

**867 LAKESHORE RD., LABORATORY & ADMINISTRATIVE BUILDING
NEW ULTRA TRACE LAB AT THE CANADA CENTRE
FOR INLAND WATERS (CCIW)**

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PROJECT NO. R.066381.001

DATE: March 3, 2015

The following changes in the tender documents are effective immediately. This addendum will form part of the contract documents.

SPECIFICATIONS

1. REFERENCE SECTION 01 11 00 – SUMMARY OF WORK

- .1 Delete Item 1.8.1.

2. REFERENCE SECTION 01 14 00 – PROJECT MEETINGS

- .1 Item 1.2, add the following:

- “.1 The contractor shall agree to install proper site separation and identification in order to maintain "Time and Space" at all times throughout the life of the project.

- .2 When building operations staff require access to equipment in order to operate building, proper coordination and communication must exist between all parties.”

3. REFERENCE SECTION 01 31 19 – WORK RESTRICTIONS

- .1 Delete Item 1.2.5.9.

4. REFERENCE SECTION 01 35 00 – CLEANROOM CERTIFICATION AND ACCEPTANCE PROCEDURES

- .1 Revise Section 01 35 00 (attached herewith).

5. REFERENCE SECTION 01 35 29 – HEALTH AND SAFETY REQUIREMENTS

- .1 Item 1.11, add the following:

- “.1 . Assume role of constructor as described in the Ontario Occupational Health & Safety Act and Regulations for Construction projects.”

6. REFERENCE SECTION 01 91 00 – COMMISSIONING

- .1 Revise Items 1.5.4.2 & 1.5.4.4 as follows:
 - .2 Review and approve Startup Checklists, PI and PV Report forms.
 - .4 Witness System Startup Verification Testing and review test reports.

SPECIFICATIONS (CONT'D)

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7. REFERENCE SECTION 02 82 00.01 – ASBESTOS ABATEMENT – MINIMUM PRECAUTIONS

- .1 Revise Section 02 82 00.01 – Asbestos Abatement – Minimum Precautions (attached herewith).

8. REFERENCE SECTION 02 82 00.02 – ASBESTOS ABATEMENT – INTERMEDIATE PRECAUTIONS

- .1 Revise Section 02 82 00.02 – Asbestos Abatement – Intermediate Precautions (attached herewith).

9. REFERENCE SECTION 09 91 23 – INTERIOR PAINTING

- .1 Delete Item 1.1.1 in its entirety and Add/Replace with new item 1.1.1 as follows:
 - “.1 Architectural Painting Specifications Manual, Master Painters Institute (MPI), 2010.”
- .2 Item 1.5 Quality Control, Delete items 1.5.1, 1.5.2 and 1.5.3 and Add/Replace with new items as follows:
 - “.1 Conform to latest MPI requirements for interior painting work including preparation and priming.
 - .2 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) shall be in accordance with MPI Painting Specification Manual "Approved Product" listing and shall be from a single manufacturer for each system used.
 - .3 Other paint materials such as linseed oil, shellac, turpentine, etc. shall be the highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and shall be compatible with other coating materials as required.
 - .4 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Departmental Representative.
 - .5 Standard of Acceptance:
 - .1 Walls: No defects visible from a distance of 1000 mm at 90° to surface.
 - .2 Ceilings: No defects visible from floor at 45° to surface when viewed using final lighting source.
 - .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.”

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SPECIFICATIONS (CONT'D)

9. REFERENCE SECTION 09 91 23 – INTERIOR PAINTING (CONT'D)

- .3 Item 3.1 Surface Preparation, Delete items 3.1.1 and 3.1.2 and Add/Replace with new items as follows:

“.1 Clean and prepare surfaces in accordance with MPI Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:

- .1 Remove dust, dirt, and other surface debris by wiping with dry, clean cloths.
- .2 Wash surfaces with a biodegradable detergent and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
- .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
- .4 Allow surfaces to drain completely and allow to dry thoroughly.
- .5 Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.

.2 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.”

- .4 Item 3.2 Application, Delete Items 3.2.2 and 3.2.3 and Add/Replace with new items as follows:

“.1 Brush and Roller Application:

- .1 Apply paint in a uniform layer using brush and/or roller of types suitable for application.
- .2 Work paint into cracks, crevices and corners.
- .3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
- .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces shall be free of roller tracking and heavy stipple unless approved by Departmental Representative.
- .5 Remove runs, sags and brush marks from finished work and repaint.

.2 Apply coats of paint as a continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied. Apply one coat primer and two finish coats.”

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SPECIFICATIONS (CONT'D)

9. REFERENCE SECTION 09 91 23 – INTERIOR PAINTING (CONT'D)

- .6 Item 3.2 Application, Delete Items 3.2.2 and 3.2.3 and Add/Replace with new items as follows: (Cont'd)

“.3 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.

.4 Sand and dust between coats to remove visible defects.

.5 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.”

- .7 Add new heading 3.1 General and new items 3.1 and 3.2 as listed below. (Insert new heading prior to 3.1 Surfaces Preparation):

“3.1 GENERAL

.1 Perform preparation and operations for interior painting in accordance with MPI Painting Specifications Manual except where specified otherwise.

.2 Apply paint materials in accordance with paint manufacturer's written application instructions.”

10. REFERENCE SECTION 22 00 00 – PLUMBING

- .1 Add new Item 2.14 as follows:

“2.14 RO PIPING

.1 Process water/reverse osmosis water piping to be polypropylene Schedule 80 virgin unpigmented pipe (to ASTM D2146) specifically for purified water. Fittings to be Schedule 80 with solvent welded socket joints. Uninsulated.”

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SPECIFICATIONS (CONT'D)

**11. REFERENCE SECTION 23 30 00 – HEATING, VENTILATING AND AIR
CONDITIONING - AIR SYSTEMS**

.1 Add new Item 2.11 as follows:

“2.11 MOBILIZED EXHAUST ARM (MA)

- .1 Hanging Model: 304 stainless steel mounting flange with hardware, bracket and duct connection flange. Swivel. 75 mm diameter arm, 100 mm diameter duct connection.
- .2 Stainless steel capture hood, 160 mm, with air diverter and grab handle with stainless steel on aluminum inside and out flexible joint and aluminum brackets.
- .3 Smooth stainless steel tubes with stainless steel or aluminum, inside and out, flexible middle joint with aluminum brackets.
- .4 Length at tubes to extend capture hood approximately 1.8 metres down from connection flange at ceiling.

12. REFERENCE SECTION 23 34 00 – HEAT RECOVERY EXHAUST UNIT

.1 Revise Item 1.4.4.4 as follows:

- .4 Provide delivery time from date of shop drawing review.

.2 Revise Item 2.2.1 as follows:

- .1 Fan housing shall be a minimum 14 gauge steel construction with phenolic epoxy powder coating with UV inhibitors or FRP and aerodynamically designed with high-efficiency inlet, engineered to reduce incoming air turbulence. FRP fan housing shall be manufactured in specifically formulated resins, for maximum corrosion resistance, and reinforced with fibreglass for structural strength. Fastening bolts holding the casing to the support plate are to be encapsulated in FRP. All fibreglass ports shall include UV inhibitors.

.3 Revise Item 2.5.2 as follows:

- .2 The minimum thermal resistance value of the wall, floor or roof panels as measured at the panel joints is to be R-1.46.

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SPECIFICATIONS (CONT'D)

13. REFERENCE SECTION 23 34 00 – HEAT RECOVERY EXHAUST UNIT

- .4 Revise Item 2.5.3 as follows:
 - .3 Baserail to be manufactured of FRP profiles or structural FRP, or fully welded and galvanized structural steel members adequately braced and reinforced to withstand all loads during shipment, rigging, installation, and operation. If a structural steel baserail is provided, the baserail must be protected from the ambient environment by epoxy paint galvanization or fibreglass-reinforced-plastic (FRP) laminate jacket that can withstand 1,000 hours of salt spray testing per ASTM B117 with no corrosion or lifting present at the scribe.
- .5 Delete Item 2.5.6.
- .6 Revise Item 2.7.3.1 as follows:
 - .1 Minimum 4 mm thickness F.R.P. or 22 gauge 304 stainless steel sheet.
- .7 Revise Item 2.7.4 as follows:
 - .4 The floor panels shall be of the same construction as the roof and wall panels. The floor panels shall be installed on top of the unit structural baserail so that the baserail forms a complete sub-base underneath the floor panels.
 - .1 Minimum 4 mm thickness F.R.P. or 16 gauge 304 stainless steel sheet steel walk-on surface.
 - .2 Minimum 4 mm thickness F.R.P. or 22 gauge 304 stainless steel sheet steel under-liner.

13. REFERENCE SECTION 23 74 00 – CUSTOM OUTDOOR HVAC EQUIPMENT

- .1 Revise Item 2.9.3 as follows:
 - .3 Custom unit manufacturer must take full responsibility for the complete package, including condensers if built by a different manufacturer. Custom unit manufacturer must provide field quality control services to ensure field refrigeration piping and accessories are installed in accordance with manufacturers requirements. Manufacturers field representative to provide certification of work performed in the field and submit documentation for inclusion in closeout manuals.

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SPECIFICATIONS (CONT'D)

14. REFERENCE SECTION 23 74 00 – CUSTOM OUTDOOR HVAC EQUIPMENT

.2 Revise Item 2.15.6 as follows:

- .6 All controls, including wiring, devices, sensors, relays controllers, network devices and associated accessories, shall be coordinated with Div. 25 and provisions for controls, including conduit, terminal strips for factory installed controllers and panels installed at factory. Unit controls to be in accordance with Div. 25 sections.

14. REFERENCE APPENDIX 'B' – PANEL HVP-8A, APPENDIX 'C' – PANEL LP7-N13 and APPENDIX 'D' – PANEL LPP-8A

- .1 Add APPENDIX 'B' – Panel HVP-8a, APPENDIX 'C' – Panel LP7-N13 and APPENDIX 'D' – Panel LPP-8A (attached herewith).

DRAWINGS

1. REFERENCE DOOR SECURITY DETAIL ON DRAWING E3

- .1 Delete the requirement for a 21 mm homerun conduit back to security panel.

2. REFERENCE NOTES #1 AND #3 ON DRAWING E5

- .1 Integral weatherproof disconnect switches shall be provided by mechanical trades for the two fans in ERU2. Disconnect switch for ERU2 120V controls and disconnect switches for RTU2 shall be provided by electrical trades as per the drawings.

3. REFERENCE NOTE #3 ON DRAWING E5

- .1 Delete the requirement for low-voltage wiring of the VFD output filters.
- .2 Provide interconnection between the VFD's and the unit-mounted disconnect switches to shutdown the VFD's when disconnected remotely.

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DRAWINGS (CONT'D)

4. REFERENCE HEAT TRACE RECEPTACLE ON DRAWING E5

- .1 Provide GFI receptacle for heat trace system.

Enclosures: Section 01 35 00 – Cleanroom Certification and Acceptance Procedures –
Three (3) pages
Section 02 82 00.01 – Asbestos Abatement – Minimum Precautions – Five
(5) pages
Section 02 82 00.02 – Asbestos Abatement – Intermediate Precautions –
Seven (7) pages
APPENDIX 'B' – Panel HVP-8a – Six (6) pages
APPENDIX 'C' – Panel LP7-N13 – Five (5) pages
APPENDIX 'D' – Panel LPP-8A – Ten (10) pages