



## RETURN BIDS TO:

## RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government  
Services Canada/Réception des soumissions Travaux  
publics et Services gouvernementaux Canada  
800 Burrard Street, Room 219  
800, rue Burrard, pièce 219  
Vancouver  
British Columbia  
V6Z 0B9  
Bid Fax: (604) 775-9381

## SOLICITATION AMENDMENT MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise  
indicated, all other terms and conditions of the Solicitation  
remain the same.

Ce document est par la présente révisé; sauf indication contraire,  
les modalités de l'invitation demeurent les mêmes.

### Comments - Commentaires

Vendor/Firm Name and Address  
Raison sociale et adresse du  
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution  
Public Works and Government Services Canada - Pacific  
Region  
800 Burrard Street, Room 219  
800, rue Burrard, pièce 219  
Vancouver  
British C  
V6Z 0B9

<b>Title - Sujet</b> Air Handler/Manifold Replacement	
<b>Solicitation No. - N° de l'invitation</b> 39903-180402/A	<b>Amendment No. - N° modif.</b> 007
<b>Client Reference No. - N° de référence du client</b> 39903-180402	<b>Date</b> 2017-10-13
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$PWY-025-8166	
<b>File No. - N° de dossier</b> PWY-7-40174 (025)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2017-10-24</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Pacific Daylight Saving Time PDT
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Fung, Donna(PWY)	<b>Buyer Id - Id de l'acheteur</b> pwy025
<b>Telephone No. - N° de téléphone</b> (604) 671-9689 ( )	<b>FAX No. - N° de FAX</b> (604) 775-6633
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> CFIA - Burnaby Lab - Burnaby, BC	

Instructions: See Herein

Instructions: Voir aux présentes

<b>Delivery Required - Livraison exigée</b>	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

Solicitation No. - N° de l'invitation  
39903-180402

Amd. No. - N° de la modif.  
007

Buyer ID - Id de l'acheteur  
pwy025

Client Ref. No. - N° de réf. du client

File No. - N° du dossier CCC No./N°

CCC - FMS No./N° VME

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Les documents en français seront disponibles sur demande.

The Solicitation Amendment 007 is raised to issue Addendum 005.

Please find Addendum 005 herein.

All other terms and conditions remain unchanged.

This Addendum forms part of the Contract Documents and is to be read, interpreted and co-coordinated with all other parts. Include cost of all work contained herein in the Contract Price. The following revisions supersede information contained in the original drawings and specification issued of the above named project to the extent referenced and become part thereof. Please acknowledge receipt of this Addendum on the Form of Tender.

Please issue an Addendum with the following wording:

1. Refer to IFT Mechanical specification. Add section 23 84 13.01. Section to read as follows:

**1a.1 WORK INCLUDED**

- .1 *Short Absorption Manifold (Humidifier Steam Dispersion Panel).*
- .2 *Complete and operable humidification system [which meets applicable building codes].*
- .3 *Equipment start-up and project inspection by qualified factory trained representative.*

**1a.2 QUALITY ASSURANCE**

- .1 *Manufacturer: For each product specified, provide components by same manufacturer throughout.*
- .2 *Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authority having jurisdiction, and marked for intended use.*
- .3 *Comply with ARI 640, "Standard for Commercial and Industrial Humidifiers."*
- .4 *Products shall be supported with a warranty that ensures the product will be free from defects in materials and workmanship for a period of two years after shipment.*
- .5 *Commissioning of a system or systems specified in this section is part of the construction process. Documentation and testing of these systems, as well as training of the Owner's operation and maintenance personnel, is required in cooperation with the Commissioning Authority. Project Closeout is dependent on successful completion of all commissioning procedures, documentation, and issue closure. Refer to Project Closeout Section for substantial completion details. Refer to Sections 01 91 00 and 23 08 00 Commissioning, for detailed commissioning requirements.*
- .6 *Products specified below are to be manufactured in an ISO 9001-2000 certified facility.*

**1a.3 SUBMITTALS**

- .1 *Submit product data under provisions of Section 23 05 00. Include product description, model, dimensions, component sizes, rough-in requirements, service sizes, and finishes. Include rated capacities, operating weights, furnished specialties, and accessories.*
- .2 *Submit manufacturer's installation instructions.*
- .3 *Submit operation and maintenance data.*
- .4 *Submit coordination drawings. Detail fabrication and installation of humidifiers. Include piping details, plans, elevations, sections, details of components, and dispersion tubes. Detail humidifiers and adjacent equipment. Show support locations, type of support, weight on each support, and required clearances.*
- .5 *Submit wiring diagrams including power, signal, and control wiring. Differentiate between manufacturer-installed and field-installed wiring.*
- .6 *Submit minimum water quality requirements and water pressure requirements.*

**1a.4 EXTRA MATERIALS**

- .1 *Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.*

**1a.5 REFERENCES**

- .1 *ANSI/NFPA 70 - National Electrical Code.*

**1a.6 COORDINATION**

- .1 *Coordinate location and installation of humidifiers in ducts and air-handling units. Adjust locations and elevations to suit field conditions and to ensure proper humidifier operation.*

**PART 2a - PRODUCTS**

**2a.1 SHORT ABSORPTION MANIFOLD**

- .1 Short Absorption Manifold designed for atmospheric steam humidifiers or pressurized steam from a boiler, to directly inject the steam into ducted air for humidification.
  - .1 Absorption distance characteristic shall prevent water accumulation on any induct surfaces beyond 200 mm downstream of the steam dispersion panel.
  - .2 Steam dispersion panel consisting of a horizontal stainless steel header supplying steam to a bank of closely spaced vertical tubes as necessary to meet absorption distance requirements, and to reduce condensation losses at minimum airflow resistance 25 Pa.
  - .3 Single horizontal stainless steel header to provide steam to vertical distributor tubes and to reduce condensation losses. Dual header systems creating unnecessary condensation, or systems needing to be installed on a partition or requiring blank off plates are not acceptable.
  - .4 Header design shall be round tube to minimize pressure drop. Square headers are not acceptable.
  - .5 Steam inlet and condensate return located on the same side and at the bottom of the header to allow single point entry and floor mounting.
  - .6 Headers shall be 304 stainless steel construction.
  - .7 Vertical stainless steel distribution tubes to promote condensate evacuation. Horizontal distributor tubes are not accepted.
  - .8 Distribution tubes shall include threaded standoffs for trouble free attachment to factory- supplied support bracket.
  - .9 All tubes shall be 304 stainless steel construction.
  - .10 Stainless steel nozzle inserts ensure condensate free steam is discharged from the center of the distribution tubes. Systems without nozzle inserts, or other than stainless steel, are not acceptable.
  - .11 Stainless steel nozzle inserts shall have metered orifices, sized to provide even distribution of the discharged steam, spaced for optimum steam absorption.
  - .12 Tubes and headers shall accommodate factory installation of insulation for increased energy efficiency.
  - .13 Tube and header insulation constructed from 304 stainless steel shielding for increased energy efficiency and reduced airstream heat gain. Stainless steel shields to be isolated from distributor using plenum rated synthetic foam strips. Insulation to provide air-gap to minimize conduction and convection, as well provide reflective surface to minimize radiating heat transfer. Uninsulated headers, or simple foam insulation is not acceptable.
  - .14 Adjustable mounting frame shall be provided for quick and easy installation.
  - .15 Short absorption manifold for HOT DECK shall be 3657x914. Short absorption manifold for the COLD DECK shall be 3657x914. Contractor to confirm exact required manifold size on site prior to ordering. Provide the following accessories, pipings, and fittings:
    - a) Steam piping and fittings for hot and cold deck manifolds
    - b) Condensate piping and fittings for hot and cold deck manifolds
    - c) Condensate pumps
    - d) Matching inlet adapter kits for 3+1 future humidifier connections as noted on drawings and required for proper humidification system operation.

**PART 3a - EXECUTION**

**3a.1 EXAMINATION**

- .1 Examine ducts, air-handling units, and conditions for compliance with requirements for installation tolerances and other conditions affecting performance.
- .2 Examine roughing-in for piping systems to verify actual locations of piping connections before humidifier installation.
- .3 Proceed with installation only after unsatisfactory conditions have been corrected.

**3a.2 INSTALLATION**

- .1 Install humidifiers and steam dispersion panels per manufacturers' instructions.
- .2 Seal humidifier dispersion-tube duct penetrations with flange.
- .3 Install with required clearance for service and maintenance.

**3a.3 TESTING**

- .1 Manufacturer's Field Service: Engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including piping and electrical connections. Report results in writing.
  - .1 Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
  - .2 Operational Test: After electrical circuitry has been energized, start units to confirm proper unit operation. Remove malfunctioning units, replace with new units, and retest.
  - .3 Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

**3a.4 TRAINING**

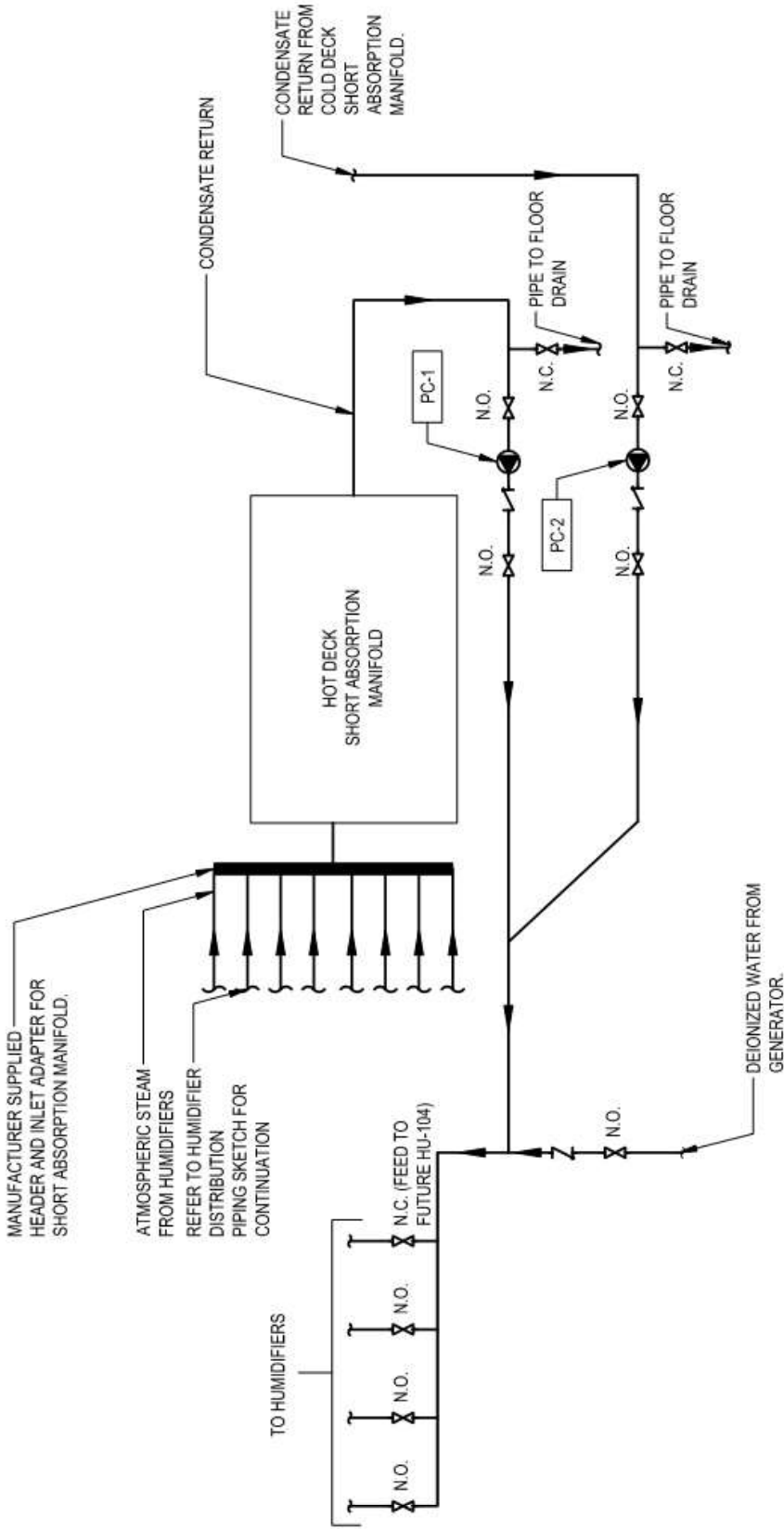
- .1 Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain humidifiers.
- .2 Training of the Owner's operation and maintenance personnel is required in cooperation with the Commissioning Authority.
  - .1 Train Owner's maintenance personnel on procedures and schedules for starting and stopping, troubleshooting, servicing, and maintaining equipment and schedules.
  - .2 Review data in maintenance manuals.
  - .3 Schedule training with Owner, through Departmental Representative, with at least ten days advance notice.

END OF SECTION

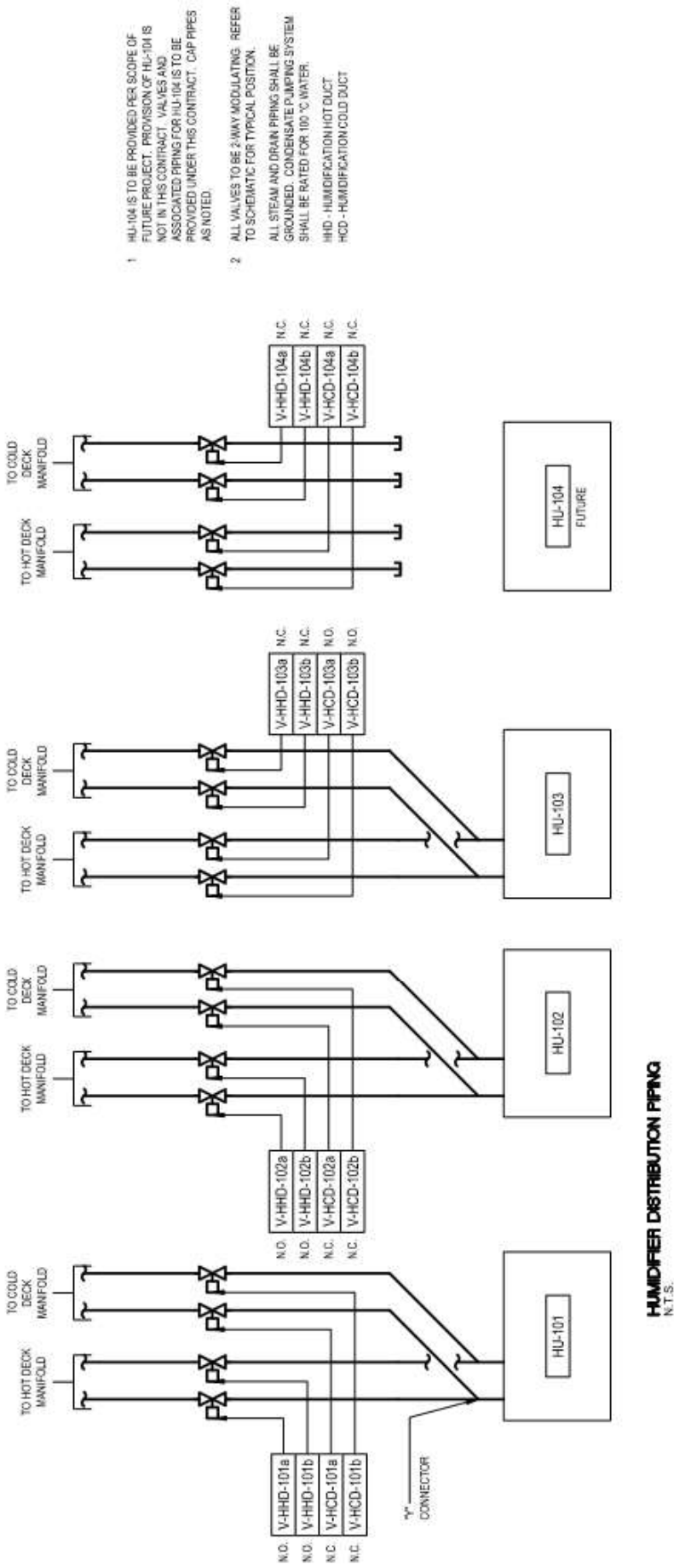
- 2. Provide two (2) condensate pumps labelled PC-1 and PC-2. Pumps shall be of the centrifugal type with two piece enclosed brass impeller, cast iron housing and stainless steel motor shaft. The float switch shall be two pole with plastic case, stainless steel float and shafting, and double break silver contacts. A flat perforated brass strainer shall be provided in the inlet of the pump from the tank. Pumps shall have the following accessories:
  - a. Fabricated steel receivers, duplex package
  - b. Bronze fitted centrifugal pumps
  - c. Energy efficient 3450 RPM motors
  - d. Automatic venting
  - e. Ceramic pump seals
  - f. Heavy duty float switches
- 2.1 Pumps shall have 57 litre receivers
- 2.2 Pumps shall operate at 0.4 L/s at 138 kPa using 120V/1 phase 1/3 hp motors.
- 2.3 Provide pumps with seismic restraint and removable floor attachment.
- 2.4 Electrical contractor shall install 15A, 1-pole breaker in the panel "2D4a" located in the room #117. Provide #12 cable in EMT conduit from the panel "2D4a" to the location of the condensing pumps PC-101 and PC-102. Exact pump location to be coordinated with mechanical contractor.
- 3. Provide fill cup extension kit accessory for humidifiers. Fill cup extension kit to be from same manufacturer as humidifier. Install per manufacturer's recommendations.
- 4. Provide drip tee kit accessory for humidifiers. Drip tee kit to be from same manufacturer as humidifier. Install per manufacturer's recommendations. Install drip tees where distribution piping rises over obstructions, locate air gap only in spaces with adequate temperature and air movement to absorb flash steam. Support steam hose for full length so there are no sags or low spots.
- 5. Refer to specification section 23 21 16.
  - 5.1 Add clause 2.7 to read as follows:

**2.7 STEAM AND TRAPPED CONDENSATE PIPING**

- .1 50 mm and smaller
  - .1 Pipe - carbon steel, ASTM A53, Grade B, seamless, Schedule 40 for steam, Schedule 80 for condensate.
  - .2 Fittings – 125 pound black cast iron. Thread-o-lets may be used when the branch line is one third the main size or less.
  - .3 Joints – Threaded.
  - .4 Unions – Class 300 malleable iron.
- .2 65 mm and larger
  - .1 Pipe – Carbon steel, ASTM A53, Grade B, seamless, standard weight for steam and ERW schedule 80 for condensate.
  - .2 Fittings – Butt weld, conforming to ASTM A234, Grade WPB, ANSI B16.9, standard weight for steam, schedule 80 for trapped condensate.
  - .3 Joints – Butt weld.
  - .4 Flanges Class 150, ANSI B16.5, forged steel, raised face, materials in accord with ASTM A105, Grade II, weld neck.
- 6. Refer to the two attached sketches for additional information on humidifier and short absorption manifold distribution piping.



SHORT ABSORPTION MANIFOLD DISTRIBUTION PIPING  
N.T.S.



END OF ADDENDUM # MA-3