

East Tunnel Steam Expansion Joint Replacement Project  
University of South Carolina  
Project Number CP00425136

Mechanical Addendum Two

April 22, 2015

NOTE: The following amendments, additions, and deletions shall be made to the Construction Documents and Contract Documents. Insofar as those documents are at variance with this Addendum, this Addendum shall govern.

Drawings

Item No.      Description

1.              Revision: Reference Drawing M-1 Site Plan – Renovation. Delete Note to Sheet 4, there are no drip trap repairs included in this project.

Specifications

Item No.      Description

2.              Revision: Reference Section 230010. Reference 1.17 Manufacturers: The following shall be included as a prior approved manufacturer.  
  
Expansion Joints: Bellows Manufacturing and Research
3.              Revision: Reference Section 230500 HVAC Piping. Reference 2.6 Expansion Joints, A. XJ-1: Flexpress FP-S/150 Externally Pressurized Guided Expansion Joint. The expansion joints shall accommodate up to 8” axial movement for pipe expansion in a single direction.
4.              Revision: Reference Section 230500 HVAC Piping. Reference 2.6 Expansion Joints, B. XJ-2: Flexpress FP-D/150 Externally Pressurized Guided Expansion Joint. The expansion joints shall accommodate up to 8” axial movement for pipe expansion in each direction, for a total of 16” total axial movement.

Clarifications

Item No.      Description

5.              Clarification: The tunnel is classified as a permit required confined space and USC will be enforcing all OSHA regulations.

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6.            Clarification: The Asbestos Abatement Guidelines have been attached as prepared by F&ME Consultants.
  
7.            Clarification: Question: Are expansion joints flanged or will they have beveled ends? Answer: Both types of expansion joints list the “End fittings shall be carbon steel standard wall beveled weld ends for weld end models.”

END OF ADDENDUM

Attachments  
East Tunnel Expansion Joint Abatement Guidelines

**ABATEMENT GUIDELINES FOR THERMAL SYSTEM INSULATION (TSI)  
ASSOCIATED WITH EAST TUNNEL EXPANSION JOINT REPLACEMENT PROJECT  
UNIVERSITY OF SOUTH CAROLINA PROJECT NO: CP00425136**

As a component to the planned expansion joint replacement project for the University of South Carolina's East Tunnel, abatement of asbestos containing materials (ACM) in the form of thermal systems insulation (TSI) will be required at each location for the installation of a new expansion joints, pipe guides and anchoring points. The abatement will take place at all locations within the east tunnel where the removal of existing expansion joints and where the installation of new expansion joints, pipe guides and anchors points are to occur as part of these mechanical up fits to the existing steam systems. The abatement contractor (Contractor) shall be required to coordinate access to all areas where abatement is to occur with the mechanical contractor (GC). Contractor and GC are to ensure that all activities which will impact existing ACM thermal systems insulation (TSI) found within the portion of the east tunnel included in the project shall be completed by the Contractor.

The project involves the removal of two (2) existing expansion joints; the installation of nine (9) new expansion joints on various sized steam piping throughout the project area; the installation of thirty (30) new pipe guides for various sized steam piping throughout the project area; and installation of eighteen (18) anchors at ten (10) utility vaults included in the project area. This work will occur from utility vault G2-6D in front of the East Energy facility and terminating at two points, one at the Capstone Building and one at Columbia Hall. The existing steam lines located within these areas of the east tunnel are of various sizes, from 4' to 10" in diameter. They are insulated with and ACM TSI pipe insulation and covered with an aluminum jacketing. Existing fittings and hangers are covered with an ACM mudding compound. Varying amounts of TSI and mudding compound is found on top of piping and on the ground surface in the majority of the project area. The section of the east tunnel running between utility vault G2-4D and H2-1D will be abated during another project involving the replacement of a pumped condensate line. Contractor shall refer to the mechanical plans prepared by Swygert & Associated for locations and limits of the proposed project.

Contractor shall conduct a general clean-up of all loose ACM dirt and debris found within the interior portions of the tunnel where the mechanical up fits are to occur with the exception of the section previously cleaned and abated during the replacement of the pumped condensate line. This work shall include tops of existing pipes, hangers and existing pipe rails. This work activity shall be performed by an SCDHEC-licensed Abatement Contractor (Contractor) only. The Contractor shall provide all appropriate supervision, personnel, equipment, labor and materials; the disposal of contaminated materials; removal of the waste from the premises; and incidentals necessary to perform abatement of ACM as described.

The contractor shall coordinate with the GC for glove bag abatement of TSI at all points requiring the removal of TSI to complete the required up fits to the mechanical systems. This will include removal of an adequate amount of TSI from the existing piping to allow the GC to complete the mechanical up fits without coming in contact with the ACM. The ends of all TSI shall not be left exposed at the completion of the glove bag removal operations and shall be covered with a material that will maintain the ends of the TSI intact and keep the GC from disturbing the ACM during re-insulation after mechanical up fits

are complete. All glove bags utilized during the abatement activities shall be inspected, smoke tested and approved by the Owners Representative.

The Contractor shall be responsible to coordinate with the GC all removal as required for the installation of new mechanical components and connections to be made within the interior of the existing vaults. Access to the tunnel and vaults shall be coordinated with the GC and be in accordance with all OSHA guidelines for confined spaces.

Additionally, the following performance guidelines are provided to the Contractor to establish minimum standards and compliance. Furthermore, if any of the guidelines need to be altered, all parties involved should be consulted and must consent to such changes. Should there be any difference between the requirements specified within these guidelines and the regulations, the regulations shall take precedence.

**Abatement Preparation** - Contractor shall cordon off entry points leading into the east tunnel where the abatement is to take place. Only personnel authorized and certified to enter the tunnel during abatement activities shall be allowed to enter during the abatement activities through to final clearance of the space. Contractor shall prepare and remove all designated thermal ACM using acceptable removal methods in accordance with SCDHEC regulations. ACM debris shall be removed from the top surfaces of all pipes, pipe hangers and pipe rails in which the GC will come in contact with during the up fits to the mechanical systems within the project area. The tops of all pipes, pipe hangers and pipe rails shall be wet wiped to remove loose ACM, dirt and debris. All loose debris found on the floor surface of the tunnel shall be removed utilizing wet methods. Once gross abatement of TSI within the tunnel is completed, Contractor shall clean all affected areas again, to include HEPA vacuuming and wet wiping, to ensure that no asbestos-fibers remain in this space.

**Limits of, Removal of Asbestos-Containing Materials** - GC shall coordinate with the Contractor so as to designate the limits and locations of mechanical up fits within the project area. Additionally, Contractor shall be responsible to clean loose ACM, contaminated dirt and debris within these limits and dispose of them as ACM. Contractor shall utilize appropriate wet methods during removal/ clean up activities.

**Abatement Clearance** - Once all dirt, debris and TSI have been removed from the affected space and final clean-up (i.e., wet wipe, HEPA vacuum) has been performed, Contractor shall coordinate with the University's Representative regarding final clearance sampling. Final clearance samples shall be collected from the East Tunnel and shall be analyzed via phase contrast microscopy (PCM). In the event that clearance samples fail to meet the standard, Contractor shall return to the space to perform additional clean-up at no additional cost to the University.