

Prepared for:

Department of Veterans Affairs  
Medical Center  
3200 Vine Street  
Cincinnati, OH 45220

## **Logistics HVAC Modifications**

VA Project Number

Heapy Engineering No. 2015-04025

Prepared by:



1400 W Dorothy Lane, Dayton, OH 45409-1310  
Ph 937-224-0861 Fax 937-224-5777 [www.heapy.com](http://www.heapy.com)

**Date: June 20, 2016**

## INTRODUCTION

This set of work instructions, along with all attachments, is intended to provide direction for modifying the HVAC system serving second floor Logistics. This work is to include switching the order of the heating and cooling coils in RTU-13, and adding a humidifier in the main duct serving Clean Supply Room B201. Specifications for VA Project No. 539-13-104, Relocate Kitchen and SPD, shall also apply and can be provided by COR.

## ROOFTOP AIR HANDLING UNIT RTU-13 HEATING AND COOLING COILS

### Background information:

RTU-13 was installed in 2008 on the roof, at the fourth floor level, to serve the third floor kitchen. RTU-13 ductwork is currently being modified under VA Project No. 539-13-104, Relocate Kitchen and SPD, to serve second floor Logistics. Second floor Logistics was SPD. It is now split into SPS, which is moving to third floor where the kitchen used to be, and the remaining functions on second floor are being called Logistics for our purposes. RTU-13 was designed as a constant volume rooftop unit delivering 9,300 CFM supply air with 7,000 CFM return air. RTU-13 consists of a mixed air section with 100% enthalpy economizer, return fan, chilled water cooling coil, steam distributing heating coil, supply fan, and discharge air section. The 2" chilled water pipes for RTU-13 are routed from the north A/C shaft, above the fourth floor ceiling, thru the exterior wall, and over eight to ten feet where they extend down to the cooling coil. Exterior piping includes heat trace. The 2.5"-30 PSI steam and 1.5" condensate piping extends up from the sub-basement service room, within the north wall at column lines O / 12.1 where the piping offsets thru the new SPS suite on third floor over near RTU-13 and thru the roof. Once above the roof, the piping offsets again to the steam distributing coil. The new ductwork from RTU-13 is routed down the exterior of the building into the second floor.

### Work Instructions:

Disconnect the chilled water piping from the cooling coil and remove back as far as necessary for access to the coil. Remove heat trace as required and protect for reinstallation. Remove the cooling coil and associated blank-offs, coil supports/frames, drain pan, etc. from the unit and set aside for relocation. Refer to attached instruction drawing. Remove freeze-stat for relocation to preheat coil.

Disconnect the steam and condensate piping from the heating coil and remove back as far as necessary for access to the coil. Remove all exterior piping insulation for replacement. Remove the heating coil and associated blank-offs, coil supports/frames, etc. from the unit and set aside for relocation. Refer to attached instruction drawing.

Install the heating coil and associated blank-offs, coil supports/frames, etc. in the section where the cooling coil was. Refer to attached instruction drawing. The coil will now be in the preheat position. Extend the piping and connect to the coil in its new location. Provide new shut-off valves and unions at the coil connection. All piping work shall be above the roof. Insulate all exterior piping per specifications. Relocate freeze-stat from chilled water coil and install on steam preheat coil.

Install the cooling coil and associated blank-offs, coil supports/frames, drain pan, etc. in the section where the heating coil was. Refer to attached instruction drawing. Extend the piping and connect to the coil per the attached chilled water coil piping detail. All piping work shall be outside of the building. Re-install heat trace and **re-insulate all chilled water piping exterior of building** per specifications.

Replace sheaves for supply fan and balance fan to 6,210 CFM.

Replace sheaves for return fan and balance fan to 2,275 CFM.

Modify all drain piping as required. Field verify all dimensions.

Seal all unit openings water tight.

Attachments: Sheet H1, RTU-13 shop drawing, Cooling Coil Instruction Drawing, Heating Coil Instruction Drawing, Cooling Coil Piping Detail (H1.1).

## **Humidification for Clean Supply Room B201**

### Work Instructions:

Provide duct mounted humidifier with single dispersion tube sized for 14.0 lbs/hr and maximum 12" absorption distance in 20x10 duct upstream of CVD1 (1860 CFM). Extend 0.75" steam and condensate piping from the 2.5"-30 PSI steam and 1.5" condensate piping in the north wall at column lines O / 12.1 and connect to humidifier per the attached humidifier piping detail. Provide duct mounted humidity sensor in return duct from Clean Supply Room B201. Humidifier to maintain 25% RH. Provide humidistat on wall in Clean Supply Room B201. Controls shall be stand alone.

Field verify all dimensions.

Attachments: Sheet H2, Humidifier Piping Detail.