

ADDENDUM NO. 1

DATE: May 3rd, 2013

PROJECT: Cathedral of the Risen Christ School
HVAC Remodel Project
Geary Engineering Project No. 23016

This addendum is issued to all plan holders of record prior to receipt of proposals. This addendum modifies only those portions of the proposed Contract Documents as described below and all other portions of the proposed Contract Documents remain unchanged and in full effect.

DRAWINGS

1. Sheet CS-1.0 Delete reference to Sheet M-4.0. Change sheet title for M3.0 to be Mechanical Rooms Sections and Details.
2. Sheet CS-1.0 Alternate Number 3: Under the Base Bid, a Line Hide system shall be used to conceal all exposed refrigerant piping, conduit and control wiring in the main corridor. Piping above the suspended corrugated aluminum panel system shall not be considered exposed. Under Alternate Number 3, add Line Hide system to conceal all exposed refrigerant piping, conduit and control wiring in the Classrooms.
3. Sheet D-1.0 Where window air-conditioning units are shown to be removed, Contractor shall reinstall glazing in window opening. Coordinate with Owner.
4. Sheet D-2.0 Remove existing incinerator in Boiler Room located next to mechanical chase in northeast corner. Remove all components from Boiler Room, including electrical.
5. Sheet M-1.0 There is no ceiling in Classroom 20, change evaporator unit type from ceiling cassette to wall mounted type, size 015. Mount on south wall, high enough for humidity drain to be run above ceiling of Classroom 19. Revise electrical as required.
6. Sheet M-2.0 Provide fire dampers in duct openings in new mechanical room, 72"x72" and 72"x60".
7. Sheet M-3.0 Revise Wall Section 1 to add support beam above new louver openings, see attached detail. Increase the height of the opening 8 inches to accommodate the new beam.
8. Sheet M-3.0 Revise dimensions for north areaway and wall openings. Change the distance between wall openings and on both ends from 12 inches to 18 inches. Change overall length of areaway from 16'-8" to 18'-8".
9. Sheet M-3.0 Contractor shall re-seed all grass areas that are torn up due to the installation of the new areaways. The landscaping on the east side shall be returned to its previous condition. There is a small tree that will have to be removed and replaced or replanted. Coordinate with Owner.

10. Sheet E-1.0 and E-2.0 Provide a wiremold surface backbox and surface raceway on wall down to thermostats. See Mechanical plans for thermostat locations. Provide conduit for thermostat wiring where exposed up high.
11. Sheet E-1.0 Remove the existing wiring for 6 mechanical items being removed; Refer to Mechanical Demolition Plan Sheet D-1.0:
 - Evaporators and condensers for Offices 2 & 3.
 - Evaporators and condensers for Teachers Lounge and Classroom 20.
12. Sheet E-1.0 Near Kindergarten Room, locate indoor evaporator AC-19 into Stair. See Mechanical Sheet M-1.0.
13. Sheet E-1.0 Change the circuits to condensing units CU-1 and CU-2 from 3 phase to single phase. CU-1: 35A/2P #10 and CU-2 25A/2P #12.
14. Sheet E-1.0 The existing air handling units in the mechanical penthouse have existing smoke detectors. The new rooftop unit detector shall be connected into this circuit.
15. Sheet E-2.0 The area in the northwest corner of the original building (under the Teachers Lounge) in unexcavated. Therefore, the electrical contractor shall drill the new conduit for the new panel 'HP' from outside the building and into the Tunnel space indicated on the drawing.
16. Sheet E-2.0 Remove the existing wiring for the mechanical items being removed; Refer to Mechanical Demolition Plan Sheet D-2.0:
 - Air handler in Electrical Room 2.
 - Boiler and Condensate pump in Mech. Room 1.

SPECIFICATIONS

1. Instructions to Bidders, Page 4 Delete reference to Sheet M-4.0. Change sheet title for M3.0 to be Mechanical Rooms Sections and Details.
2. Section 15260 – Piping Insulation Refrigerant piping insulation thickness shall be 1-1/2”.
3. Add Section 15183 - Refrigerant Piping. See attachment.

QUESTIONS

Q: *Have the plans been submitted to the city for permitting? Is there a balance due to be included by the contractor?*

A: Plans will be submitted to the City for Building Permit. Contractors shall be responsible for mechanical and electrical permits.

Q: *The specifications only indicate a bid bond be included. I believe the Diocese requires all projects to be bonded. The invitation indicates a performance bond is not required. Please clarify.*

A: Performance bond is not required. Lien wavers will be required.

Q: *Please clarify the liquidated damages on the project. These are currently not tied to any work or dates in the specifications. Do these begin after October 1 for the heating portion only?*

A: Liquidated damages will be tied to the completion date provided by the Contractor on the Proposal.

Q: Has the boiler jacket and interior door been tested for asbestos? Is there an asbestos report available for the project?

A: Asbestos will be abated under separate contract. See Project Requirements on CS-1.0.

Q: *What is the roofing material? Is there an existing roofing warranty in place? Is there a specified roofer that we need to use for the roofing penetrations?*

A: Existing roof was installed by AAA Roofing in 1987. The 10 year warranty has expired. The Owner does not require a specific roofer.

Q: *You have Line hide indicated on the plans as base bid but then have an alternate for it, can you clarify what is base bid and what is alternate? Can you specify a Line Hide product?*

A: See item #2 under Drawings above.

Q: *I assume the school is not sprinkled? We can verify this at pre-bid.*

A: Not sprinkled.

Q: *Do the rooftop units or UHs require any structural support?*

A: No additional support required. RTU is to be located at beam and column.

Q: *Will the new areaway penetrations require support at the new opening?*

A: See revised detail in this addendum.

Q: *Please verify there is no Sheet M-4.0 (Listed but not included in the sets).*

A: No Sheet M-4.0

EQUIVALENT MANUFACTURERS

Rooftop units and Split System Furnaces/Condensing Units: Johnson Controls Company.

Exhaust Fans: Greenheck

Gas-fired Unit Heaters: Roberts Gordon

ATTACHMENTS

Revised Louver Opening

Section 15183 – Refrigerant Piping

Pre-bid meeting attendance sheets (4)

END OF ADDENDUM 1

SECTION 15183 - REFRIGERANT PIPING

PART 1 - GENERAL

1.1 SCOPE

- A. This section contains specifications for all Refrigerant piping for this project.

1.2 REFERENCE

- A. Applicable provisions of Division 1 govern work under this section.

1.3 REFERENCE STANDARDS

ANSI B16.22	Wrought Copper and Wrought Copper Alloy Solder Joint Pressure Fittings
ASTM B88	Seamless Copper Water Tube
ASTM B280	Seamless Copper Tube for Air Conditioning and Refrigeration Field Service
ASTM B210	Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes
ASHRAE 15	Safety Code for Mechanical Refrigeration
ASME B31.5	Refrigeration Piping and Heat Transfer Components
UL 207	Refrigerant-Containing Components and Accessories, Nonelectrical

1.3 SHOP DRAWINGS

- A. Refer to division 1, General Conditions, Submittals.
- B. Contractor shall submit schedule indicating the ASTM specification number of the pipe being proposed along with its type and grade and sufficient information to indicate the type and rating of fittings for each service.

1.4 QUALITY ASSURANCE

- A. Order all copper refrigeration tube with each shipping unit marked with the metal or alloy designation, temper, size, and name of supplier; with soft straight lengths or coils identified with a tag indicating that the product was manufactured in accordance with ASTM B280; and with each hard temper straight length identified throughout its length by a blue colored marking not less than 3/16 inch in height and a legend at intervals of not greater than three feet that includes the designation "ACR" and pipe outside diameter.
- B. Order all aluminum refrigeration tube with each shipping unit marked with metal or alloy designation, temper, size, and name of supplier; with soft straight lengths identified with a tag indicating that the product was manufactured in accordance with ASTM B210 and complies with ASME B31.5; and with each hard temper straight length identified throughout its length by a marking not less than 3/16 inch in height and a legend at intervals of not greater than three feet that includes the designation "ACR" and pipe outside diameter. Each hard temper straight length shall be manufactured in accordance to ASTM B210 and comply with ASME B31.5.

- C. Any installed material not meeting the specification requirements must be replaced with material that meets these specifications without additional cost to the Owner.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Promptly inspect shipments to insure that the material is undamaged and complies with specifications.
- B. Cover pipe to eliminate rust and corrosion while allowing sufficient ventilation to avoid condensation. Do not store materials directly on grade. Protect pipe, tube, and fitting ends so they are not damaged. Where end caps are provided or specified, take precautions so the caps remain in place. If end caps are not present on tube bearing the "ACR" designation, clean and re-cap in accordance with ASTM B280. Protect fittings, flanges, and unions by storage inside or by durable, waterproof, above ground packaging.
- C. Offsite storage agreements will not relieve the contractor from using proper storage techniques.
- D. Storage and protection methods must allow inspection to verify products.

1.6 DESIGN CRITERIA

- A. Use only new material, free of defects and scale, and meeting the latest revision of ASTM specifications as listed in this specification.
- B. Where ASTM B88, type L hard temper copper tubing is specified, ASTM B88, type K hard temper copper tubing may be substituted at Contractor's option.
- C. At the Contractor's option, ASTM B210 complying to ASME B31.5, Seamless Aluminum tubing may be substituted. If Aluminum tubing is substituted, the joints must be made without the use of heat. Any joint fitting must be UL or ETL listed and tested per UL-207 for joining refrigeration tubing using either copper or aluminum tubing.

PART 2 - PRODUCTS

2.1 REFRIGERANT PIPING

- A. ASTM B88 type L hard drawn copper tube, cleaned and capped in accordance with ASTM B280, and marked "ACR", with ANSI B16.22 wrought copper or forged brass solder-type fittings. Contractor may use REFLOK fittings to join copper to copper.
- B. ASTM B210 seamless drawn aluminum tubing, cleaned and capped in accordance with ASTM B280, and complying with ASME B31.5, with REFLOK steel fittings.
- C. ETL tested and listed to UL 207 REFLOK fittings for joining copper to copper, aluminum to aluminum or aluminum to copper. Fittings shall have dielectric coating to allow connection of dissimilar metals. Fittings shall be certified to a working pressure of 600 psi.

2.2 REFRIGERANT PIPING ACCESSORIES

- A. Provide all refrigerant piping specialties with a maximum working pressure of full vacuum to 450 psig and a maximum working temperature of 225 deg F. For systems using R-410A, provide all refrigerant piping specialties with a maximum working pressure of full vacuum to 800 psig and a maximum working temperature of 225 deg F.

- B. Flexible pipe connectors: Double braided bronze hose flexible pipe connectors with brazed end connections, or Double braided stainless steel flexible pipe connectors with REFLOK end connections.
- C. Filter Dryers: For circuits 15 tons and over provide angle pattern filter dryers with replaceable core. For circuits below 15 tons provide straight pattern filter dryers without replaceable core.
- D. Sight glasses: Two piece brass construction with brazed end connections. Include color indicator for sensing moisture.
- E. Solenoid Valves: Two way normally closed with two piece brass body, full port, stainless steel plug, stainless steel spring, teflon diaphragm and solder end connections. Provide replaceable coil assembly.
- F. Hot Gas Bypass Valves: Provide with integral solenoid valve, external equalizer connection and adjustable pilot assembly.
- G. Thermostatic Expansion Valves: Brass body, bronze disc, neoprene seat, bronze bonnet, stainless steel spring and solder end connections.
- H. Charging Valves: Provide ¼" SAE brass male flare access ports with finger tight, quick seal caps. Provide 2-inch long copper extension sections.
- I. Check valves: Spring loaded type with bronze body, bronze disc, neoprene seat, bronze bonnet, stainless steel spring and solder end connections.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove all foreign material from interior and exterior of pipe and fittings.

3.2 ERECTION

- A. Install all piping parallel to building walls and ceilings and at heights which do not obstruct any portion of a window, doorway, stairway, or passageway. Where interferences develop in the field, offset or reroute piping as required to clear such interferences. In all cases, consult drawings for exact location of pipe spaces, ceiling heights, door and window openings, or other architectural details before installing piping.
- B. Do not route piping above transformers, panel boards, or switchboards, including the required service space for this equipment, unless the piping is serving this equipment
- C. Install all valves and piping specialties, including items furnished by others, as specified and/or detailed. Make connections to all equipment installed by others where that equipment requires the piping services indicated in this section.

3.3 REFRIGERANT PIPING

- A. Refrigeration piping to be installed by firms who are experienced in installation of such piping.
- B. All joints to be brazed and have a melting point greater than 1,125 degrees F. Filler impurities shall not exceed 0.15%. Tubing to be new and delivered to the job site with the original mill end

caps in place. Purge all lines with nitrogen during brazing. Provide manual shut-off and check valves as required.

- C. Contractor may substitute REFLOK fittings for brazing of copper tubing. If REFLOK fittings are used to join tubing (copper or aluminum), brazing and nitrogen purge will be eliminated.
- D. No refrigerant is to be vented directly to the atmosphere except that which may escape through leaks in the system during leak testing. During evacuation procedures, use equipment designed to recover and allow recycling of the refrigerant.
- E. Leak test the system by charging the system to a pressure of 10 psig with an HFC refrigerant, with the compressor suction and discharge valves closed and with all other system valves open. Increase pressure to 300 psig with dry nitrogen. Rap all joints with a mallet and check for leaks with an electric leak detector having a certified sensitivity of at least one ounce per year. Seal any leaks that may be found and retest.
- F. After completion of the leak test, evacuate the system with a vacuum pump to an absolute pressure not exceeding 1500 microns while the system ambient temperature is above 60°F. Break the vacuum to 2 psig with the refrigerant to be used in the system. Repeat the evacuation process, again breaking the vacuum with refrigerant. Install a drier of the required size in the liquid line, open the compressor suction and discharge valves, and evacuate to an absolute pressure not exceeding 500 microns. Leave the vacuum pump running for not less than two hours without interruption. Raise the system pressure to 2 psig with refrigerant and remove the vacuum pump.
- G. Charge refrigerant directly from original drums through a combination filter-drier. Each drier may be used for a maximum of three cylinders of refrigerant and then must be replaced with a fresh drier. Charge the system by means of a charging fitting in the liquid line. Weigh the refrigerant drum before charging so that an accurate record can be kept of the weight of refrigerant put in the system. If refrigerant is added to the system through the suction side of the compressor, charge in vapor form only.

3.4 REFRIGERANT PIPING ACCESSORIES

- A. Install accessories in accordance with the manufacturer's written instructions and recommendations.

3.5 CONSTRUCTION VERIFICATION ITEMS

- A. Contractor is responsible for utilizing the construction verification checklists supplied under specification Section 019101 or 019102 in accordance with the procedures defined for construction verification checklists.

END OF SECTION 15183

Cathedral of the Risen Christ School – HVAC Remodel Project
Geary Eng. No. 23016

Pre-Bid Meeting and Walk-Through
Thursday, May 2, 2013
3:30pm

ATTENDANCE

<u>NAME</u>	<u>COMPANY</u>	<u>PHONE</u>	<u>EMAIL</u>
David Meiergaard	Bison Electric	450-2996	bisonelctris@windstream.net
Chuck Lacey	Lacey Construction	443-1112	chuck@laceyinc.com
Spich, Noel	Noel Ena-	483-5683	noeleng@windstream.net
Kyle Siggershoff	Siggershoff Pkg & Htg	406-8118	kyle@siggershoff.com



MECHANICAL
ELECTRICAL
FIRE PROTECTION

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ATTENDANCE

<u>NAME</u>	<u>COMPANY</u>	<u>PHONE</u>	<u>EMAIL</u>
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Roderick Hansen	H&S	421-1573	rhansen@hspe.com
Chris Sanders	Mech Solutions	490-0975	csanders@mechsolutions.com

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Roger Steinmeyer	Sentry Electric Inc	402-467-5550	roger@sentryelectric.com
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