

**ADDENDUM #4**

**September 26, 2017**

**UNC Charlotte Sycamore Hall Renovation  
Charlotte, North Carolina  
SCO #16-12735**

This addendum is pursuant to the University of North Carolina General Administration Instructions to Bidders and General Conditions of the Contract in connection with the revision of Bidding Documents which have been previously issues.

Addenda are issued prior to execution of Contract. All instructions contained herein shall be reflected in the Contract Sum and this Addendum will be made a part of the Contract Documents, if, as and when a Construction Contract is awarded.

This Addendum forms a part of the Contract Documents and modifies the original documents dated August 25, 2017, as noted below. Acknowledge receipt of this Addendum in the space provided on the Form of Proposal. Failure to do so will subject the Bidder to disqualification.

**REVISIONS TO THE PROJECT MANUAL:**

1. Revise the project manual by replacing spec sheets/sections/individual pages with the following project manual sheets as follows:
  - a. SECTION 232123 – Replace pages 232123-1 thru 2 with attached pages.
  - b. SECTION 233600 – Replace page 233600-2 with attached page.
  - c. SECTION 237313 – Replace page 237313-2 with attached page.
  - d. SECTION 238126 – Replace page 238126-2 with attached page.
  - e. SECTION 238214 – Replace pages 238214-1 thru 2 with attached pages.

**BIDDER CLARIFICATION REQUESTS**

<b>#</b>	<b>RFI/ Substitution Request</b>	<b>Response</b>
34	Restroom on first floor toilet tag (P-1A) is scheduled as a wall hung; however, there is no plumbing wall to support fixture. Should this become a floor mount fixture as shown and if so what is the specification?	Refer to attached bulletin drawings; this is a P-1B fixture.
35	The janitors sink in room 313 is not tagged. Does it need to be a P-9 or is it existing to be relocated?	The janitor's sink in room 313 is a new P-9 fixture. See attached bulletin drawings.

36	The 3" stack vent running near 9B, is it the stack for Alternate #6 only. If so do we need to include it in alt #6 or go ahead and run it in the base bid and just add the mop sink to tie to base bid stack for the alternate.	Include the 3" stack vent running near 9B as part of the Base Bid. Mop sink to be included in the Base Bid.
37	Same question with the 1/2 water line to the fourth floor near 9B. Base Bid? Alt #6?	1/2 inch water line to the fourth floor to be included in Base Bid.

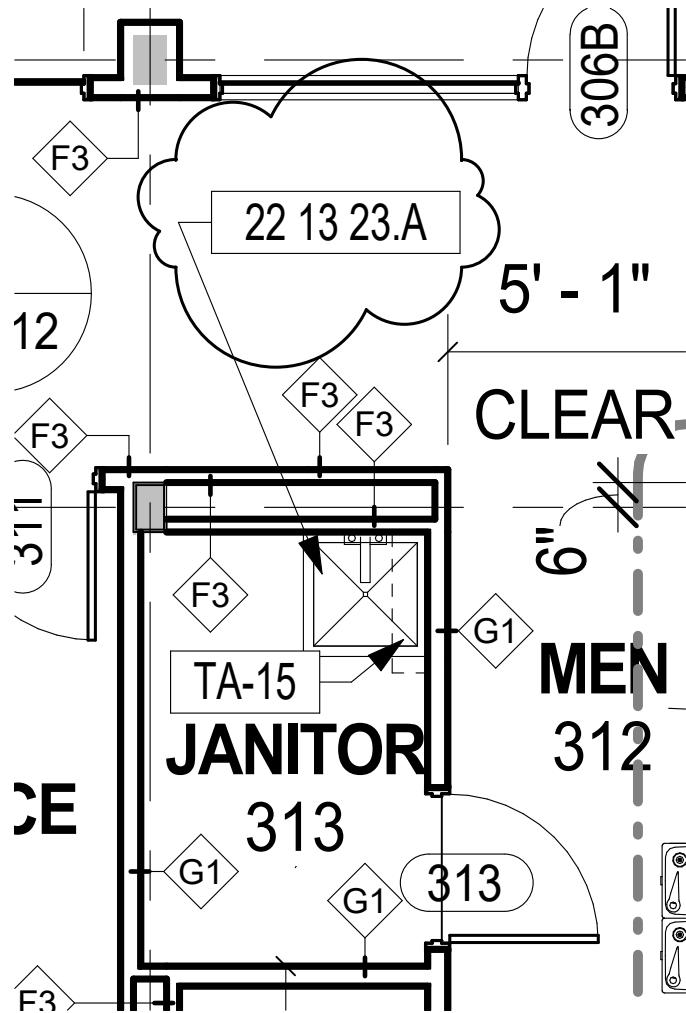
**ATTACHMENTS**

1. PLAN HOLDERS LIST
2. ABD-004 – 1/AE102 – THIRD FLOOR PLAN
3. BDM-4 – BUFFER TANK SCHEDULE
4. BDP-1 – THIRD FLOOR PLUMBING
5. BDP-2 – FOURTH FLOOR PLUMBING
6. BDP-3 – PLUMBING FIXTURE SCHEDULE
7. SPECIFICATION SECTION 232123-1 THRU 232123-2
8. SPECIFICATION SECTION 233600-2
9. SPECIFICATION SECTION 237313-2
10. SPECIFICATION SECTION 238126-2
11. SPECIFICATION SECTION 238214-1 THRU 238214-2

END OF ADDENDUM #4

**UNC Charlotte Sycamore Hall Renovations****Plan Holders List 09.26.17**

<b>Company Name</b>	<b>Contact</b>	<b>Email</b>	<b>Trade</b>
Heartland Contracting, LLC	Mark Fasser	<a href="mailto:mfasser@heartlandnc.com">mfasser@heartlandnc.com</a>	Contractor
W.C. Construction Company, LLC	Chris Hoover	<a href="mailto:chrish@wconstructionco.com">chrish@wconstructionco.com</a>	Contractor
Messer Construction Company	Jake Fromholt	<a href="mailto:jfromholt@messer.com">jfromholt@messer.com</a>	Contractor
MV Momentum Construction	Derek Meachum	<a href="mailto:dmeachum@mvmomentum.com">dmeachum@mvmomentum.com</a>	Contractor
Walbridge	Joey Smith	<a href="mailto:jasmith@walbridge.com">jasmith@walbridge.com</a>	Contractor
I.L. Long Construction Co., Inc.	Rachel Collins	<a href="mailto:rcollins@illong@illong.com">rcollins@illong@illong.com</a>	Contractor
Coram Construction	Coram Construction	<a href="mailto:pat@jgcoram.com">pat@jgcoram.com</a>	Contractor
HM Kern	Emily Kemp	<a href="mailto:emilyk@hmkern.com">emilyk@hmkern.com</a>	Contractor



PURPOSE OF DRAWING: ADDENDUM #3 REVISIONS

**Morris Berg**  
ARCHITECTS  
400 WEST GORHAM STREET, SUITE 200  
CHARLOTTE, NC 28202

**SYCAMORE HALL  
RENOVATION**  
9201 UNIVERSITY CITY  
BOULEVARD, CHARLOTTE, NC  
28223

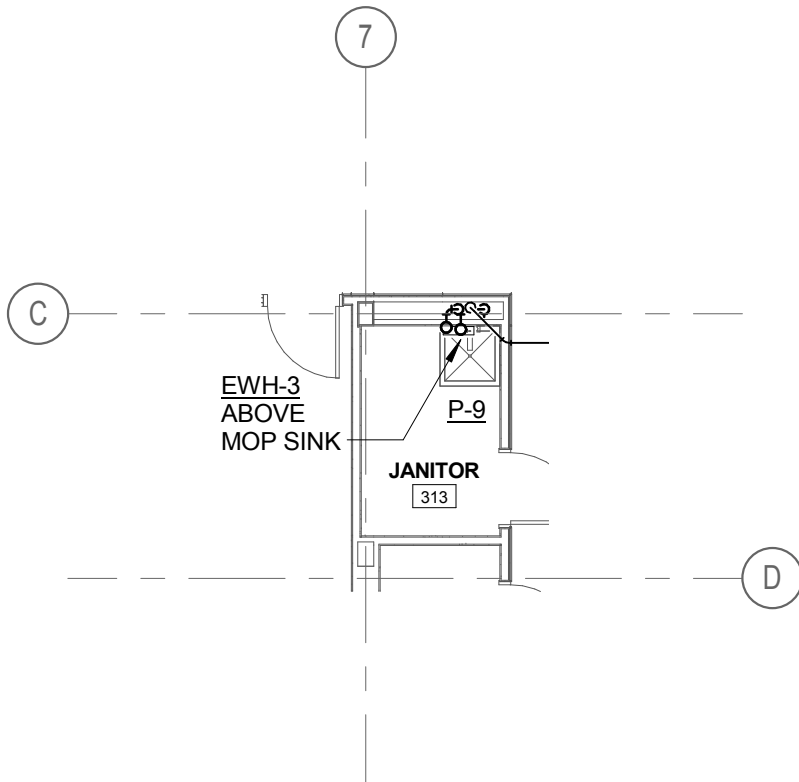
<small>BULLETIN DRAWING TITLE:</small> <b>1/AE102 - THIRD FLOOR PLAN</b>	<small>PROJECT NUMBER:</small> <b>1610</b>
<small>DRAWING NUMBER:</small> <b>ABD-004</b>	<small>DATE:</small> <b>09/29/17</b>

# BUFFER TANK SCHEDULE

UNIT DESIGNATION	BT-1	
SERVICE	CHILLED WATER	
TYPE	DIAPHRAGM	
MANUFACTURER	TACO	
MODEL NUMBER	BTL0500F04-125N	
TANK VOLUME (GALLONS)	500	
EMPTY WEIGHT (LBS)	1160	
HEATER KW	7.5	
HEATER VOLTAGE	460/3	
HEATER AMPS	9.4	
<p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>1. APPROVED EQUALS: LOCHINVAR, WESSELS</li> <li>2. ASME, CARBRON STEEL CONSTRUCTION</li> <li>3. 2" ARMAFLEX INSULATION WITH ALUMINUM JACKET</li> <li>4. PROVIDE IMMERSION TYPE HEATER FOR FREEZE PROTECTION.</li> </ol>		

**PURPOSE OF DRAWING:** TO PROVIDE SPECIFICATION FOR CHILLED WATER BUFFER TANK

<p><small>BULLETIN DRAWING TITLE:</small></p> <p>CHILLED WATER BUFFER TANK SCHEDULE</p>	<p><small>PROJECT NUMBER</small> 1610</p> <p><small>DRAWING NUMBER</small></p> <p style="font-size: 2em; font-weight: bold; text-align: center;">BDM-4</p> <p><small>DATE:</small> 09/25/17</p>
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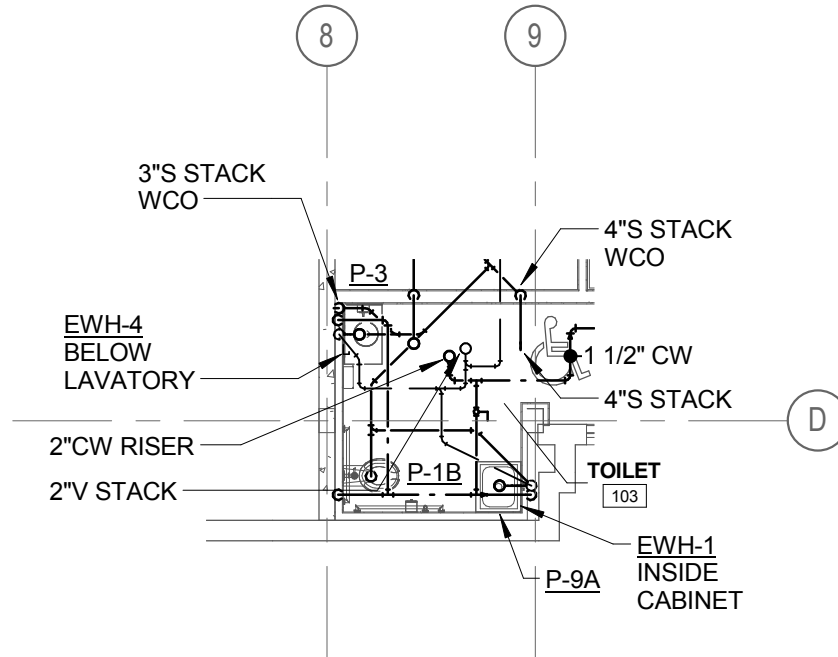


**PURPOSE OF DRAWING:** ADD TAG TO MOP SINK IN JANITOR'S CLOSET - 313.

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(704) 552-9800 FAX (704) 552-7420

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BULLETIN DRAWING TITLE:	PROJECT NUMBER
<b>THIRD FLOOR</b>	<b>1610</b>
<b>PLUMBING</b>	DRAWING NUMBER
	<b>BDP-1</b>
	DATE: 09/25/17



**PURPOSE OF DRAWING:** TO CHANGE TAG OF WATER CLOSET IN TOILET - 103.

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BULLETIN DRAWING TITLE:	PROJECT NUMBER
FIRST FLOOR	1610
PLUMBING	DRAWING NUMBER
	<b>BDP-2</b>
	DATE: 09/25/17

## PLUMBING FIXTURE SCHEDULE

DESIGNATION	MANUFACTURER	MODEL #	FIXTURE DESCRIPTION	CONNECTION SCHEDULE			
				WASTE	VENT	CW	HW
P-1A	AMERICAN STANDARD	"AWFALL" 2257.103	WALL-HUNG VITREOUS CHINA WATER CLOSET W/ ELONGATED BOWL (ADA) MOUNT TOP OF RIM AT 17" A.F.F. TO MEET A.D.A. FLUSH VALVE - SLOAN 111 - 1.28 SEAT - OLSONITE NO. 95 LOW WATER CONSUMPTION ( 1.28 GALLONS PER FLUSH )	3"	2"	1"	-
P-1B	AMERICAN STANDARD	"MADERA" 3043.001	FLOOR MOUNTED VITREOUS CHINA WATER CLOSET W/ ELONGATED BOWL (ADA) MOUNT TOP OF RIM AT 17" A.F.F. TO MEET A.D.A. FLUSH VALVE - SLOAN 111 - 1.28 SEAT - OLSONITE NO. 95 LOW WATER CONSUMPTION ( 1.28 GALLONS PER FLUSH )	3"	2"	1"	-

**PURPOSE OF DRAWING:**



## SECTION 232123 - HYDRONIC PUMPS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
1. Close-coupled, in-line centrifugal pumps.
  2. Separately coupled, horizontally mounted, in-line centrifugal pumps.
  3. Automatic condensate pump units.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of pump.
- B. Shop Drawings: For each pump.
1. Show pump layout and connections.
  2. Include setting drawings with templates for installing foundation and anchor bolts and other anchorages.
  3. Include diagrams for power, signal, and control wiring.

#### 1.3 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

### PART 2 - PRODUCTS

#### 2.1 CLOSE-COUPLED, IN-LINE CENTRIFUGAL PUMPS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
1. Armstrong Pumps, Inc.
  2. ITT Corporation.
  3. Patterson Pump Company; a Gorman-Rupp company.
  4. TACO Comfort Solutions, Inc.
  5. Wilo (Approved for PHWP-1 only)
  6. Grundfos.
- B. Description: Factory-assembled and -tested, centrifugal, overhung-impeller, close-coupled, in-line pump as defined in HI 1.1-1.2 and HI 1.3; designed for installation with pump and motor shafts mounted horizontally or vertically.

C. Pump Construction:

1. Casing: Radially split, cast iron, with threaded gage tappings at inlet and outlet, replaceable bronze wear rings, and threaded companion-flange connections.
2. Impeller: stainless steel; statically and dynamically balanced, keyed to shaft, and secured with a locking cap screw. For constant-speed pumps, trim impeller to match specified performance.
3. Pump Shaft: Steel, with copper-alloy shaft sleeve.
4. Seal: Mechanical seal consisting of carbon rotating ring against a ceramic seat held by a stainless-steel spring, and Buna-N bellows and gasket. Include water slinger on shaft between motor and seal.
5. Seal: Packing seal consisting of stuffing box with a minimum of four rings of graphite-impregnated braided yarn with bronze lantern ring between center two graphite rings, and bronze packing gland.
6. Pump Bearings: Permanently lubricated ball bearings.

2.2 SEPARATELY COUPLED, HORIZONTALLY MOUNTED, IN-LINE CENTRIFUGAL PUMPS

A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

1. Armstrong Pumps, Inc.
2. ITT Corporation.
3. Patterson.
4. TACO Comfort Solutions, Inc.
5. Grundfos.

B. Description: Factory-assembled and -tested, centrifugal, overhung-impeller, separately coupled, in-line pump as defined in HI 1.1-1.2 and HI 1.3; designed for installation with pump and motor shafts mounted horizontally.

C. Pump Construction:

1. Casing: Radially split, cast iron, with threaded gage tappings at inlet and outlet, and threaded companion-flange connections.
2. Impeller: stainless steel; statically and dynamically balanced, and keyed to shaft. For pumps not frequency-drive controlled, trim impeller to match specified performance.
3. Pump Shaft: Steel, with copper-alloy shaft sleeve.
4. Mechanical Seal: Carbon rotating ring against a ceramic seat held by a stainless-steel spring, and Buna-N bellows and gasket. Include water slinger on shaft between motor and seal.
5. Pump Bearings: Permanently lubricated ball bearings.

D. Shaft Coupling: Molded-rubber insert with interlocking spider or interlocking frame with interconnecting springs capable of absorbing vibration.

3. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
- B. Field quality-control reports.

## 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For air terminal units to include in emergency, operation, and maintenance manuals.
1. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
    - a. Instructions for resetting minimum and maximum air volumes.
    - b. Instructions for adjusting software set points.

## PART 2 - PRODUCTS

### 2.1 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and System Start-up."
- C. ASHRAE Compliance: Applicable requirements in ASHRAE/IES 90.1, "Section 6 - Heating, Ventilating, and Air Conditioning."

### 2.2 SHUTOFF, SINGLE-DUCT AIR TERMINAL UNITS

- A. **Basis-of-Design Product:** Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
1. [METALAIRE, Inc.](#)
  2. [Price Industries.](#)
  3. [Titus.](#)
  4. [Trane](#)
  5. [Johnson Controls.](#)
- B. Configuration: Volume-damper assembly inside unit casing with control components inside a protective metal shroud.
- C. Casing: 0.034-inch- thick galvanized steel, single wall.
1. Casing Liner: Comply with requirements in "Casing Liner" Article for flexible elastomeric duct liner.
  2. Air Inlet: Round stub connection or S-slip and drive connections for duct attachment.

- A. Include data on design, inspection and procedures related to preventative maintenance. Operation and Maintenance manuals shall be submitted at the time of unit shipment.

#### 1.05 QUALIFICATIONS

- A. Manufacturer shall be a company specializing in the design and manufacture of commercial / industrial custom HVAC equipment. Manufacturer shall have been in production of custom HVAC equipment for a minimum of 5 years.
- B. Each unit shall bear an ETL or UL label under UL Standard 1995 indicating the complete unit is listed as an assembly. ETL or UL listing of individual components, or control panels only, is not acceptable.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under the supervision of the owner.

#### 1.07 SEQUENCING AND SCHEDULING

- A. Coordinate work performed under this section with work performed under the separate installation contract.

#### 1.08 WARRANTY

- A. The complete unit shall be covered by a parts warranty issued by the manufacturer covering the first year of operation. This warranty period shall start upon receipt of start-up forms for the unit or eighteen months after the date of shipment, whichever occurs first.
- B. The installing contractor shall provide labor warranty during the unit's first year of operation.

#### 1.07 FACTORY TESTING

- A. Leakage Test and Deflection
  - 1. The casing leakage of the unit shall not exceed 1% of the design airflow of the unit when tested at 1.5 times the scheduled operating pressure. (Units under 10,000 c.f.m. shall be tested in accordance with SMACNA Class 4 requirements). Panel deflection shall not exceed 1/180<sup>th</sup> of the span of the panels for 2" walls and 1/240<sup>th</sup> of the span of the panels for 4" walls when operating at 1.5 times the scheduled operating pressure or a maximum of 12" w.c. static pressure.

### PART TWO - PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Provide air handling units as manufactured by TMI, Temtrol, Governair, or Energy Labs provided the construction specifications capacities, performance criteria, and space constraints are met. Alternate products complying with the construction specifications, capacities, performance criteria, and space constraints may be submitted for consideration and must obtain written prior approval from Architect prior to bidding.

1. Warranty Period:
  - a. For Compressor: Five year(s) from date of Substantial Completion.
  - b. For Parts: One year(s) from date of Substantial Completion.
  - c. For Labor: One year(s) from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. **Manufacturers:** Subject to compliance with requirements, provide products by one of the following:
  1. LG.
  2. Mitsubishi Electric & Electronics USA, Inc.
  3. SANYO North America Corporation.
  4. Trane.
  5. Daikin.

### 2.2 INDOOR UNITS (5 TONS OR LESS)

- A. Concealed Evaporator-Fan Components:
  1. Chassis: Galvanized steel with flanged edges, removable panels for servicing, and insulation on back of panel.
  2. Insulation: Faced, glass-fiber duct liner.
  3. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins and thermal-expansion valve. Comply with ARI 206/110.
  4. Water Coil: Copper tube, with mechanically bonded aluminum fins spaced no closer than 0.1 inch; leak tested to 300 psig underwater; with a two-position control valve.
  5. Electric Coil: Helical, nickel-chrome, resistance-wire heating elements; with refractory ceramic support bushings, automatic-reset thermal cutout, built-in magnetic contactors, manual-reset thermal cutout, airflow proving device, and one-time fuses in terminal box for overcurrent protection.
  6. Fan: Forward-curved, double-width wheel of galvanized steel; directly connected to motor.
  7. Fan Motors:
    - a. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements specified in Section 230513 "Common Motor Requirements for HVAC Equipment."
    - b. Multitapped, multispeed with internal thermal protection and permanent lubrication.
    - c. Wiring Terminations: Connect motor to chassis wiring with plug connection.
  8. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.
  9. Filters: Permanent, cleanable.

## SECTION 238214 - CHILLED BEAMS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes active chilled beams.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for chilled beams.
  - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories for chilled beams.
- B. Shop Drawings: For chilled beams.
  - 1. Include plans, elevations, sections, and attachment details.
  - 2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 3. Include diagrams for power, signal, and control wiring.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Seismic Qualification Data: Certificates, for chilled beams, accessories, and components, from manufacturer.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

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

#### 2.2 ACTIVE CHILLED BEAMS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
  - 1. Barcol Air.
  - 2. Titus.

3. Trox USA Inc.
4. LTG

B. Standards:

1. Comply with ASHRAE 55.

C. Description: Sheet metal with primary air plenum, secondary chilled-water coil and heating-water coil assembly, and mounting-bracket supports suitable for exposed hangers.

D. Components:

1. Panel: Minimum 0.0375-inch- thick, galvanized-steel sheet.
2. Factory Piping: ASTM B 88, Type L copper tube with ASME B16.22 wrought-copper fittings and brazed joints.
3. Hydronic Coils: Copper tube, with mechanically bonded 0.006-inch- thick, aluminum fins spaced no closer than 0.1 inch, rated for a minimum working pressure of 200 psig and a maximum entering-water temperature of 220 deg F. Include manual air vent and drain valve.
  - a. Cooling Coil: NPS 1/2.
  - b. Heating Coil: NPS 1/2.
4. Number of Nozzles: Two.
5. Electrical Connections: Nonheating, high-temperature, insulated-copper leads.

E. Exposed Metal Finish: Sheet metal with baked enamel.

1. Color: Manufacturer's custom paint color as selected by Architect.
2. Surface-Mounted Trim: Sheet metal with baked-enamel finish in manufacturer's custom paint color as selected by Architect.

## 2.3 ACCESSORIES

- A. Purging Nipple: Copper, with threaded end connection.
- B. Access Door: Hinged with four spring-loaded cabinet roller latches.

## 2.4 GENERAL FINISH REQUIREMENTS

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Finish chilled beams after assembly.
- C. Appearance of Finished Work: Variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.