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architecture

Addendum No. 2

South Carolina School for the Deaf and the Blind
Vocational Center Renovations Re-Bid
McMillan Pazdan Smith Project No. 012106.02
H75-9545-JM
January 14, 2016

The following clarifications, amendments, additions, deletions, revisions, and/or modifications are hereby made a part of the Contract Documents, and change the original documents only in the manner and to the extent stated below:

Item No. 1: **General:**
No building permit or business license fees are required. The cost for the grading permit will be $90.00 to be paid for by the General Contractor.

Item No. 2: **General:**
All asbestos has been removed by the owner.

Item No. 4: **Project Manual - Section 01 50 00 Temporary Facilities and Controls:**
Part 1.4: Use charges 1.4.C and 1.4.D. The owner will pay costs associated with water and power usage. General Contractor shall pay costs for temporary hook up.

Include the following
"1.4.E. If Owner, Architect, or CM deems that the contractor is continuously abusing the use of the Owners utilities or does not properly manage the Owners Water and Electric service, then these privileges may be revoked and at that time it will be the contractors responsibility to provide the water and electricity as needed to complete the project and at the contractors expense."

Item No. 5: **Project Manual - Section 01 50 00 Temporary Facilities and Controls:**
Part 2.2 – Temporary Facilities: Delete 2.2.C in its entirety. 2.2.B shall be at the contractors option.

Item No. 6: **Project Manual - Section 08 80 00 Door Hardware:**
Provide new door hardware as shown in the schedule for all doors existing and new.

Item No. 7: **Project Manual - Section 23 07 13 Duct Insulation:**
Part 3.9: Add paragraph G to read "All ductwork in the Mechanical Platform and for 3 feet beyond is considered exposed. The balance of the attic is considered concealed."

Item No. 8: **Project Manual - Section 23 07 19 HVAC Piping Insulation:**
Insert section 23 07 19 HVAC Piping Insulation into the contract documents.

Item No. 9: **Project Manual - Section 23 21 13 Condensate Piping:**
Insert section 23 21 13 Condensate Piping into the contract documents.

Item No. 10: **Project Manual - Section 23 74 33 Dedicated Outdoor Air Units:**
Part 2.1.A: Add Reznor.

Item No. 11: **Project Manual - Section 23 82 19 Fan Coil Units:**
Part 2.1.A: Add Panasonic and Toshiba Carrier.

Item No. 12: **Civil Drawings – General:**
There will be no water or sewer taps fees required for the project.

Item No. 13: **Architectural Drawings – G1.5 – Fencing Plan A1/G1.5 Fencing Plan:**
All references to summer 2015 shall be summer 2016.

Item No. 14: **Architectural Drawings – NA7.2– Enlarged Toilet Plans and Details – D5/NA7.2 Countertop Detail:**
The countertop, apron, and backsplash are all made of solid surface material.

Item No. 15: **Architectural Drawings – NID2.1 – Room Finish Legend C1/NID2.1 Room Finish Legend**
Wilson Art 4842-60 Canyon Zephyr shall be substituted for PLB3 – Formica.

Solid Surface material shall be:
SS – A1 Corian Fossil
SS – B1 Wilson Art Light Beige Mirage

Item No. 16: **Architectural Drawings – PA10.1– Door Schedule – C1/PA10.1**
Include the attached drawings AD2.1 and AD2.2 into the contract documents.

Item No. 17: **Architectural Drawings – PID2.1– Interior Finish Legend – A3/PID2.1 – Interior Finish Legend**
The Wilson Art solid surface material shown shall be 9063GG Capers.

item No. 18: **Mechanical Drawings – NM0.1 - Mechanical General Notes:**
Add the following Note #2 to the Mechanical General Notes:

"Relocate the existing steam and condensate lines as indicated on Civil Drawings CV-1 and CV-2.

Provide piping tunnel similar to Trenwa, or equal, One Piece Medium Duty Vehicle Trench. Trench to be 24" wide and 15" deep. Verify that the existing tunnel construction is a concrete tunnel with removable lids. Prior to construction, provide written verification as to the existing construction to the Architect and Engineer.

Install new 4 inch steam line and a new 2 inch condensate line in the new tunnel. Prior to construction, provide written verification that the size of the existing steam and condensate piping is as indicated to the Architect and Engineer. Material for the steam piping to be Schedule 40, ASTM A 53/A 53M, black steel pipe with welded joints. Material for the condensate piping to be Schedule 80, ASTM A 53/A 53M, black steel pipe with welded joints. Insulate piping with 4-1/2" thick calcium silicate preformed pipe insulation. Cover pipe insulation with vapor barrier jacket."

Item No. 19: **Mechanical Drawings – NM2.1 – Mechanical Floor Plan:**
Added condensate piping.

Item No. 20: **Mechanical Drawings – NM6.1 – Mechanical Schedules:**
Revised equipment model numbers.

Item No. 21: **Mechanical Drawings – PM2.1 – Mechanical Floor Plan:**
Added condensate piping. Added equipment number to roof hood at AHU-P-1.

Item No. 22: **Mechanical Drawings – PM6.1 – Mechanical Schedules:**
Revised equipment model numbers and added Roof Hood Schedule.

Item No. 23: **Equals:**

Product	Manufacturer
10 73 27 Covered Walkways Extruded Aluminum	Mitchell Metals
Retaining Walls	Ridge Rock

The following fixture manufacturers are acceptable for bidding on this project. Items deemed acceptable for bidding are still subject to the requirements of the Contract documents:

- Type A2, A2EM, A2S, A2SEM, A2SV, A3, A3EM, A3D, A3DEM, A3DV, AA2: Columbia
- Type C3: Luminaire LED
- Type DA, DC, DCEM, DD: Prescolite
- Type F2, F2EM: Columbia
- Type H3EM: Hubbell Lighting
- Type J2, J2EM, K3, K3EM, K3D, K3DEM: Columbia
- Type MA: Feelux
- Type P1, P1EM, P2, P2EM, P3, P3EM: Columbia
- Type P4, P4EM: Beghelli USA
- Type W3: Columbia
- Type W5EM, W6: Eclipse Lighting
- Type W7: Luminaire LED
- Type X1, X2, X3, X5: Lightalarms
- Type XRH: Focus Industries
- Type XRH2: Lightalarms
- Occupancy Sensors: Leviton

This addendum contains

3	Summary Pages
4	30 x 42 Sketches
2	11 x 17 Sketches
2	Specification Sections

End of Addendum No. 2

SECTION 230719 - HVAC PIPING INSULATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes insulating the following HVAC piping systems:
   1. Refrigerant suction and hot-gas piping, indoors and outdoors.
   2. Condensate drain piping
   3.

B. Related Sections:

   1. Section 230713 "Duct Insulation."

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.3 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.4 QUALITY ASSURANCE

A. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84, by a testing and inspecting agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.

   1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
   2. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

A. Products shall not contain asbestos, lead, mercury, or mercury compounds.

B. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.

C. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.

D. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.

E. Flexible Elastomeric Insulation: Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Rubatex.
b. Aeroflex USA, Inc.
c. Armacell LLC.
d. K-Flex USA.

2.2 ADHESIVES

A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated unless otherwise indicated.

B. Flexible Elastomeric and Polyolefin Adhesive: Comply with MIL-A-24179A, Type II, Class I.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Aeroflex USA, Inc.
b. Armacell LLC.
c. Foster Brand; H. B. Fuller Construction Products.

2. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
3. Adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.3 MASTICS

A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.

1. For indoor applications, use mastics that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

3.2 GENERAL INSTALLATION REQUIREMENTS

A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties.

B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of pipe system as specified in insulation system schedules.

C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.

D. Install insulation with longitudinal seams at top and bottom of horizontal runs.

E. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.

F. Keep insulation materials dry during application and finishing.

G. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.

H. Install insulation with least number of joints practical.

I. Seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.

1. Install insulation continuously through hangers and around anchor attachments.

2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.
4. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.

J. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.

K. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.

L. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches (100 mm) beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

M. For above-ambient services, do not install insulation to the following:

1. Vibration-control devices.
2. Testing agency labels and stamps.
3. Nameplates and data plates.
4. Manholes.
5. Handholes.
6. Cleanouts.

3.3 PENETRATIONS

A. Insulation Installation at Roof Penetrations: Install insulation continuously through roof penetrations.

1. Seal penetrations with flashing sealant.
2. For applications requiring only indoor insulation, terminate insulation above roof surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
3. Extend jacket of outdoor insulation outside roof flashing at least 2 inches (50 mm) below top of roof flashing.
4. Seal jacket to roof flashing with flashing sealant.

B. Insulation Installation at Underground Exterior Wall Penetrations: Terminate insulation flush with sleeve seal. Seal terminations with flashing sealant.

C. Insulation Installation at Aboveground Exterior Wall Penetrations: Install insulation continuously through wall penetrations.

1. Seal penetrations with flashing sealant.
2. For applications requiring only indoor insulation, terminate insulation inside wall surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
3. Extend jacket of outdoor insulation outside wall flashing and overlap wall flashing at least 2 inches (50 mm).
4. Seal jacket to wall flashing with flashing sealant.

D. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.

E. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions.

1. Comply with requirements in Section 078413 "Penetration Firestopping" for firestopping and fire-resistive joint sealers.

F. Insulation Installation at Floor Penetrations:

1. Pipe: Install insulation continuously through floor penetrations.
2. Seal penetrations through fire-rated assemblies. Comply with requirements in Section 078413 "Penetration Firestopping."

3.4 GENERAL PIPE INSULATION INSTALLATION

A. Requirements in this article generally apply to all insulation materials except where more specific requirements are specified in various pipe insulation material installation articles.

B. Insulation Installation on Fittings, Valves, Strainers, Flanges, and Unions:

1. Install insulation over fittings, valves, strainers, flanges, unions, and other specialties with continuous thermal and vapor-retarder integrity unless otherwise indicated.
2. Insulate pipe elbows using preformed fitting insulation or mitered fittings made from same material and density as adjacent pipe insulation. Each piece shall be butted tightly against adjoining piece and bonded with adhesive. Fill joints, seams, voids, and irregular surfaces with insulating cement finished to a smooth, hard, and uniform contour that is uniform with adjoining pipe insulation.
3. Insulate tee fittings with preformed fitting insulation or sectional pipe insulation of same material and thickness as used for adjacent pipe. Cut sectional pipe insulation to fit. Butt each section closely to the next and hold in place with tie wire. Bond pieces with adhesive.

4. Insulate valves using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. For valves, insulate up to and including the bonnets, valve stuffing-box studs, bolts, and nuts. Fill joints, seams, and irregular surfaces with insulating cement.
5. Insulate strainers using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. Fill joints, seams, and irregular surfaces with insulating cement. Insulate strainers so strainer basket flange or plug can be easily removed and replaced without damaging the insulation and jacket. Provide a removable reusable insulation cover. For below-ambient services, provide a design that maintains vapor barrier.
6. Insulate flanges and unions using a section of oversized preformed pipe insulation. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker.
7. Cover segmented insulated surfaces with a layer of finishing cement and coat with a mastic. Install vapor-barrier mastic for below-ambient services and a breather mastic for above-ambient services. Reinforce the mastic with fabric-reinforcing mesh. Trowel the mastic to a smooth and well-shaped contour.

C. Insulate instrument connections for thermometers, pressure gages, pressure temperature taps, test connections, flow meters, sensors, switches, and transmitters on insulated pipes. Shape insulation at these connections by tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.

3.5 INSTALLATION OF FLEXIBLE ELASTOMERIC INSULATION

A. Seal longitudinal seams and end joints with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

B. Insulation Installation on Pipe Flanges:

1. Install pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with cut sections of sheet insulation of same thickness as pipe insulation.
4. Secure insulation to flanges and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

C. Insulation Installation on Pipe Fittings and Elbows:

1. Install mitered sections of pipe insulation.
2. Secure insulation materials and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

D. Insulation Installation on Valves and Pipe Specialties:

1. Install preformed valve covers manufactured of same material as pipe insulation when available.
2. When preformed valve covers are not available, install cut sections of pipe and sheet insulation to valve body. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
3. Install insulation to flanges as specified for flange insulation application.
4. Secure insulation to valves and specialties and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

3.6 FINISHES

A. Flexible Elastomeric Thermal Insulation: After adhesive has fully cured, apply two coats of insulation manufacturer's recommended protective coating.

B. Color: Final color as selected by Architect. Vary first and second coats to allow visual inspection of the completed Work.

C. Do not field paint aluminum or stainless-steel jackets.

3.7 FIELD QUALITY CONTROL

A. Perform tests and inspections.

B. All insulation applications will be considered defective Work if sample inspection reveals noncompliance with requirements.

3.8 PIPING INSULATION SCHEDULE, GENERAL

A. Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.

3.9 INDOOR PIPING INSULATION SCHEDULE

A. Refrigerant Suction and Hot-Gas Piping: Flexible elastomeric preformed pipe insulation, 1-1/2 inch (38 mm) thick.

B. Refrigerant Suction and Hot-Gas Flexible Tubing: Flexible elastomeric preformed pipe insulation, 1-1/2 inch (38 mm) thick.

C. Condensate drain piping, 40 to 200 Deg F (5 to 93 Deg C): Flexible elastomeric preformed pipe insulation, 1 inch (25 mm) thick.

D. OUTDOOR, ABOVEGROUND PIPING INSULATION SCHEDULE
   1. Refrigerant Suction and Hot-Gas Piping: Insulation shall be, Flexible elastomeric preformed pipe insulation, 2 inch (50 mm) thick.
   2. Refrigerant Suction and Hot-Gas Flexible Tubing: Insulation shall be, Flexible elastomeric preformed pipe insulation, 2 inch (50 mm) thick.

END OF SECTION 230719

SECTION 232113 – CONDENSATE PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pipe, tube, and fittings.
2. Specialty pipe fittings.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.3 QUALITY ASSURANCE

A. Piping materials shall bear label, stamp, or other markings of specified testing agency.

B. Comply with NSF/ANSI 14, "Plastics Piping Systems Components and Related Materials," for plastic piping components. Include marking with "NSF-dwv" for plastic drain, waste, and vent piping and "NSF-sewer" for plastic sewer piping.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

A. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.

2.2 COPPER TUBE AND FITTINGS

A. Copper DWV Tube: ASTM B 306, drainage tube, drawn temper.

B. Copper Drainage Fittings: ASME B16.23, cast copper or ASME B16.29, wrought copper, solder-joint fittings.

C. Solder: ASTM B 32, lead free with ASTM B 813, water-flushable flux.

2.3 PVC PIPE AND FITTINGS

A. Solid-Wall PVC Pipe: ASTM D 2665, drain, waste, and vent.

B. PVC Socket Fittings: ASTM D 2665, made to ASTM D 3311, drain, waste, and vent patterns and to fit Schedule 40 pipe.

C. Solvent Cement: ASTM D 2564.

1. PVC solvent cement shall have a VOC content of 510 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
2. Solvent cement shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

PART 3 - EXECUTION

3.1 PIPING INSTALLATION

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Install piping as indicated unless deviations to layout are approved on coordination drawings.

B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.

C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

E. Install piping at a minimum slope of ¼” per foot.

F. Install piping free of sags and bends.

G. Install fittings for changes in direction and branch connections.

H. Make changes in direction for drainage piping using appropriate branches, bends, and long-sweep bends. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical. Do not change direction of flow more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.

I. Install aboveground copper tubing according to CDA's "Copper Tube Handbook."

J. Install aboveground PVC piping according to ASTM D 2665.

K. Plumbing Specialties:
   1. Install cleanouts at all change of direction of 90^{o} or more.

L. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 220517 "Sleeves and Sleeve Seals for Plumbing Piping."

M. Install sleeve seals for piping penetrations of concrete walls and slabs. Comply with requirements for sleeve seals specified in Section 230517 "Sleeves and Sleeve Seals for HVAC Piping."

3.2 JOINT CONSTRUCTION

A. Join copper tube and fittings with soldered joints according to ASTM B 828. Use ASTM B 813, water-flushable, lead-free flux and ASTM B 32, lead-free-alloy solder.

B. Plastic, Nonpressure-Piping, Solvent-Cement Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:

   1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
   2. PVC Piping: Join according to ASTM D 2855 and ASTM D 2665 Appendixes.

3.3 HANGER AND SUPPORT INSTALLATION

A. Comply with requirements for pipe hanger and support devices and installation specified in Section 230529 "Hangers and Supports for HVAC Piping and Equipment."

   1. Install carbon-steel pipe hangers for horizontal piping in noncorrosive environments.
   2. Install carbon-steel pipe support clamps for vertical piping in noncorrosive environments.
   3. Vertical Piping: MSS Type 8 or Type 42, clamps.
   4. Install individual, straight, horizontal piping runs:

      a. 100 Feet (30 m) and Less: MSS Type 1, adjustable, steel clevis hangers.

B. Support horizontal piping and tubing within 12 inches (300 mm) of each fitting] and coupling.

C. Support vertical piping and tubing at base and at each floor.

D. Rod diameter may be reduced one size for double-rod hangers, with 3/8-inch (10-mm) minimum rods.

E. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:

1. NPS 1-1/4 (DN 32): 72 inches (1800 mm) with 3/8-inch (10-mm) rod.
2. NPS 1-1/2 and NPS 2 (DN 40 and DN 50): 96 inches (2400 mm) with 3/8-inch (10-mm) rod.
3. NPS 8 (DN 200): 10 feet (3 m) with 3/4-inch (19-mm) rod.

F. Install supports for vertical copper tubing every 10 feet (3 m).

G. Install hangers for PVC piping with the following maximum horizontal spacing and minimum rod diameters:

1. NPS 1-1/2 and NPS 2 (DN 40 and DN 50): 48 inches (1200 mm) with 3/8-inch (10-mm) rod.

H. Install supports for vertical PVC piping every 48 inches (1200 mm).

I. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.

3.4 CONNECTIONS

A. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Connect pumped condensate piping from equipment to condensate piping.

C. Where installing piping adjacent to equipment, allow space for service and maintenance of equipment.

3.5 IDENTIFICATION

A. Identify exposed sanitary waste and vent piping. Comply with requirements for identification specified in Section 230553 "Identification for HVAC Piping and Equipment."

3.6 FIELD QUALITY CONTROL

A. Test condensate piping in absence of published procedures, as follows:

1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
2. Leave uncovered and unconcealed new, altered, extended, or replaced piping until it has been tested and approved. Expose work that was covered or concealed before it was tested.
3. Roughing-in Test Procedure: Close openings in piping system and fill with water to point of overflow, but not less than 10-foot head of water (30 kPa). From 15 minutes before

inspection starts to completion of inspection, water level must not drop. Inspect joints for leaks.

4. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
5. Prepare reports for tests and required corrective action.

3.7 CLEANING AND PROTECTION

A. Clean interior of piping. Remove dirt and debris as work progresses.

B. Protect condensate piping during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.

C. Place plugs in ends of uncompleted piping at end of day and when work stops.

3.8 PIPING SCHEDULE

A. Flanges and unions may be used on aboveground pressure piping unless otherwise indicated.

B. Aboveground, condensate piping shall be any of the following:
   1. Copper DWV tube, copper drainage fittings, and soldered joints.
   2. Solid-wall PVC pipe, PVC socket fittings, and solvent-cemented joints.

END OF SECTION 232113

DOOR SCHEDULE 1 of 2

DOOR NO.	DOOR SIZE			FIRE RATING	GLAZING	DOOR TYPE	DOOR MTL	FRAME	FRAME	FRAME	FRAME	FRAME	REMARKS
	WIDTH	HEIGHT	THK.					FRAME TYPE	FRAME MTL	HEAD	JAMB	SILL	
	3' - 0"	2' - 4"											
P101-A	6' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S5- sim	
P101-B	3' - 0"	7' - 0"	1 3/4"	--	GL-2	G	WOOD	F1	P.M.	H-1	J-1	--	ACCESS CONTROL
P102-A	3' - 0"	7' - 0"	1 3/4"	--	GL-2	G	WOOD	F2	P.M.	H-2	J-2	S-1	
P102-B	3' - 0"	7' - 0"	1 3/4"	--	GL-2	G	WOOD	Existing	P.M.	--	--	S-1	
P103	3' - 0"	7' - 0"	1 3/4"	--	--	E	WOOD	Existing	P.M.	--	--	--	
P104	3' - 0"	7' - 0"	1 3/4"	--	--	E	WOOD	Existing	P.M.	--	--	S-3	
P105	3' - 0"	7' - 0"	1 3/4"	--	--	E	WOOD	Existing	P.M.	--	--	S-3	
P106	3' - 0"	7' - 0"	1 3/4"	--	--	E	WOOD	Existing	P.M.	--	--	S-3	
P107	3' - 0"	7' - 0"	1 3/4"	--	--	E	WOOD	F-2	P.M.	H-2	J-2	S-3	
P108	3' - 0"	7' - 0"	1 3/4"	--	--	E	WOOD	F-2	P.M.	H-2	J-2	S-3	
P109	3' - 0"	7' - 0"	1 3/4"	--	--	E	WOOD	Existing	P.M.	--	--	S-3	
P110	3' - 0"	7' - 0"	1 3/4"	--	GL-2	G	WOOD	Existing	P.M.	--	--	--	
P111	3' - 0"	7' - 0"	1 3/4"	--	GL-2	G	WOOD	Existing	P.M.	--	--	--	
P112-A	3' - 0"	7' - 0"	1 3/4"	--	--	E	WOOD	Existing	P.M.	--	--	--	
P112-B	3' - 0"	7' - 0"	1 3/4"	--	--	E	WOOD	Existing	P.M.	--	--	--	
P113-A	6' - 0"	7' - 0"	1 3/4"	45 MIN.	--	E	WOOD	F2	P.M.	H-2	J-2	--	
P113-B	6' - 0"	7' - 0"	1 3/4"	--	--	B	P.M.	F2	P.M.	H-5	J-5	S-5	
P114-A	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P114-B	10' - 0"	10' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	--	
P114-C	3' - 0"	7' - 0"	1 3/4"	45 MIN.	--	E	WOOD	Existing	P.M.	--	--	--	This door and frame is removed if Alt. #2 is taken.
P115-A	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P115-B	3' - 0"	7' - 0"	1 3/4"	20 MIN.	GL-4	G	WOOD	Existing	P.M.	--	--	--	
P115-C	3' - 0"	7' - 0"	1 3/4"	20 MIN.	GL-4	G	WOOD	Existing	P.M.	--	--	--	
P115-D	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P116	3' - 0"	7' - 0"	1 3/4"	--	--	E	WOOD	Existing	P.M.	--	--	S-2	
P117-A	3' - 0"	7' - 0"	1 3/4"	1 1/2 HR.	GL-4	F	WOOD	Existing	P.M.	--	--	S-2	
P117-B	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P117-C	10' - 0"	10' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	--	
P117-D	10' - 0"	10' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	--	
P120-A	3' - 0"	7' - 0"	1 3/4"	--	GL-2	H	P.M.	F2	P.M.	H-3	J-3	--	
P120-B	12' - 0"	10' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	--	
P121	3' - 0"	7' - 0"	1 3/4"	45 MIN.	--	B	P.M.	F2	P.M.	H-3	J-3	--	
P122	6' - 0"	7' - 0"	1 3/4"	45 MIN.	--	B	P.M.	F2	P.M.	H-2	J-2	--	
P123	3' - 0"	7' - 0"	1 3/4"	--	--	E	WOOD	F2	P.M.	H-2	J-2	--	
P124-A	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P124-B	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P124-C	10' - 0"	10' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	--	
P125-A	8' - 0"	10' - 0"	1 3/4"	--	--	C	STEEL	--	--	H-4	J-4	S-4	
P125-B	3' - 0"	7' - 0"	1 3/4"	45 MIN.	--	B	P.M.	F2	P.M.	H-2	J-2	--	
P126	6' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P127-A	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P127-B	3' - 0"	7' - 0"	1 3/4"	45 MIN.	GL-4	H	P.M.	F2	P.M.	H-2	J-2	S-1	
P129-A	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P129-B	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P129-C	10' - 0"	10' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	--	
P130-A	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P130-B	3' - 0"	7' - 0"	1 3/4"	--	GL-2	H	P.M.	Existing	P.M.	--	--	S-2	

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VOCATION CENTER RENOVATIONS
AT THE SOUTH CAROLINA SCHOOL
FOR THE DEAF AND THE BLIND
PENNEL BUILDING

PROJ. NO. 012106.02
DATE: 01/13/16
REV NO:
REV DESCRIPTION:
MODIFIES DTL/SHT: C1 / PA10.1
SKETCH NO. AD2.1

DOOR SCHEDULE 2 of 2

DOOR NO.	DOOR SIZE			FIRE RATING	GLAZING	DOOR TYPE	DOOR MTL	FRAME	FRAME	FRAME	FRAME	FRAME	REMARKS
	WIDTH	HEIGHT	THK.					FRAME TYPE	FRAME MTL	HEAD	JAMB	SILL	
P131-A	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P131-B	3' - 0"	7' - 0"	1 3/4"	--	GL-2	H	P.M.	Existing	P.M.	--	--	S-2	
P132-A	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P132-B	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	
P132-C	10' - 0"	10' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	--	
P133-A	3' - 0"	7' - 0"	1 3/4"	45 MIN.	GL-4	J	P.M.	Existing	P.M.	--	--	--	
P133-B	3' - 0"	7' - 0"	1 3/4"	45 MIN.	GL-4	J	P.M.	Existing	P.M.	--	--	--	
P134	6' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S5- sim	
P135	3' - 0"	7' - 0"	1 3/4"	--	GL-2	G	WOOD	Existing	P.M.	--	--	S-1	
P136	6' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S5- sim	
P137	6' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S5- sim	
P138-A	3' - 0"	7' - 0"	1 3/4"	45 MIN.	GL-4	G	WOOD	Existing	Existing	--	--	S-5 sim.	This door and frame is removed if Alt. #3 is taken.
P138-B	3' - 0"	7' - 0"	1 3/4"	90 MIN.	GL-4	J	P.M.	F2	P.M.	H-2	J-2	S-1	This door and frame is removed if Alt. #3 is taken.
P139	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	This door and frame is removed if Alt. #3 is taken.
P140	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	This door and frame is removed if Alt. #3 is taken.
P141	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	This door and frame is removed if Alt. #3 is taken.
P142	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	This door and frame is removed if Alt. #3 is taken.
P143	3' - 0"	7' - 0"	1 3/4"	--	--	Existing	Existing	Existing	Existing	--	--	S-5 sim.	This door and frame is removed if Alt. #3 is taken.

DOOR SCHEDULE- ALTERNATE #2

DOOR NO.	DOOR SIZE			FIRE RATING	GLAZING	DOOR TYPE	DOOR MTL	FRAME	FRAME	FRAME	FRAME	FRAME	REMARKS
	WIDTH	HEIGHT	THK.					FRAME TYPE	FRAME MTL	HEAD	JAMB	SILL	
P118	3' - 0"	7' - 0"	1 3/4"	--	GL-2	G	WOOD	F2	P.M.	H-3	J-3	S-2	
P119	3' - 0"	7' - 0"	1 3/4"	-	GL-2	G	WOOD	F3	P.M.	H-3	J-3	S-2	

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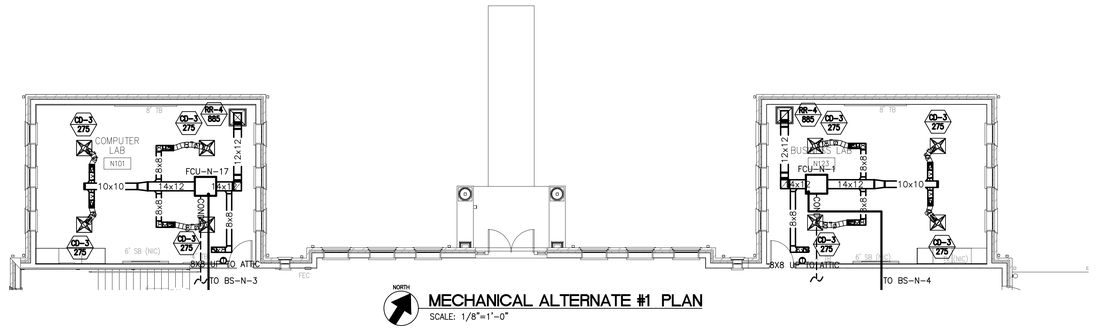
VOCATION CENTER RENOVATIONS
AT THE SOUTH CAROLINA SCHOOL
FOR THE DEAF AND THE BLIND
PENNEL BUILDING

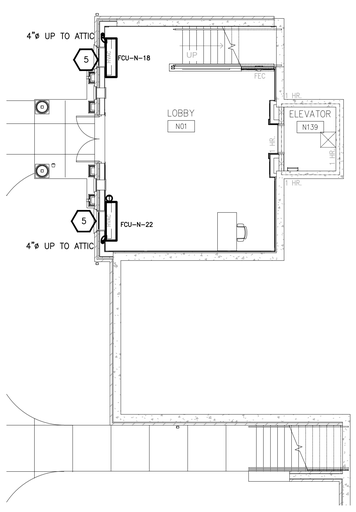
PROJ. NO. 012106.02
DATE: 01/13/16
REV NO:
REV DESCRIPTION:
MODIFIES DTL/SHT: C1 / PA10.1
SKETCH NO. AD2.2

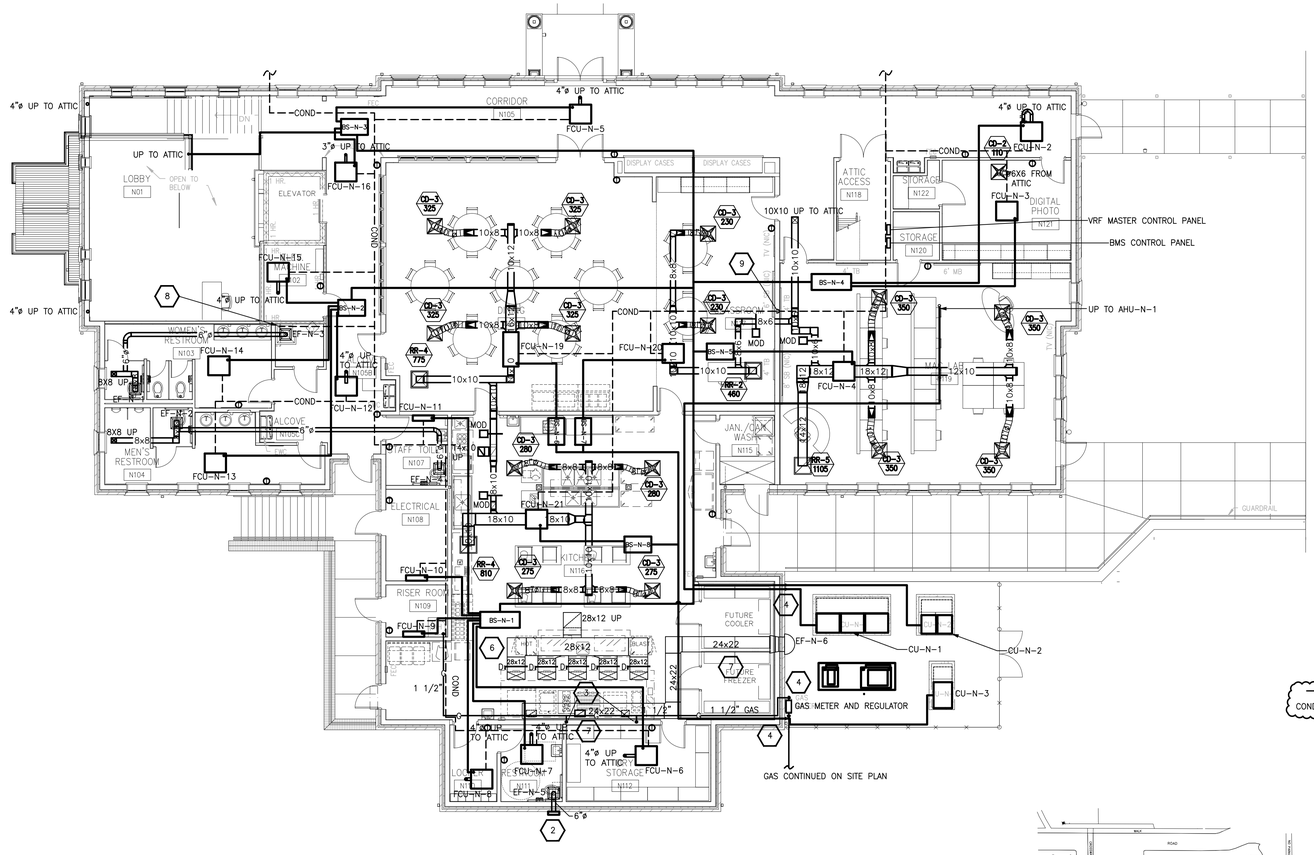
KEY NOTES:

1. BRICK VENT ABOVE WINDOW. CENTER ON WINDOW, MINIMUM OF 3 FEET FROM TOP OF WINDOW AND BOTTOM OF VENT.
2. BRICK VENT.
3. 1" GAS DOWN TO KITCHEN EQUIPMENT.
4. ROUTE PIPING EXPOSED ON EXTERIOR OF BUILDING TO ABOVE CEILING. ENTER BUILDING ABOVE KITCHEN CEILING.
5. ROUTE CONDENSATE DRAIN FROM FAN COIL UNIT THRU WALL AND DISCHARGE ABOVE GRADE. PROVIDE 90 DEGREE ELBOW ON DISCHARGE.
6. MAKE UP AIR DUCTWORK TO BE INSTALLED IN THE FUTURE. DO NOT INSTALL ANYTHING IN AREA WHERE DUCTWORK IS TO BE INSTALLED IN THE FUTURE.
7. HOOD, EXHAUST DUCTWORK AND EXHAUST FAN TO BE INSTALLED IN THE FUTURE. DO NOT INSTALL ANYTHING IN AREA WHERE FUTURE EQUIPMENT AND DUCTWORK IS TO BE INSTALLED.
8. DISCHARGE CONDENSATE DRAIN PIPING OVER MOP SERVICE BASIN IN JANITOR RM.
9. CONNECT CONDENSATE WASTE TO SANITARY WASTE LINE IN WALL ABOVE CEILING. PROVIDE P-TRAP AND ZURN Z-1025 AIR GAP BEFORE P-TRAP.
10. ALL CONDENSATE DRAIN PIPING TO BE 1 1/2".



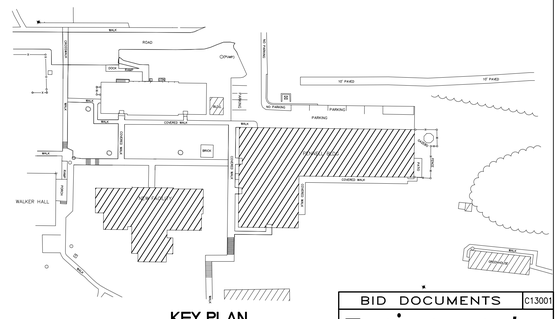
NORTH
MECHANICAL ALTERNATE #1 PLAN
SCALE: 1/8"=1'-0"





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

COND
CONDENSATE DRAIN PIPING ADDED.



KEY PLAN

BID DOCUMENTS C13001

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SOUTH CAROLINA LICENSED PROFESSIONAL No. 18258 WILLIAM S. MCMILLAN

1/11/2016

VOCATIONAL CENTER RENOVATIONS - REBID
AT THE
SOUTH CAROLINA SCHOOL
FOR THE DEAF AND THE BLIND
H75-9545-JM
NEW FACILITY
355 Cedar Springs Road
Spartanburg, SC

REVISIONS:

NO.	DATE	DESCRIPTION	BY
1	1/11/2016	ADDENDUM 1	

REBID 12.01.15

PRINCIPAL IN CHARGE: DLL
PROJECT ARCHITECT: WSM
DRAWN BY: JMO

SHEET TITLE:
MECHANICAL FLOOR PLAN

SHEET NO. NM2.1

PROJ. NO. 12106.02

AIR HANDLING UNIT SCHEDULE – NEW

TAG			AHU-N-1	AHU-N-2
AREA SERVED			Bldg	Kit Hood
BRANCH SELECTOR VALVE NUMBER				
CAPACITY, CFM			2,072	3,808
MINIMUM OA, CFM			2,072	3,808
SUPPLY FAN				
	CAPACITY, CFM		2,072	3,808
	STATIC PRESSURE			
		TOTAL, IN. WG.		
		EXTERNAL, IN. WG.	0.75	0.75
	TYPE		FC	FC
	RPM			725
	BHP			
	MOTOR			
		RPM	1750	1750
		HP	2.0	2.0
		TYPE	ODP	ODP
	ELECTRICAL			
		VOLTAGE	208	208
		PHASE	3	3
AIR VOLUME CONTROL			VFD	No
PREHEAT COIL				
	SERVICE		Electric	Electric
	CAPACITY, CFM		2,072	3808
	MAX. AIR VELOCITY, FPM		700	700
	MIN. FACE AREA, SQ. FT.		---	---
	AIR PRESSURE DROP, IN. WG.		---	---
	CAPACITY			
		TOTAL, MBH	68.3	153.6
		SENSIBLE, MBH	---	153.6
		KW	20	40
	AIR TEMPERATURE			
		ENTERING		
		FDB	20.0	20.0
		FWB	17.5	17.5
		LEAVING		
		FDB	50.5	53.0
		FWB	---	---
	ELECTRICAL			
		VOLTAGE	208	208
		PHASE	3	3
		AMPERAGE	---	125
	MIN. NO. OF ROWS		1	1
	MAX. NO. OF FINS/IN.		---	---
COOLING COIL				
	CAPACITY, CFM		2072	---
	MAX. AIR VELOCITY, FPM		500	---
	MIN. FACE AREA, SQ. FT.		4.1	---
	AIR PRESSURE DROP, IN. WG.		0.8	---
	CAPACITY			
		TOTAL, MBH	163.2	---
		SENSIBLE, MBH	93.53	---
	AIR TEMPERATURE			
		ENTERING		
		FDB	93.0	---
		FWB	74.0	---
		LEAVING		
		FDB	53.1	---
		FWB	49.8	---
	MIN. NO. OF ROWS		3	---
	MAX. NO. OF FINS/IN.		14	---
FIRST STAGE FILTER				
	TYPE MEDIA		Throwaway	Throwaway
	CAPACITY, CFM		2072	3808
	FACE AREA, SQ. FT.		---	7.6
	FILTER DEPTH, INCHES		2	2
	MAX. AIR VELOCITY, FPM		500	500
	INITIAL PRESS DROP, IN. WG.		---	---
	FINAL PRESS DROP, IN. WG.		---	---
	MERV RATING		8	8
ACCESSORIES				
	MOTOR OPERATED OA DAMPER		Yes	Yes
	HOT GAS BYPASS		Yes	No
	SCR CONTROL FOR ELECTRIC HEAT		Yes	Yes
	VFD FOR FAN		Yes	No
MANUFACTURER			Morganizer	Captiveaire
MODEL NO.			TWE150E	A2-E.452G15
REMARKS			COOLING ONLY	

GAS CONSUMPTION SCHEDULE

EQUIPMENT NO.	EQUIPMENT NAME	TOTAL INPUT, MBH	PRESSURE AT EQUIPMENT, IN. W.C.
WH-N-1	WATER HEATER	300	10.0
38	TWO BURNER RANGE	50	14.0
42	FRYER	110	14.0

BRANCH SELECTOR UNIT SCHEDULE – NEW

TAG	BS-N-1	BS-N-2	BS-N-3	BS-N-4	BS-N-5	BS-N-6	BS-N-7	BS-N-8
AREA SERVED	SOUTH	SW	NW	EAST	Rm N119	Rm N106	Rm N117	Rm N116
	Base Bid	Base Bid	Base Bid	Base Bid	Base Bid	Base Bid	Base Bid	Base Bid
CONDENSING UNIT NUMBER	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-2	CU-N-2	CU-N-2
NO OF ZONES	6	4	4	4	1	1	1	1
UNIT ELECTRICAL								
VOLTAGE	208	208	208	208	208	208	208	208
PHASE	1	1	1	1	1	1	1	1
MCA	0.66	0.45	0.45	0.45	0.11	0.11	0.11	0.11
ACCESSORIES								
DISCONNECT SWITCH	No	No	No	No	No	No	No	No
MANUFACTURER	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin
MODEL NO. ⚠1	BS60S4TVJ	BS40S4TVJ	BS40S4TVJ	BS40S4TVJ	BS060TVJ	BS060TVJ	BS036TVJ	BS036TVJ
REMARKS								

GRILLE, REGISTER AND DIFFUSER SCHEDULE

TAG	CD-1	CD-2	CD-3	CD-4	SG-1	SG-2	RR-1	RR-2	RR-3	RR-4	RR-5	RR-6	RR-7	ER-1
TYPE	Plaque	Plaque	Plaque	Plaque	Louvered	Louvered	Perforated	Perforated	Perforated	Perforated	Perforated	Louvered	Louvered	Perforated
MODULE SIZE	12 x 12	24 x24	24 x24	24 x24	---	---	24 x 24	24 x 24	24 x 24	24 x 24	24 x 24	---	---	24 x 24
NECK SIZE	4" dia	6" dia	8" dia	10" dia	8 x 6	16 x 8	8" dia	10" dia	12" dia	14" dia	15" dia	18 x 10	16 x 8	8" dia
PATTERN	4-way	4-way	4-way	4-way	---	---	---	---	---	---	---	---	---	---
THROW														
MAXIMUM CFM	120	200	350	550	250	650	350	500	700	900	1230	1230	650	350
MAXIMUM PRESSURE DROP, IN. WG.	0.1	0.17	0.17	0.17	0.06	0.17	0.17	0.15	0.14	0.13	0.17	0.04	0.17	0.17
MAXIMUM NC LEVEL	20	20	20	20	30	26	20	20	20	20	22	30	26	20
BORDER	Lay in	Lay in	Lay in	Lay in	Surface	Surface	Lay in	Lay in	Lay in	Lay in	Lay in	Surface	Surface	Lay in
MATERIAL	Alum	Alum	Alum	Alum	Alum	Alum	Alum	Alum	Alum	Alum	Alum	Alum	Alum	Alum
FINISH	Off white	Off white	Off white	Off white	Anodized	Anodized	Off white	Off white	Off white	Off white	Off white	Anodized	Anodized	Off white
ACCESSORIES														
OPPOSED BLADE DAMPER	No	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No
RADIAL DAMPER	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FIRE DAMPER	No	No	No	No	No	No	No	No	No	No	No	No	No	No
INSULATED BOOT PLENUM	No	No	No	No	No	No	No	No	No	No	No	No	No	No
MANUFACTURER	E. H. Price	E. H. Price	E. H. Price	E. H. Price	E. H. Price	E. H. Price	E. H. Price	E. H. Price	E. H. Price	E. H. Price	E. H. Price	E. H. Price	E. H. Price	E. H. Price
MODEL NO.	ASPD	ASPD	ASPD	ASPD	620DAL	620DAL	PDDR	PDDR	PDDR	PDDR	PDDR	610DAL	610DAL	PDDR
REMARKS														

THE GRILLE, REGISTER AND DIFFUSER SCHEDULE IS INCLUSIVE FOR THE PROJECT AND TYPES ARE LISTED THAT MAY NOT APPEAR IN EACH BUILDING. REFER TO THE REPRESENTATIVE PLAN FOR THE ACTUAL TYPES UTILIZED FOR EACH BUILDING.

FAN COIL UNIT SCHEDULE – NEW

TAG	FCU-N-1	FCU-N-2	FCU-N-3	FCU-N-4	FCU-N-5	FCU-N-6	FCU-N-7	FCU-N-8	FCU-N-9	FCU-N-10	FCU-N-11	FCU-N-12	FCU-N-13	FCU-N-14	FCU-N-15	FCU-N-16	FCU-N-17	FCU-N-18	FCU-N-19	FCU-N-20	FCU-N-21	FCU-N-22
AREA SERVED	Rm N123	Rm N105	Rm N121	Rm N119	Rm N105	Rm N112	Rm N111	Rm N110	Rm N109	Rm N108	Rm N107	Rm N105	Rm N104	Rm N103	Rm N102	Rm N105	Rm N101	Rm N01	Rm N106	Rm N117	Rm N116	Rm N01
BRANCH SELECTOR VALVE NUMBER	BS-N-4	BS-N-4	BS-N-4	BS-N-5	BS-N-3	BS-N-1	BS-N-1	BS-N-1	BS-N-1	BS-N-1	BS-N-1	BS-N-2	BS-N-2	BS-N-2	BS-N-2	BS-N-3	BS-N-3	BS-N-3	BS-N-6	BS-N-7	BS-N-8	BS-N-3
CONDENSING UNIT NUMBER	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-1	CU-N-2	CU-N-2	CU-N-2	CU-N-1
TYPE	Ducted	Ceiling Cassette	Ceiling Cassette	Ducted	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette	Wall Mounted	Wall Mounted	Wall Mounted	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette	Ducted	Wall Mounted	Ducted	Ducted	Ducted	Wall Mounted
CAPACITY, CFM	1105	680	320	1395	1430	200	70	95	230	525	11	1345	465	150	800	180	1105	500	1300	455	1110	500
DESIGN OA, CFM	222	30	111	291	28	23	0	0	0	6	0	30	0	0	10	12	222	27	525	205	296	27
MINIMUM OA, CFM	72	30	31	150	28	23	0	0	0	6	0	30	0	0	10	12	72	27	200	65	251	27
COOLING CAPACITY																						
CAPACITY																						
TOTAL, MBH	29.6	14.8	10.6	38.9	27.6	4.6	1.5	1.9	2.4	10	0.6	26.1	9	3.5	15.0	4.4	29.6	10.8	45.8	17.0	34.5	10.8
SENSIBLE, MBH	23.1	11.8	7.6	29.2	24.5	3.6	1.1	1.6	2.2	9.4	0.3	23	7.9	2.4	14.3	3.2	23.1	8.7	32	11.7	24.2	8.7
AIR TEMPERATURE																						
ENTERING																						
FDB	79.6	76.9	81.8	79.6	76.8	77.6	76.1	76.2	75.8	76.1	76.2	76.9	76.6	76.3	75.9	76.9	79.6	77.2	82.6	83.7	80.5	77.2
FWB	67.1	66.3	68.4	67.4	65.6	66.8	66.1	65.3	69.1	64.3	68.9	65.7	65.5	67.1	63.9	66.7	67.1	66.2	69.0	69.7	68.4	66.2
LEAVING																						
FDB	59.6	60.2	59.0	59.6	60.4	60.5	59.8	59.7	66.7	59.0	59.9	60.5	60.3	60.3	58.7	59.7	59.6	60.2	58.9	59.1	59.6	60.2
FWB	58.4	59.2	57.8	58.5	59.3	59.5	58.8	58.7	66.0	57.9	59.3	59.4	59.4	59.4	57.7	58.8	58.4	59.2	57.7	57.9	58.5	59.2
HEATING CAPACITY																						
CAPACITY																						
TOTAL, MBH	16.6	12.0	6.7	20.9	23.5	3.1	0.6	0.9	5.8	6.2	0.2	18.1	3.3	1.0	0.7	2.4	16.6	10.1	29.4	11.5	29.7	10.1
FILTER																						
TYPE MEDIA																						
MAX. AIR VELOCITY, FPM																						
MERV RATING																						
UNIT ELECTRICAL																						
VOLTAGE	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208	208
PHASE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MCA	2.9	0.9	0.8	3.4	1.4	0.8	0.8	0.8	0.3	0.4	0.3	1.4	0.8	0.8	0.7	0.8	2.9	0.4	8.0	1.8	2.9	0.4
ACCESSORIES																						
DISCONNECT SWITCH	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
CONDENSATE PUMP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
MANUFACTURER	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin
MODEL NO. ⚠1	FXMQ36PBVJU	FXZQ18MVJU9	FXZQ15MVJU9	FXMQ48PBVJU	FXFQ36TVJU	FXZQ07MVJU9	FXZQ07MVJU9	FXZQ07MVJU9	FXAQ07PVJU	FXAQ18PVJU	FXAQ07PVJU	FXFQ36TVJU	FXZQ15MVJU9	FXZQ07MVJU9	FXFQ24TVJU	FXZQ07MVJU9	FXMQ36PBVJU	FXAQ18PVJU	FXTQ54PAVJU	FXMQ24PBVJU	FXMQ36PBVJU	FXAQ18PVJU
REMARKS																						

CONDENSING UNIT SCHEDULE – NEW

TAG	CU-N-1	CU-N-2	CU-N-3
SYSTEM			AHU-N-1
DESIGN AMBIENT COOLING TEMP, FDB	100	100	100
DESIGN AMBIENT HEATING TEMP, FDB	17	17	17
CAPACITY			
COOLING, MBH	287	89	164.2
HEATING, MBH	293	87	94.4
COMPRESSERS			
QUANTITY	3	1	2
KW	---	---	---
FLA	---	---	---
CONDENSER FANS			
QUANTITY	4	2	2
HP	---	---	1
FLA	---	---	---
UNIT ELECTRICAL			
VOLTAGE	208	208	208
PHASE ⚠	3	3	3
MCA	1@61.9 & 1@55	43.8	66.3
MOCP	2@70	45	80
ACCESSORIES			
SINGLE POINT POWER CONNECTION	No	No	Yes
DISCONNECT SWITCH	No	No	No
LOW AMBIENT CONTROL	Yes	Yes	Yes
HOT GAS BYPASS	Yes	Yes	Yes
MANUFACTURER	Daikin	Daikin	Trane
MODEL NO. ⚠1	REYQ312TJU	REYQ96TTJU	TTA150E
REMARKS			COOLING ONLY

FAN SCHEDULE – NEW

TAG	EF-N-1	EF-N-2	EF-N-3	EF-N-4	EF-N-5	EF-N-6
AREA SERVED	Rm N103	Rm N104	Rm N103A	Rm N107	Rm N111	Hood
TYPE	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Kitchen
CAPACITY, CFM	200	200	100	100	100	4760
EXTERNAL STATIC PRESSURE, IN. WG.	0.375	0.375	0.375	0.375	0.375	1.25
FAN						
RPM	1225	1225	750	750	750	998
BHP	0.2	0.2	0.2	0.2	0.2	1.77
MOTOR						
RPM	1350	1350	1050	1050	1050	1750
HP	0.2	0.2	0.2	0.2	0.2	2
TYPE						ODP
ELECTRICAL						
VOLTAGE	115	115	115	115	115	208
PHASE	1	1	1	1	1	1
ACCESSORIES						
MOTORIZED BACKDRAFT DAMPER	No	No	No	No	No	No
GRAVITY BACKDRAFT DAMPER	Yes	Yes	Yes	Yes	Yes	No
DISCONNECT SWITCH	Yes	Yes	Yes	Yes	Yes	Yes
BIRDSCREEN	No	No	No	No	No	Yes
ALUMINUM ROOF CURB	No	No	No	No	No	No
GALVANIZED STEEL ROOF CURB	No	No	No	No	No	No
ADAPTER TO REUSE EXISTING ROOF CURB	No	No	No	No	No	No
MOTORSIDE FAN GUARD	No	No	No	No	No	Yes
WEATHERPROOF MOTOR COVER	No	No	No	No	No	Yes
FILTER	No	No	No	No	No	No
CEILING GRILLE	Yes	Yes	Yes	Yes	Yes	No
BRICK VENT	Yes	Yes	Yes	Yes	Yes	No
REOSTAT	Yes	Yes	Yes	Yes	Yes	Yes
MANUFACTURER	Greenheck	Greenheck	Greenheck	Greenheck	Greenheck	Greenheck
MODEL NO.	SP-A390	SP-A390	SP-B150	SP-B150	SP-B150	CWB-240HP
REMARKS						

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SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION SIMS GROUP ENGINEERS, INC. No. C03104

SOUTH CAROLINA LICENSED PROFESSIONAL No. 19258 WILLIAM S. MCMILLAN

1/11/2016

VOCATIONAL CENTER RENOVATIONS - REBID
AT THE
SOUTH CAROLINA SCHOOL
FOR THE DEAF AND THE BLIND
H75-9545-JM
NEW FACILITY
355 Cedar Springs Road
Spartanburg, SC

REVISIONS:

NO.	DATE	DESCRIPTION	BY
⚠1	1/11/2016	ADDENDUM 1	

REBID 12.01.15

PRINCIPAL IN CHARGE: DLL
PROJECT ARCHITECT: WSM
DRAWN BY: JMO

SHEET TITLE:
MECHANICAL SCHEDULES

BID DOCUMENTS C13001

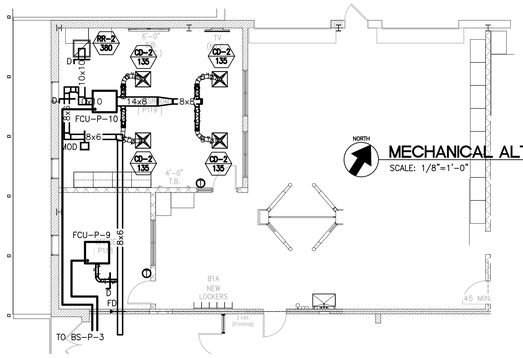
sims group
SIMS GROUP ENGINEERS, INC.
800 Columbiana Drive, Suite 208
Irmo, South Carolina 29063
Phone: (803) 765-1007 Fax: (803) 765-1030
www.simsgroupusa.com

SHEET NO. NM6.1

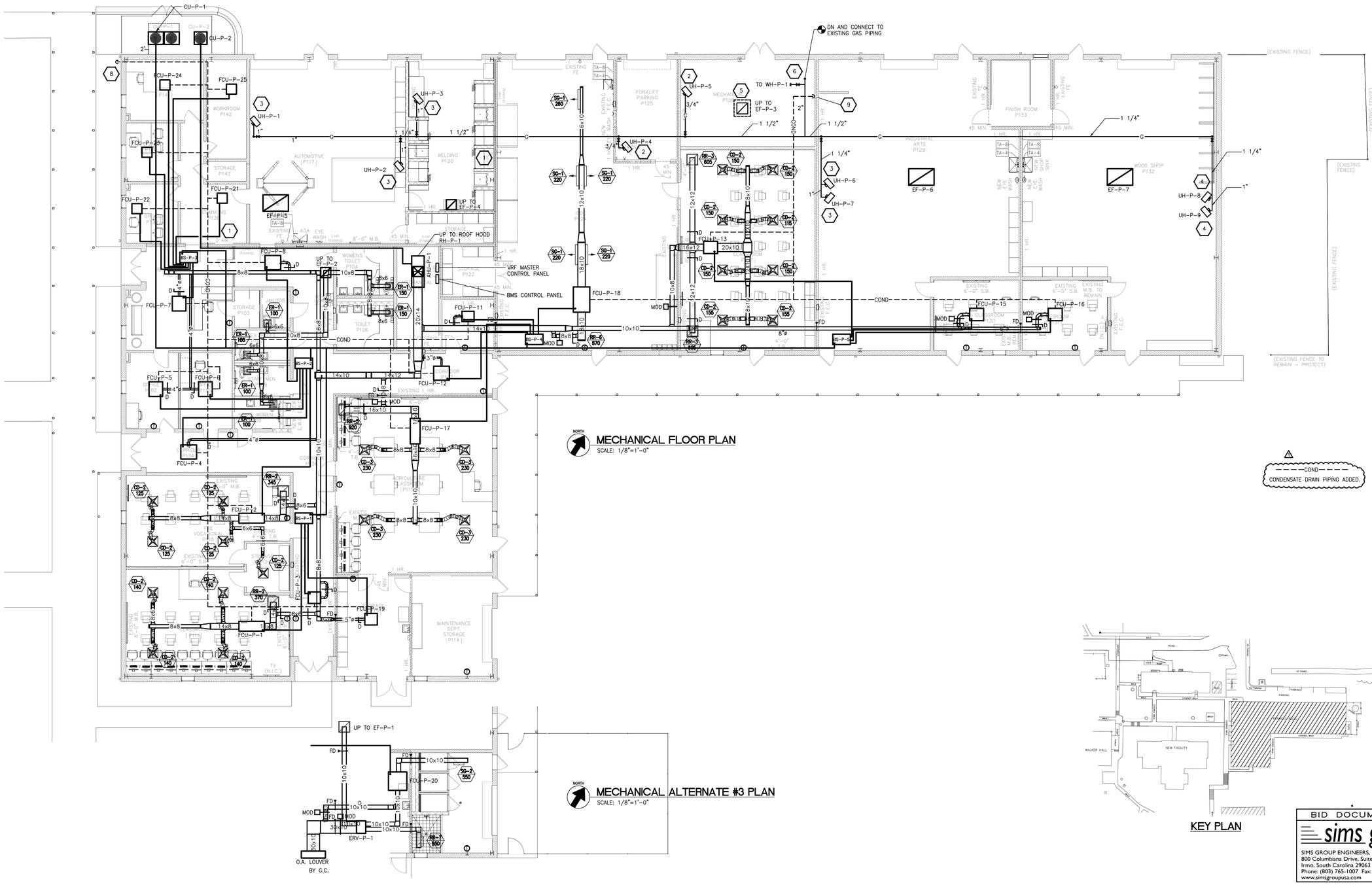
PROJ. NO. 12106.02

KEY NOTES:

1. FIRE RATED WALL. FIRE STOP ALL PENETRATIONS.
2. REFER TO DETAIL 2 ON SHEET PM5.1 FOR DETAILS OF INSTALLATION OF UNIT HEATER.
3. REFER TO DETAIL 2 ON SHEET PM5.1 FOR DETAILS OF INSTALLATION OF UNIT HEATER.
4. REFER TO DETAIL 3 ON SHEET PM5.1 FOR DETAILS OF INSTALLATION OF UNIT HEATER.
5. INSTALL NEW EF-P-3 ON EXISTING ROOF CURB.
6. MECHANICAL CONTRACTOR TO PROVIDE FLUE FOR WH-P-1.
7. NOT USED
8. EXTEND CONDENSATE DRAIN AND TERMINATE 1 FOOT ABOVE EXTERIOR GRADE.
9. EXTEND CONDENSATE DRAIN DOWN AND TERMINATE 6 INCHES ABOVE EXISTING FLOOR DRAIN.



MECHANICAL ALTERNATE #2 PLAN
SCALE: 1/8"=1'-0"



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

MECHANICAL ALTERNATE #3 PLAN
SCALE: 1/8"=1'-0"

⚠ ----COND---- CONDENSATE DRAIN PIPING ADDED.

KEY PLAN

BID DOCUMENTS C13001

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SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION SIMS GROUP ENGINEERS, INC. No. C03104

SOUTH CAROLINA LICENSED PROFESSIONAL No. 18258 WILLIAM S. MCMILLAN, JR. 1/11/2016

VOCATIONAL CENTER RENOVATIONS - REBID
AT THE
SOUTH CAROLINA SCHOOL
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H75-9545-JM
PENNELL BUILDING
355 Cedar Springs Road
Spartanburg, SC

REVISIONS:

NO.	DATE	DESCRIPTION	BY
⚠	1/11/2016	ADDENDUM 1	

REBID 12.01.15

PRINCIPAL IN CHARGE: DLL
PROJECT ARCHITECT: WSM
DRAWN BY: JMO

SHEET TITLE:
MECHANICAL FLOOR PLAN

SHEET NO. PM2.1

PROJ. NO. 12106.02

BRANCH SELECTOR UNIT SCHEDULE – PENNELL

TAG	BS-P-1	BS-P-2	BS-P-2	BS-P-3	BS-P-3	BS-P-4	BS-P-5
AREA SERVED	P111	P102	P102	P101	P101	P115	P128
	Base Bid	Base Bid	Alt #2	Base Bid	Alt #2	Base Bid	Base Bid
CONDENSING UNIT NUMBER	CU-P-1	CU-P-1	CU-P-1	CU-P-1	CU-P-1	CU-P-1	CU-P-1
NO. OF ZONES	4	6	4	5	4	4	3
UNIT ELECTRICAL							
VOLTAGE	208	208	208	208	208	208	208
PHASE	1	1	1	1	1	1	1
MCA	0.45	0.66	0.45	0.66	0.45	0.45	0.45
ACCESSORIES							
DISCONNECT SWITCH	No	No	No	No	No	No	No
MANUFACTURER	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin
MODEL NO. ⚠	BS4Q54TVJ	BS6Q54TVJ	BS4Q54TVJ	BS6Q54TVJ	BS4Q54TVJ	BS4Q54TVJ	BS4Q54TVJ
REMARKS							

CONDENSING UNIT SCHEDULE – PENNELL

TAG	CU-P-1	CU-P-2
SYSTEM		
DESIGN AMBIENT COOLING TEMP, FDB	100	100
DESIGN AMBIENT HEATING TEMP, FDB	17	17
CAPACITY		
COOLING, MBH	234	140
HEATING, MBH	285	
COMPRESSERS		
QUANTITY	2	2
KW		
FLA		
CONDENSER FANS		
QUANTITY	2	2
HP		
FLA		
UNIT ELECTRICAL		
VOLTAGE	208	208
PHASE	3	3
MCA ⚠	1@55 & 1@38	
MOCP	1@70 & 1@45	
ACCESSORIES		
SINGLE POINT POWER CONNECTION	No	Yes
DISCONNECT SWITCH	No	Yes
LOW AMBIENT CONTROL	Yes	Yes
HOT GAS BYPASS	Yes	Yes
MANUFACTURER	Daikin	Trane
MODEL NO. ⚠	REYQ240TJU	TWA150E
REMARKS		HEAT PUMP

FAN SCHEDULE – PENNELL

TAG	EF-P-1	EF-P-2	EF-P-3	EF-P-4	EF-P-5	EF-P-6	EF-P-7
AREA SERVED	P114	Toilet Rms	Not used	P120	P117	P129	P132
TYPE	Centrifugal	Centrifugal	Propeller	Propeller	Propeller	Propeller	Propeller
CAPACITY, CFM	550	700	3350	12,000	11,600	15,900	15,900
EXTERNAL STATIC PRESSURE, IN. WG.	0.5	0.5	0.2	0.25	0.25	0.25	0.25
FAN							
RPM	1603	1623	858	1359	721	744	744
BHP	0.1	0.14	0.31	2.95	1.21	1.69	1.69
MOTOR							
RPM	1603	1623	1725	1725	1725	1725	1725
HP	1/6	1/6	1/3	3	2	2	2
TYPE	ECM	ECM	ODP	ODP	ODP	ODP	ODP
ELECTRICAL							
VOLTAGE	115	115	115	208	208	208	208
PHASE	1	1	1	3	3	3	3
ACCESSORIES							
MOTORIZED BACKDRAFT DAMPER	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GRAVITY BACKDRAFT DAMPER	No	No	No	No	No	No	No
DISCONNECT SWITCH	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BIRDSCREEN	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ALUMINUM ROOF CURB	No	No	No	No	No	No	No
GALVANIZED STEEL ROOF CURB	Yes	Yes	No	Yes	No	No	No
ADAPTER TO REUSE EXISTING ROOF CURB	No	No	Yes	No	Yes	Yes	Yes
MOTORSIDE FAN GUARD	Yes	Yes	Yes	Yes	Yes	Yes	Yes
WEATHERPROOF MOTOR COVER	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FILTER	No	No	No	No	No	No	No
CEILING GRILLE	No	No	No	No	No	No	No
BRICK VENT	No	No	No	No	No	No	No
REOSTAT	Yes	Yes	No	No	No	No	No
MANUFACTURER	Greenheck	Greenheck	Greenheck	Greenheck	Greenheck	Greenheck	Greenheck
MODEL NO.	CUE-090-VG	G-095-VG	RBCE-3H24	RBCE-3H30	RBCE-3H42	RBCE-3H48	RBCE-3H48
REMARKS							

⚠

ROOF HOOD SCHEDULE

TAG	RH-P-1
TYPE	Intake
LOCATION	Roof
AREA SERVED	AHU-P-1
SIZE	36 x 36
CFM	1875
MAXIMUM PRESSURE DROP, IN. WG.	0.01
MATERIAL	Galv St
FINISH	Galv St
ACCESSORIES	
ROOFCURB	Yes
OPPOSED BLADE DAMPER	No
GRAVITY RELIEF DAMPER	No
FIRE DAMPER	No
DAMPER OPERATOR	No
MANUFACTURER	Greenheck
MODEL NO.	FGI
REMARKS	

FAN COIL UNIT SCHEDULE – PENNELL

TAG	FCU-P-1	FCU-P-2	FCU-P-3	FCU-P-4	FCU-P-5	FCU-P-6	FCU-P-7	FCU-P-8	FCU-P-9	FCU-P-10	FCU-P-11	FCU-P-12	FCU-P-13	FCU-P-14	FCU-P-15	FCU-P-16	FCU-P-17	FCU-P-18	FCU-P-19	FCU-P-20	FCU-P-21	FCU-P-22	FCU-P-23	FCU-P-24	FCU-P-25
AREA SERVED	Rm P111	Rm P112	Rm P136	Rm P134	Rm P102	Rm P135	Rm P101	Rm P136	Rm P118	Rm P119	Rm P123	Rm P136	Rm P127	---	Rm P130	Rm P131	Rm P115	Rm P124	Rm P113	Rm P114	Rm P138	Rm P139	Rm P140	Rm P141	Rm P142
	Base Bid	Base Bid	Base Bid	Base Bid	Base Bid	Base Bid	Base Bid	Base Bid	Alt #2	Alt #2	Base Bid	Base Bid	Base Bid	Not used	Base Bid	Base Bid	Base Bid	Base Bid	Base Bid	Alt #3	Base Bid	Base Bid	Base Bid	Base Bid	Base Bid
BRANCH SELECTOR VALVE NUMBER	BS-P-1	BS-P-1	BS-P-1	BS-P-2	BS-P-2	BS-P-2	BS-P-2	BS-P-3	BS-P-3	BS-P-3	BS-P-4	BS-P-2	BS-P-4	---	BS-P-5	BS-P-5	BS-P-4	BS-P-4	BS-P-1	BS-P-1	BS-P-3	BS-P-3	BS-P-3	BS-P-3	BS-P-3
CONDENSING UNIT NUMBER																									
TYPE	Ducted	Ducted	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette	Ducted	Ceiling Cassette	Ceiling Cassette	Ducted	---	Ceiling Cassette	Ceiling Cassette	Ducted	Ducted	Ceiling Cassette	Ducted	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette	Ceiling Cassette
CAPACITY, CFM	520	500	170	100	180	110	300	110	290	510	420	130	1210	---	250	240	875	1040	190	550	240	175	170	220	270
DESIGN OA, CFM	188	186	25	15	15	15	35	16	41	160	6	19	330	---	90	90	330	270	52	0	23	12	12	16	14
MINIMUM OA, CFM	188	186	25	15	15	15	35	16	41	160	6	19	330	---	30	30	100	0	52	0	23	12	12	16	
COOLING CAPACITY																									
CAPACITY																									
TOTAL, MBH	10.3	9.8	3.9	2.3	3.7	2.2	5.8	2.6	5.5	10.1	7.8	3.0	23.5	---	4.7	4.6	17.3	21.5	3.4	17.3	4.6	3.3	3.3	4.2	5.0
SENSIBLE, MBH	9.7	9.3	2.9	1.7	3.2	1.9	4.9	1.9	5.2	9.6	7.4	2.3	22.6	---	4.6	4.5	16.4	18.6	3.1	12.1	4.1	3.0	3.0	3.7	4.6
AIR TEMPERATURE																									
ENTERING																									
EDB	77.6	77.6	76.8	76.7	76.4	76.7	76.6	76.7	76.8	77.3	76.1	76.7	77.2	---	77.6	77.6	77.6	77.1	77.3	80.7	76.6	76.6	76.4	76.4	76.4
EWB	64.8	64.9	66.7	66.4	64.8	65.5	65.9	66.7	64.7	64.6	64.1	66.7	64.5	---	64.7	64.7	64.8	65.6	65.8	68.9	64.9	64.9	64.7	64.9	64.8
LEAVING																									
EDB	59.4	59.5	60.1	60.1	59.1	59.6	60.4	60.2	59.5	59.2	58.9	60.2	59.3	---	59.7	59.7	59.4	59.9	60.8	60.4	59.4	59.4	59.3	59.4	59.7
EWB	58.2	58.3	59.2	59.2	58.0	58.6	59.3	59.2	58.4	58.0	57.8	59.2	58.1	---	58.4	58.4	58.1	58.8	59.7	59.3	58.3	58.3	58.2	58.3	58.6
HEATING CAPACITY																									
CAPACITY																									
TOTAL, MBH	2.5	0.9	1.3	1.3	1.2	0.2	2.5	1.1	1.0	2.1	0.1	1.2	3.8	---	1.0	0.9	1.5	7.6	1.4	16.0	0.9	1.1	1.0	1.7	1.7
FILTER																									
TYPE MEDIA																									
MAX. AIR VELOCITY, FPM																									
MERV RATING																									
UNIT ELECTRICAL																									
VOLTAGE	208	208	208	208	208	208	208	208	208	208	208	208	208	---	208	208	208	208	208	208	208	208	208	208	208
PHASE	1	1	1	1	1	1	1	1	1	1	1	1	1	---	1	1	1	1	1	1	1	1	1	1	1
MCA	1.6	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.6	0.8	0.8	2.9	---	0.8	0.8	2.3	2.3	0.8	0.7	0.8	0.8	0.8	0.8	0.8
ACCESSORIES																									
DISCONNECT SWITCH	No	No	No	No	No	No	No	No	No	No	No	No	No	---	No	No	No	No	No	No	No	No	No	No	No
CONDENSATE PUMP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	---	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MANUFACTURER	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	---	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin	Daikin
MODEL NO. ⚠	FXMQ15PBVJU	FXMQ15PBVJU	FXZQ07MVJU9	FXZQ07MVJU9	FXZQ07MVJU9	FXZQ07MVJU9	FXZQ07MVJU9	FXZQ07MVJU9	FXZQ07MVJU9	FXMQ18PBVJU	FXZQ15MVJU9	FXZQ07MVJU9	FXMQ36PBVJU	---	FXZQ07MVJU9	FXZQ07MVJU9	FXMQ30PBVJU	FXMQ30PBVJU	FXZQ07MVJU9	FXFQ24TVJU	FXZQ07MVJU9	FXZQ07MVJU9	FXZQ07MVJU9	FXZQ07MVJU9	FXZQ07MVJU9
REMARKS																					Note 1	Note 1	Note 1	Note 1	Note 1

Note 1: These units not required when Alt #2 in accepted.

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SOUTH CAROLINA SIMS GROUP ENGINEERS, INC. No. C03104 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL No. 18258 WILLIAM S. MCMILLAN

1/11/2016

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REVISIONS:

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⚠	1/11/2016	ADDENDUM 1	

REBID 12.01.15

PRINCIPAL IN CHARGE: DLL
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DRAWN BY: JMO

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