"				Freezeproof, Anti-siphon Roof Hydrant With Air Gap, Air Vent, Boot Cover, Under Deck Flange Clamping Kit.	
P-22	Shampoo Sink	2"	1-1/2"	1/2"	1/2"		3	Fixture shall be furnish by the Owner and installed by the Plumbing Contractor.	
P-23	Shampoo Sink (ADA)	2"	1-1/2"	1/2"	1/2"		3	Fixture shall be furnish by the Owner and installed by the Plumbing Contractor.	
P-24	Pedicure Station	2"Indirect		1/2"	1/2"		3	Fixture shall be furnish by the Owner and installed by the Plumbing Contractor.	
P-25	Ice Maker Filtration System			1/2"				Wall Mounted Filtration System With Replaceable Filter. See specifications.	
P-26	Interior Cleanout	4"						Cast Iron Body With Internal Bronze Plug & Nickel Bronze Cover. Install Flush With Floor	
P-27	Exterior Cleanout	4"						Cast Iron Body With Internal Bronze Plug & Ductile Iron Cover. Install In Concrete Pad As Detailed.	
P-28	Mop Sink	3"	2"					Floor Mounted Terrazzo Sink With Service Faucet, Trim, Stainless Steel Wall Guards & Mop Hanger	

Notes:

1. Fixture shall be relocated from the Culinary Arts Classroom at Decatur High School by the Plumbing Contractor and installed where directed.
2. Fixture shall be relocated from an existing school as identified by the Owner. The Contractor shall take possession of the sink at the Career Tech site.
3. Fixture will be supplied to the Owner for installation. The Plumbing Contractor shall review the fixture waste and water connections on the furnished installation guide prior to roughing the fixture in.
4. Pipes shall be extended to the fixture full size as indicated. Any increase or reduction in pipe size for actual connection shall be done at the extension of the pipe through the wall.
5. Coordinate mounting height of all wall mounted fixtures with the Architectural Drawings.
6. See Specifications for thermostatic mixing valves, pressure reducing valve and pressure gauge requirements.

THERMOSTATIC MIXING VALVE SCHEDULE			
Mark	TMV-1	TMV-2	TMV-3
Minimum Flow, GPM	.25	.5	1
Maximum Flow, GPM	5.5	6	13
Inlet Temperature, °F	140	140	140
Discharge Temperature, °F	See Drawings	See Drawings	See Drawings
Maximum ΔP, PSI	10	10	15
Thermostat Assembly Type	Bi-metal		
TMV Inlet Size	1/2"	3/4"	3/4"
TMV Discharge Size	1/2"	3/4"	3/4"
Basis of Design			
Manufacturer	Leonard	Leonard	Leonard
Model	TM54LF-DT	TM54LF-DT	TM55A-26 LF
Accessories	1, 2, 3, 5	1, 2, 3, 5	1, 2, 3, 4, 5

Accessories:

1. All thermostatic mixing valves will be ASSE 1017/1070 Compliant.
2. Provide valves, integral check valves and unions on all inlet and discharge piping.
3. Cap shall be vandal resistant and locking.
3. Provide a dial thermometer on the discharge pipe.
4. Provide a thermometer on the hot water inlet pipe.
5. TMV's by Lawler or Powers will be considered.

WATER HAMMER ARRESTOR SCHEDULE					
Mark	Manufacturer	Model	Size	Fixture Unit Capacity	Connection Size
WHA-A	Zum	Z-1700	100	1 - 11	3/4"
WHA-B	Zum	Z-1700	200	12 - 32	3/4"
WHA-C	Zum	Z-1700	300	33 - 60	1"
WHA-D	Zum	Z-1700	400	61 - 113	1"
WHA-E	Zum	Z-1700	600	114 - 154	1"
WHA-F	Zum	Z-1700	600	155 - 330	1"

Notes:

1. Water hammer arrestors have been shown generally on the piping diagrams. The Plumbing Contractor shall be responsible for installing additional arrestors as necessary conforming to IPC, Local Code and the manufacturer's installation requirements based on the length of pipe and the total quantity of fixture units on each branch line.
2. Zum Shoktrols arrestors have been specified. Equal arrestors shall be Watts SS Stainless Steel series or Jay R. Smith Hydrotrols.
3. Arrestors specified are rated for the required test pressures of the hot and cold water piping systems. All arrestors shall be installed when piping is tested.
4. Water hammer arrestors shall be installed with service isolation valves. Where arrestors occur inside a chase or wall and are inaccessible, an access door shall be provided. See details on the drawings for additional references.

PIPE SUPPORT SCHEDULE					
Pipe Size	Support Spacing				Hanger Rod Diameter
	Sched 40 Black Steel	Copper	PVC	Cast Iron Soil Pipe	
1/2"	-	5'-0"	4'-0"	-	3/8"
3/4"	7'-0"	5'-0"	4'-0"	-	3/8"
1"	7'-0"	6'-0"	4'-0"	-	3/8"
1-1/4"	7'-0"	7'-0"	4'-0"	-	3/8"
1-1/2"	9'-0"	8'-0"	4'-0"	-	3/8"
2"	10'-0"	8'-0"	4'-0"	5'-0"	3/8"
2-1/2"	10'-0"	9'-0"	4'-0"	5'-0"	1/2"
3"	10'-0"	10'-0"	4'-0"	5'-0"	1/2"
4"	10'-0"	10'-0"	4'-0"	5'-0"	1/2"
6"	10'-0"	10'-0"	4'-0"	5'-0"	5/8"
8"	10'-0"	10'-0"	4'-0"	5'-0"	3/4"

Note: Rods may be reduced one size for double rod hangers, with 3/8" being the minimum diameter.

PLUMBING DEVICES & NOTES

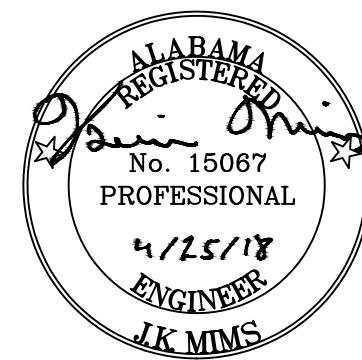
1. New water pipe connections will be made on the existing systems as shown on the drawings. The Plumbing Contractor will be required to field locate the pipe, drain the systems down and make connector with a new tee with discharge valve. Verify the size of the existing hot and cold water mains prior to ordering fittings. Ceiling will be removed by at Demolition Contractor prior to bid. The bidding contractor shall visit the site and confirm all locations.
2. New hot and cold water lines will be coordinated with the new duct systems. Where necessary, offset the piping above the bottom chord of the joists. Existing hot and cold water piping has been generally shown on the plumbing floor plans. Where necessary, it will be the Plumbing Contractors responsibility to provide offsets in the plumbing lines where insufficient space is available for the duct systems. See Mechanical Drawings for duct run locations.
3. New waste pipe connections will be made on the existing below floor waste systems. A TVI will be required to confirm all waste locations prior to cutting the floor. When located, inverts will be required to be confirmed before starting construction of the new waste piping. See Specifications for TVI requirements.
4. Existing footings and foundation walls are present in the existing building and will be required to be crossed as necessary for the new waste piping. These areas have been identified on the renovation drawings but will have to be field confirmed before constructing any waste pipe systems.
5. Pipe Disinfectant: Piping to be flushed with clean potable water until discharge water appears clear. Add to the domestic water main 50 ppm (parts per million) of available chlorine. Allow the solution to stand for 24 hours, then flush thoroughly. Schedule the procedure with the local plumbing official for observation. Coordinate the clean water sampling with the health department.
6. Plumbing Contractor shall coordinate installation of plumbing vents with the Mechanical Contractor for a minimum of 15'-0" clearance from all outside air intake systems on the mechanical equipment. See the Mechanical Drawings for unit locations on the roof.
7. Structural steel furnished for equipment or piping support shall be cleaned and coated with two coats of rust inhibiting primer. Where pre-primed steel is used, primer shall be applied over the cut ends. All welded steel shall be wire brushed to remove any scale, ground smooth where necessary and then primed.
8. ADA Accessible water closets to be installed with the flush valve handle accessible on the wide side of the room or stall. Coordinate with the fixture specifications for the applicable fixture application.
9. Hot and cold water systems in building areas are shown generally for connection to all fixtures. Prior to construction, the Plumbing, Mechanical and Electrical Contractors shall determine the available space for their appropriate piping, duct, conduit, etc., and jointly create a shop drawing confirming their coordination and installation locations. Failure to coordinate does not constitute a change order when components will not fit within the designated areas. See Notes 1 & 2 for additional requirements.
10. Fixtures are indicated on the waste and vent diagrams as a wet vent system. The Plumbing Contractor shall not deviate from this system by combining fixtures or "tapping down" fixtures unless approved in writing by the Engineer. See Notes 3 and 4 for additional requirements.

COORDINATION AMONG TRADES

The Civil Contractor, General/Structural Contractor, Fire Protection Contractor, Plumbing Contractor, Mechanical Contractor and Electrical Contractor shall coordinate with each other to determine the space required by, the location of, and the routing of their required respective structural members, beams, footing pours, piping, ductwork, conduits, etc. A jointly created scaled shop drawing at a minimum scale of 1/8" per 1'-0" with dimensions confirming their coordination and installation locations shall be submitted for approval prior to any installation. The minimum sheet size shall be 24" X 36". Failure to coordinate does not constitute a change order when components will not fit within the allocated space and may result in installed equipment and materials being removed at the contractor's expense.

PLUMBING LEGEND

	NEW COLD WATER PIPE ABOVE FLOOR
	EXIST. COLD WATER TO REMAIN
	EXIST. COLD WATER TO BE REMOVED
	NEW HOT WATER PIPE ABOVE FLOOR
	NEW HOT WATER CIRCULATION RETURN PIPE
	EXIST. HOT WATER TO REMAIN
	EXIST. HOT WATER TO BE REMOVED
	NEW WASTE PIPE
	NEW CAST IRON WASTE PIPE
	EXIST. WASTE PIPE TO REMAIN
	EXIST. WASTE PIPE TO BE REMOVED
	WATER INTR RELIEF & PAN DRAIN
	WHA - WATER HAMMER ARRESTOR
	PRV - PRESSURE REDUCING VALVE
	VTR - PLUMBING VENT THRU ROOF
	TMV - THERMOSTATIC MIXING VALVE
	PG - PRESSURE GAUGE
	SV - SERVICE VALVE
	CV - CHECK VALVE
	RZP - REDUCED PRESSURE ZONE BACKFLOW PREVENTER
	BFP - DUAL CHECK BACKFLOW PREVENTER
	BWV - BACKWATER VALVE
	SCHEDULE SYMBOL



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JOB NUMBER

17922

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REVISIONS
AD-1 05-14-2018

SHEET TITLE

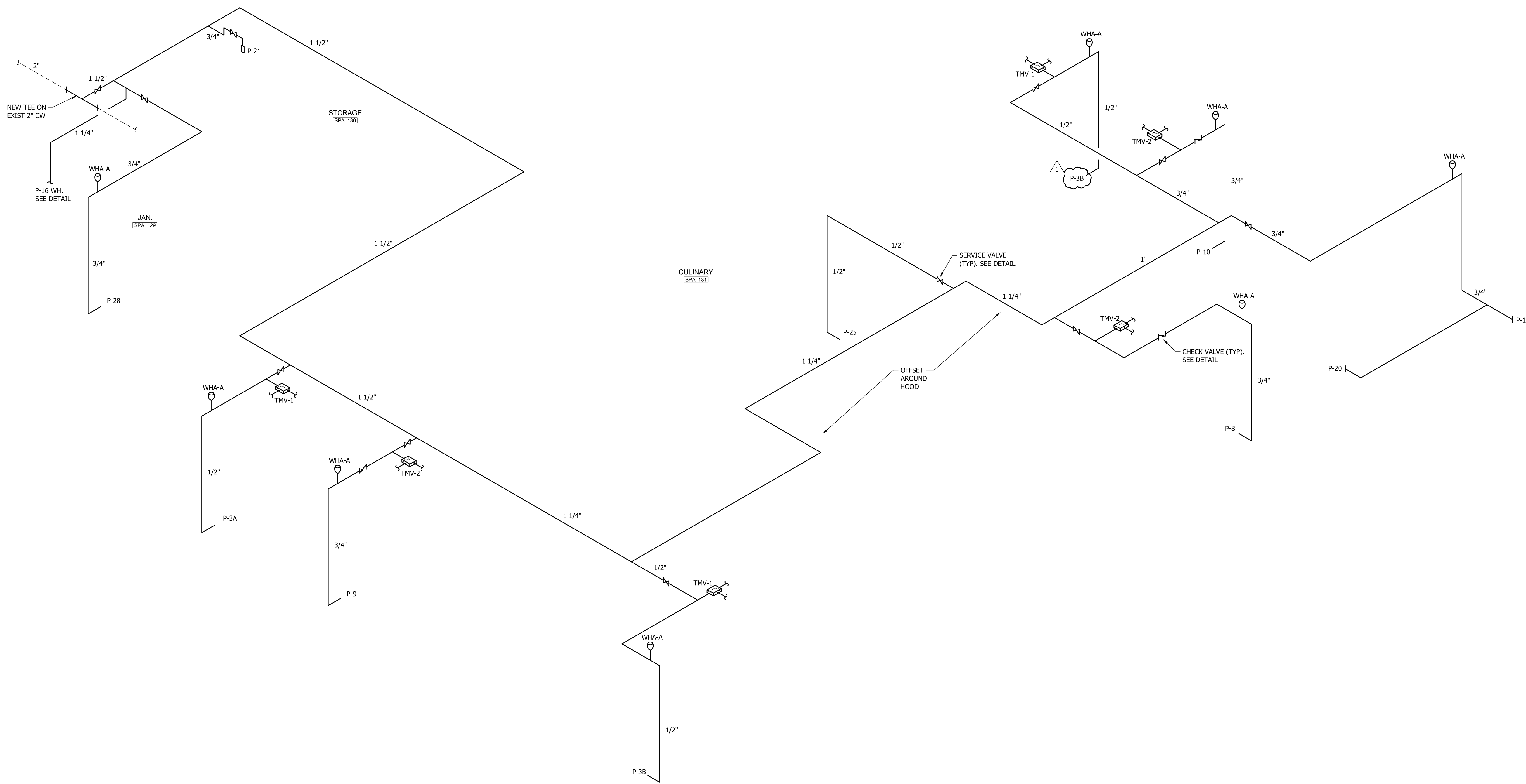
PLUMBING
SCHEDULES

SHEET NUMBER

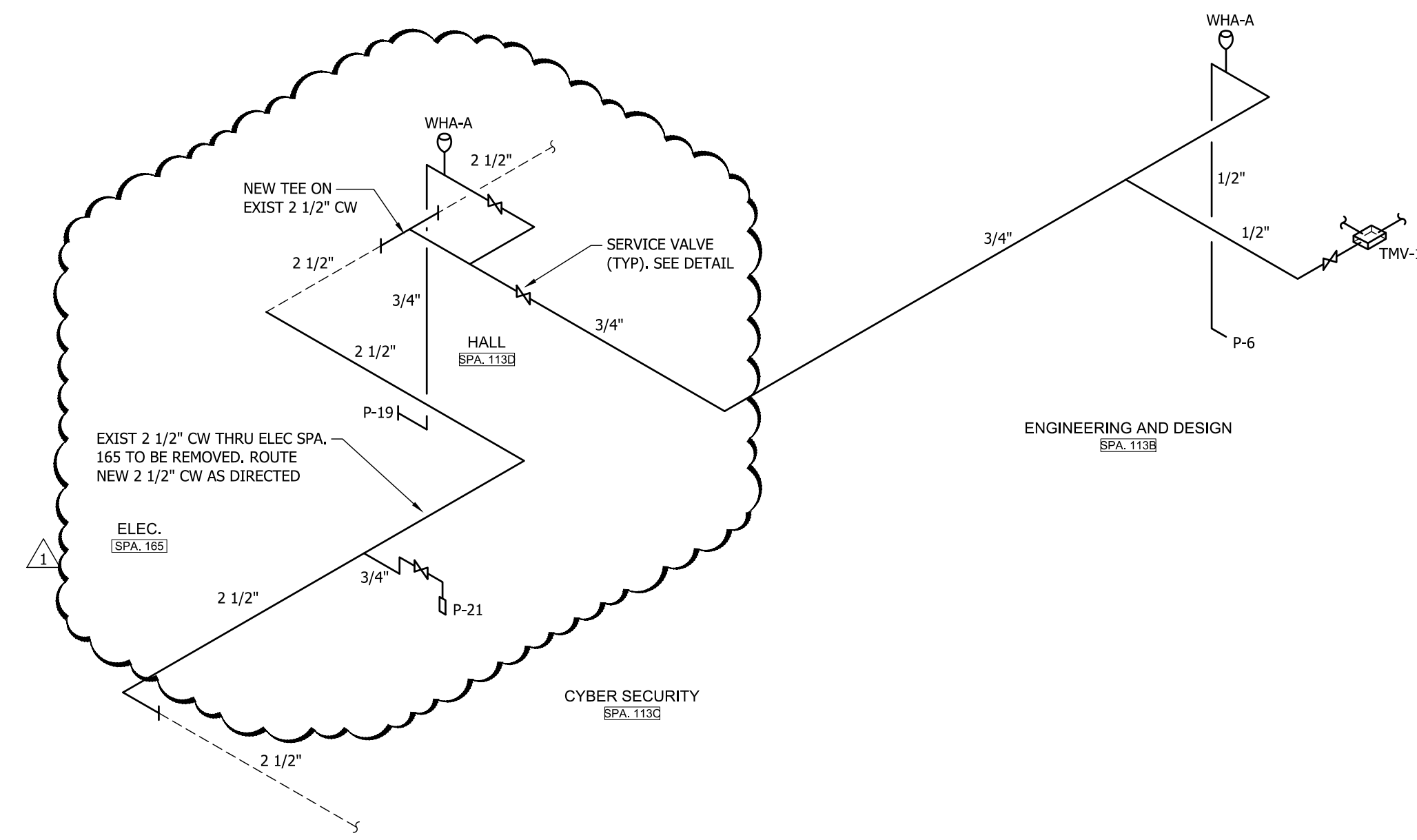
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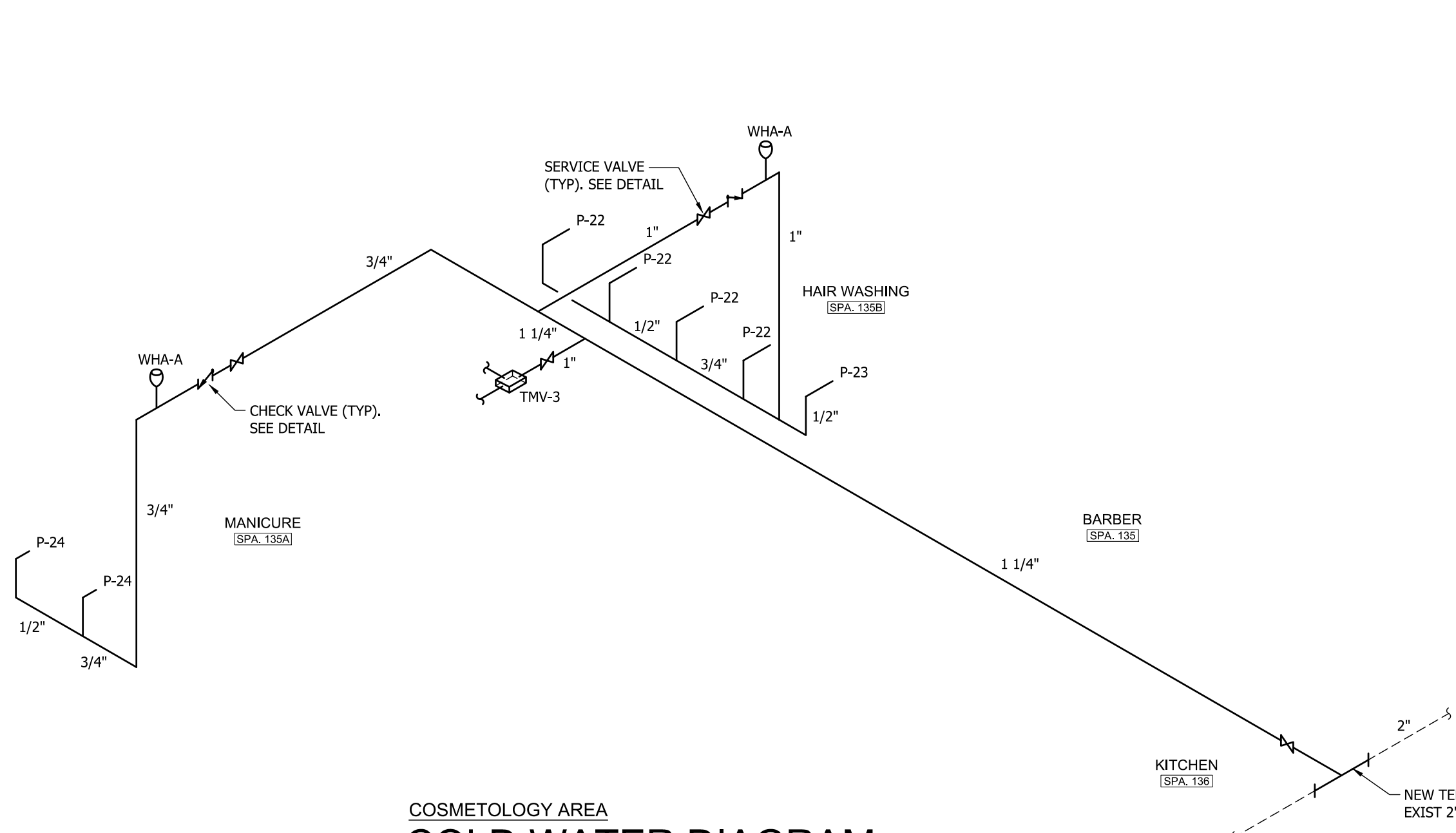
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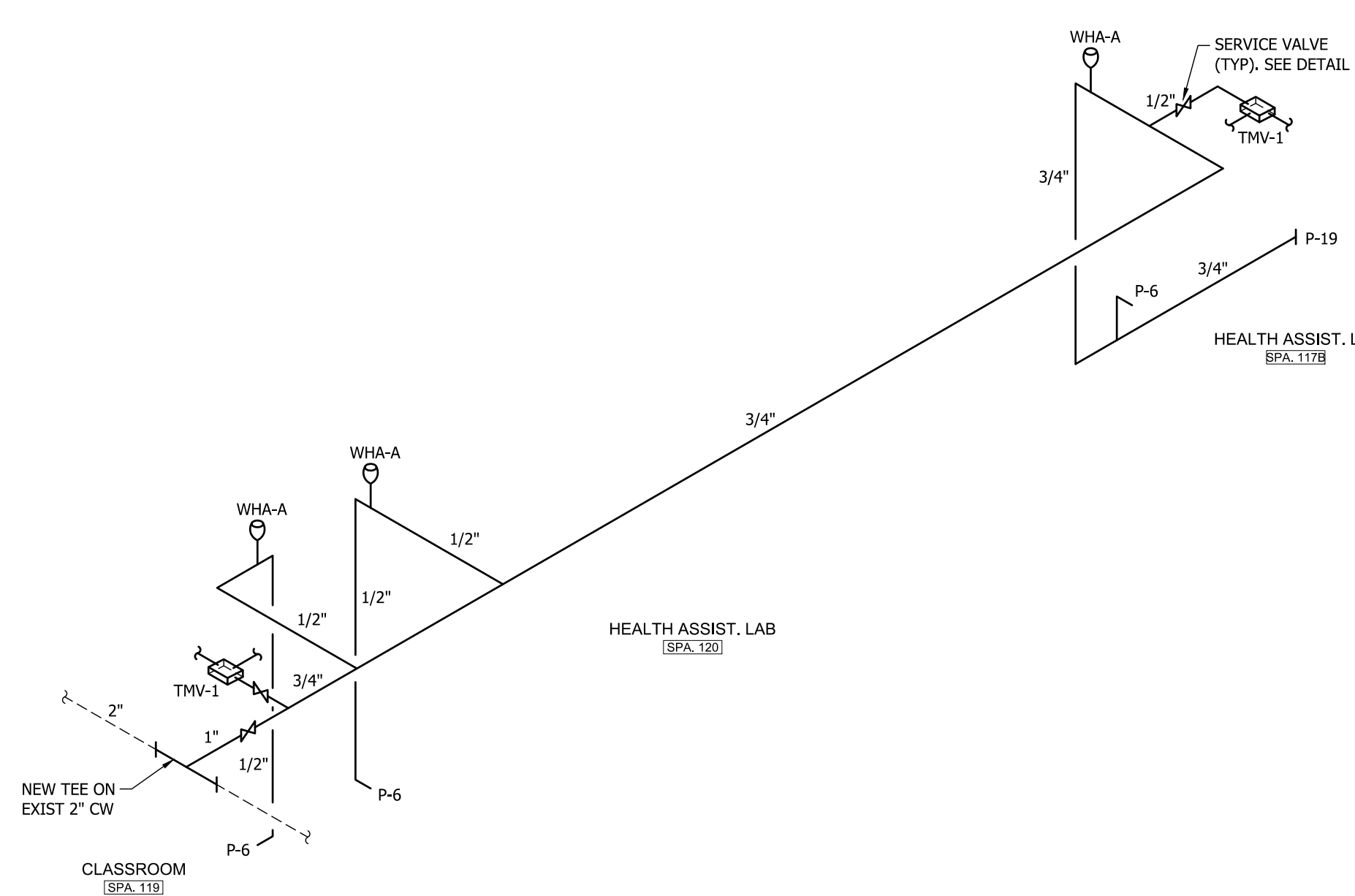
CULINARY SPA, 131
COLD WATER DIAGRAM
NOT TO SCALE



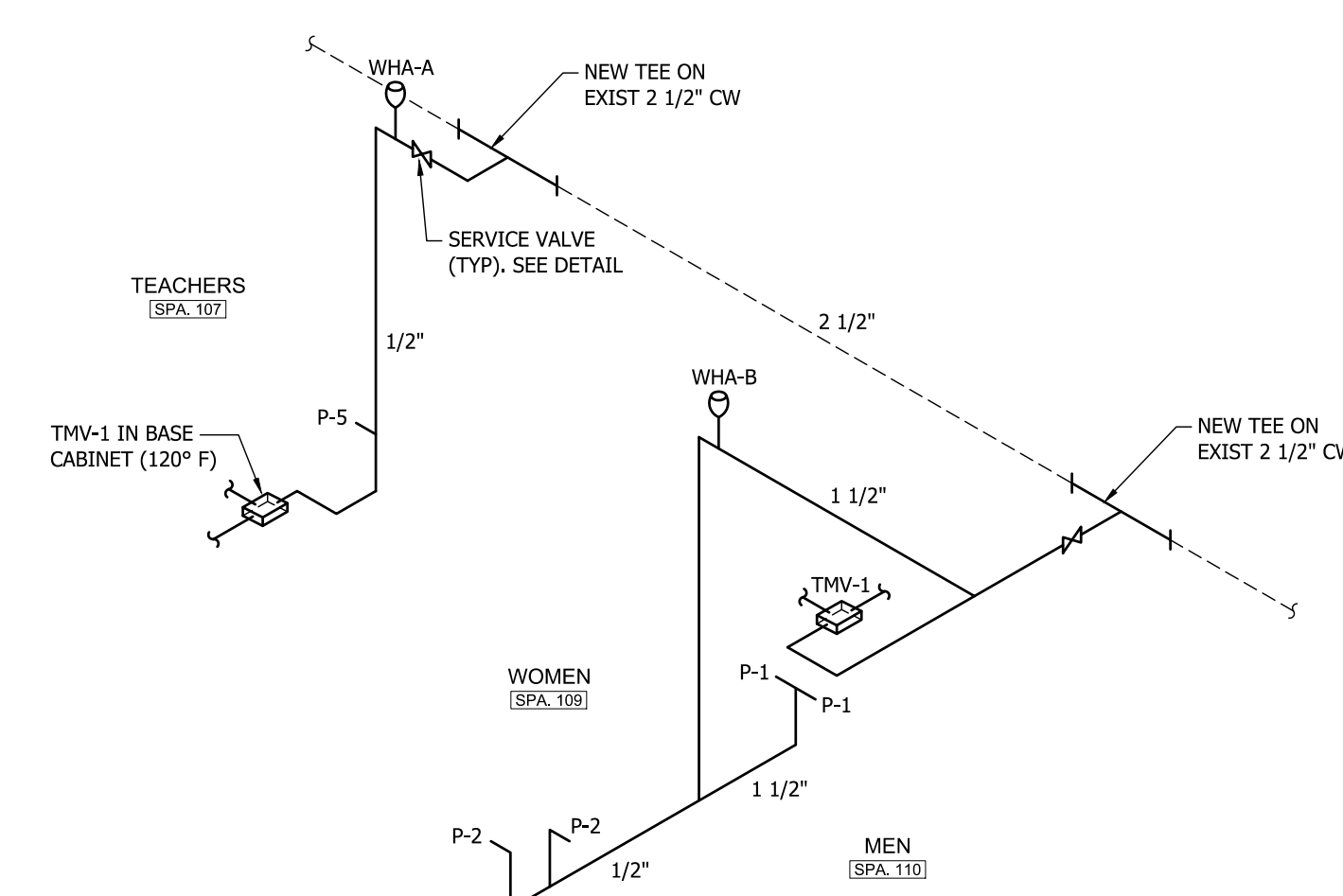
ENG. & DESIGN SPA, 113B
COLD WATER DIAGRAM
NOT TO SCALE



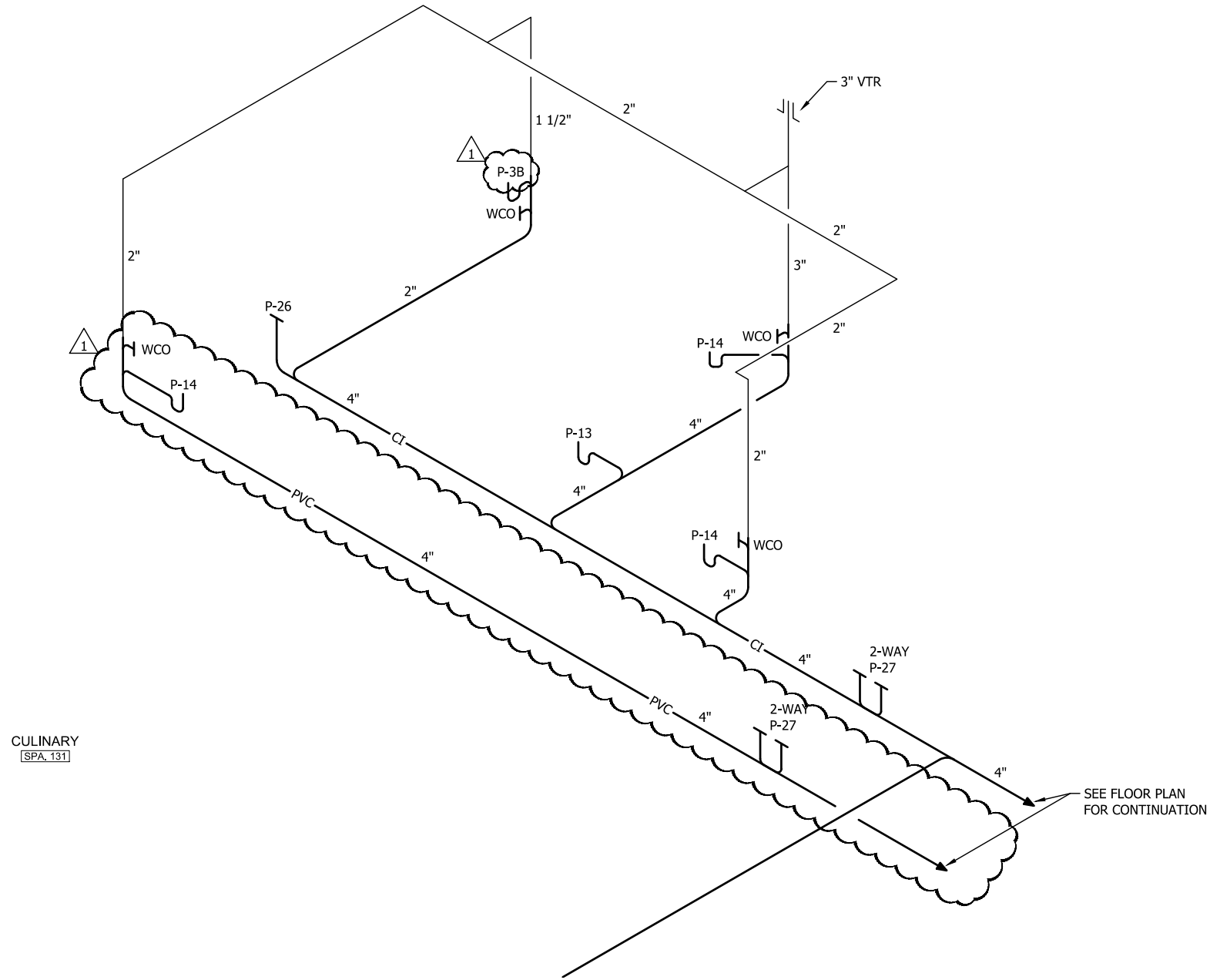
COSMETOLOGY AREA
COLD WATER DIAGRAM
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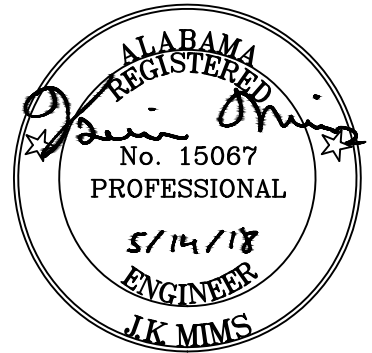
CLASSROOM/LAB AREA
COLD WATER DIAGRAM
NOT TO SCALE

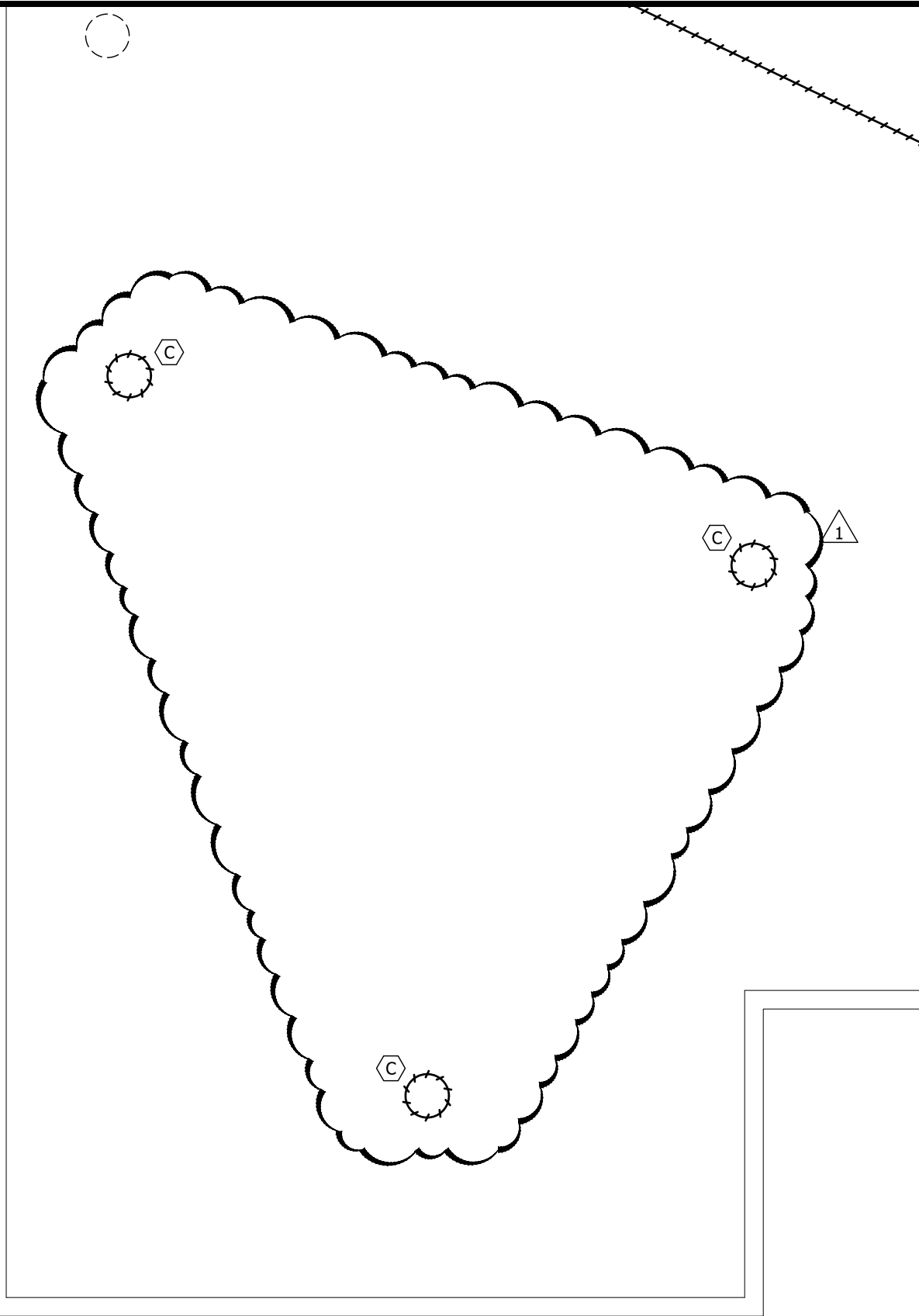


ADA TOILETS
COLD WATER DIAGRAM
NOT TO SCALE



CULINARY AREA
WASTE & VENT DIAGRAM
NOT TO SCALE





M-1.1 MECHANICAL DEMOLITION NOTES

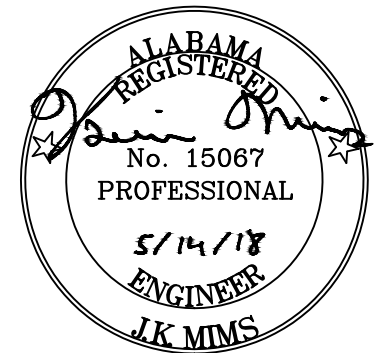
- A** Existing roof mounted Aeon HVAC unit to be removed. Removal shall include the roof curb, curb adapter, attached supply and return duct system, hydronic piping system, controls and control wiring. Coordinate with the Electrical Contractor for removal of the power wiring and conduit. Coordinate with the General Contractor and Owners Roofing Contractor for all necessary repairs to the roof
- B** Existing roof mounted Trane cooling unit to be removed. Removal shall include all attached ductwork, controls and control conduit. Coordinate with the Electrical Contractor for removal of the power wiring and conduit. Cap the existing curb as described in Mechanical Notes
- C** Existing roof mounted exhaust fan to be removed. Removal shall include all attached ductwork. Coordinate with the Electrical Contractor for removal of the power wiring and conduit. Cap the existing curb as described in Mechanical
- D** Existing roof mounted louvered penthouse to be removed. Removal shall include all attached ductwork down to the heating and ventilating unit. Cap the existing curb as described in Mechanical Notes
- E** Existing gas pipe on the roof to be removed. Removal shall include all pipe supports. Coordinate with the Owners Roofing Contractor for all necessary repairs to the roof
- F** Existing 2" 15 psi gas main to remain. The existing pipe shall be cut and a new tee with valves to be installed. Clean the gas pipe around the installation area, prime and paint as necessary. See detail
- G** Existing exhaust fan on the roof to remain
- H** Existing gas main on wall mounting brackets serving the boiler to remain



AHS DEMOLITION

PARTIAL MECHANICAL ROOF PLAN

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



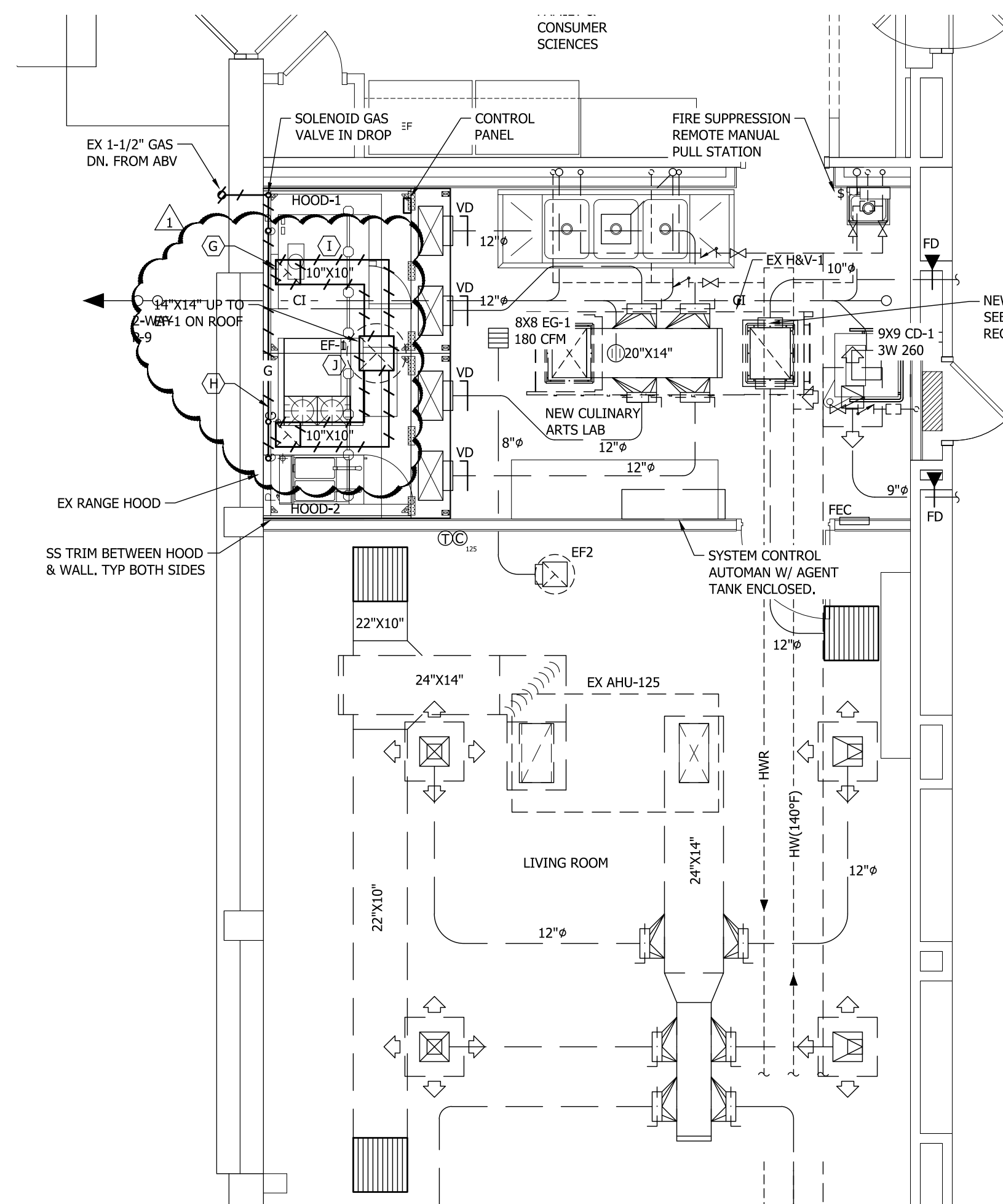
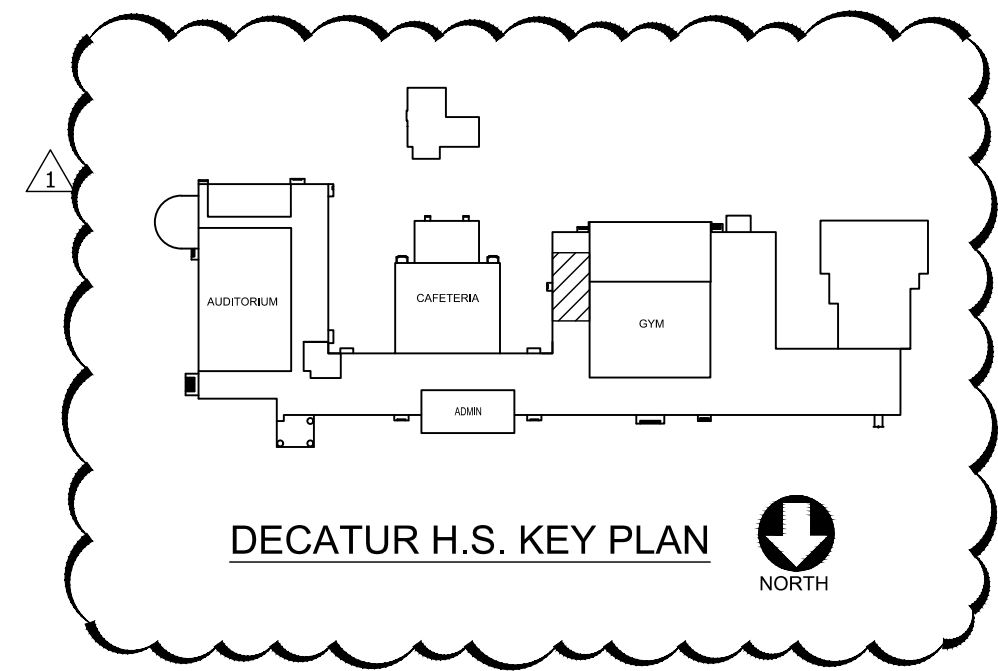
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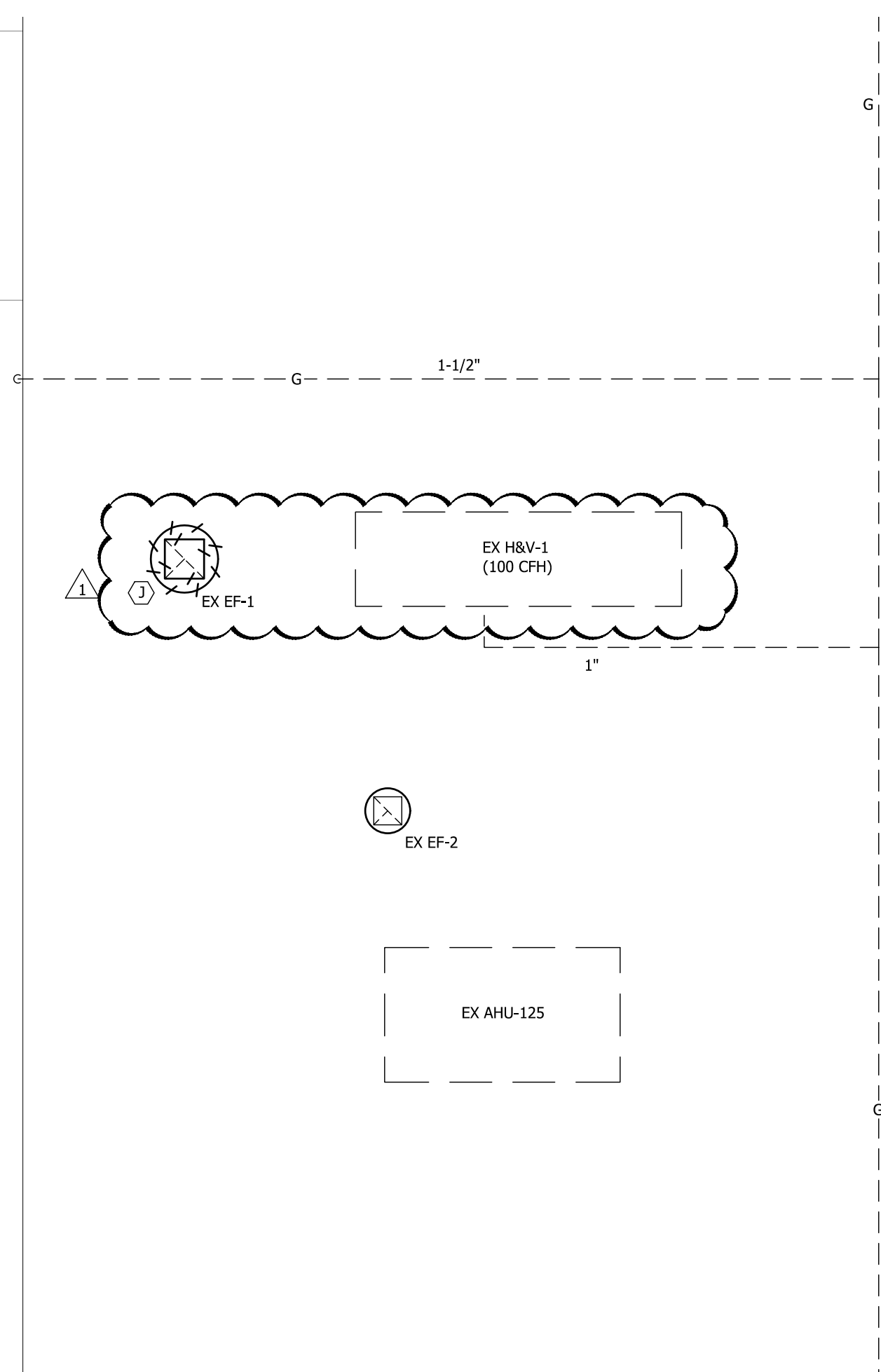
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AD1-M-1.1-01

Date: 05-14-2018



DHS CULINARY
MECHANICAL FLOOR PLAN
SCALE: 1/4" = 1'-0"



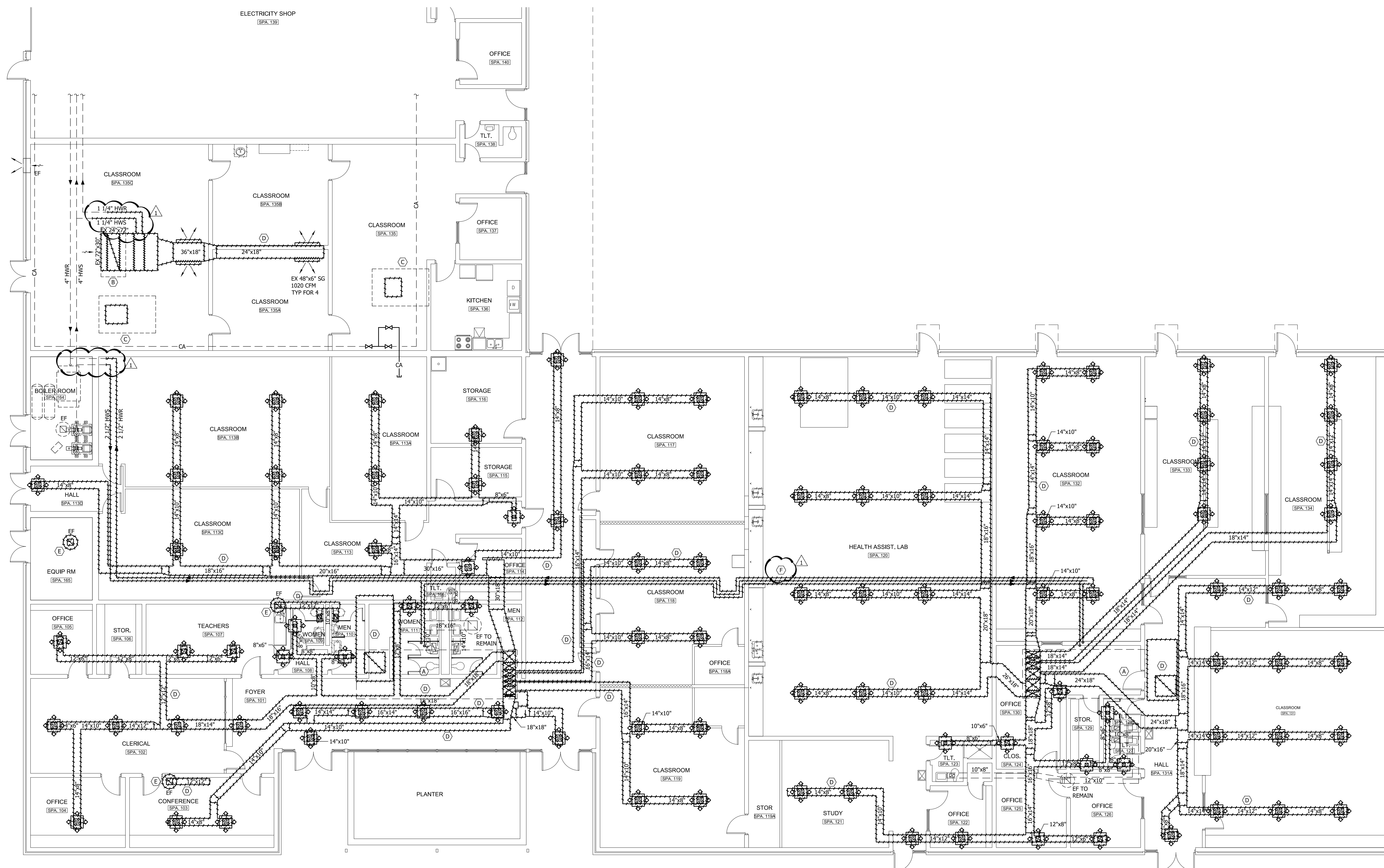
DHS CULINARY
MECHANICAL ROOF PLAN
SCALE: 1/4" = 1'-0"

M-1.2 AUSTIN HIGH SCHOOL MECHANICAL DEMOLITION NOTES

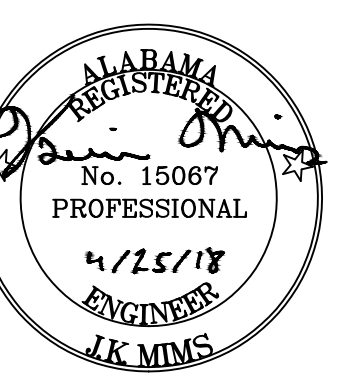
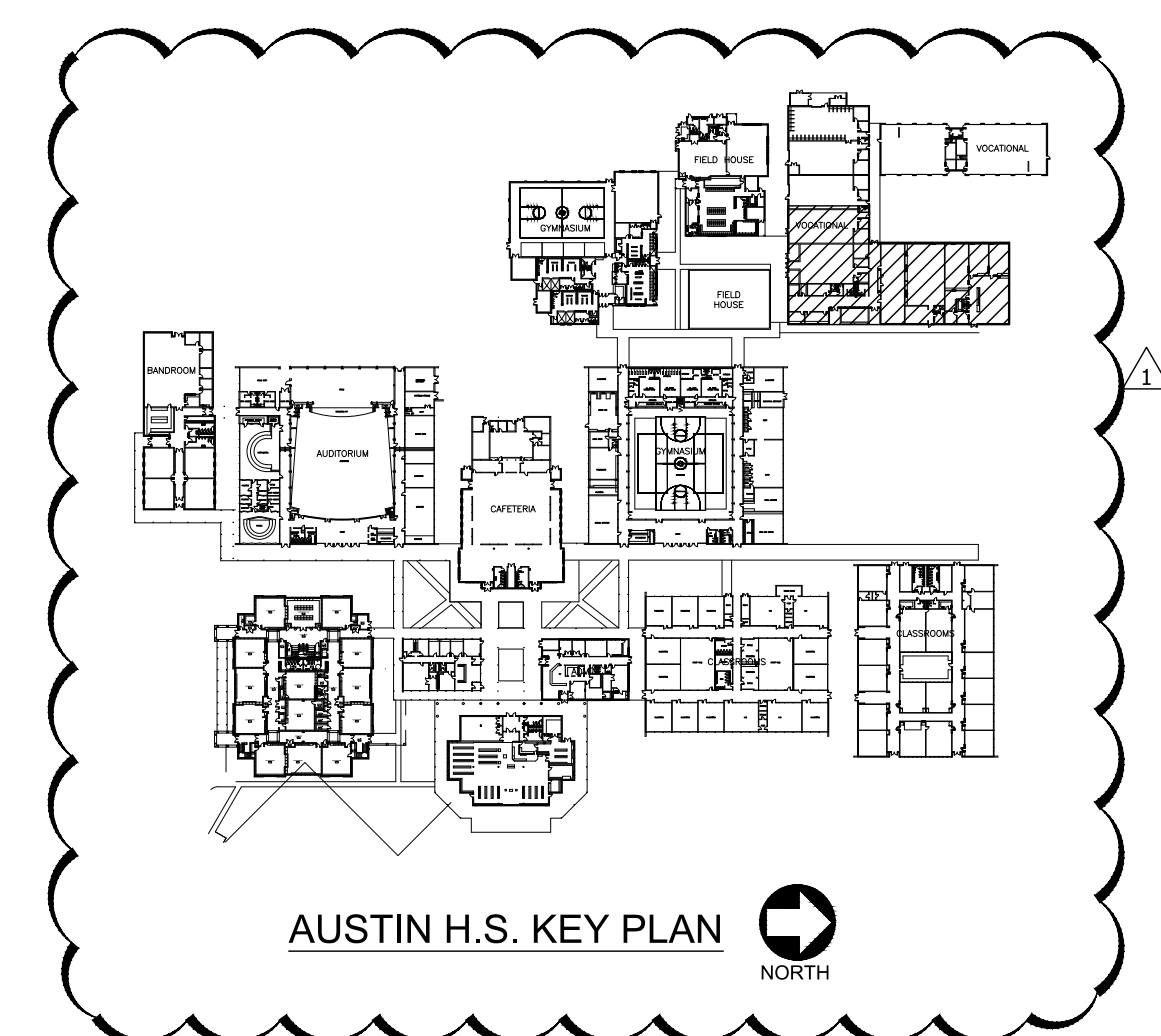
- Existing Acon unit is shown on the M-1.1 Demolition Roof Plan to be removed. All duct systems for this unit is to be removed. It is shown on M-1.1 Mechanical Roof Plan to be removed. All existing supply, return and exhaust duct for this equipment is to be removed. Removal shall include all straps, supports and grilles.
- Existing heating and ventilating unit is to be removed. Removal shall include all of the ducted systems, hydronic hot water piping including insulation and hangers back to the mains, pneumatic operators and tubing back to the mains, controls and control wiring and support steel. After removal of the branch runouts, new 1-1/4" service valves, all necessary piping and a full size calibrated balancing valve shall be installed and set for 12 GPM. See Sheet M-2.2 for location. Coordinate with the Electrical Contractor for removal of the power wiring and conduit. See Renovation Mechanical Floor Plans for the new balancing valves required on the hydronic pipe runouts. Coordinate with the Electrical Contractor for removal of the power wiring and conduit.
- Existing Trane units are shown on M-1.1 Mechanical Roof Plan to be removed. All existing supply, return duct drops into the plenum are to be removed. Removal shall include all flex duct runouts, attached grilles and duct support straps. Those opening will require fills.
- Existing air distribution system is to be removed. Removal is to include insulation, runouts, supports, straps and grilles. Coordinate with the General Contractor where the duct is removed through a rated wall as identified on the Architectural Plans.
- Controls for the Acon units, Trane Units and Heating and Ventilating unit are present in the spaces but have not been shown. Controls that are removed and not replaced with new shall have a stainless steel wall cover plate installed on the junction box.
- Existing hydronic heating supply and return piping to be removed. Removal shall be made back to the wall of the boiler room. Removal shall include all hangers, support steel and insulation. After removal of the branch runouts, new 2-1/2" service valves necessary new piping and a full size calibrated balancing valve shall be installed and set for 56 GPM. See Sheet M-2.2 for location.

M-1.2 DECATUR HIGH SCHOOL CULINARY MECHANICAL DEMOLITION NOTES

- Existing range hood shall be removed and relocated to Austin Career Tech Culinary. Care must be taken when removing the existing steel exhaust duct and supply duct to the supply plenum assembly. Removal shall include the complete Annu-R 102 Fire Suppression system including the pull station, Main Hood Controller, area thermostat and all attachments. Prior to removal, the complete system must be energized to confirm operation. A document shall be provided to include results of that test. The Annu-R system will be tested with a compressed air tank to determine functionality of the system. All component will be transported to Austin Career Tech for installation. See renovation drawings for additional required work.
- Existing gas to be removed. Removal shall include the gas piping on the roof, down and into the kitchen and connections to all cooking devices.
- Existing welded steel exhaust duct is to be removed. Removal shall include all duct supports and wrap insulation. The duct will not be reused for the installation at Austin. See Specifications for the new duct.
- Existing exhaust fan on the roof shall be removed and relocated to the Austin Career Tech Culinary. All exhaust duct inside the curb is to be removed. After removal, a permanent sheet metal cap shall be installed on the curb. See Mechanical Notes and Exhaust Fan Schedule for EF-1 requirements.



AHS DEMOLITION - DUCTED SYSTEMS
MECHANICAL FLOOR PLAN
SCALE: 1/8" = 1'-0"



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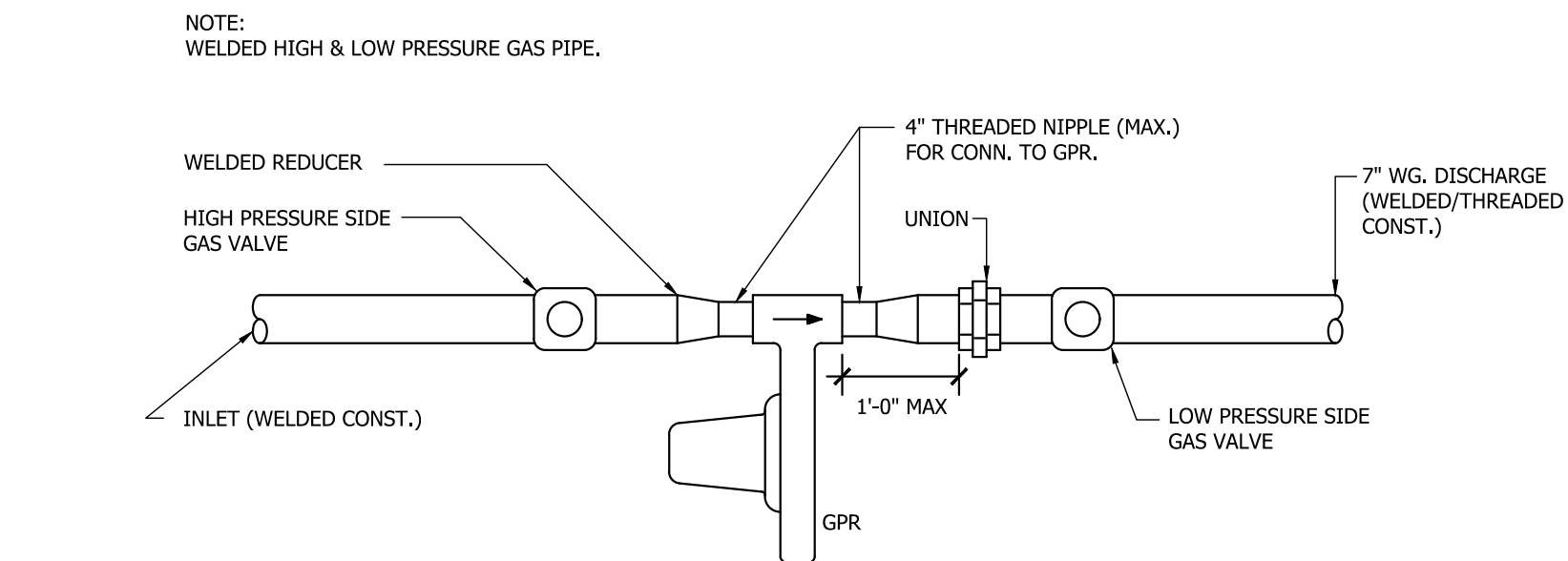
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AD-1	

SHEET TITLE

MECHANICAL
DEMOLITION
FLOOR PLANS

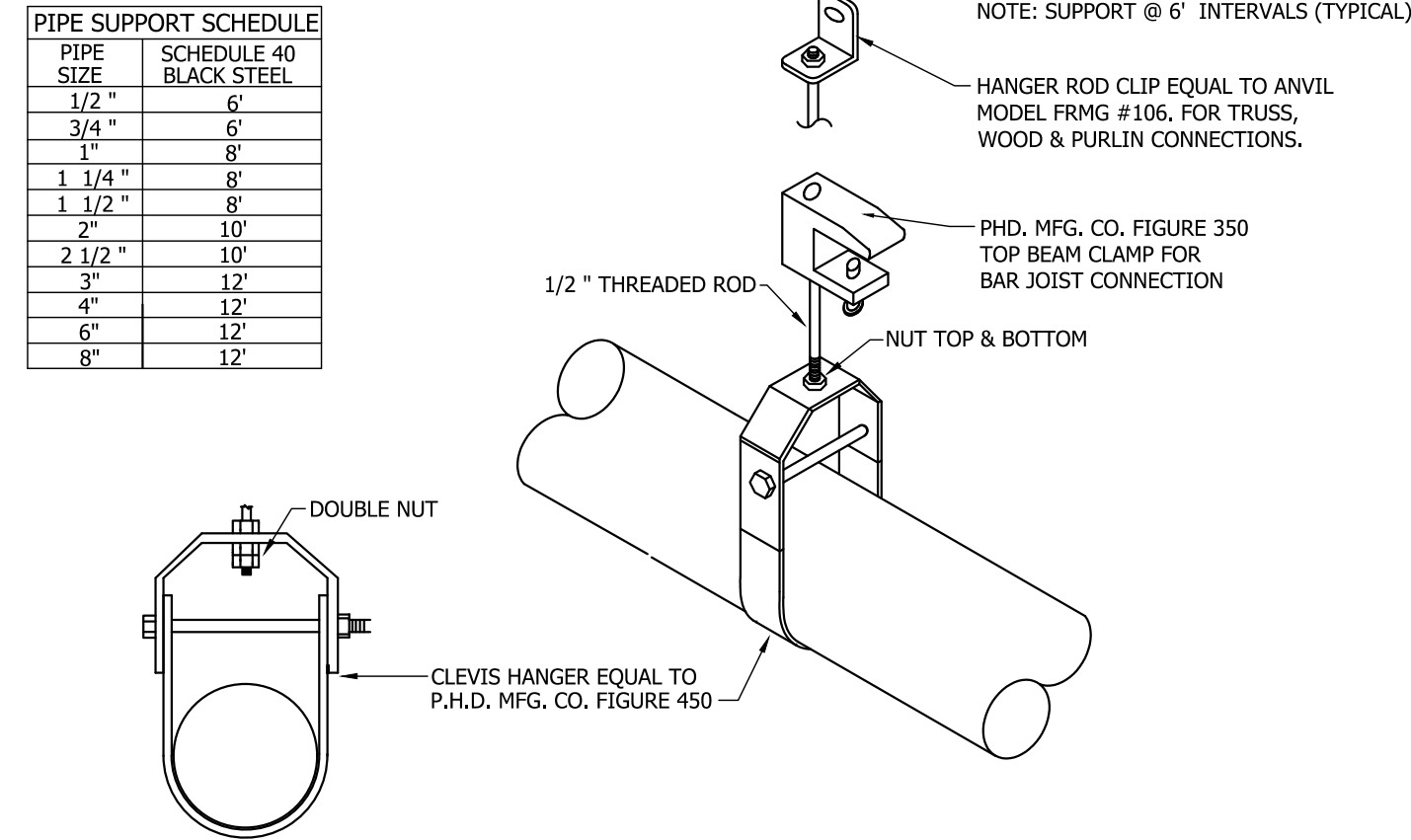
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M-1.2
OF
8

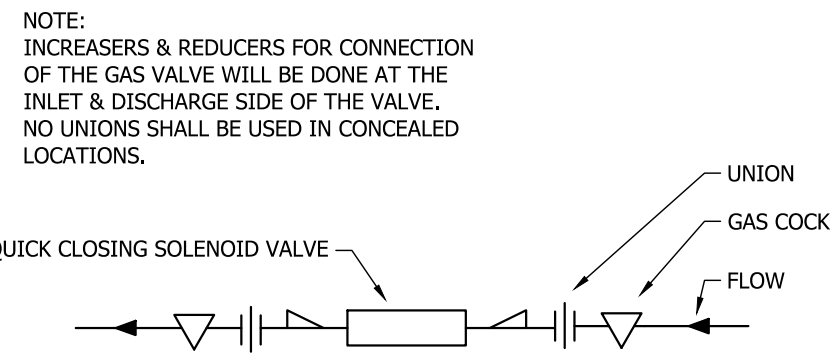


GAS PRESSURE REGULATOR DETAIL
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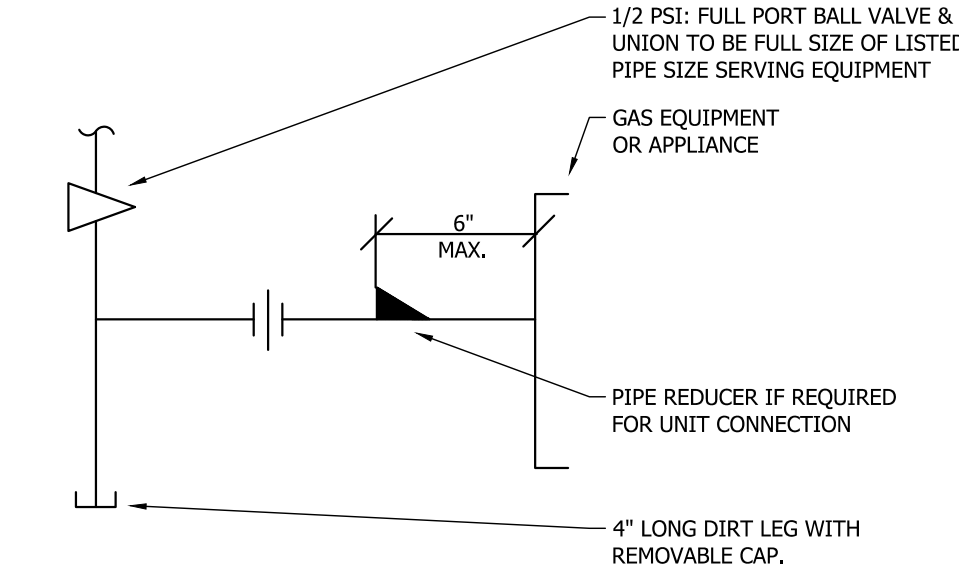
PIPE SIZE	SCHEDULE 40 BLACK STEEL
1/2"	6
3/4"	8
1"	8
1 1/4"	8
1 1/2"	10
2"	12
3"	12
4"	12
6"	12
8"	12



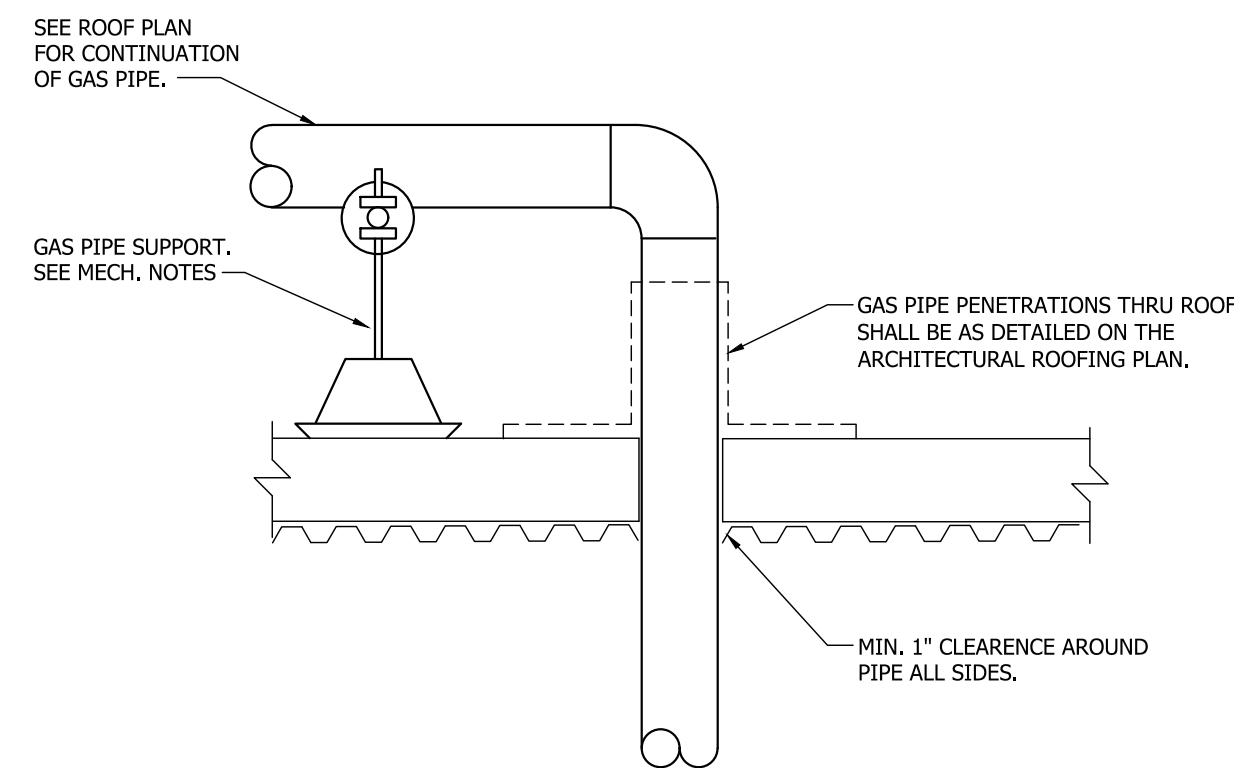
GAS PIPE HANGER DETAIL
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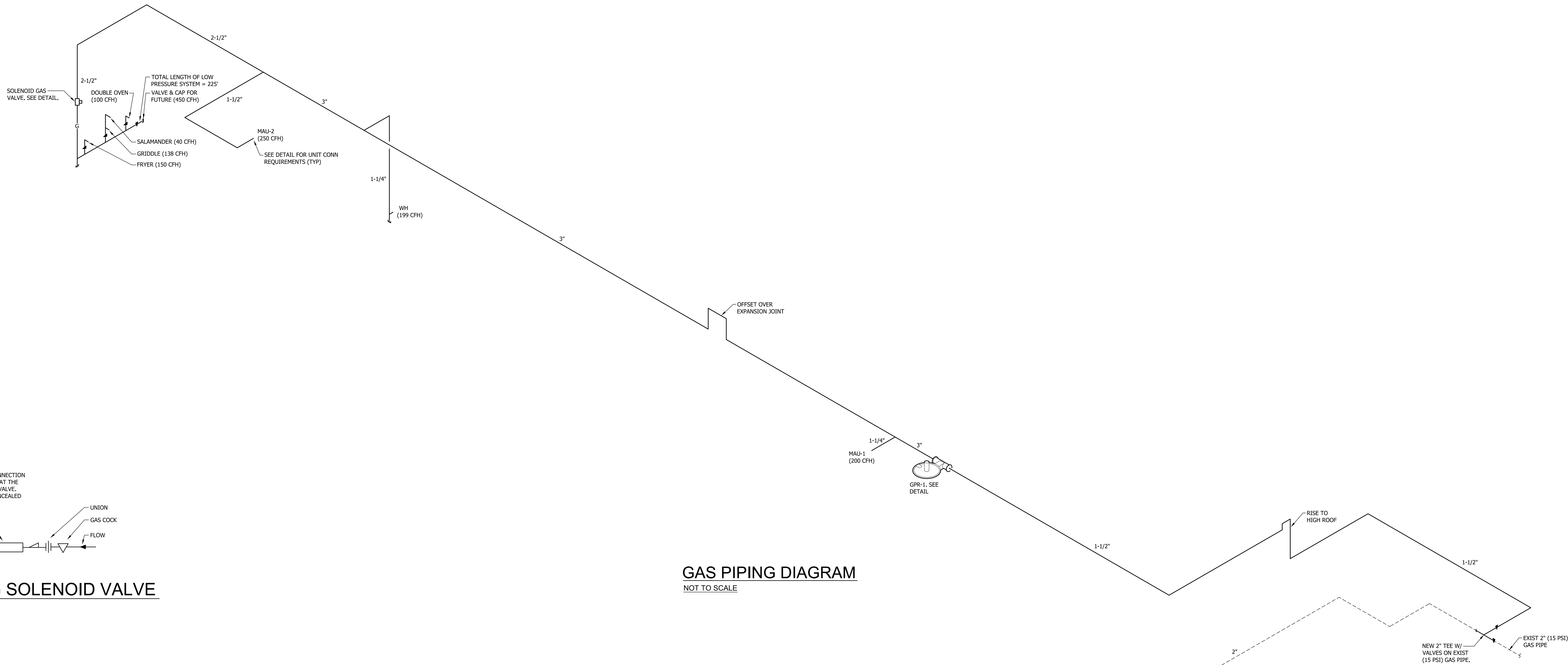
RANGE HOOD QUICK CLOSING SOLENOID VALVE
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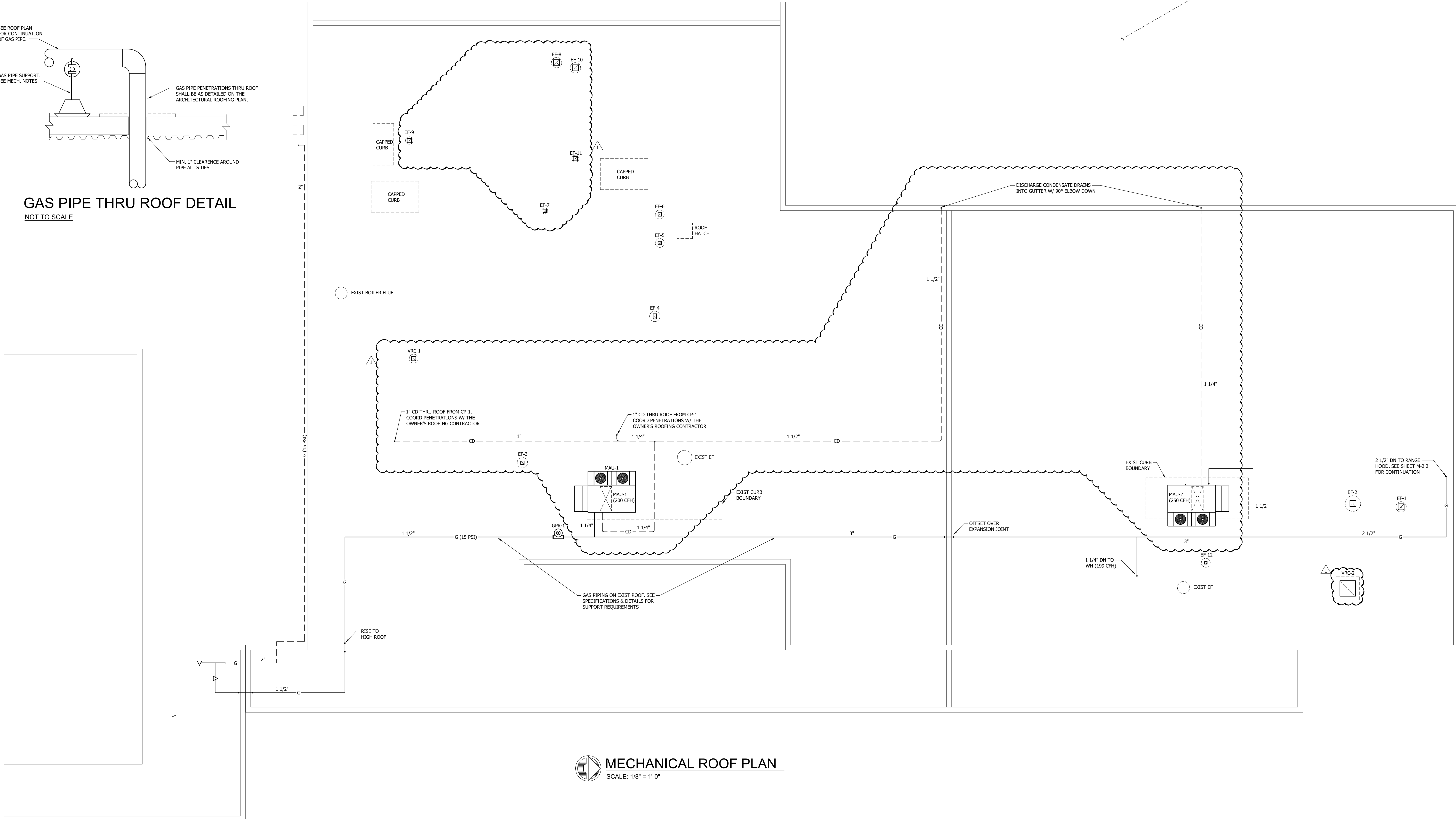
GAS EQUIPMENT/APPLIANCE UNIT CONNECTION DETAIL
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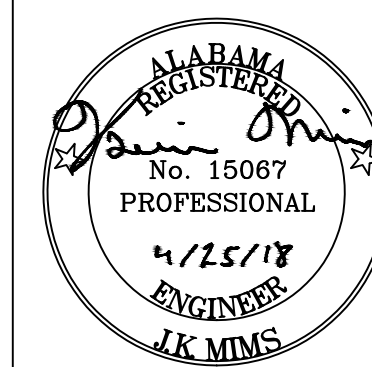
GAS PIPE THRU ROOF DETAIL
NOT TO SCALE



GAS PIPING DIAGRAM
NOT TO SCALE



MECHANICAL ROOF PLAN
SCALE: 1/8" = 1'-0"



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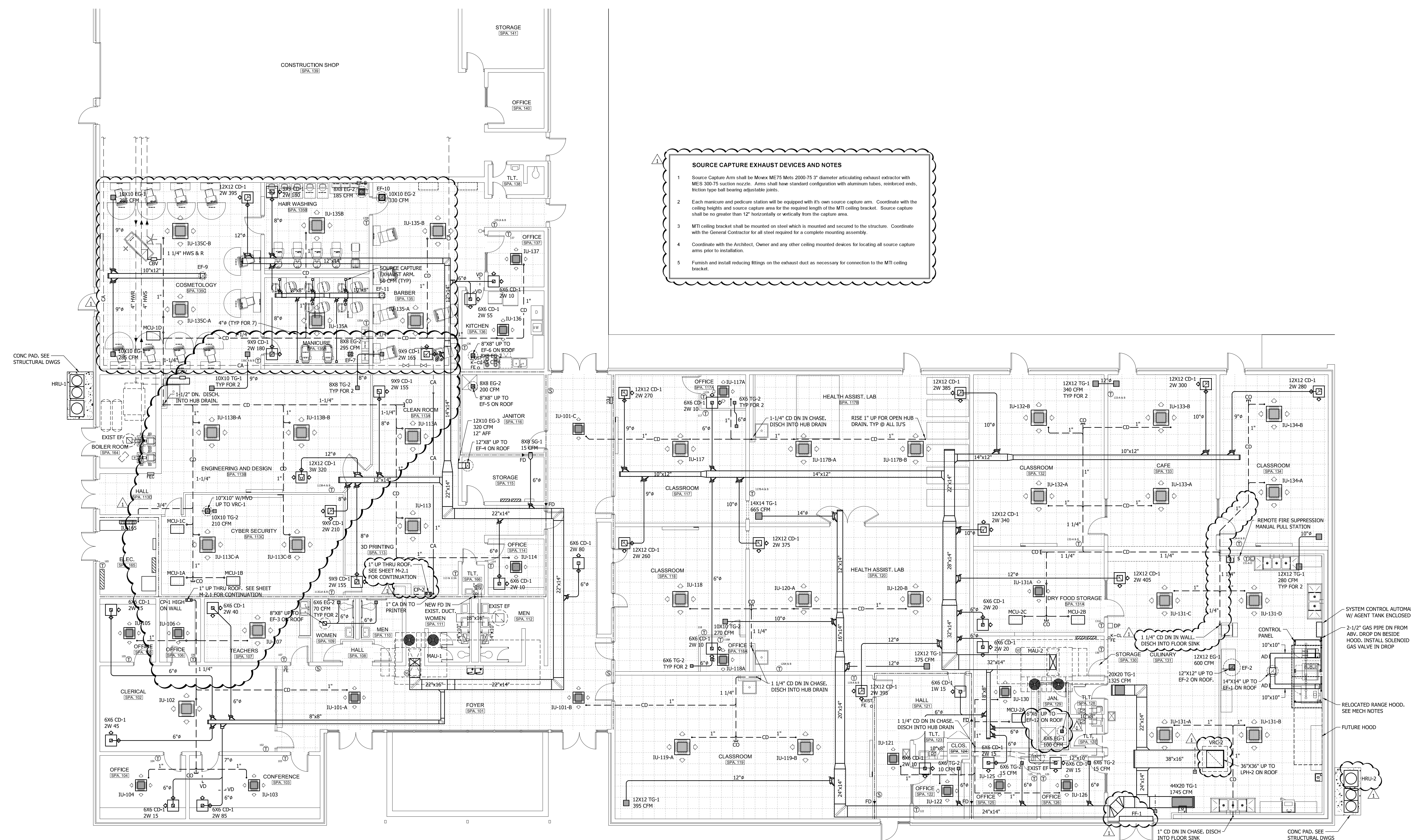
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SHEET TITLE
MECHANICAL
RENOVATION FLOOR
PLAN

SHEET NUMBER
M-2.2
OF
7



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

EXHAUST FAN SCHEDULE												
Mark Location	EF-1 (Existing, Relocated) SPA 131 Range Hood	EF-2 Roof SPA 131 Culinary Area	EF-3 Roof SPA 109 110 ADA Toilets	EF-4 Roof SPA 113 320 Printing, 113A Clean Rm	EF-5 Roof SPA 115 Janitor	EF-6 Roof SPA 130 Kitchen	EF-7 Roof Manicure SPA 135A	EF-8 Roof SPA 138B	EF-9 Roof Cosmetology SPA 135C	EF-10 Roof Barbering SPA 135	EF-11 Roof Source Capture SPA 135B	EF-12 Roof Janitor 129
Fan Type	Centrifugal Upblast	Centrifugal Downblast	Centrifugal Downblast	Centrifugal Downblast	Centrifugal Downblast	Centrifugal Downblast	Centrifugal Downblast	Centrifugal Downblast	Centrifugal Downblast	Centrifugal Downblast	Centrifugal Downblast	Centrifugal Downblast
Blade Type	Blade	Direct - EC	Direct - EC	Direct - EC	Direct - EC	Direct - EC	Direct - EC	Direct - EC	Direct - EC	Direct - EC	Direct - EC	Direct - EC
Drive	Belt											
CFM	2200	600	140	320	200	145	195	165	570	350	350	130
HP	1-1/2	1/4	1/8	1/8	1/8	1/4	1/8	1/4	1/8	1/8	1/8	1/8
Static Pressure, in WG	1.5	20	25	25	25	25	25	25	25	30	30	25
RPM	1263	1327	1571	1265	1052	1589	1037	1008	1242	1212	1552	1522
Sones	14.5	7.2	3.9	4.5	4.3	4.0	2.8	2.7	6.5	4.8	6.0	3.8
Volt/Phase	208/1/50	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60	115/1/60
Basics of Design												
Manufacturer	Greenheck	Cook	Cook	Cook	Cook	Cook	Cook	Cook	Cook	Cook	Cook	Cook
Series	CUBE	ACED-EC	ACED-EC	ACED-EC	ACED-EC	ACED-EC	ACED-EC	ACED-EC	ACED-EC	ACED-EC	ACED-EC	ACED-EC
HP/CFM-15	189/4P-15	101C/TD6C	96C/TD6C	96C/TD6C	96C/TD6C	70C/TD6C	90C/TD6C	90C/TD6C	101C/TD6C	90C/TD6C	96C/TD6C	70C/TD6C
Weight, Lbs.	250	150	100	100	75	75	75	75	125	75	75	100
Accessories	1, 2, 3	4, 5, 6, 7, 8, 9, 10	4, 5, 6, 7, 8, 9, 10	4, 5, 6, 7, 8, 9, 10	4, 5, 6, 7, 8, 9, 10	4, 5, 6, 7, 8, 9, 10	4, 5, 6, 7, 8, 9, 10	4, 5, 6, 7, 8, 9, 10	4, 5, 6, 7, 8, 9, 10	4, 5, 6, 7, 8, 9, 10	4, 5, 6, 7, 8, 9, 10	4, 5, 6, 7, 8, 9, 10
Notes	A, B					A		A	A		A	
Accessories 1 The existing exhaust fan EF-1 will be relocated from Decatur High School Culinary Arts. Relocated will be the fan and ventilated roof thimble. A new 24" high roof curb shall be supplied. Provide a factory fabricated 24" high roof curb. Fan and curb assembly shall be in compliance with IBC 1609 Wind Load. Submit factory installation details including connection requirements for the existing ventilated roof thimble. 2 The existing fan mounted disconnect shall be re-used. Coordinate with the Electrical Contractor. The Flex connection shall have provisions for the hinged tilting fan. 3 The existing grease containment assembly shall be relocated with the fan. 4 Provide a factory installed and pre-wired NEMA 3 disconnect. 5 Provide a fan mounted speed controller. 6 Provide a backdraft damper 7 Provide aluminum bird screen 8 Provide stainless steel hardware 9 Provide a factory fabricated 20" high roof curb with damper tray, less wood natter. Fan and curb assembly shall be in compliance with IBC 1609 Wind Load and Hurricane Rated. Submit factory installation details sealed with signature and date by the manufacturer's compliance engineer in compliance with IBC 1609 Wind Load. 10 Exhaust fan shall standst fan fin												
Notes: A See Sequence of Control B See Control Monitoring Points												

Mark	Description	Mounting	Material	Finish	Max NC Rating	Basis of Design		Accessories / Notes
						Manuf.	Model	
CD-1	Ceiling Diffuser Square Louvered Face Square Neck	Lay-In	Aluminum	Baked White Finish	30	Titus	TDCA-AA	Border Type 3 24" x 24" Panel
CD-2	Ceiling Diffuser Square Louvered Face Square Neck	Surface	Aluminum	Baked White Finish	30	Titus	TDCA-AA	Border Type 6
SG-1	Supply Grille Double Deflection 3/4" Blade Spacing	Surface	Aluminum	Baked White Finish	30	Titus	300FL	Border Type 1 Opposed blade damper
EG-1	Exhaust Grille 35 Degree Deflection Square Neck	Lay-In	Aluminum	Baked White Finish	30	Titus	350FL	Border Type 3 Sg. to Rnd. Adaptor Where Necessary
EG-2	Exhaust Grille 35 Degree Deflection Square Neck	Surface	Aluminum	Baked White Finish	30	Titus	350FL	Border Type 1 Opposed blade damper
EG-3	Exhaust Grille 30 Degree Deflection Square Neck	Surface	Aluminum	Baked White Finish	30	Titus	63 FL	Border Type 1 Opposed Blade Damper
TG-1	Transfer Grille 35 Degree Deflection Square Neck	Lay-In	Aluminum	Baked White Finish	30	Titus	350FL	Border Type 3 Sg. to Rnd. Adaptor Where Necessary
TG-2	Transfer Grille 35 Degree Deflection Square Neck	Surface	Aluminum	Baked White Finish	30	Titus	350FL	Sg. to Rnd. Adaptor Border Type 1

Condensate Drain Sizing	
Pipe Size	Load in Tons
3/4"	Up to 2 Tons
1"	Up to 5 Tons
1-1/4"	Up to 30 Tons
1-1/2"	Up to 50 Tons
2"	Up to 175 Tons
3"	Up to 300 Tons

Notes:

1. All condensate drains below slab or grade to be a minimum of 2"
2. Where slope is less than 1" per foot, increase valves by one pipe size.
3. Where unit condensate drains are combined, the pipe size shall be for the combined tonnage of the units.
4. Where unit or combined unit tonnage exceeds 300, the pipe size shall be 4"

The Civil Contractor, General/Structural Contractor, Fire Protection Contractor, Plumbing Contractor, Mechanical Contractor and Electrical Contractor shall coordinate with each other to determine the space required by the location of and the routing of their required respective structural members, beams, fooking props, piping, ductwork, conduits, etc. A jointly created scaled shop drawing at a minimum scale of 1/8" per 1'-0" with dimensions confirming their coordination and installation shall be submitted for approval prior to any installation. The minimum sheet size shall be 24" X 36". Failure to coordinate does not constitute a change order when components will not fit within the allocated space and may result in installed equipment and materials being removed at the contractor's expense.

HP	RPM	Sones	Volt/Ph	Basis of Design			Options
				Manuf	Series	Model	
1/2 HP Each	1750		115/1/60	Mars		72C	As Listed

one switch for each door.

PIPE SUPPORT SCHEDULE					
Pipe Size	Support Spacing			Cast Iron Soil Pipe	Hanger Rod Diameter
	Sched 40 Black Steel	Copper	PVC		
1/2"	-	5'-0"	4'-0"	-	3/8"
3/4"	7'-0"	5'-0"	4'-0"	-	3/8"
1"	7'-0"	6'-0"	4'-0"	-	3/8"
1-1/4"	7'-0"	7'-0"	4'-0"	-	3/8"
1-1/2"	9'-0"	8'-0"	4'-0"	-	3/8"
2"	10'-0"	8'-0"	4'-0"	5'-0"	3/8"
2-1/2"	10'-0"	9'-0"	4'-0"	5'-0"	1/2"
3"	10'-0"	10'-0"	4'-0"	5'-0"	1/2"
4"	10'-0"	10'-0"	4'-0"	5'-0"	1/2"
6"	10'-0"	10'-0"	4'-0"	5'-0"	5/8"
8"	10'-0"	10'-0"	4'-0"	5'-0"	3/4"

Note: Rods may be reduced one size for double rod hangers, with 3/8" being the minimum diameter.

PIPE SUPPORT SCHEDULE					
Pipe Size	Support Spacing			Cast Iron Soil Pipe	Hanger Rod Diameter
	Sched 40 Black Steel	Copper	PVC		
1/2"	-	5'-0"	4'-0"	-	3/8"
3/4"	7'-0"	5'-0"	4'-0"	-	3/8"
1"	7'-0"	6'-0"	4'-0"	-	3/8"
1-1/4"	7'-0"	7'-0"	4'-0"	-	3/8"
1-1/2"	9'-0"	8'-0"	4'-0"	-	3/8"
2"	10'-0"	8'-0"	4'-0"	5'-0"	3/8"
2-1/2"	10'-0"	9'-0"	4'-0"	5'-0"	1/2"
3"	10'-0"	10'-0"	4'-0"	5'-0"	1/2"
4"	10'-0"	10'-0"	4'-0"	5'-0"	1/2"
6"	10'-0"	10'-0"	4'-0"	5'-0"	5/8"
8"	10'-0"	10'-0"	4'-0"	5'-0"	3/4"

Note: Rods may be reduced one size for double rod hangers, with 3/8" being the minimum diameter.

MECHANICAL LEGEND

—•—•—•—	= FIRE DAMPER WITH ACCESS DOOR
⊖	= THERMOSTAT
⊙	= SMOKE DETECTOR
⊕	= TEMPERATURE SENSOR
OBV	= CALIBRATED BALANCING VALVE
⊞	= DIFFERENTIAL PRESSURE SWITCH
AD	= ACCESS DOOR
—(H)—	= MOTORIZED VOLUME DAMPER
f — VD	= MANUAL VOLUME DAMPER
—G—	= GAS PIPE
—CD—	= CONDENSATE DRAIN
—A—	= COMPRESSED AIR PIPING
---	= EXISTING TO REMAIN
----	= EXISTING TO BE REMOVED
○	= NOTE REFERENCE SYMBOL



DECATUR CITY SCHOOLS
**AUSTIN HIGH SCHOOL
CAREER TECH CENTER**
DECATUR, ALABAMA

MECHANICAL DEVICES & NOTES

- 3D Printer compressed air piping and devices shall consist of the Mechanical Contractor furnishing and installing the following:
 - Zaks Mechanical Moisture separator 01 micron filter, Model ZF22G3, Solids, Class 1.
 - Zaks Cycling Refrigerated Dryer Model 24HSH, 115/160, 36 F dew point, Water Content, Class 4.
 - Zaks High Efficient Filter Model ZF222H, 1 micron filter, Oil Content Class 1.
 - Zaks Activated Carbon Filter Model ZF222A, Vaporodor Removal .003 PPM.

Each 3D printer shall be installed with a separate regulator at the riser. The regulator shall have zinc bodies with brass valves and valve seats, inlet pressure of 125psig, outlet pressure of 5-50psig, internal relief and gauge, capacity of 40 CFM. Norgren 11-002-061 series or approved equal.

 - Differential pressure gauges on all filters.
 - Internal auto drains on all filters.
 - Steel pipe: ASTM A53, Schedule 40 black. Fittings: ANSI/ASME B16.3, malleable iron, or ASTM A234, forged steel welding type. Joints: Solved for pipe 2" and under: ANSI/ASME D1.1. Copper Pipe: Type K hard drawn copper per ASTM B-88. Fittings: Wrought copper or cast brass. Joints: silver brazed.
 - Devices valves 1/2" shall be full port 1/4 turn lead free ball valves, two-piece construction, sweat and connection, with PTFE seats and seals, adjustable stem packing gland, stem O-ring and steel handle with vinyl sleeve. Valves shall be pressure rated at 600 psi WOG and 150 psi WSP. Valves shall be, Nilco model FP-600-LP or approved equal.
 - Furnish and install reinforced flexible hoses from the discharge header from the filtration/dryer assembly termination coupling to the unit connections. Header shall be installed low on the wall with separate risers and valves. Discharge of the valves will be flexible hoses.
 - The filtration system shall be installed adjacent to the printer. Condensate pump CP-2 shall be installed below the refrigerated air dryer and auto drains of the filtration systems. The discharge of the pump shall be extended to the roof and discharge through the roof. See Roof Plan for continuation.
 - Installation of a discharge drain from the dryer and all components with drain valves shall header together below the assemblies. Piping for the drain shall be 1" schedule 40 PVC.
 - All components of the filtration system may be obtained from General Machinery Company, Inc. 9059 Madison Blvd, Suite G, The Company Proposal Sheet will be provided for referenced material, pricing and contact information.
- Piping systems that have been removed as indicated on the Demolition Mechanical Floor Plan and Demolition Notes will have the following installed as described:
 - Calibrated Balancing Valves up to 3" pipe size shall be bronze bodied with brass ball construction and PTFE seats and seals. Valves shall have NPT connections. Valves shall be rated at a minimum of 200 psig. Valves shall have differential pressure read out ports across the valve seat area. Read out ports shall be fitted with internal EPT insert check valve. Valves shall have a memory stop to allow valve to be closed for service and then reopening to the set point without disturbing the balance position. Calibrated balance valves shall be Ball and Gossett Model CB, Press-B-Plus or Taco Model CS.
 - Hydronic pipe shall be schedule 40 black steel per ASTM A-53. Fittings: Forged steel welding type per ASTM A-234. Joints shall be threaded per ANSI B2.1.
 - Valves shall be threaded, bronze body, screw-in bonnet, rising stem, solid wedge, non-asbestos fiber packing, Class 125, Nilco T-111, Grinnel 3010, Stockham B-100.
 - Insulation shall be rigid fiberglass - 20K Factor, 34 density, minimum R Factor 4.3 suitable for 850F. Equal to Owens Corning - Fiberglass ASJ/SSL-11. Fittings will be machine formed, routed and fitted for the specific size fitting. All insulation shall be butted together and securely stapled in place with outward clinching staples on 2" centers. Factory provided laps of 4" wide ASJ Tapes of the same type as jacket on insulation shall be used on butt joints. All laps and penetrations shall be sealed with a vapor barrier mastic finish. Fitting insulation shall be covered with two coats of vapor barrier mastic with an intermediate layer of glass fabric.
- The Captive Air Range Hood and all associated components shall be removed from Decatur High School as identified in the Demolition Mechanical Floor Plan and Demolition Mechanical Notes. The Mechanical Contractor shall be responsible for removing the supply air support prior to installation. The range hood shall be installed where directed. The hood shall be suspended from 3/8" galvanized all thread at all hood suspension points to angle steel spanning the structure. Angle steel shall be minimum of 3" x 3" x 1/4" and shall span a minimum of two joists. Included in the installation will be the Electrical Control Package, Room Temperature Sensor, Remote Pull Station and the System Control Automan with Aqua-R-102 Agent Tank. New piping will be required from the Automan connection to the range hood fire suppression system. Coordinate with Captive Air for cables, connectors, pull cables and any additional components to complete the installation of the pull station. After the installation has been completed, the range hood shall be smoke/pressure tested. The hood pull station will be activated for a simulated fire condition. A compressed air tank will be used for the simulation to determine that all nozzles are activated and the fire alarm sounds. In the test, the exhaust fan shall be energized regardless of switch position. The hood heat sensors will be heated to simulate cooking without energizing the fan. When temperature is reached, the fan shall be energized. A heat gun shall be used for this process, not an open flame. Coordinate with the Electrical Contractor for connection to the fire alarm system.
- The complete hydronic hot water piping system will be drained for the demolition as shown on the Demolition Mechanical Plans and Demolition Notes. The Mechanical Contractor shall make the necessary modifications of the removed branch lines with two service valves, calibrated balancing valve and union. After the modifications are complete, the piping will be flushed and filled. The Owner will provide the necessary chemical treatment.
- Structural steel furnished for equipment or piping support shall be cleaned and coated with two coats of rust inhibiting primer. Where pre-primed steel is used, primer shall be applied over the cut ends. All welded steel shall be wire brushed to remove any scale, ground smooth where necessary and then primed. Where structural support steel is provided for by Structural Drawings, coordinate with the steel installer with dimensions of all cuts prior to the installation.
- All above ceiling mounted equipment and powered devices shall be mounted no greater than 24" above the ceiling level and in an accessible location for service and routine maintenance. Equipment shall include but not be limited to all indoor HVAC equipment with or without filters, fans, motorized control dampers, VRF BC controllers, remote control panels, transformers and like devices.
- The all roof mounted equipment curbs shall have a complete perimeter steel support system. See Structural for all steel requirements. Curbs shall be secured to the perimeter structural steel on all sides. Self tapping screws, placement and spacing will be determined by the equipment manufacturer. Engineered shop drawings and details to achieve all requirements for BC 1605 Wind Loading installation. Included with the manufacturer's installation guide for equipment with base rails will be the required wind/seismic retaining clips to secure the unit to the curb. Clips must be submitted and approved, including spacing and attachment requirements. Screw attachments as required by fans and similar caps must be secured to the curb with a submitted and approved attachment procedure from the manufacturer. All equipment shop drawings and calculations must be prepared by the manufacturer's licensed Engineer for the construction requirements of the project. Shop drawings, details and calculations must bear the Engineers seal with signature and date.
- Mechanical Contractor shall coordinate the location of all ceiling air distribution devices with the ceiling grid and other disciplines including, but not limited to, electrical, fire protection and architectural.
- Condensing unit concrete pad to be installed with the top of the pad a minimum of 3" above finished grade, and the bottom 3" below grade on undisturbed or compacted soil. Furnish and install compressible joint material between the pad and wall. Top of pad shall have a 1/4"/ft. slope away from the building wall for water runoff.
- Condensate drains inside the building shall be 1" for single VRF equipment or devices. Multiple pieces equipment grouped to a single line shall be sized as scheduled on the drawings. Pipe sizes shall increase regardless of size to 2" above the slab. Branch mains below the slab shall all be 2". Combined single main shall be 4". Coordinate with the Plumbing Contractor for the location and elevation necessary for connection and extension to the rain water leader where shown on the drawings. Termination of condensate drains from pumped equipment shall be a 1" line extending up a minimum of 4" at the device for the discharge of the discharge tubing.
- Mechanical Contractor shall be responsible for installing a roll type filter media over any return grilles or open return ducts as a temporary measure to block infiltration of construction dust and debris into any active returns serving existing or new HVAC systems until the completion of construction. Any tape or clips used to secure the media shall not leave permanent marks on the grilles.
- All exterior slab mounted packaged equipment shall have neoprene in-shear isolation pads with crossed double ribs and .25" deflection. Pads shall be molded using oil resistant 25,000 PSI tensile strength neoprene.
- Roof curbs that are scheduled to remain after equipment is removed are to be permanently capped. The Mechanical Contractor shall provide perimeter framing on the inside of the curb. Framing shall consist of 2x4 secured to the curb frame with a minimum of 2" x 3/8" lag screws. Framing shall be installed spanning the short span of the curb with separations of no greater than 16". The framing shall be capped with 3/4" plywood. The plywood shall be flush with the outer edges of the curb. A bead of sealing caulk shall be installed on the top of the curb before the plywood is installed with 2-1/2" x 1/4" wood screws. The curb shall be capped with a 20 gauge sheet metal cap, cross broken and with 2" turn downs on all sides. The turn down edges shall have liquid tight corners. Secure the cap to the curb on the turn down edges to the curb.

MECHANICAL GAS SYSTEM DEVICES & NOTES

- The existing gas meter serving the school complex will remain.
- Gas pipe penetrations thru the roof shall be coordinated with the General Contractor.
- Gas Solenoid Valve (Range Hood), Captive-Air part number MQVA2, 2" Install where indicated on the drawings. Contractor shall coordinate with the hood controls contractor for the final installation location.
- Gas pressure regulators shall be installed as indicated on the roof plan and Gas Regulator Schedule. Mechanical Contractor shall coordinate the exact position of the regulator to where the vent is not within 15' of any MAU outside air intake. Configure the regulator where the vent is in the vertical down position.
- Mechanical Contractor shall be required to offset the gas pipe as necessary for the installation on several different roof or building levels. The offsets shall be installed with a gas support hanger adjacent to the upper drop and the lower elbow back to the horizontal position. Where the offset is greater than 5', the Contractor shall further install a wall support consisting of a bolted support base secured to the sidewall, threaded rod extension to the pipe and secured with a split ring extension hanger. All devices shall be factory, or field painted.
- All equipment shall be connected with a dirt leg extension as detailed on the drawings.

SEQUENCE OF CONTROL

Substantial Completion for Controls shall not be approved, regardless of Substantial Completion has been approved for the remainder of the project, until the Controls System is complete, fully functional, including graphics.

The Controls Supplier shall be responsible for the correct installation, connection, set up and operation of the controls system. This shall also apply to the Controls Supplier installing the system and also when the controls are supplied to the Mechanical Contractor for installation. If the Mechanical Contractor is not able get the controls to operate correctly, the Supplier shall be responsible for making all necessary corrections to ensure proper operation.

The Mechanical/Controls Contractor shall ensure that the Electrical Contractor provides sufficient sources of 120 volt power, relays and conduit for all devices, VAV boxes, damper actuators and valve actuators, etc. The Mechanical/Controls Contractor shall provide all transformers and coordinate with the Electrical Contractor for the installation of the transformers. The Mechanical/Controls Contractor shall provide all necessary wiring, components and devices such as relays, motor starters, thermostats, sensors, etc. for a complete control system. The Controls Contractor shall have an allowance in the project on the anticipated cost of the Electrical Contractors service when additional power sources are needed. This allowance will be in the Controls Contractors bid price. Failure to include the cost will not constitute a change order.

The Electrical Contractor shall furnish and install all wall boxes and rigid conduit in all walls for all thermostats, CO₂ sensors and other wall mounted devices. The Mechanical/Controls Contractor shall coordinate with the Electrical Contractor for the installation, location and quantity of these boxes. The Mechanical/Controls Contractor shall provide and install wiring in conduit and boxes installed by the Electrical Contractor. The Mechanical/Controls Contractor shall install all rigid conduit, boxes and wire for control devices installed in unfinished areas pending approval from the Architect that conduit, boxes and wire will be allowed to be exposed. These shall be installed in accordance with Division 16 and the box locations shall be coordinated with All Trades.

All control wiring shall be shielded cable. All control wire sheathing shall be one color, orange, or as directed by the Owner's representative.

Two-position dampers shall be controlled with Belimo model NF24-S-US, direct coupled, 24 volt, 60 in-lb torque with 75 second run time, spring return and built in auxiliary switch. Fully modulating dampers shall be controlled with Belimo model NF24-SR-S-US, direct coupled, 24 volt, 60 in-lb torque, spring return and built in auxiliary switch.

All set points shall be adjustable.

Smoke detectors indicated on the mechanical plans shall be provided by the Electrical / Fire Alarm Contractor, installed by the Mechanical Contractor and shall be wired by the Electrical / Fire Alarm Contractor.

The building is protected by a global fire alarm panel. In the event any smoke detector or pull station is activated, a signal is to be sent to disable the HVAC equipment. The HVAC equipment shall be equipped with duct mounted smoke detectors as shown on the drawings. In the event a smoke detector is activated, the associated system shall be completely disabled.

Controls shall be Andover and shall be fully integrated into the Decatur City Schools existing control system Controls shall be Andover

System

Make Up Air Units

The unit shall be enabled during occupied periods as determined by the BAS. When the unit is enabled during the occupied mode, the outside air damper shall open and the cooling control valves shall modulate as required in order to maintain the discharge air set point of 55° F dry bulb during cooling operation. If the outside air Dew Point falls below 55° and the Dry Bulb falls below 72° then the control valves shall close and untempered outside air shall be delivered to the space. When the outside air temperature falls below 55° DB then the unit shall modulate the heating sequence to deliver 72-75° air to the space.

The units shall vary the airflow supplied according to a duct mounted static pressure sensor located 2/3 down the length of the supply duct work. The automatic dampers shall modulate to maintain a CO₂ setpoint of 1000 ppm in all spaces supplied with a CO₂ sensor.

If the room humidity rises above 55% the unit shall enable cooling & the hot gas reheat coil shall operate to maintain the discharge set-point temperature.

Units shall be shut down and alarm sent to the BAS if any of the factory mounted safeties are tripped or the Duct mounted smoke detector shuts the unit down.

MAUs shall be de-energized during unoccupied hours.

When the unit is de-energized the fan shall be de-energized, the unit outside air damper shall fully close.

VRF Ductless Split Systems

System shall be operated and controlled by the factory mounted controls. The Controls Contractor shall install room temperature sensors integrated into the building control system to monitor the space temperature. The BAS shall be capable of enabling and disabling the system.

EF-1 Range Hood:

Fan shall be energized by switches mounted on the hood and the duct/hood mounted temperature sensor (provided by the hood supplier). If the Ansul system is activated the exhaust fan shall be turned on. MAU-2 air supply fan shall be turned off and the gas valve shall be closed.

EF-2 Kitchen Area:

Fan shall run whenever the building is occupied.

EF-3 ADA Toilets

Exhaust fan shall be energized with the light switch in both toilets. When the light switches are turned off, a time delay switch shall keep the fan energized for a preset period of time.

EF-4 through EF-16 and EF-12

Energize with occupancy signal from the BAS.

EF-11

Energize with a wall mounted switch. When energized, EF-11 shall be de-energized.

Condensate Pump Alarm:

Whenever condensate pump CP-1 and CP-2 tank reaches high tank level an alarm shall be sent to the BAS.

Domestic Hot Water Circulation Pump:

The hot water circulation pump shall be energized through the BAS during occupied times. The circulation system shall be equipped with a pipe mounted immersion aquastat. The aquastat shall control the pump operation to maintain the setpoint temperature in the loop. The BAS shall de-energize the pump during unoccupied periods.

DX System Analysis Form				
Project:				
Date:				
Architect:				
Mechanical Contractor:				
System Mark:				
System Model Number:				
System Serial Number:				
Heating Type:	Heat Pump	Gas	Hot Water	Electric
Reheat Type:	Hot Gas	Hot Water	Electric	N/A
Outdoor Temperature:				
Indoor Temperature:				
Indoor Relative Humidity:				
Mixed Air Temperature Entering Indoor Coil:				
Supply Air Temperature @ The Air Handler:				
Supply Air Temperature @ The Farthest Supply Grille:				
Suction Pressure:				
Suction Line Temperature @ Compressor:				
Discharge Pressure:				
Discharge Line Temperature @ Compressor:				
Liquid Line Pressure:				
Liquid Line Temperature @ Condenser:				
Superheat:				
Subcooling:				
Discharge Superheat:				
Heating Entering and Leaving Air Temperature:				
Inlet Gas Pressure:				
Manifold Gas Pressure:				
Electric Heat kW:				
Amps per Heating Element:				
Total Electric Heat Amps:				
Discharge Air Temperature with Reheat Operational:				
Supply Air CFM:				
Return Air CFM (Doc, UnDoc):				
Outside Air CFM (Doc, UnDoc):				
This shall be filled out in heating, cooling & dehumidification modes for every piece of DX equipment. Outdoor ambient shall be 80°F minimum for cooling readings and 50°F or below for heating readings.				

CONTROLS MONITORING POINT LIST

The following items shall be monitored in addition to those points required to control the systems in accordance with the Sequence of Control:

General

- Outside Air Temperature
- Outside Air Relative Humidity

Makeup Air Units (MAU)

- Fan Status (via adjustable CT / VFD % status)
- Supply Air Quantity (CFM)
- Outside Air Damper Position
- Entering Air Temperature
- Entering Air Relative Humidity
- Leaving Air Temperature
- Leaving Air Relative Humidity
- Preheat Valve Position (3-Way Modulating)
- Preheat Entering Water Temperature
- Preheat Leaving Water Temperature
- CW/HW Valve Position (3-Way Modulating)
- CW/HW Entering Water Temperature
- CW/HW Leaving Water Temperature
- Reheat Valve Position (3-Way Modulating)
- Reheat Entering Water Temperature
- Reheat Leaving Water Temperature

VRF Ductless Split Systems

- Outdoor Unit Operating Status
- Indoor Unit Operating Status
- Room Set Point
- Room Temperature
- Entering Air Temperature
- Leaving Air Temperature

Exhaust Fans On / Off

- Fan Status (via CT)

Condensate pump CP-1 and CP-2

- Pump basin high level alarm.

OWNER PROVIDED EQUIPMENT – CONTRACTOR INSTALLED NOTES

- Owner to provide Trane MAU-1 & MAU-2 as scheduled including curb and start-up. Trane shall also include time necessary for commissioning and coordination with controls contractor for a fully operable system. Trane shall coordinate with curbs plus prior to bid for proper curb size. Contractor to install all owner provided equipment and provide all other appliances required and shown on plans or specified to provide a complete and fully operable system. Contractor shall coordinate receiving and storage of owner provided equipment and delivery to site for installation.
- Owner to provide Trane multi-zone VRF system indoor & outdoor equipment as scheduled including condensate pumps and branch controllers and start-up. Trane shall also include time necessary for commissioning and coordination with controls contractor for a fully operable system. Contractor to install all owner provided equipment. Contractor to provide all refrigerant line insulation and all other appliances required and shown on plans or specified to provide a complete and fully operable system. Contractor shall coordinate receiving and storage of owner provided equipment and delivery to site for installation.
- All other equipment shown and schedule on plans or specifications are to be provided and installed by contractor.

JOB NUMBER

17922

ZWW/BD / JRM / 04-25-2018

DRAWN - CHECKED - DATE

REVISIONS

ADD 05-14-2018

SHEET TITLE

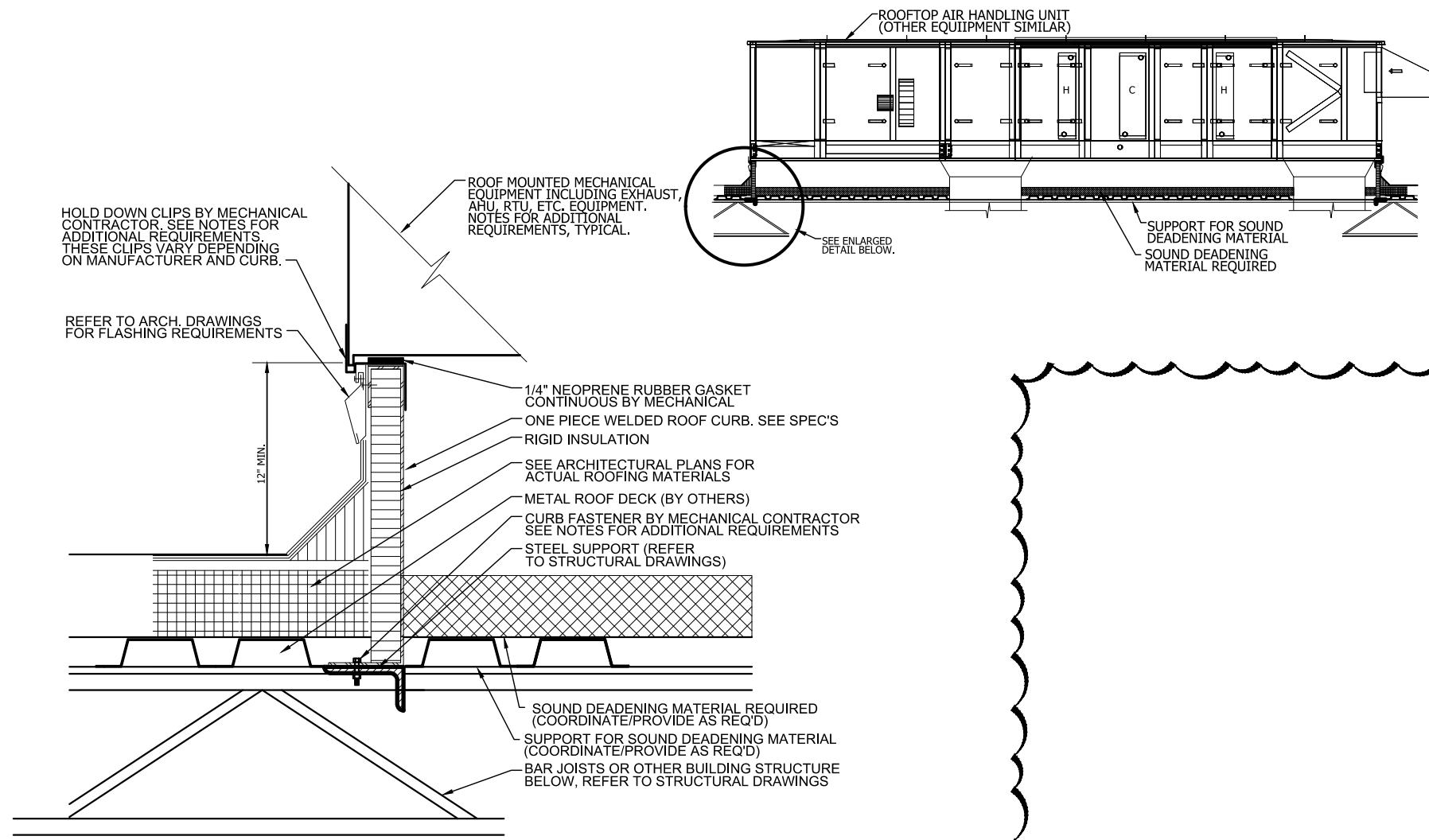
MECHANICAL
SCHEDULES

SHEET NUMBER

M-3.2

OF

7



ROOF MOUNTED EQUIPMENT NOTES:

SHOP DRAWINGS AND CALCULATIONS MUST BE PREPARED BY AN ENGINEER LICENSED IN THE STATE OF ALABAMA FOR THE ROOF EQUIPMENT ATTACHMENTS CONNECTED TO THE STEEL STRUCTURE DESIGNED IN THESE DOCUMENTS. SHOP DRAWINGS AND CALCULATIONS MUST BEAR ENGINEERS SEAL WITH SIGNATURE AND DATE.

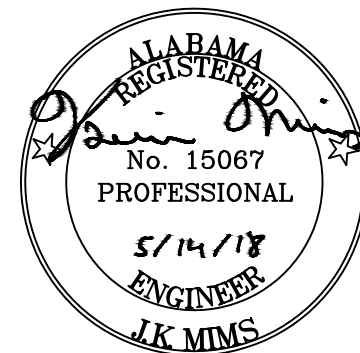
ALL ROOF MOUNTED EQUIPMENT CURBS SHALL HAVE A COMPLETE PERIMETER STEEL SUPPORT SYSTEM. REFER TO STRUCTURAL DRAWINGS AND COORDINATE WITH GENERAL CONTRACTOR AS REQUIRED. WHERE ROOF DECKING IS REMOVED BELOW CURB, PROVISIONS SHALL BE MADE TO INSTALL DECKING AT OPENING AND RIGID INSULATION BELOW ROOFTOP AIR HANDLING UNITS FOR SOUND DEADENING PURPOSES.

EQUIPMENT CURBS SHALL BE SECURED DIRECTLY TO THE STEEL ON ALL SIDES WITH STAINLESS STEEL OR GALVANIZED BOLTS, WASHERS, AND NUTS AS REQUIRED BY ENGINEERING DESIGN TO BE SUBMITTED. THE MANUFACTURER/SUPPLIER OF THE ROOF MOUNTED EQUIP. AND CURB SHALL PROVIDE WITH THE EQUIPMENT SUBMITTALS AN ENGINEERED DRAWING/CALCULATIONS SHOWING COMPLIANCE WITH EQUIPMENT SPECIFIC REQUIREMENTS FOR THE MAXIMUM SPACING, MINIMUM SCREW/BOLT SIZE, THRU STEEL PENETRATION DIMENSION, AND SPACING FROM EDGE OF CURB/STEEL SUPPORT TO ACHIEVE IBC 1609 WIND LOADING REQUIREMENTS. EQUIPMENT WITH BASE RAILS MUST HAVE SEISMIC CLIPS INSTALLED/SUBMITTED IN A SIMILAR FORMAT. EQUIPMENT HOLD DOWN CLIPS THAT ATTACH EQUIPMENT TO CURB MUST BE SUBMITTED AND APPROVED, INCLUDING SPACING AND ATTACHMENT REQUIREMENTS. THE EQUIPMENT MUST BE SECURED TO THE CURB IN A TESTED AND APPROVED MANNER. ENGINEER OF RECORD DESIGNING ATTACHMENTS FOR WIND LOAD REQUIREMENTS MUST INCLUDE ALL ATTACHMENTS IN CALCULATIONS.

EXHAUST FANS AND OTHER EQUIPMENT MUST BE SUBMITTED AND APPROVED IN A SIMILAR PROCEDURE FROM THE MANUFACTURER AS WELL

ROOF EQUIPMENT ATTACHMENT DETAIL

NOT TO SCALE



ELECTRICAL LEGEND

LIGHTING

- CEILING OUTLET - FIXTURE SINGLE OR CONTINUOUS LENGTHS
- WALL OUTLET - BRACKET TYPE FIXTURE
- SINGLE SIDE EXIT SIGN - WITH DIRECTIONAL CHEVRONS AS SHOWN. BATTERY BACKUP. SEE LIGHTING FIXTURE SCHEDULE
- CEILING OR WALL MOUNTED EMERGENCY LIGHT, BATTERY BACKUP.

LIGHTING CONTROLS SYSTEM

- P2S WALL MOUNTED TWO BUTTON DIGITAL SWITCH, ON/OFF, BUTTONS FOR CONNECTION TO MOTION SENSORS. PROVIDE WALL BOX ADAPTER OPTION LUTRON MODEL NO. PJ2-2B OR APPROVED EQUAL
- P3S WALL MOUNTED THREE BUTTON DIGITAL SWITCH, ON/OFF, RAISE LOWER, FOR CONNECTION TO MOTION SENSORS. PROVIDE WALL BOX ADAPTER OPTION LUTRON MODEL NO. PJ2-3BRL OR APPROVED EQUAL
- OS WALL MOUNTED DUAL TECHNOLOGY SINGLE POLE SWITCH, 120/277V; LUTRON MODEL NO. MS-B102 OR APPROVED EQUAL
- CEILING MOUNTED MULTI-TECHNOLOGY OCCUPANCY SENSOR, 360° COVERAGE, LOW VOLTAGE. COORDINATE WITH ARCHITECTURAL DRAWINGS ON CEILING TYPES. LUTRON MODEL NO. LRF2-OCR2B-P-WH OR APPROVED EQUAL
- CEILING MOUNTED VACANCY SENSOR, 360° COVERAGE, LOW VOLTAGE. COORDINATE WITH ARCHITECTURAL DRAWINGS ON CEILING TYPES. LUTRON MODEL NO. LRF2-VCR2B-P-WH OR APPROVED EQUAL
- POWER PACK, WITH DIMMING, MOUNT ABOVE CEILING WHERE APPLICABLE, 120V; LUTRON MODEL NO. RMS-BT-DV-B OR APPROVED EQUAL
- POWER PACK, MOUNT ABOVE CEILING WHERE APPLICABLE, 120V; LUTRON MODEL NO. RMS-16R-DV-B OR APPROVED EQUAL
- VIVE WIRELESS HUB, PREMIUM VIVE HUB WITH BACKL, FLUSH MOUNTED ADAPTER AND POWER SUPPLY, LOCATED WITHIN 10FT OF WIRELESS ACCESS POINT, 120/277V; LUTRON MODEL NO. HJ2-2-FM OR APPROVED EQUAL
- BRANCH CIRCUITING AS REQUIRED BY MANUFACTURER.

LIGHTING CONTROL NOTES

- ALL SENSOR LOCATIONS ARE APPROXIMATE. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.
- ULTRASONIC CEILING MOUNT SENSORS SHOULD BE LOCATED A MINIMUM OF SIX (6) FEET FROM HVAC SUPPLY/RETURN VENTS
- FIELD VERIFY PROPER SENSITIVITY AND TIME DELAY SETTINGS FOR NON-ADAPTIVE PRODUCTS, FOLLOWING THE MANUFACTURER'S RECOMMENDED PLACEMENT, AND FIELD VERIFICATION OF CIRCUITS WITH RESPECT TO POWER PACK PLACEMENT
- CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF REQUIRED NUMBER OF POWER PACKS:
 - A MINIMUM OF ONE POWER PACK IS REQUIRED FOR EACH CONTROLLED CIRCUIT.
 - EACH POWER PACK CAN SUPPLY UP TO 1500A. REFER TO INSTALLATION GUIDE FOR MAXIMUM NUMBER OF SENSORS CONNECTED TO POWER PACK.
 - IF MULTIPLE CIRCUITS ARE TO BE CONTROLLED BY A SINGLE SENSOR, AUXILIARY RELAYS MAY BE USED IN CONJUNCTION WITH A POWER PACK.
- SENSORS MOUNTED OVER DOORWAYS SHOULD BE PLACED ONE (1) FOOT INSIDE THRESHOLD.
- THE LIGHTING CONTROL SYSTEM IS DESIGNED AROUND LUTRON LIGHTING CONTROLS AND ALL PRE-APPROVED EQUAL MANUFACTURERS SHALL PROVIDE SITE SPECIFIC INSTALLATION DRAWINGS, OUT SHEETS AND WIRING DIAGRAMS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEVIATIONS FROM THE SYSTEM IN THE CONTRACT DOCUMENTS. 10 DAY PRIOR APPROVAL ON ALL ALTERNATE MANUFACTURERS.
- THE LIGHTING CONTROL SYSTEM MANUFACTURER SHALL PROVIDE SHOP DRAWINGS AND FACTORY STARTUP.
- LIGHTING CONTROL MANUFACTURER SHALL INCLUDE IN SUBMITTAL PACKAGE A CONTROL BLOCK DIAGRAM, SENSOR MOUNTING LOCATIONS, AND CONTROL WIRING CONFIGURATION AS REQUIRED FOR A FULLY FUNCTIONING SYSTEM AS INDICATED ON THE DRAWINGS.
- PROVIDE ALL 0-10V DIMMING CONTROL CABLEING AS REQUIRED PER MANUFACTURES RECOMMENDATIONS.

POWER

- POWER PANEL - SEE SCHEDULE AND SPECIFICATIONS
- RECESSED MOUNTED POWER PANEL - SEE SCHEDULE AND SPECIFICATIONS, PROVIDE 4 EA. 1" EMPTY CONDUIT TO ABOVE CEILING FOR FUTURE USE.
- LIGHTING PANEL - SEE SCHEDULE AND SPECIFICATIONS
- RECESSED MOUNTED LIGHTING PANEL - SEE SCHEDULE AND SPECIFICATIONS, PROVIDE 4 EA. 1" EMPTY CONDUIT TO ABOVE CEILING FOR FUTURE USE
- TRANSFORMER - SEE SCHEDULE AND SPECIFICATIONS, 80V RISE, FLOOR MOUNTED ON FACTORY SPRING VIBRATION.
- MOTOR-HORSEPOWER AS SHOWN (HP) HORSEPOWER (TYPICAL)
- FAN - CEILING/ROOF MOUNTED EXHAUST FAN
- NON-FUSIBLE PULLOUT TYPE DISCONNECT SWITCH - SEE SPECIFICATIONS FOR IDENTIFICATION.
- FUSED DISCONNECT SWITCH - 600V - HEAVY DUTY TYPE, RATING AND ENCLOSURE AS SHOWN, SEE SPECIFICATIONS FOR IDENTIFICATION, FURNISH AND INSTALL NINE PLATES PER DETAIL FUSE PER EQUIPMENT MANUFACTURER.
- MANUAL MOTOR STARTER - HORSEPOWER RATED, WITH THERMAL OVERLOAD UNITS AND ENCLOSURE CONSISTENT WITH ENVIRONMENT.

BRANCH CIRCUITS

- BRANCH CIRCUIT - ROUTED ABOVE CEILING OR IN WALL (SEE SPECIFICATIONS)
- BRANCH CIRCUIT - ROUTED IN FLOOR (SEE SPECIFICATIONS)
- HOMERUN TO PANELBOARD - NUMBER OF CIRCUITS/CONDUCTORS AS REQUIRED, CONDUIT SIZE AS REQUIRED (3/4" MINIMUM), INDIVIDUAL NEUTRAL CONDUCTOR REQUIRED PER CIRCUIT, FURNISH AND INSTALL PER NEC REQUIREMENTS
- BRANCH CIRCUIT - EXPOSED (SEE SPECIFICATIONS)
- EQUIPMENT HOMERUN - NUMBER OF CIRCUITS/CONDUCTORS AS REQUIRED, CONDUIT SIZE AS REQUIRED (3/4" MINIMUM), FURNISH AND INSTALL PER NEC REQUIREMENTS

- FEEDER - OVERHEAD
- FEEDER - UNDERGROUND

RECEPTACLES

- WALL OUTLET - DUPLEX OUTLET, 20A, 125V, 3 WIRE ONE POLE GROUND, SEE SPECIFICATIONS.
- SINGLE SWITCHED WALL OUTLET - DUPLEX OUTLET, 20A, LEGRAND® WRC-20-1-(COLOR BY ARCHITECT)
- SWITCHED WALL OUTLET - DUPLEX OUTLET, 20A, LEGRAND® WRC-20-2-(COLOR BY ARCHITECT)
- RECEPTACLE RF TRANSMITTER - LEGRAND® WRC-TX WITH POWER PACK AND OCCUPANCY SENSOR
- WALL OUTLET - DUPLEX OUTLET WITH GROUND FAULT INTERRUPTER, 20A, 125V, 3 WIRE ONE POLE GROUND, SEE SPECIFICATIONS.
- WALL OUTLET - WEATHERPROOF DUPLEX OUTLET WITH GROUND FAULT INTERRUPTER, 20A, 125V, 3 WIRE ONE POLE GROUND
- WALL OUTLET - DOUBLE DUPLEX OUTLET, 20A, 125V, 3 WIRE ONE POLE GROUND
- QUAD SINGLE SWITCHED WALL OUTLET - DUPLEX OUTLET, 20A, 2 EACH LEGRAND® WRC-20-1-(COLOR BY ARCHITECT)
- WALL OUTLET - JUNCTION BOX
- WALL OUTLET - JUNCTION BOX WITH FLEX CONNECTION TO EQUIPMENT
- CEILING OUTLET - JUNCTION BOX
- RISER - UP
- RISER - DOWN
- FURNISH AND INSTALL HEAVY DUTY CABLE REEL WITH 2 EACH 20A DUPLEX GFI RECEPTACLE, SECURE TO CEILING (COORDINATE LOCATION WITH ARCHITECT PRIOR TO INSTALLATION), CABLE REEL SHALL BE 35H, #2, 50 TYPE CORD, 2 CONDUCTOR WITH GROUND - BY DANIEL WOODHEAD OR APPROVED EQUAL.
- FURNISH AND INSTALL HEAVY DUTY CABLE REEL WITH 12W FLUORESCENT SHOP LIGHT, SECURE TO CEILING (COORDINATE LOCATION WITH ARCHITECT PRIOR TO INSTALLATION), CABLE REEL SHALL BE 35H, #2, 50 TYPE CORD, 2 CONDUCTOR WITH GROUND - BY DANIEL WOODHEAD OR APPROVED EQUAL.
- STEEL TELE-POWER POLE - WIREMOLD® 250T® WITH SWITCHED RECEPTACLES AND SIX (6) DATA DROPS/CABLES, FURNISH AND INSTALL CAT6 CONNECTOR (LEWITON® 61110-R4B) WITH DATA DROPS FOR EACH DATA JACK AS INDICATED, FURNISH AND INSTALL CAT6 PLENUM RATED CABLES (# AS INDICATED FOR DATA) FROM OUTLET TO NEAREST AUXILIARY BACKBOARD VIA CONDUIT, 3-POONS, SLEEVES AND/ OR CABLE TRAY, ALL CABLES SHALL BE TERMINATED, BOTH ENDS, AS DIRECTED BY OWNER. SEE FLOOR PLAN FOR REQUIRED POLE CONFIGURATION, COLOR BY ARCHITECT

NETWORK AND VOICE

- DATA OUTLET (NUMBER OF DATA CABLES AS INDICATED) - WALL MOUNTED - SEE DETAIL
- CONDUIT SLEEVE(S) - FURNISH AND INSTALL CONDUIT SLEEVES AS REQUIRED FOR ALL AUXILIARY CABLES TO BE ROUTED THROUGH. CONDUIT FILL SHALL NOT EXCEED 40%. CONDUIT SLEEVES SHALL BE 2" O OR 4" O AND SHALL BE TERMINATED WITH SMOOTH BUSHING AND LABELED PER SPECIFICATIONS.
- DATA OUTLET FOR WIRELESS ACCESS POINT - CEILING MOUNTED - SEE DETAIL. WIRELESS ACCESS POINTS TO BE FURNISHED BY OWNER AND INSTALLED BY DIVISION 269000 CONTRACTOR.
- CABLE TRAY SYSTEM BY CARLOPIL (SEE SPECS) COMPLETE WITH ALL REQUIRED SUPPORT HARDWARE, COUPLINGS/CONNECTORS AND VELCRO STRAPS (MAXIMUM 50% ON CENTER). APPROXIMATE ROUTING AS SHOWN ON PLANS. TRAY SHALL BE CENTER HUNG, IN AREAS WITH EXPOSED STRUCTURE CABLE TRAY SHALL BE POWDER COATED TO MATCH ADJACENT SURFACE AND ALL CABLE TRAY SECTIONS SHALL BE CONNECTED TO SYSTEM GROUND WITH #6 AWG COPPER AND GROUNDING LUG.
- INTERCOM SYSTEM CALL-IN STATION AND ASSOCIATED CABLEING TO BE FURNISHED AND INSTALLED BY OTHER (NOC) - SEE DETAILS.

SECURITY

- ACCESS CONTROL DOOR CARD READER AND ASSOCIATED CABLEING TO BE FURNISHED AND INSTALLED BY OTHER (NOC) - SEE DETAILS.
- MONITORED DOOR, DOOR POSITION SWITCH AND ASSOCIATED CABLEING TO BE FURNISHED AND INSTALLED BY OTHER (NOC) - SEE DETAILS.
- VIDEO SURVEILLANCE CAMERA AND ASSOCIATED CABLEING TO BE FURNISH AND INSTALLED BY OTHERS (NOC).
- VIDEO ENTRY DOOR, VIDEO ENTRY STATION AND ASSOCIATED CABLEING TO BE FURNISHED AND INSTALLED BY OTHER (NOC) - SEE DETAILS.
- VIDEO ENTRY MASTER STATION AND ASSOCIATED CABLEING TO BE FURNISH AND INSTALLED BY OTHERS (NOC).

FIRE ALARM SYSTEM

- FACP - EDWARDS WIGLANT V52, SURFACE MOUNTED, 120V. SYSTEM TO BE EQUIPPED WITH VOICE EVACUATION, BATTERY BACKUP AND DIALER. SEE SPECIAL FIRE ALARM NOTE BELOW. FURNISH AND INSTALL TWO (2) EACH CAT5E PHONE LINES FROM NEAREST AUXILIARY BACKBOARD FOR MONITORING.
- CEILING MOUNTED FIRE ALARM SPEAKER STROBE - EDWARDS GCF-S2VM ON FLUSH MOUNTED BOX. SEE SPECIAL FIRE ALARM NOTE BELOW.
- CEILING MOUNTED FIRE ALARM STROBE - EDWARDS GCF-VM ON FLUSH MOUNTED BOX. SEE SPECIAL FIRE ALARM NOTE BELOW.
- CEILING MOUNTED ADDRESSABLE SMOKE/ CO DETECTOR - EDWARDS EB5001-0651 ON FLUSH MOUNTED BOX. SEE SPECIAL FIRE ALARM NOTE BELOW.
- CEILING MOUNTED ADDRESSABLE HEAT/ CO DETECTOR - EDWARDS EB5001-0620 ON FLUSH MOUNTED BOX. SEE SPECIAL FIRE ALARM NOTE BELOW.
- DUCT MOUNTED ADDRESSABLE SMOKE DETECTOR - EDWARDS EB5001-0584 ON FLUSH MOUNTED BOX. SEE SPECIAL FIRE ALARM NOTE BELOW.
- WALL MOUNTED ADDRESSABLE MANUAL PULL STATION - EDWARDS EB5001-0279 ON FLUSH OR SURFACE (SEE DETAILS) MOUNTED BOX AT +40" TO BOTTOM OF BOX. SEE SPECIAL FIRE ALARM NOTE BELOW.

SPECIAL FIRE ALARM NOTE:

- NEW FIRE ALARM SYSTEM (FIRE ALARM CONTROL PANEL, FIRE ALARM DEVICES, FIRE ALARM CABLEING, FIRE ALARM SYSTEM SET-UP AND PROGRAMMING) TO BE FURNISHED AND INSTALLED BY OWNER'S STATE CERTIFIED FIRE ALARM CONTRACTOR, NOT IN CONTRACT. ALL ROUGH-IN FOR NEW FIRE ALARM SYSTEM TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR UNDER PROJECT BID. OWNER'S FIRE ALARM CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL ROUGH-IN AND POWER REQUIREMENTS. NEW FIRE ALARM SYSTEM TO BE INSTALLED CONCURRENT WITH OTHER RENOVATION WORK. NEW FIRE ALARM SYSTEM FOR RENOVATED BUILDINGS WILL BE MONITORED SEPARATELY FROM AND OPERATE INDEPENDENTLY OF ANY OTHER FIRE ALARM SYSTEMS ON CAMPUS.

FIRE ALARM SYSTEM NOTES:

- THE FIRE ALARM SYSTEM MUST BE RECERTIFIED UPON COMPLETION OF THE PROJECT. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OWNER OF ANY TROUBLES ON THE EXISTING FIRE ALARM SYSTEM PRIOR TO BEGINNING WORK.
- FIRE ALARM CONTRACTOR TO INCLUDE IN BID PRICE REQUIRED PROGRAMMING SERVICES SUCH THAT THE FINAL ROOM NUMBERS (PER THE APPROVED OWNERS SIGNAGE SCHEME) FOR EACH F.A. SYSTEM DEVICE SUCH THAT ALARMS AND DEVICE LOCATIONS MATCH BUILDING SIGNAGE.
- ELECTRICAL CONTRACTOR TO FURNISH POINT TO POINT WIRING DIAGRAM BY THE FIRE ALARM MANUFACTURER WITH FIRE ALARM SYSTEM SUBMITTALS. POINT TO POINT WIRING DIAGRAMS SHALL INCLUDE ALL WIRING INFORMATION AND CONDUIT SIZES. REQUIRED WIRING DIAGRAMS SHALL BE FURNISHED WITH THE ELECTRICAL SUBMITTAL PACKAGE. SUBMITTAL PACKAGES WITHOUT THESE DRAWINGS AND THE REQUIRED MAINTENANCE AND EXPANSION INFORMATION (SEE SPECIFICATIONS) WILL NOT BE ACCEPTED.
- ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WIRING REQUIREMENTS WITH THE FIRE ALARM SYSTEM SUBCONTRACTOR PRIOR TO BIDDING AND/OR ROUGHING. FURNISH AND INSTALL ALL REQUIRED 120V. CIRCUITS FOR AMPLIFIERS, FIELD CHARGING PANELS, RELAY PANELS, ETC.
- ALL FIRE ALARM CABLEING SHALL BE INSTALLED CONCEALED IN CONDUIT, 3/4" MINIMUM (NO EXCEPTIONS). ALL FIRE ALARM CONDUITS SHALL BE RED TRULY COLOR ENT AS MANUFACTURED BY ALUMED TUBE AND CONDUIT (UNLESS OTHERWISE NOTED).
- CONTRACTOR SHALL PROVIDE WITH THE FIRE ALARM SUBMITTAL PACKAGE THE FOLLOWING INFORMATION PER IBC 2009, SECTION 907.1.1: COPY OF STATE OF ALABAMA FIRE ALARM CONTRACTOR LICENSE/PERMIT LOCATION OF ALARM INITIATING DEVICES/CONDUCTOR TYPES AND SIZES AND TERMINATING EQUIPMENT MODEL NUMBERS AND LISTING INFORMATION FOR EQUIPMENT DEVICES AND MATERIALS.
- THE NEW FIRE ALARM SYSTEMS WILL COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING CODES:
 - INTERNATIONAL BUILDING CODE 2015
 - INTERNATIONAL FIRE CODE 2015
 - NFPA 72 LATEST REVISION
 - ALL REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION
- THE CERTIFIED FIRE ALARM ACT REQUIRES THAT EVERY BUSINESS WHO INSTALLS FIRE ALARM SYSTEMS IN COMMERCIAL OCCUPANCIES MUST BE LICENSED AS A CERTIFIED FIRE ALARM CONTRACTOR. THE CONTRACTOR MUST HAVE A NISSET LEVEL III TECHNICIAN IN A POSITION OF RESPONSIBILITY, AND THE LICENSE WILL BE ISSUED IN THE NAME OF THE CERTIFICATE HOLDER AND THE CONTRACTOR. THE CERTIFIED FIRE ALARM ACT ALSO REQUIRES THAT TECHNICIANS WORKING FOR THE CERTIFIED CONTRACTOR MUST HOLD A CURRENT NISSET LEVEL II, OR EQUIVALENT, CERTIFICATION. CONTRACTORS TO SHOW MANUFACTURER WITH SUBMITTAL PACKAGE THAT HE/SH/HE MEETS THE CERTIFICATION REQUIREMENTS OF THE ACT AND HOLDS A PERMIT ISSUED BY THE STATE FIRE MARSHALL.
- THE FIRE ALARM CONTRACTOR SHALL NOTIFY THE ENGINEER IF EITHER BUILDING DOES NOT COMPLY WITH NFPA 72 FOR DEVICE PLACEMENT.

ELECTRICAL NOTES

- THESE DRAWINGS ARE A PART OF A COMPLETE SET OF ARCHITECTURAL/ENGINEERING CONTRACT DOCUMENTS. ELECTRICAL CONTRACTOR SHOULD REFER TO THE ARCHITECTURAL PLANS FOR WALL DEFINITIONS, ELEVATIONS, CASEWORK, REFLECTED CEILING PLAN, ETC.
-
- ALL CIRCUIT BREAKERS AND SWITCHES ARE 3-POLE UNLESS OTHERWISE NOTED.
- ALL TRANSFORMERS ARE 480V, 3PH, 3W DELTA PRIMARY, 208Y/120V, 3PH, 4W WYE SECONDARY, UON. SEE WIRING DIAGRAM. ALL PANELBOARDS ARE 3PH, 4W UNLESS OTHERWISE NOTED.
- ALL BRANCH CIRCUIT CONDUIT SHALL BE GALVANIZED EMT, JOINED AND TERMINATED WITH SET SCREW STEEL FITTINGS, 1/2" CONDUIT MINIMUM. ALL CIRCUITS SHOWN CONCEALED SHALL BE RUN IN FURRED CEILING SPACES AND SHALL BE CONCEALED IN CONCRETE SLAB ONLY WHEN NO FURRED CEILING SPACE IS PROVIDED.
- ALL CONDUITS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION TYPE FITTINGS. ALL OUTLET BOXES MOUNTED BACK-TO-BACK IN WALLS SHALL HAVE FIREPROOF SOUND INSULATING MATERIAL INSTALLED BETWEEN THE BOXES TO PREVENT SOUND TRANSMISSION FROM ONE ROOM TO THE OTHER.
- ALL FLUSH MOUNTED PANELS SHALL HAVE 3-1" EMPTY CONDUITS STUBBED OUT TO ABOVE CEILING FOR FUTURE CIRCUITS.
- VERIFY LOCATION OF ALL FLOOR OUTLETS BEFORE INSTALLATION.
- ALL WALL OUTLETS NOT PROVIDED WITH A DEVICE BY THIS CONTRACTOR SHALL BE PROVIDED WITH BLANK WALL PLATES.
- ALL BRANCH CIRCUITS SHALL INCLUDE A GREEN COVERED GROUND WIRE SIZED PER NEC OR AS SHOWN, CONNECT TO EACH DEVICE AND OUTLET BOX ON THE CIRCUIT AND TO THE PANELBOARD GROUND BUS. MULTIPLE WIRE BRANCH CIRCUITS WITH COMMON NEUTRAL REQUIRE ONLY ONE GROUND WIRE. NUMBER OF WIRES SHOWN ON DRAWINGS DOES NOT INCLUDE GROUND WIRE. SEE TYPICAL DETAILS FOR MOUNTING HEIGHTS OF ALL OUTLETS.
- ALL CONDUIT TO BE CONCEALED U.O.N.
- WHERE FIXTURES/DEVICES SHOWN ON PLASTERS, ABOVE DOORS, ETC. IT IS INTENDED TO BE CENTERED U.O.N. COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.
- ALL RACEWAYS AND CABLEING SHALL BE CONCEALED IN WALLS OR ABOVE CEILING WHERE POSSIBLE. WHERE COMPLETED FINISHES ARE DISTURBED, CONTRACTOR SHALL REPAIR/REPLACE SURFACES TO MATCH ORIGINAL AT NO ADDITIONAL EXPENSE TO OWNER. ANY/ ALL EXPOSED RACEWAY/ CONDUIT (WHERE ALLOWED IN CEILING AREAS WITH EXPOSED STRUCTURE) SHALL BE PAINTED TO MATCH ADJACENT SURFACE.
- ALL ROOF PENETRATIONS SHALL BE KEPT TO AN ABSOLUTE MINIMUM. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE ROOFING MANUFACTURER CONTRACTOR FOR ALL ROOF PENETRATIONS. NO ROOF PENETRATIONS SHALL BE PERMITTED THAT WOULD VOID THE ROOF WARRANTY. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY/ ALL CHARGES RELATED TO COORDINATION FOR PENETRATIONS.
- CONTRACTOR SHALL FURNISH AND INSTALL ALL BRACKETS, HARDWARE AND ENVIRONMENTALLY APPROPRIATE ENCLOSURES AS REQUIRED FOR ALL PENETRATIONS.
- CONTRACTOR SHALL REVIEW AND MAINTAIN ALL FIRE RATINGS.
- CONTRACTOR SHALL, IN NO WAY PERFORM ANY WORK OR MAKE ANY PENETRATIONS THAT MIGHT COMPROMISE THE INTEGRITY OF THE SAFE SPACE AREA.

PANELBOARD SCHEDULE

NAME PLATE INFORMATION	MARK	TYPE	MAINS			BRANCHES					MTD.	REMARKS	APPROVED EQUALS	AVAILABLE FAULT CURRENT
			TYPE	AMPS	SERVICE	1-POLE	2-POLE	3-POLE	SPARES	SPACES				
MP 277/480V 3P 4W FED FROM UTILITY	MP	SQUARE D™ LINE HCR-U 1200AMP	MB GFP	1200	277/480V 3P 4W	---	1-15 A,	1-40 A, 1-50 A, 1-60 A, 1-70 A, 1-100 A, 1-125 A, 2-250 A, 1-400 A, 1-600 A,	---	---	SURFACE	PANEL FURNISHED WITH GFF PROTECTION AND ARM SWITCH	G.E. SIEMENS, CUTLER HAMMER	37,861
LPN 277/480V 3P 4W FED FROM MP	LPN	SQUARE D™ NF 125AMP	MLO	100	277/480V 3P 4W	7-20 A,	---	---	---	---	SURFACE		G.E. SIEMENS, CUTLER HAMMER	9,715
PP 120/208V 3P 4W FED FROM D	PP	SQUARE D™ LINE HCR-U 1200AMP	MB	800	120/208V 3P 4W	---	---	3-125 A, 1-150 A, 3-200 A,	1-30/2, 1-60/2, 1-30/3, 1-60/3	---	SURFACE		G.E. SIEMENS, CUTLER HAMMER	19,337
RPN1 120/208V 3P 4W FED FROM PP	RPN1	SQUARE D™ NQOD 225AMP	MB	200	120/208V 3P 4W	36-20 A,	3-15 A,	---	---	---	SURFACE	PANEL FURNISHED WITH FEED THRU LUGS	G.E. SIEMENS, CUTLER HAMMER	13,589
RPN2 120/208V 3P 4W FED FROM RP1	RPN2	SQUARE D™ NQOD 225AMP	MLO	200	120/208V 3P 4W	40-20 A,	1-15 A,	---	---	---	SURFACE		G.E. SIEMENS, CUTLER HAMMER	12,805
RPN2A 120/208V 3P 4W FED FROM PP	RPN2A	SQUARE D™ NQOD 225AMP	MLO	200	120/208V 3P 4W	4-20 A,	---	---	---	---	SURFACE		G.E. SIEMENS, CUTLER HAMMER	13,458
RPN3 120/208V 3P 4W FED FROM PP	RPN3	SQUARE D™ NQOD 225AMP	MB	200	120/208V 3P 4W	27-260 A, 1-20 A ST, 1-30 A,	3-15 A, 3-35 A,	---	---	---	SURFACE	PANEL FURNISHED WITH FEED THRU LUGS	G.E. SIEMENS, CUTLER HAMMER	10,199
RPN4 120/208V 3P 4W FED FROM RP3	RPN4	SQUARE D™ NQOD 225AMP	MLO	225	120/208V 3P 4W	19-20 A, 2-20 A GFI, 1-30 A,	1-15 A, 1-20 A, 1-25 A,	---	---	---	SURFACE		G.E. SIEMENS, CUTLER HAMMER	9,933

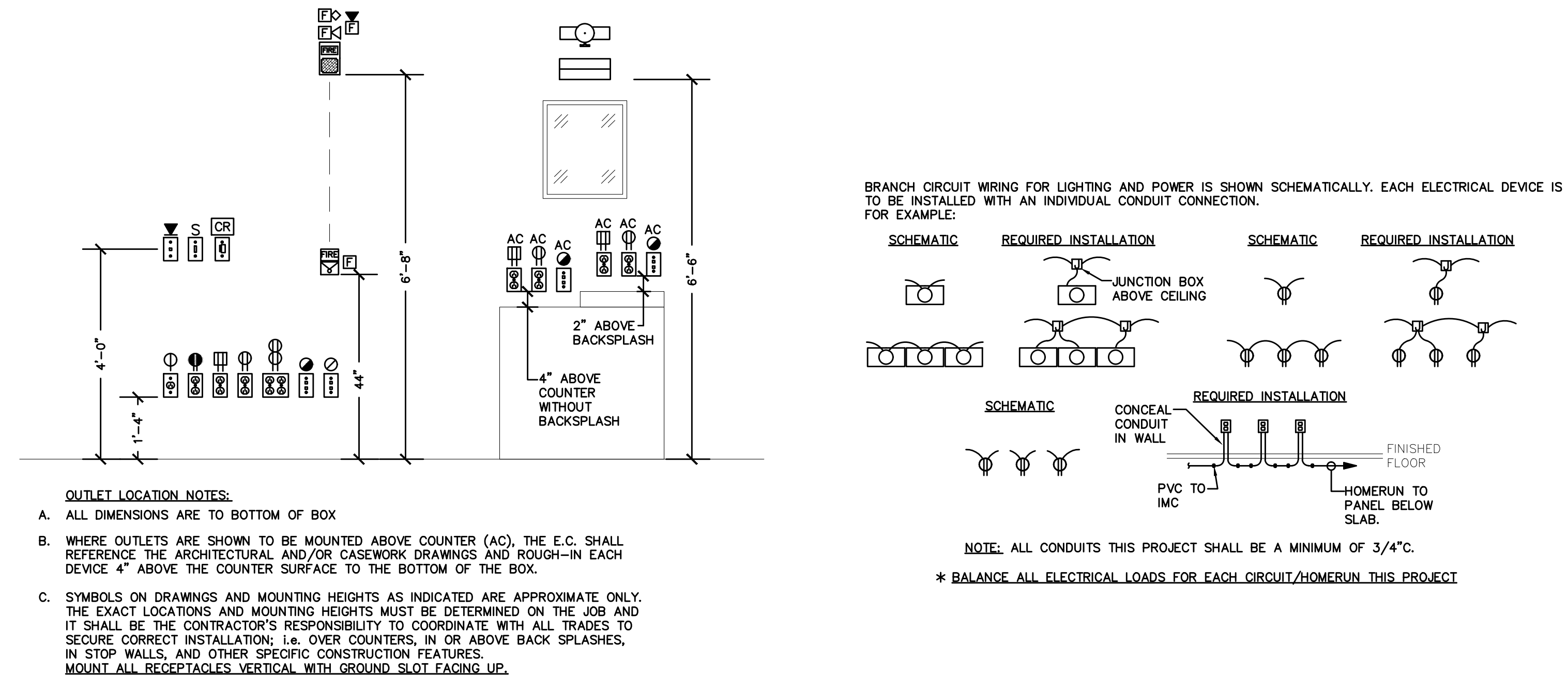
PANELBOARD NOTES:

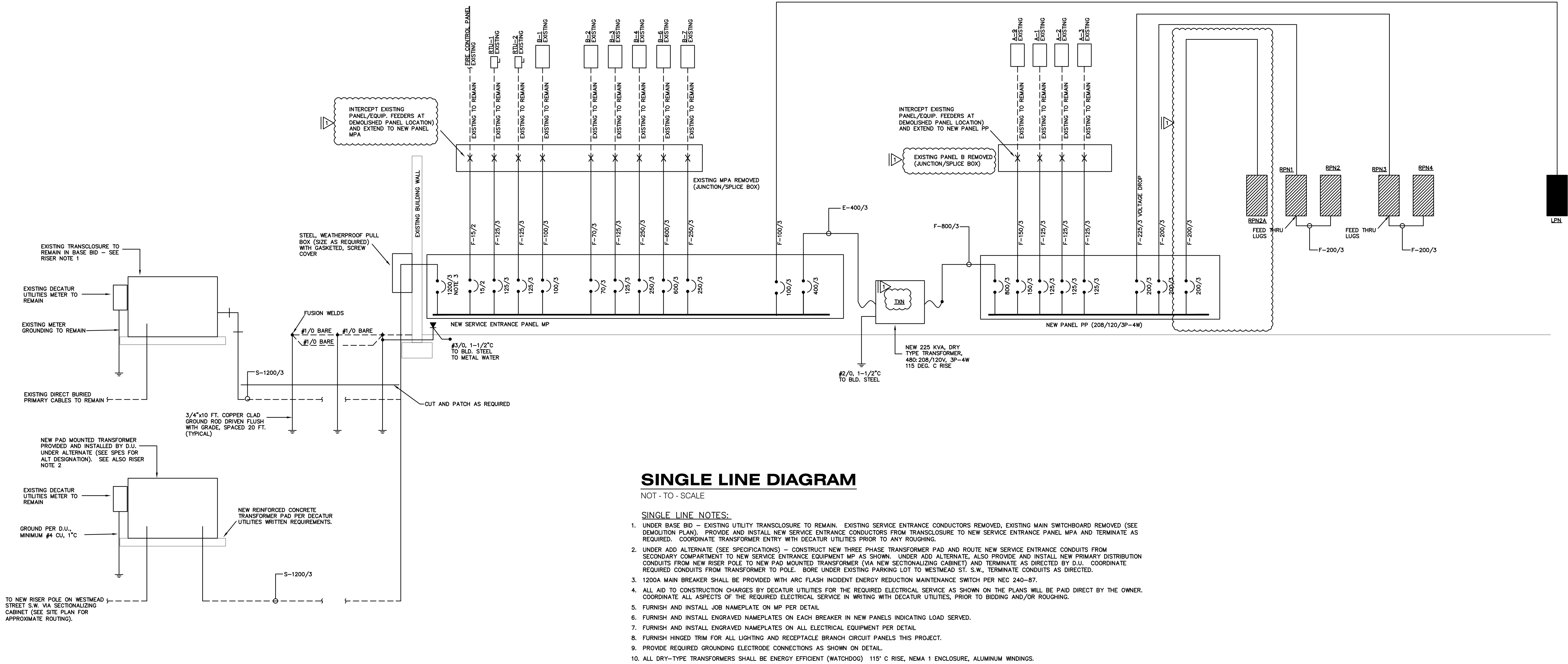
- FURNISH HINGED TRIM FOR ALL PANELS THIS PROJECT.
- FOR ALL PANELS INSTALL NAMEPLATES TO OUTSIDE OF DOOR USING 2 PART EPOXY (12HR)
- FOR ALL FLUSH PANELS, FURNISH AND INSTALL 4EA. 1" EMPTY CONDUITS TO ABOVE NEAREST ACCESSIBLE CLO. LABEL AS SPARES AND PROVIDE REQUIRED FIRESTOPPING MATERIAL.
- PANELS TO HAVE WELDED METAL DIRECTORY CARD HOLDERS WITH TYPEWRITTEN DIRECTORY CARDS.
- FURNISH AND INSTALL ENGRAVED NAMEPLATES ON ALL ELECTRICAL EQUIPMENT PER DETAILS.

LIGHT FIXTURE SCHEDULE

MARK	MANUFACTURER	CATALOG NUMBER	LAMPS		MOUNTING		RECESS DEPTH	REMARKS
			NO./FIX	LUMENS/WATTS	TYPE	HEIGHT		
RL1	EATON	24FP4740C	---	4658 LUMENS/ 41W	LED	CEILING	RECESSED 2 1/8"	OR APPROVED EQUAL
RL2	EATON	22FP4240C	---	4567 LUMENS/ 40W	LED	CEILING	RECESSED 2 1/8"	OR APPROVED EQUAL
RL3	EATON	24GR-FA-LD5-72-A19156-UNV-QL-L835-CD-1-G3	---	7200 LUMENS/ 56W	LED	CEILING	RECESSED 3 1/4"	OR APPROVED EQUAL
RC6	EATON	P06-20-DD10-PDM6A-640	---	3000 LUMENS/ 40W	LED	CEILING	RECESSED 5"	OR APPROVED EQUAL
LS	EATON	4SLSTP563SD-UNV	---	3500LUMENS/ 49W	LED	CEILING	SURFACE	OR APPROVED EQUAL
EM1	EXTRONIX	NFT-HQ-WH-G2	WITH UNIT		CEILING	SURFACE	---	OR APPROVED EQUAL
X1	EXTRONIX	VEKU-BP-WB-WH-G2	WITH UNIT		CEILING	SURFACE	---	OR APPROVED EQUAL
XC	EXTRONIX	VLED-1-WH-EL-90-G2	WITH UNIT		CEILING	SURFACE	---	OR APPROVED EQUAL
XD	EVERLAST LIGHTING	EL-LED-SD-40-UL-X-50-PC-EM	---	4000 LUMENS/ 40W	LED	WALL	SURFACE	OR APPROVED EQUAL, FIXTURE PROVIDED WITH EMERGENCY BATTERY PACK
NOTES:								
1. SUPPORT OF ALL FIXTURES IN THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. SEE SPECIFICATION AND DETAILS.								
2. PROVIDE ANY AND ALL SLOPE ADAPTERS THAT MAY BE REQUIRED FOR A COMPLETE FIXTURE INSTALLATION.								
3. ALL LIGHT FIXTURES THIS PROJECT SHALL BE FUSED.								
4. ALL EMERGENCY BATTERY PACKS IN L.E.D. FIXTURES SHALL BE RATED FOR FULL LUMEN OUTPUT FOR A MINIMUM OF 90 MINUTES								

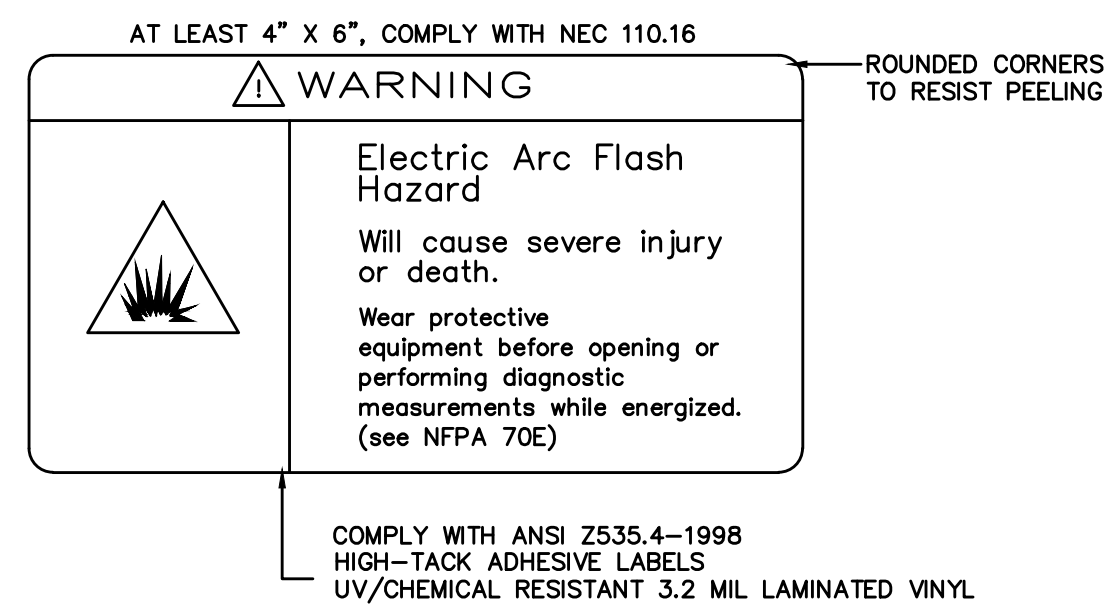
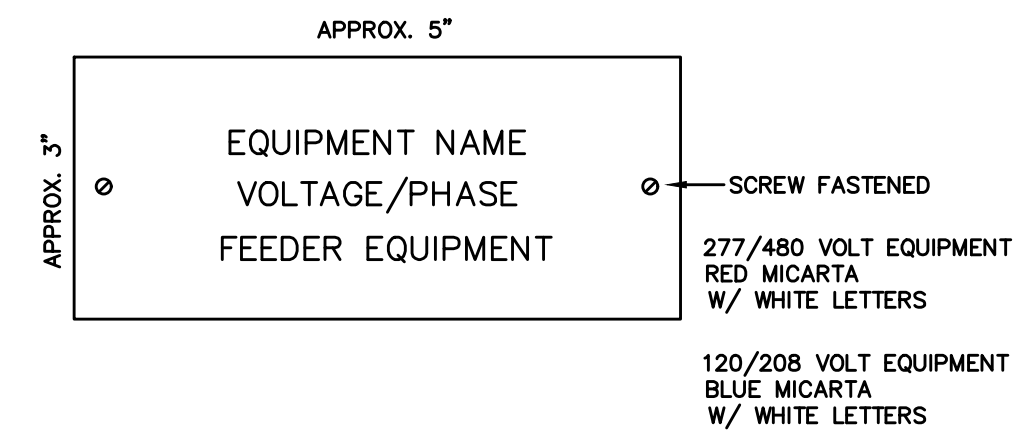
OUTLET LOCATIONS





CONDUCTOR/CONDUIT SCHEDULE

FEEDER IDENTIFIER	MOCP	SERVICE FEEDER EQUIPMENT	COPPER WIRE AND CONDUIT SIZE *
S-1200/3	1200/3	SERVICE	4-RUNS #4350MCM-3 1/2" C.
F-15/2	15/2	FEEDER	3#12, 1#12(G)-3/4" C.
F-70/3	70/3	FEEDER	4#4, 1#8(G)-1 1/4" C.
F-100/3	100/3	FEEDER	4#3, 1#8(G)-1 1/4" C.
F-125/3	125/3	FEEDER	4#1, 1#8(G), 1-1/2" C.
F-150/3	150/3	FEEDER	4#1/0, 1#8(G), 2" C.
F-200/3	200/3	FEEDER	4#3/0, 1#8(G), 2" C.
F-250/3	250/3	FEEDER	4#250MCM, 1#4(G), 2-1/2" C.
F-600/3	600/3	FEEDER	2-RUNS #4350MCM, 1#1(G), 3-1/2" C.
F-800/3	800/3	FEEDER	2-RUNS #600MCM, 1#1/0(G), 4" C.
S-550/3	550/3	EQUIPMENT	4#50MCM, 1#3(G), 3-1/2" C.
F-225/3	225/3	FEEDER	4#4/0, 1#3(G), 2-1/2" C.

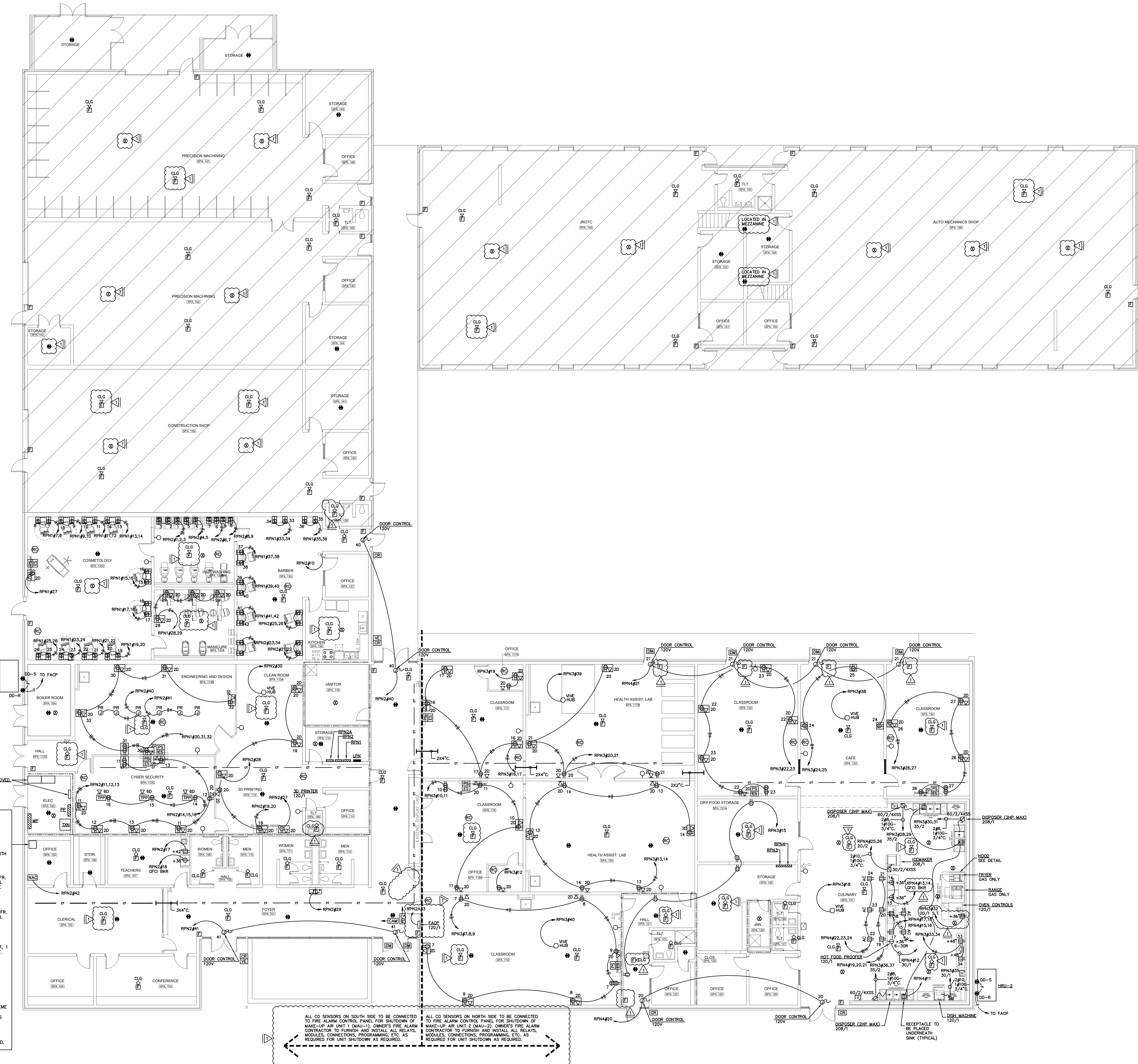


ARC FLASH HAZARD LABEL

ALL ELECTRICAL EQUIPMENT PER SPECIFICATIONS
NOT TO SCALE



FLOOR PLAN - DEMOLITION



- AUXILIARY CABINET (BB-N). SEE FLOOR PLANS FOR BACKBOARD LOCATION. FURNISH AND INSTALL ALL EQUIPMENT AS LISTED/REQUIRED.
- WALL-MOUNTED CABINET SHALL BE GREAT LAKES MODEL# DWR-18-26PD.
 - 48 PORT PATCH PANEL SHALL BE LEVITON# 69086-U48 (48-PORT, CAT6 HIGH-DENSITY PATCH PANEL). PROVIDE QUANTITY AT EACH LOCATION AS REQUIRED FOR ALL HORIZONTAL DATA AND VOICE CABLE TERMINATIONS WITH ADDITIONAL SPACE FOR 10% FUTURE GROWTH. ALL DATA, VOICE AND SECURITY CABLES TO BE PATCHED TO SEPARATE PATCH PANELS. VOICE CABLES SHALL BE TERMINATED ON SEPARATE PATCH PANELS.
 - 1 RACK UNIT HORIZONTAL CABLE MANAGER SHALL BE LEVITON# 491RU-HFR. PROVIDE QUANTITY AT EACH LOCATION AS REQUIRED FOR ALL HORIZONTAL DATA AND VOICE CABLE TERMINATIONS WITH ADDITIONAL SPACE FOR 10% FUTURE GROWTH. PROVIDE 1 RACK UNIT OF HORIZONTAL CABLE MANAGEMENT PER EACH 24 PATCH OR SWITCH PORTS (ABOVE OR BELOW ASSOCIATED PATCH PANEL/ OWNER FURNISHED SWITCH LOCATION).
 - 2 RACK UNIT HORIZONTAL CABLE MANAGER SHALL BE LEVITON# 492RU-HFR. PROVIDE QUANTITY AT EACH LOCATION AS REQUIRED FOR ALL HORIZONTAL DATA AND VOICE CABLE TERMINATIONS WITH ADDITIONAL SPACE FOR 10% FUTURE GROWTH. PROVIDE 1 RACK UNIT OF HORIZONTAL CABLE MANAGEMENT PER EACH 24 PATCH OR SWITCH PORTS (ABOVE OR BELOW ASSOCIATED PATCH PANEL/ OWNER FURNISHED SWITCH LOCATION).
 - BLANK FILLER PANEL SHALL BE LEVITON# 49254-BP2, 2 RU / 49254-BP1, 1 RU. PROVIDE QUANTITY AS REQUIRED FOR ALL BLANK SPACES IN CABINET.
 - RACK GROUNDING KIT SHALL BE GREAT LAKES# G101. PROVIDE 1 PER CABINET AND CONNECT TO TELECOM GROUND BAR.
 - RACK MOUNT FIBER CABINET(S). EACH CABINET SHALL BE LEVITON# 5814H-S03 COMPLETE WITH ADAPTER PANELS (LEVITON# 57100-122) AS REQUIRED TO TERMINATE ALL FIBER PAIRS AND BLANKS (LEVITON# 57100-BP1) FOR OPEN PANEL LOCATIONS.
 - AT EACH CABINET PROVIDE, AT A MINIMUM, THE FOLLOWING ACCESSORIES: COLOR CODED CABLE MANAGEMENT STRAPS (TO COORDINATE COLOR SCHEME WITH OWNER PRIOR TO ORDERING), 2" C (QUANTITY AS REQUIRED) FROM ABOVE CEILING TO CABINET FOR ALL HORIZONTAL AND BACKDRONE ENTRIES INTO RACK, 1 EACH HORIZONTAL POWER STRIP (20AMP, 6 POSITION, WITH AMP METER - NO SWITCH) AND EQUIPMENT GROUND ASSEMBLY.
 - FURNISH AND INSTALL FIBER JUMPERS FROM EXISTING WALL-MOUNTED CABINET IN SAME ROOM FOR PROVISION OF LAN CONNECTION AS REQUIRED.

ALL CO SENSORS ON SOUTH SIDE TO BE CONNECTED TO FIRE ALARM CONTROL PANEL FOR SHUTDOWN OF MAKE-UP AIR UNIT 1 (MAU-1). OWNER'S FIRE ALARM CONTRACTOR TO FURNISH AND INSTALL ALL RELAYS, MODULES, CONNECTIONS, PROGRAMMING, ETC. AS REQUIRED FOR UNIT SHUTDOWN AS REQUIRED.

ALL CO SENSORS ON NORTH SIDE TO BE CONNECTED TO FIRE ALARM CONTROL PANEL FOR SHUTDOWN OF MAKE-UP AIR UNIT 2 (MAU-2). OWNER'S FIRE ALARM CONTRACTOR TO FURNISH AND INSTALL ALL RELAYS, MODULES, CONNECTIONS, PROGRAMMING, ETC. AS REQUIRED FOR UNIT SHUTDOWN AS REQUIRED.

FLOOR PLAN - POWER AND AUXILIARY
SCALE: 1/8" = 1'-0"

