

**GENERAL FUND HVAC IMPROVEMENTS  
PHASE II EXTEND CHILLED WATER PIPING  
CENTRAL CONNECTICUT STATE UNIVERSITY, NEW BRITAIN, CONNECTICUT  
PROJECT: BI- RC – 339D**

<b>BID OPENING</b>	<b>1:00 P.M.</b>	<b>SEPTEMBER 28, 2011</b>
<b>ADDENDUM # 2</b>	<b>ADDENDUM DATE</b>	<b>SEPTEMBER 23, 2011</b>

The following items, provide clarifications, address requests for information, and apply to Drawings and the Project Manual Technical Specification (hereinafter referred to as "Specifications" and / or Project manual).

1. Please refer to Project Manual, "Table of Contents" page 5 of 6. This Addendum deletes the word "MECHANICAL" from the heading at the top of page 5. The heading at the top of page shall read "Heating, Ventilating and Air conditioning".
2. For Information: Drawing LP-1 "Location Plan" in addition to showing the relative location of buildings, the drawing also shows the outline of drawings M-1 through M-8. Please note the outline of drawings M-1 through M-8, as depicted on LP-1 is only a rough approximation of the area actually covered by the respective drawing, and is intended for general orientation only. The actual area covered by each respective drawing (M-1 through M-8) may not overlap or abut an adjacent drawing area. In addition, the actual area covered by each respective drawing (M-1 through M-8) may overlap the area covered by an adjacent drawing. In other words, collectively, drawings M-1 through M-8 may show the same area more than once or not at all. Drawing M-0 shows the areas in question without overlapping or duplication.
3. Please refer to specification section 23 05 30, PART 1 – GENERAL, subparagraphs 1.07 "Warranty". Delete sub-paragraph 'C', referring to steam service.
4. For Clarification: Specification section 23 00 00 "Summary of Work" paragraph 1.02, 5b - refers to radiographic testing for welded steel pipe joints. Factory welded steel pipe joints fabricated for the underground "Pre-insulated Piping System" and meeting the requirements of section 23 05 30 are not subject to the requirements of section 23 00 00 paragraph 1.02, 5b pertaining to radiographic testing. Field welded steel pipe joints fabricated, during field assembly of the underground "Pre-insulated Piping System" components, are subject to the requirements of section 23 00 00 paragraph 1.02, 5b.
5. Please refer to drawing M-8, and the note with eight bullets on the lower right hand side of M-8. The fourth bullet from the top reads "Remove existing valves". The scope of the work - related to providing new 14" ChW S&R piping in the Kaiser Hall Tunnel Spur – includes removing the two existing valves that had been installed in stub branches – at the tunnel spur - for future use, in addition to providing all other work indicated. The two existing branch valves and stub branches installed for future use - referenced above – and which shall be removed - are 10 inches in diameter.
6. Please refer to drawing M-8, and the note with eight bullets on the lower right hand side of M-8. The first bullet from the top reads "Engage a qualified testing and balancing firm. Establish baseline flow and pressure data for the existing secondary chilled water system, by recording flow and pressure at the main pump serving the secondary chilled water system".

For Information: There are two 500 horsepower existing secondary chilled water pumps. Both pumps are located on the lower level of the Energy Center. The design maximum capacity of each existing secondary chilled water pump is 4,600 gpm. A single pump is designed to operate with the second pump available in standby mode, under normal conditions.

7. Please refer to specification section 23 09 90, PART 1 – GENERAL, paragraphs 1.01, B, and C. This addendum item confirms that there is currently a total of eleven (11) existing plate and frame heat exchangers served by the existing secondary (or district) chilled water system. Each respective existing plate and frame heat exchanger serves its respective building. The following buildings are served: # 1 Davidson, # 3A Marcus White Annex, # 6 Welte, # 13 Student Center, # 22 Burrett Library, # 23 Copernicus, # 37 Vance Academic Center, # 43 Energy Center, # 9 Samuel May, # 14 Robert Sheridan, and # 16 Gallaudet. Each respective existing plate and frame heat exchanger is located, within its respective building, in close proximity to its respective building, or in a utility tunnel, or mechanical equipment room, in close proximity to its respective building – and as indicated on the

contract drawings. Please refer to drawing LP-2 "Location Plan – Contract Limit Lines & Equipment Lay Down Areas" for the location of campus buildings.

8. Please refer to specification section 23 09 90. This addendum item confirms that the scope of the work, with respect to testing and balancing, is as indicated the project manual, and does not include balancing chilled water which is contained within piping located on the - building side or tertiary side - of its respective existing plate and frame heat exchanger.
9. This addendum item adds the following note to drawing LP-2 regarding the Contract Limit Line.

"The Contract Limit Line applies to, and is hereby extended to include, work covered by the contract documents, located within the following existing buildings - that presently receive chilled water from the Energy Center – via each respective building's plate and frame heat exchanger:

1. 01 – Davidson
  2. 3A - Marcus White Annex
  3. 06 - Welte
  4. 13 - Student Center
  5. 22 - Burritt Library
  6. 23 - Copernicus
  7. 09 - Samuel May
  8. 14 - Robert Sheridan
  9. 16 - Thomas Gallaudet
  10. 37 - Vance Academic Center
  11. 43 - Energy Center"
10. For Information: Please refer to specifications section 01 35 19 "Confined Space Entry" paragraph 6; sub-paragraph 02 for the definition of a "Confined Space". This addendum item confirms that specification section 23 00 00, paragraph 1.02 Summary of Work, subparagraph 1, remains in full force and effect.
  11. Please refer to drawing M-3, and the note near the Davidson Hall heat exchanger (HX), located towards the middle / top of the sheet. The note reads "Cut & cap existing lines. Furnish & install new blind flanges". This addendum deletes the aforementioned note.
  12. Please refer to drawing M-0, detail "Access Hatch Ladders – Typical". A new ladder is required at each location where access to the utility tunnel is via grade level galvanized steel-hinged doors, and as indicated on the drawings. New ladders shall be as indicated on the contract documents and shall meet the requirements of OSHA Standard 1910.27 "Fixed Ladders" with side rails capable of extending to a height of 3-1/2 feet above the existing steel hinged access doors.
  13. For Information: Please refer to drawings M-1.1 and M-1.2, "Powerhouse Floor Plan..." and the note that appears on both drawings near the Stor Room to the lower left hand side of the floor plan that reads "Proposed location of FUTURE opening and fire rated doors". The new opening and proposed doors are not within the scope of the project.
  14. For Information: Please refer to specifications section 23 05 45 "Chemical Water Treatment" paragraph 2.01. Sub-paragraph 'C' reads, "The contractor may utilize existing Chemical Feeding and filtration equipment". An existing chemical shot feeder serves the existing chilled water system. The existing chemical shot feeder is operated under the supervision of plant personnel.
  15. Please refer to specification section 23 00 00 "Summary of Work" paragraph 1.03, sub-paragraph 'AA'. This addendum replaces text in paragraph 'AA': Paragraph 'AA', as revised, shall read, "The restoration of the integrity of all watertight construction, including that of utility tunnel roofs, disturbed by the work, shall be the responsibility of the contractor."
  16. For Clarification: Please refer to drawing M-11 "Typical Pipe Trench Sections". The empty 2" PVC conduit for future signal shall extend beyond the full length of the respective trench and terminate within the respective building / tunnel. Provide an accessible pull-cord for each empty conduit.

17. Please refer to specifications section 23 05 15 "Hydronic Specialties and Equipment", PART 2 PRODUCTS - paragraph 1.02 "Flow Balancing Devices". This addendum item replaces text in paragraph 1.02:

PART 2 PRODUCTS - Paragraph 1.02, as revised, shall read, "Flow Balancing Devices shall be: Straight pattern valve designed to perform the functions of a non-slam check valve, positive shut-off valve, throttling valve, calibrated balancing valve, and system flow-meter; similar to ITT Bell & Gossett Model 3DS Triple Duty Valves. Valve shall be heavy-duty iron construction with standard 125 psig ANSI flanged connections, rated for a maximum working pressure of 175 psig at 250 degrees F. Valve shall be fitted with EPDM soft seat, replaceable bronze disc, stainless steel stem, and chatter-preventing spring. The valve design shall permit repacking under full system pressure. Each valve shall be equipped with brass readout valves with integral check valve for taking differential pressure readings across the orifice to accurately balance the system to specified design conditions.

18. Please refer to specifications section 23 05 15 "Hydronic Specialties and Equipment", PART 2 PRODUCTS - paragraphs 1.04, 1.05, and 1.06. This addendum item deletes paragraphs 1.04, 1.05, and 1.06.
19. Please refer to drawing M-11, detail at the lower right hand side of the sheet "General Arrangement Pipe Mains at Marcus White Tunnel". This addendum changes the words "Connect new 14 inch Chilled Water S&R ..." to read as follows: Connect new 12 inch Chilled Water S&R ....
20. Please refer to drawing M-11, "Pre-Sealed Conduit Waterproof Sleeve Details". This addendum item confirms that the above-mentioned "Pre-Sealed Conduit Waterproof Sleeve Details" apply to the "Pre-Insulated Piping System" specified in section 23 05 30.
21. Please refer to drawing M-11, "Typical Piping Arrangement for Each Respective Building". This addendum item confirms that the normally closed balancing valve – located between the Secondary Chilled Water Supply and Return building branches – shall be the same size as the respective building branches. The normally closed valve mentioned above shall be a butterfly valve as specified.
22. Please refer to specification section 23 05 30 "Pre-insulated Piping System"

PART 1 – GENERAL, paragraph 1.01, sub paragraph B., This addendum changes the words "Underground hot water ..." to read "Underground chilled water ..." Paragraph 1.02, this addendum deletes the words "similar to Xtru-Therm Gold as manufactured by Perma-Pipe or engineer equal". Paragraph 1.07, this addendum deletes sub-paragraph 'C'.

PART 2 – PRODUCTS, paragraph 1.02 sub-paragraph 1 this confirms carrier pipe shall be as specified. Regarding sub-paragraph 4c, this confirms insulation thickness shall be as specified.

PART 3 – EXECUTION, paragraph 5.01 sub paragraph 'H', This addendum replaces text in paragraph 'H'. Sub-paragraph 'H', as revised, shall read, "The carrier pipe shall be tested at 225 psig, and maintain test pressure for a minimum of four hours."

Sub-paragraph 'K', this addendum adds the following text at the end of paragraph 'K', "Refer to section 23 00 00 sub-paragraphs 1.16 Excavating, 1.17 Trenching, and 1.21 Backfilling, for additional requirements".

Sub-paragraph 'L', this addendum adds the following text at the end of paragraph 'L', "Refer to section 23 01 21 - Expansion Compensation - for additional requirements".

23. For Clarification: Please refer to underground piping expansion loops on drawing M-8. The expansion loops for underground piping shall be sized in accordance with specifications section 23 01 21 "Expansion Compensation" paragraph 1.04 "Design Criteria". Provide a minimum of four 90-degree elbows for each underground loop. Provide additional elbows (facing up /down) only where additional flexibility is required.
24. This addendum adds sixteen (16) additional 14-inch diameter butterfly valves & blind flanges to the scope of the subject project. The additional 14-inch diameter butterfly valves & blind flanges are to be installed into the 24-inch primary chilled water loop located on the main and lower levels of the Energy

Center. The new valves shall be installed at the points where 14-inch diameter blind flanges already exist, and includes removing the existing blind flanges, but does not require cutting-in new connections, or insulation repairs. The valves shall be installed while the chilled water system has been drained, as follows:

Furnish and install eight (8) valves into the existing 24" overhead primary S&R loop located on the main floor of the Energy Center for new chillers. Furnish and install eight (8) valves into the existing 24" overhead primary S&R loop located on the lower level of for new pumps.


By way of background – during construction of the Energy Center a certain number of blind flanges (without valves) were provided for future equipment. Since it is anticipated new chillers may be installed in the foreseeable future, and since the chilled water system will be drained under the subject project, in the interest of avoiding draining / filling again, this addendum adds the valves mentioned above.

25. For Clarification: Please refer to specifications section 23 02 50 "Mechanical Insulation" paragraph 3.03 "Insulation Schedule" for type of insulation to be provided for New Chilled Water Supply & Return piping, and paragraph 2.04 "Accessory Materials" for accessories, including PVC fitting covers. This addendum item adds the words "utility tunnels and" to paragraph 3.02 sub-paragraph C7. Sub-paragraph C7, as revised, shall read, "Pipe exposed in utility tunnels and, mechanical spaces, or in finished spaces below 10 feet above finished floor: finish with Zeston 2000 PVC jacket and fitting covers ..."
26. Please refer to 23 05 45 "Chemical Water Treatment" PART 2 – PRODUCTS, sub-paragraph 2D, regarding the Side Stream Filtration Unit. This addendum adds the following words to the end of paragraph 2D, "The new Side Stream Filtration Unit shall be capable of 0.5 micron particle filtration, shall be designed for proper operation at 225 psig, and shall be capable of utilizing city water when backwashing.
27. For Information: Please refer to specification section 23 05 45 "Chemical Water Treatment" subparagraph 1.01 E, which contains the words, "Identify the chemical composition, solution, and concentrations, of the existing closed chilled water system". This addendum confirms - the work shall be as specified.
28. For Information: The operating pressure of the secondary chilled water system varies by location - along the length of supply and return piping. According to pump manufacturer's data – the shut-off head of the existing secondary chilled water pump(s) is 275 feet. A single pump is designed to operate with the second pump available in standby mode, under normal conditions. The existing secondary chilled water pumps are piped in parallel and shall remain in service following completion of the subject project.
29. For Clarification: Please refer to drawings M-0, M-4, and M-7. This addendum confirms that the new chilled water supply and return piping running from - the tunnel junction marked 1SW to the tunnel junction at Catherine Beecher Hall - shall be 10 inches in diameter.
30. For Information: Please refer to specification section 23 05 30, PART 1 – GENERAL. Subparagraphs 1.03 C&D, apply to both, welded and seamless piping, and PART 2 – PRODUCTS, paragraph 1.02 sub-paragraph 1 applies to both welded and seamless piping. This addendum reconfirms - carrier pipe shall be as specified.
31. For Information: Please refer to specification section 23 05 10, PART 1 – GENERAL. Subparagraphs 1.04 L&M, apply to both, welded and seamless piping, and PART 2 – PRODUCTS, paragraph 2.01 sub-paragraph 2A applies to both welded and seamless piping. This addendum reconfirms - pipe shall be as specified.
32. Please refer to specification section 01 23 00 "Supplemental Bids" paragraph 'D' Schedule of Supplemental Bids. This addendum reverses the numbering as follows: Supplemental Bid 1 shall become Supplemental Bid 2, and Supplemental Bid 2 shall become Supplemental Bid 1. In other words, the Kaiser supplemental becomes # 1 and the DiLoreto / Willard supplemental becomes # 2.

33. For Clarification: Regarding restrictions on work hours, normal work hours shall be - weekdays from 7:00 AM to 3:30 PM, except – no work shall be permitted within any dormitory before 9:00 AM. Refer to section 00 72 00 article 37, Division 01 sections 01 14 00, and 01 14 16, for additional requirements.
34. For Information: Gate valves and/or butterfly valves, consistent with specifications, may be provided.

All questions must be in writing (not phone or e-mail) and must be forwarded to the consulting Architect/Engineer – Lawrence Mechanical, P.C., fax #203 966 0549, with copies sent to the DPW Project Manager – Mr. Lee Rowley, fax #860 713 7261.

End of Addendum 2

  
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Mellanee Walton,  
Associate Fiscal Administrative Officer  
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