



## Contract For

# INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract Number: IT-2018-STNS-255

P.O. Number: TBA

## LIST OF CONTENTS

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 1 of 2

Title	No. of Pages
List of Contents .....	2
Addendum No. 2 dated August 2, 2018.....	3
Addendum No. 1 dated July 26, 2018.....	1
Form of Tender .....	4
Contract Prices .....	2
Conflict of Interest .....	2
Mandatory Corporate, Personnel and Technical Requirements .....	2
Supplementary Agreement Between Owner and Contractor.....	3
Agreement Between Owner and Contractor .....	8
Supplementary Definitions of the Contract .....	6
Definitions of the Contract.....	3
Supplementary General Conditions of the Contract .....	69
General Conditions of the Contract .....	23

### **DIVISION 1 - GENERAL REQUIREMENTS**

01000 General Instructions .....	6
01300 Shop Drawings and Other Submittals.....	4
01400 Quality Control .....	3
01500 Temporary Facilities .....	1
01560 Environmental Protection .....	2
01600 Safety Requirements .....	6
01700 Material and Equipment.....	3
01710 Cleaning .....	1
01800 Project Closeout .....	3

### **SPECIFICATIONS – DIVISIONS 2 THROUGH 16**

15010 Basic Mechanical Requirements .....	9
15050 Basic Mechanical Materials and Methods .....	10
15060 Pipes, Hangers and Supports.....	7
15110 Pipes, Fittings and Valves.....	15
15400 Plumbing General Requirements .....	3
15410 Plumbing Fixtures .....	2

16010 Electrical General Provisions.....	14
16062 Grounding System .....	3
16071 Fastenings and Supports .....	2
16122 Wire and Cables 0-1000V.....	3
16131 Splitters, Junction, Pullboxes and Cabinets .....	4
16133 Conduits, Fastenings and Conduit Fittings .....	4
16151 Wire and Box Connectors (0-1000V) .....	2
16477 Moulded Case Circuit Breakers .....	2

## **DRAWINGS**

E-001 Electrical Key Plan, Legend & Panelboard .....	1
E-002 Electrical Washroom Plan.....	1
M-100 Mechanical, Legend, General Notes and Washroom Parts Plan .....	1
M-101 Mechanical Details.....	1

## **ATTACHMENTS**

Contract Performance Appraisal.....	1
Metrolinx Safety Guidelines for Contractors, Consultants & Project Coordinators	75

**Date:** August 2, 2018

**Tender No.** IT-2018-STNS-255

Installation of dual faucet hand dryers at York Concourse – Union Station

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The following amendments/clarifications hereby form part of this Addendum, which in turn form part of the Tender Document. The contents of this Addendum shall be accounted for in the Submission, including any prices bid for the Work.

No consideration will be given for extras and/or changes due to the Bidder not being familiar with the contents of this Addendum.

By way of submitting a Submission, the Bidder acknowledges receipt of this Addendum. All other terms and conditions remain the same.

## **1.0 CLARIFICATIONS**

- 1.1 Refer to the attached file entitled “Addendum No. 2 Clarifications IT-2018-STNS-255.pdf”, for responses to Bidder enquiries.

Sincerely,



Susy Avila  
Procurement Officer  
Procurement Services, Metrolinx  
Direct Dial: 416-202-7054  
Email: Susy.Avila@metrolinx.com

REFERENCE NO.	IT-2018-STNS-255
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Q #	Reference Document Section (i.e. Instructions, Form of Tender, Drawing No., etc.)	Page # of Section (i.e. Page 1 of 5)	Insert Section # (i.e. Section 1.1.1(a))	Question	Response
1	Plumbing Fixtures - 15410	2 of 2	2.b.A	<p>Where will the wall mounted faucet controller be placed? On Detail 3 of M-100 it shows the faucet controller on the outside of the wall, directly adjacent to the lavatories. Is there space in the wall cavity to put the faucet controller behind the wall?</p> <p><input type="checkbox"/> The model AB-09 specified has the hose pass through a counter, the model AB-11 is for a wall mounted application. Per detail 1 on M101 the lavatories are wall-mounted. Shouldn't the specified model be AB-11? And if so, the faucet controller should be place in the wall cavity per the installation instructions.</p>	<p>The controllers shall be installed outside of the wall as per drawing 3/M100.</p> <p>The intent is to replace the existing sink mounted touch-less faucets with the specified air blade faucets. The proposed faucet shall be installed on the existing sinks. Refer to detail A/M101 for details.</p>
2	Basic mechanical requirements - 15010			<p>How are the contractors accessing the wall cavity behind the lavatories? Will there be a hole cut in the wall for access? Will the contractors be limited to using the S.S. access panels below the lavatories? Will the contractors have to remove the lavatories in order to gain access to</p>	<p>Based on our general assessments, the existing access panels can provide the required access to complete the removal of existing faucets and installation of the proposed faucets.</p>

				the wall cavity? Please clarify.	
3	Pipes, Fittings, Valves - 15110			How large is the tempered water main in the wall cavity?	The approximate size of the tempered water pipe is 1 ½” Ø. Exact pipe size shall be verified at site.
4	Dwg M-100			Please specify the height of faucet to underneath of the counter	The faucets shall be mounted on the existing sinks. The requested information is not available at this point.
5	Dwg M-100			Please provide the model number of the faucet specified	Faucets shall be Dyson Air Blade Tap model AB09 or approved equivalent as per specifications section 15410 item 2.(b)(i)(B).

**Date:** July 26, 2018

**Tender No.** IT-2018-STNS-255

Installation of Dual Faucets Hand Dryers at York Concourse – Union Station

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The following amendments/clarifications hereby form part of this Addendum, which in turn form part of the Tender Document. The contents of this Addendum shall be accounted for in the Submission, including any prices bid for the Work.

No consideration will be given for extras and/or changes due to the Bidder not being familiar with the contents of this Addendum.

By way of submitting a Submission, the Bidder acknowledges receipt of this Addendum. All other terms and conditions remain the same.

## **1.0 CLARIFICATIONS**

- 1.1 To add the Contract Performance Appraisal form not issued with the tender package.

Sincerely,



Susy Avila  
Procurement Officer  
Procurement Services, Metrolinx  
Direct Dial: 416-202-7054  
Email: Susy.Avila@metrolinx.com

**TENDER DOCUMENT FORM  
FORM OF TENDER**

**INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
CONCOURSE WASHROOMS – UNION STATION**

Contract No. IT-2018-STNS-255

Page 1 of 4

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**1.0 Contact Information**

The Bidder submitting a Submission is as follows:

- 1.1 Bidder's registered legal business name (or individual) and any other name under which it carries on business:

Laycon Construction Services Inc.

- (a) If a Joint Venture, enter the registered legal business name of the Participant-in-Charge:

[Click here to enter text.](#)

- (b) If a Joint Venture, enter the registered legal business name of the other Joint Venture members:

[Click here to enter text.](#)

- 1.2 The Bidder's address, telephone and facsimile numbers (if Joint Venture, insert Participant-in-Charge information):

295 Milliken Blvd # 10 Scarborough ON M1V4V1

PH: 416-293-4849 FAX: 416-293-0896

- 1.3 Name, title, address, telephone/facsimile numbers and e-mail address of the Bidder's project representative (if a Joint Venture, insert contact information of project representative of Participant-in-Charge information)

Sathia Kana, President

295 Milliken Blvd # 10 Scarborough ON M1V4V1

PH: 416-293-4849 FAX: 416-293-0896 EMAIL: info@laycon.ca

- 1.4 New Vendor Information

- (a) If you haven't previously done business with Metrolinx, or have and continue to do business with Metrolinx, and are submitting a Submission for the first time or have in the past, please fully complete and provide with



**TENDER DOCUMENT FORM  
FORM OF TENDER**

**INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
CONCOURSE WASHROOMS – UNION STATION**

Contract No. IT-2018-STNS-255

Page 2 of 4

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the Submission the “New/Update Vendor Form” under “Attachments” and submit the additional documentation as indicated, including:

- (i) Vendor Registration (Articles of Incorporation, Sole Proprietorship Registration, Partnership Agreements, etc.).
- (ii) Canada Revenue Agency Registration (Business Number)
- (iii) Void Cheque (for Electronic Funds Transfer setup)
- (iv) Sample Invoice

**2.0 Acknowledgements and Declarations**

- 2.1 The Bidder acknowledges that its Submission includes the appropriate Tender Document Forms submitted in accordance with the terms and requirements of the Instructions to Bidders. Failure to comply may result in the Bidder's Submission being found non-compliant and disqualified at the sole discretion of Metrolinx.
- 2.2 The Bidder has informed itself of the conditions relating to the Work to be performed and have inspected and is thoroughly familiar with the location of the Work and the plans, specifications, drawings and all terms, conditions and covenants of the Contract.
- 2.3 The Bidder acknowledges receipt of any and all Addenda/Addendum issued hereto and that its Submission has been developed in consideration of the Addenda/Addendum.
- 2.4 The Bidder acknowledges that it meets all mandatory requirements in order for their Submission to be considered further. Failure of a Bidder to meet all of the mandatory requirements shall result in the Bidder's Submission to be non-compliant and disqualified.
- 2.5 All Addenda, Tender Document Forms, the Supplementary Agreement Between Owner and Contractor, the Agreement Between Owner and Contractor, the Supplementary General Conditions of the Contract, the General Conditions of the Contract, the Supplementary Definitions of the Contract, the Definitions of the Contract, the General Requirements (Sections 01000 through 01800), Specifications, Drawings and Attachments set out in this Tender Document shall be included in and form part of the Contract. Submitting a Submission constitutes acknowledgement that the Bidder has read and agrees to be bound by such conditions.

**TENDER DOCUMENT FORM**  
**FORM OF TENDER**

INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 3 of 4

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- 2.6 The Submission is hereby submitted on the condition and with the full understanding that it is an irrevocable offer by the Bidder for a period of one hundred and twenty (120) calendar days from the Closing. The Bidder hereby covenants that it enter into Contract with Metrolinx as contemplated by the Tender Documents by executing the Contract and will perform and execute the Work at the Contract Price if it is notified, in writing, by Metrolinx within one hundred and twenty(120) days of the Closing that it is the successful Bidder.
- 2.7 The Bidder hereby declares that it has the physical and financial resources to sustain and complete the Work.
- 2.8 The Bidder hereby declares that no Conflict of Interest exists in accordance with “Tender Document Form: Conflict of Interest”.
- 2.9 The Bidder hereby declares that no person, firm or corporation (including any agent of Metrolinx), other than the undersigned or Suppliers or Subcontractors engaged in the ordinary course of business, has any interest in this call for Tenders or the proposed Contract for which the Submission is made.
- 2.10 The Bidder acknowledges that by way of the E-Bid Authorized Signer submitting a Submission, the Bidder is agreeing to be bound to each and every term, condition, article and obligation of the Tender Document and any resultant Contract.
- 2.11 The Bidder acknowledges that consistent with Section **Error! Reference source not found.** of Instructions to Bidders, failure by the Bidder, whose Submission was accepted by Metrolinx, to execute and deliver executed Contract with the required Insurance Certificates, Workplace Safety and Insurance Clearance Certificate and the Performance and Labour and Materials Payment Bonds, or specified alternatives, or any other required documentation (as applicable to this Tender Process) shall result in the cancellation of acceptance of the Bidder’s Submission by Metrolinx and forfeiture of the Bidder's Bid Deposit (if applicable).
- 2.12 The submitting of a Submission by a Bidder shall be considered prima facie evidence that the above requirements have been met. Failure to have complied with said requirements shall not relieve the Bidder of its obligation to enter into the Contract and to carry out the Work in accordance with the terms and conditions set forth in the Tender Documents.

**TENDER DOCUMENT FORM  
FORM OF TENDER**

**INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
CONCOURSE WASHROOMS – UNION STATION**

Contract No. IT-2018-STNS-255

Page 4 of 4

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**3.0 Requirement**

- 3.1 The Bidder shall provide all labour, superintendence, plant, tools, appliances, equipment, supplies and other accessories, services and facilities necessary for the Installation of Dual Faucets Hand Dryers at York Concourse, as further described in this Tender Document.
- 3.2 The Work is to be performed to the satisfaction of the Project Coordinator for Station Services, unless otherwise specified.

**4.0 Contract Price**

- 4.1 The Bidder, by submitting this Submission, hereby offers to Metrolinx to provide all goods and services necessary to execute the Work described by the Tender Documents, including all Addenda, and to perform the Work for the Contract Price quoted.

**5.0 Harmonized Sales Tax**

- 5.1 The Bidder acknowledges it has read and agrees to be bound by the Supplementary General Conditions of the Contract and the General Conditions of the Contract as it relates to Harmonized Sales Tax.
- 5.2 The Bidder declares that the H.S.T. registration number, as stated in the Excel spreadsheet of “Tender Document Form: Contract Prices”, is registered to the Bidder providing this Submission.
- 5.3 A non-resident Bidder unable to provide a H.S.T. Registration Number at the time of Submission shall be required to provide a H.S.T. Registration Number within five (5) Business Days of acceptance of its Submission by Metrolinx. The Bidder acknowledges that failure to comply with this requirement may result in the Contract being declared VOID.

**6.0 Project Schedule**

- 6.1 The date of Commencement of Work, the date of Substantial Performance of the Work and the date of Total Performance of the Work are identified in the Form of Agreement.

**TENDER DOCUMENT FORM  
CONTRACT PRICES**

**INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
CONCOURSE WASHROOMS – UNION STATION**

Contract No. IT-2018-STNS-255

Page 1 of 2

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Tender Document Form: Contract Prices is comprised of this section in addition to an Excel file attached.

**1.0 Contract Price**

The Contract Price is subject to all requirements of the Tender Document.

1.1 Payment for services rendered and goods supplied in accordance with the terms and conditions of the Contract shall be based on the requirements of the "Tender Document Form: Form of Tender" in addition to the following:

- (a) The Contract Price bid shall be firm and quoted in Canadian funds.
- (b) The Contract Price includes all specified cash allowances, contingency allowances (if applicable) and all applicable taxes, except Harmonized Sales Tax (H.S.T.), in force at the date the Submission is submitted.
- (c) The Contract Price quoted shall represent full payment for all the Work necessary for the proper completion of the Contract.
- (d) The Contract Price includes all labour, superintendence, plant, tools, appliances, equipment, supplies and other accessories, services and facilities customs, duties, royalties, handling, transportation, travel, mileage, overhead, overnight and weekend work charges, profit and all other charges.

**2.0 Allowances**

2.1 Cash Allowances

- (a) Not Applicable

2.2 Contingency Allowance

Contingency Allowances are subject to the General Conditions of the Contract.

- (a) This Contingency Allowance is to be used solely for unforeseen site conditions pertaining to Electrical, Mechanical and Civil.

- (i) Electrical work

- (ii) Mechanical work

**TENDER DOCUMENT FORM  
CONTRACT PRICES**

**INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
CONCOURSE WASHROOMS – UNION STATION**

Contract No. IT-2018-STNS-255

Page 2 of 2

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(iii) Civil work

**3.0 Options**

3.1 Not Applicable

**4.0 Completion of Pricing Schedules**

- 4.1 Bidders shall fully complete the Excel file entitled "Tender Document Form: Contract Prices" and insert a Unit Price into each space provided under the Contract Unit Price column.
- 4.2 "Tender Document Form: Contract Prices" must be submitted as a separate file preferably in Excel format to facilitate the pricing evaluation process, and may not be retyped or recreated. Failure to follow the submission instructions or format requirements may result in the Submission being found non-compliant and disqualified.
- 4.3 If a "0" is entered in any of the spaces where price information is to be provided, it shall be interpreted as meaning the Contractor shall provide the specified service to Metrolinx at no charge.
- 4.4 If any space is left blank or an entry of "N/C" or "N/A" or "-" is entered where price information should be entered then the Submission may be found non-compliant and disqualified consistent with the provisions of the Instructions to Bidders.



## CONTRACT PRICES

= Data Entry Cells

CONTRACT NUMBER IT-2018-STNS-255

SUBMISSION BY Laycon Construction Services Inc.  
(Full Legal Name of Company or Individual)

H.S.T NUMBER 862891660  
(H.S.T Number of Company or Individual)

		Laycon Construction Services Inc.
Item No.	Detailed Description	Lump Sum
1.	FOR THE INSTALLATION OF DUAL FAUCET HAND DRYERS AT YORK CONCOURSE WASHROOMS	\$127,765.00
TOTAL CONTRACT PRICE		\$127,765.00
13% Harmonized Sales Tax (H.S.T.) Amount		\$16,609.45

**TENDER DOCUMENT FORM  
CONFLICT OF INTEREST**

**INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
CONCOURSE WASHROOMS – UNION STATION**

Contract No. IT-2018-STNS-255

Page 1 of 2

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**1.0 Conflict of Interest**

**As it pertains to Conflict of Interest:**

1.1 If the box below is left blank or if this “Tender Document Form: Conflict of Interest” is not included as part of the Submission, the Bidder shall be deemed to declare that:

- (a) there was no Conflict of Interest in preparing its Submission; and there is no foreseeable Conflict of Interest in performing the contractual obligations contemplated in the Tender Document. Otherwise, if the statement in Section 1.1(b) below applies, check (“X”) the box.
- (b) ☐ The Bidder declares that there is an actual or potential Conflict of Interest relating to the preparation of its Submission, and/or the Bidder foresees an actual or potential Conflict of Interest in performing the contractual obligations contemplated in the Tender Document.

1.2 If the Bidder declares an actual or potential Conflict of Interest by marking the box above, the Bidder must set out below details of the actual or potential Conflict of Interest:

[Click here to enter text.](#)

1.3 The following individuals, as employees, advisers, or in any other capacity (a) participated in the preparation of our Submission (whether as employees, advisors, or in any other capacity); AND (b) were employees, advisors or consultants of Metrolinx at any time within the twelve (12) months prior to the Closing:

Name of Individual:	<a href="#">Click here to enter text.</a>
Job Classification:	<a href="#">Click here to enter text.</a>
Department:	<a href="#">Click here to enter text.</a>
Last Date of Employment with Metrolinx:	<a href="#">Click here to enter text.</a>
Name of Last Supervisor:	<a href="#">Click here to enter text.</a>
Brief Description of Individual’s Job Functions:	<a href="#">Click here to enter text.</a>
Participation in the Preparation of the	<a href="#">Click here to enter text.</a>

**TENDER DOCUMENT FORM  
CONFLICT OF INTEREST**

INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 2 of 2

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Submission:	
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(Repeat above for each identified individual)

- 1.4 The Bidder agrees that, upon request, the Bidder shall provide Metrolinx with additional information from each individual identified above in the form prescribed by Metrolinx.



**TENDER DOCUMENT FORM**  
**MANDATORY CORPORATE, PERSONNEL AND TECHNICAL REQUIREMENTS**  
INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 1 of 2

- 1.1 Bidders must meet all mandatory requirements stated below in order for their Submission to be considered further. Failure of a Bidder to meet all of the mandatory requirements listed below shall result in the Bidder's Submission being found non-compliant. Non-compliant Submissions shall not be considered further and shall be disqualified.
- 1.2 Bidders shall provide supporting documentation, if requested, to substantiate compliance to each of the listed mandatory requirements. If the Bidder has not provided the supporting documentation specified for that mandatory requirement, Metrolinx has the right but not the obligation, following the Closing, to request that the Bidder provide such supporting documentation or to request that the Bidder identify where in its Submission this information has been provided. Failure of a Bidder to provide information required to substantiate compliance to a mandatory requirement may result in the Bidder's Submission being found non-compliant and disqualified.
- 1.3 Metrolinx has the right but not the obligation, to carry out further investigations to ensure the Bidder can meet the mandatory corporate, personnel and technical requirements to the satisfaction of Metrolinx in its sole discretion.

<b>Mandatory Corporate, Personnel and Technical Requirements</b>	<b>Supporting Documentation Required to Substantiate Compliance to be Provided by Bidder</b>
<b>Mandatory Corporate Requirements</b>	
The Bidder has a valid Workplace Safety and Insurance Clearance Certificate for the premium rate class, subclass or group as appropriate for the Work of this Contract, as issued by the Workplace Safety and Insurance Board.	<ul style="list-style-type: none"><li>• No supporting documentation required with the Submission. Metrolinx reserves the right to request a valid Workplace Safety and Insurance Clearance Certificate for the premium rate class, subclass or group as appropriate for the Work of this Tender Document, as issued by the Workplace Safety and Insurance Board, at any time after Closing.</li></ul>
The Bidder has obtained a Bid Deposit for this Tender Process in accordance with Section 12.0 of Instructions to Bidders and shall provide the original Bid Deposit to Metrolinx, within three (3) Business Days after Closing.	<ul style="list-style-type: none"><li>• Original Bid Deposit to Metrolinx in accordance Section 12.0 of Instructions to Bidders of this Tender Document.</li></ul>

**TENDER DOCUMENT FORM**  
**MANDATORY CORPORATE, PERSONNEL AND TECHNICAL REQUIREMENTS**  
 INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
 CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 2 of 2

<b>Mandatory Corporate, Personnel and Technical Requirements</b>	<b>Supporting Documentation Required to Substantiate Compliance to be Provided by Bidder</b>
<p>The Bidder has obtained Contract Security for the Work of this Tender Document in accordance with Section 13.0 of Instructions to Bidders and shall provide the original Agreement to Bond or alternative to Metrolinx, within three (3) Business Days after Closing.</p>	<ul style="list-style-type: none"> <li>Original Agreement to Bond, or specified alternative, for the Work of this Tender Document, as per Section 13.0 of Instructions to Bidders.</li> </ul>
<p>The Bidder has achieved one of the following:</p> <ol style="list-style-type: none"> <li>COR<sup>TM</sup> Certified Status with IHSA; or</li> <li>OHSAS 18001 certification; or</li> <li>Out-of-Province COR<sup>TM</sup> certification and intends to apply for Out-of-Province COR<sup>TM</sup> Reciprocity (for bidding purposes only) through IHSA. Bidders applying for Out-of-Province Reciprocity must submit the request directly to the Procurement Representative, for approval by Metrolinx, prior to reaching out to their COR<sup>TM</sup> associations for a reciprocity letter. Out-of-Province COR<sup>TM</sup> Reciprocity shall be approved on a case by case basis until such time Metrolinx issues a definitive list.</li> </ol>	<ol style="list-style-type: none"> <li>A screen shot demonstrating the Bidder has achieved “Certified” status in Ontario, with IHSA, as it pertains to COR<sup>TM</sup>.</li> <li>A copy of the Bidder’s OHSAS 18001 certificate or a screen shot demonstrating that the Bidder is certified in OHSAS 18001.</li> <li>Upon receipt of Metrolinx approval, a letter from IHSA approving the Bidder’s request for Out-of-Province           <ul style="list-style-type: none"> <li>COR<sup>TM</sup> Reciprocity.”</li> </ul> </li> </ol>
<b>Mandatory Personnel Requirements</b>	
<p>The Project Manager shall have completed two (2) projects involving: Washroom renovations, electrical work, mechanical work and preferable experience with installing dual handryers faucets.</p>	<ul style="list-style-type: none"> <li>No supporting documentation required with the Submission. Metrolinx reserves the right to request two reference projects at any time after closing.</li> </ul>

The “Agreement between Owner and Contractor” of CCDC 2 2008 Stipulated Price Contract, is hereby amended as follows:

**1.0 ARTICLE A-1 THE WORK**

1.1 Paragraph 1.3 is amended as follows:

- (a) Add the words “, and attain Total Performance of the Work by the 25 day of October in the year 2018” after the words “in the year” in the third line of paragraph 1.3.

1.2 Add Paragraphs 1.4 through 1.6 as follows:

“1.4 The Contractor has informed itself of the conditions relating to the Work to be performed and has inspected and is thoroughly familiar with the location of the Work and the plans, specifications, drawings and all terms, conditions and covenants of the Contract.

1.5 The Contractor acknowledges that it meets all mandatory requirements stated in the Contract Documents.

1.6 The Contractor hereby declares that no Conflict of Interest exists in accordance with the Supplementary General Conditions of the Contract.”

**2.0 ARTICLE A-3 CONTRACT DOCUMENTS**

2.1 Paragraph 3.1 is amended as follows:

- (a) “3.1 Delete the words, “The following are the *Contract Documents* referred to in Article A-1 of the Agreement – THE WORK:  
“— Agreement between *Owner* and *Contractor*, — Definitions  
— the General Conditions of the Stipulated Price Contract”  
and replace with the words “The *Contract Documents* referred to in Article A-1 of the Agreement – THE WORK, are listed under “List of Contents” herein.”

**3.0 ARTICLE A-4 CONTRACT PRICE**

3.1 Add new Paragraphs 4.6 through 4.11 as follows:

“4.6 The Contract Price is firm.”

4.7 The Contract Price includes all specified cash allowances, contingency allowances (if applicable) and all applicable taxes, except Harmonized Sales Tax (H.S.T.).

4.8 The Contract Price represents full payment for all the Work necessary for the proper completion of the Contract.

4.9 The Contract Price includes all labour, superintendence, plant, tools, appliances, equipment, supplies and other accessories, services and facilities customs, duties, royalties, handling, transportation, travel, mileage, overhead, profit and all other charges.

4.10 Allowances

4.10.1 Cash Allowances

.1 Cash Allowances are subject to the Supplementary General Conditions and General Conditions of the Contract.

4.10.2 Contingency Allowances

.1 Contingency Allowances are subject to the General Conditions of the Contract.

#### **4.0 ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING**

4.1 Paragraph 6.1 is amended as follows:

- (a) Delete the words “or other form of electronic communication” from the second line of paragraph 6.1.
- (b) Delete the words “or other form of electronic communication” from the seventh line of paragraph 6.1.
- (c) Delete the words “email address” from the signature lines for the Owner, Contractor and Consultant in paragraph 6.1.

#### **5.0 ARTICLE A-9 SEVERABILITY**

5.1 Add new Article A-9 as follows:

“ARTICLE A-9 SEVERABILITY

9.1 If any provision of this Contract is found to be invalid or unenforceable in any circumstances, the remainder of this Contract, and the application of such provision in any other circumstances, shall not be affected.”

#### **6.0 ARTICLE A-10 TIME OF ESSENCE**

6.1 Add new Article A-10 as follows:

“ARTICLE A-10 TIME OF ESSENCE

10.1 Time shall be of the essence of the Contract and under all Contract Documents.”

END OF SECTION

CCDC 2

## stipulated price contract

2 0 0 8

Apply a CCDC 2 copyright seal here. The application of the seal demonstrates the intention of the party proposing the use of this document that it be an accurate and unamended form of CCDC 2 – 2008 except to the extent that any alterations, additions or modifications are set forth in supplementary conditions.

CANADIAN CONSTRUCTION DOCUMENTS COMMITTEE  
CANADIAN CONSTRUCTION DOCUMENTS COMMITTEE  
CANADIAN CONSTRUCTION DOCUMENTS COMMITTEE

# **AGREEMENT BETWEEN OWNER AND CONTRACTOR**

For use when a stipulated price is the basis of payment.

**This Agreement** made on the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_.

**by and between the parties**

hereinafter called the "*Owner*"

**and**

hereinafter called the "*Contractor*"

The *Owner* and the *Contractor* agree as follows:

## **ARTICLE A-1 THE WORK**

The *Contractor* shall:

1.1 perform the *Work* required by the *Contract Documents* for

located at

*insert above the name of the Work*

for which the Agreement has been signed by the parties, and for which

*insert above the Place of the Work*

is acting as and is hereinafter called the "*Consultant*" and

*insert above the name of the Consultant*

1.2 do and fulfill everything indicated by the *Contract Documents*, and

1.3 commence the *Work* by the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_ and, subject to adjustment in *Contract Time* as provided for in the *Contract Documents*, attain *Substantial Performance of the Work*, by the \_\_\_\_\_ day of \_\_\_\_\_ in the year \_\_\_\_\_.

## **ARTICLE A-2 AGREEMENTS AND AMENDMENTS**

2.1 The *Contract* supersedes all prior negotiations, representations or agreements, either written or oral, relating in any manner to the *Work*, including the bidding documents that are not expressly listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS.

2.2 The *Contract* may be amended only as provided in the *Contract Documents*.

## ARTICLE A-3 CONTRACT DOCUMENTS

3.1 The following are the *Contract Documents* referred to in Article A-1 of the Agreement - THE WORK:

- ~~Agreement between Owner and Contractor~~
- ~~Definitions~~
- ~~The General Conditions of the Stipulated Price Contract~~
- \*

\* (Insert here, attaching additional pages if required, a list identifying all other Contract Documents e.g. supplementary conditions; information documents; specifications, giving a list of contents with section numbers and titles, number of pages and date; material finishing schedules; drawings, giving drawing number, title, date, revision date or mark; addenda, giving title, number, date)



Title	No. of Pages
List of Contents .....	2
Addendum No. 2 dated August 2, 2018.....	3
Addendum No. 1 dated July 26, 2018.....	1
Form of Tender .....	4
Contract Prices .....	2
Conflict of Interest .....	2
Mandatory Corporate, Personnel and Technical Requirements .....	2
Supplementary Agreement Between Owner and Contractor.....	3
Agreement Between Owner and Contractor .....	8
Supplementary Definitions of the Contract .....	6
Definitions of the Contract.....	3
Supplementary General Conditions of the Contract .....	69
General Conditions of the Contract .....	23

## ***DIVISION 1 - GENERAL REQUIREMENTS***

01000 General Instructions .....	6
01300 Shop Drawings and Other Submittals.....	4
01400 Quality Control .....	3
01500 Temporary Facilities .....	1
01560 Environmental Protection .....	2
01600 Safety Requirements .....	6
01700 Material and Equipment.....	3
01710 Cleaning .....	1
01800 Project Closeout.....	3

## ***SPECIFICATIONS – DIVISIONS 2 THROUGH 16***

15010 Basic Mechanical Requirements .....	9
15050 Basic Mechanical Materials and Methods .....	10
15060 Pipes, Hangers and Supports.....	7
15110 Pipes, Fittings and Valves.....	15
15400 Plumbing General Requirements .....	3
15410 Plumbing Fixtures.....	2
16010 Electrical General Provisions.....	14
16062 Grounding System .....	3
16071 Fastenings and Supports .....	2
16122 Wire and Cables 0-1000V.....	3
16131 Splitters, Junction, Pullboxes and Cabinets .....	4
16133 Conduits, Fastenings and Conduit Fittings .....	4
16151 Wire and Box Connectors (0-1000V).....	2
16477 Moulded Case Circuit Breakers .....	2

## ***DRAWINGS***

E-001 Electrical Key Plan, Legend & Panelboard .....	1
E-002 Electrical Washroom Plan.....	1
M-100 Mechanical, Legend, General Notes and Washroom Parts Plan .....	1
M-101 Mechanical Details.....	1

## ***ATTACHMENTS***

Contract Performance Appraisal.....	1
Metrolinx Safety Guidelines for Contractors, Consultants & Project Coordinators .....	75

## ARTICLE A-4 CONTRACT PRICE

4.1 The *Contract Price*, which excludes *Value Added Taxes*, is:

/100 dollars \$

4.2 *Value Added Taxes* (of %) payable by the *Owner* to the *Contractor* are:

/100 dollars \$

4.3 Total amount payable by the *Owner* to the *Contractor* for the construction of the *Work* is:

/100 dollars \$

4.4 These amounts shall be subject to adjustments as provided in the *Contract Documents*.

4.5 All amounts are in Canadian funds.

## ARTICLE A-5 PAYMENT

5.1 Subject to the provisions of the *Contract Documents*, and in accordance with legislation and statutory regulations respecting holdback percentages and, where such legislation or regulations do not exist or apply, subject to a holdback of

percent ( %), the *Owner* shall:

- .1 make progress payments to the *Contractor* on account of the *Contract Price* when due in the amount certified by the *Consultant* together with such *Value Added Taxes* as may be applicable to such payments, and
- .2 upon *Substantial Performance of the Work*, pay to the *Contractor* the unpaid balance of the holdback amount when due together with such *Value Added Taxes* as may be applicable to such payment, and
- .3 upon the issuance of the final certificate for payment, pay to the *Contractor* the unpaid balance of the *Contract Price* when due together with such *Value Added Taxes* as may be applicable to such payment.

5.2 In the event of loss or damage occurring where payment becomes due under the property and boiler insurance policies, payments shall be made to the *Contractor* in accordance with the provisions of GC 11.1 – INSURANCE.

5.3 Interest

- .1 Should either party fail to make payments as they become due under the terms of the *Contract* or in an award by arbitration or court, interest at the following rates on such unpaid amounts shall also become due and payable until payment:
  - (1) 2% per annum above the prime rate for the first 60 days.
  - (2) 4% per annum above the prime rate after the first 60 days.Such interest shall be compounded on a monthly basis. The prime rate shall be the rate of interest quoted by

(Insert name of chartered lending institution whose prime rate is to be used)

for prime business loans as it may change from time to time.

- .2 Interest shall apply at the rate and in the manner prescribed by paragraph 5.3.1 of this Article on the settlement amount of any claim in dispute that is resolved either pursuant to Part 8 of the General Conditions – DISPUTE RESOLUTION or otherwise, from the date the amount would have been due and payable under the *Contract*, had it not been in dispute, until the date it is paid.

## ARTICLE A-6 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING

- 6.1 *Notices in Writing* will be addressed to the recipient at the address set out below. The delivery of a *Notice in Writing* will be by hand, by courier, by prepaid first class mail, or by facsimile or other form of electronic communication during the transmission of which no indication of failure of receipt is communicated to the sender. A *Notice in Writing* delivered by one party in accordance with this *Contract* will be deemed to have been received by the other party on the date of delivery if delivered by hand or courier, or if sent by mail it shall be deemed to have been received five calendar days after the date on which it was mailed, provided that if either such day is not a *Working Day*, then the *Notice in Writing* shall be deemed to have been received on the *Working Day* next following such day. A *Notice in Writing* sent by facsimile or other form of electronic communication shall be deemed to have been received on the date of its transmission provided that if such day is not a *Working Day* or if it is received after the end of normal business hours on the date of its transmission at the place of receipt, then it shall be deemed to have been received at the opening of business at the place of receipt on the first *Working Day* next following the transmission thereof. An address for a party may be changed by *Notice in Writing* to the other party setting out the new address in accordance with this Article.

### Owner

*name of Owner\**

*address*

*facsimile number*

*email address*

### Contractor

*name of Contractor\**

*address*

*facsimile number*

*email address*

### Consultant

*name of Consultant\**

*address*

*facsimile number*

*email address*

*\* If it is intended that the notice must be received by a specific individual, that individual's name shall be indicated.*

## ARTICLE A-7 LANGUAGE OF THE CONTRACT

- 7.1 When the *Contract Documents* are prepared in both the English and French languages, it is agreed that in the event of any apparent discrepancy between the English and French versions, the English / French # language shall prevail.  
# *Complete this statement by striking out inapplicable term.*

- 7.2 This Agreement is drawn in English at the request of the parties hereto. La présente convention est rédigée en anglais à la demande des parties.

## ARTICLE A-8 SUCCESSION

8.1 The *Contract* shall enure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors, and assigns.

**In witness whereof** the parties hereto have executed this Agreement by the hands of their duly authorized representatives.

SIGNED AND DELIVERED  
in the presence of:

**WITNESS**

**OWNER**

*name of owner*

*signature*

*signature*

*name of person signing*

*name and title of person signing*

*signature*

*signature*

*name of person signing*

*name and title of person signing*

**WITNESS**

**CONTRACTOR**

*name of Contractor*

*signature*

*signature*

*name of person signing*

*name and title of person signing*

*signature*

*signature*

*name of person signing*

*name and title of person signing*

*N.B. Where legal jurisdiction, local practice or Owner or Contractor requirement calls for:*  
*(a) proof of authority to execute this document, attach such proof of authority in the form of a certified copy of a resolution naming the representative(s) authorized to sign the Agreement for and on behalf of the corporation or partnership; or*  
*(b) the affixing of a corporate seal, this Agreement should be properly sealed.*

## SUPPLEMENTARY DEFINITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 1 of 6

The “Definitions” of CCDC 2 2008 – Stipulated Price Contract, are hereby amended as follows:

#### 1.0 Definitions

##### 1.1 Act

- (a) Add new definition, “Act”, as follows:

*Act* means the Construction Act (Ontario) as amended.”

##### 1.2 Applicable Law

- (a) Add new definition, “Applicable Law”, as follows:

*Applicable Law* means all applicable laws, statutes, regulations, orders, by-laws, treaties, judgements, decrees and ordinances applicable from time to time and, whether or not having the force of law, all applicable approvals, standards, codes, requirements, requests, directives, rules, guidelines, instructions, circulars, manuals, and policies of any Governmental Authority having or purporting to have jurisdiction or authority over a party, property, transaction or event, including laws relating to workplace safety and insurance, occupational health and safety and employment standards.”

##### 1.3 Confidential Information

- (a) Add new definition, “Confidential Information”, as follows:

*Confidential Information* means all information of a confidential nature (as determined with reference to its treatment by the Owner) which is provided, disclosed or made available (orally, electronically or in writing or by any other media) by the Owner or the Consultant (or its representatives) to the Contractor (including to employees, contractors, or other representatives thereof). For greater certainty, *Confidential Information* also includes all construction documents, Personal Information and all of the Owner’s materials provided by the Owner, which includes: (a) specifications, drawings, images, software, audio or video recordings, specifications, performance requirements, software development tools, technologies, content, data (including all information whether or not contained in or on any database or electronic information storage system or media owned by or in the custody or control of the Owner), (b) technical information, and any other recorded information, in any form and on any media, that are proprietary to, or controlled or licensed by, the Owner or the Consultant and provided to the Contractor; (c) all procurement documents issued by the Owner; (d) all documentation or source materials (including source code)

## SUPPLEMENTARY DEFINITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 2 of 6

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related to any of the foregoing; and (e) all copies, translations, improvements, modifications, enhancements, adaptations, or derivations made to the aforementioned Owner's materials by the Owner or any third party not performing work under this Contract."

#### 1.4 **Consultant**

- (a) Delete the definition of "Consultant" in its entirety and replace it with the following:

The *Consultant* shall be the person or entity designated as the *Consultant* by the Owner, from time to time."

#### 1.5 **Contract Documents**

- (a) Add the words "in writing" after the word "upon" in the second line of the definition of Contract Documents.

#### 1.6 **Contract Time**

- (a) Delete the word "Substantial" and substitute the word "Total" in the second line.

#### 1.7 **FIPPA**

- (a) Add new definition, "FIPPA", as follows:
  - (i) FIPPA means the Freedom of Information and Protection of Privacy Act (Ontario) as amended."

#### 1.8 **FIPPA Records**

- (a) Add new definition, "FIPPA Records" as follows:

*FIPPA Records* means all information, data, records and materials, however recorded, in the custody or control of the Owner, including Confidential Information and Personal Information (as defined in FIPPA). For the purposes of this definition, documents held by the *Contractor* in connection with this *Contract* are considered to be in the control of the *Owner*."

#### 1.9 **GC**

- (a) Add new definition, "GC", as follows:

## SUPPLEMENTARY DEFINITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 3 of 6

*GC* means the General Conditions of the Contract, as amended by the Supplementary General Conditions”.

#### 1.10 **Governmental Authority**

- (a) Add new definition, “Governmental Authority”, as follows:

*Governmental Authority* means any domestic government, including any federal, provincial, territorial, municipal, regional or other local government, and any government established court, agency, tribunal, commission or other authority exercising or purporting to exercise executive, legislative, judicial, regulatory or administrative functions respecting government; provided, however, “*Governmental Authority*” does not include Metrolinx.

#### 1.11 **Independent Inspection Company**

- (a) Add new definition, “Independent Inspection Company”, as follows:

“*Independent Inspection Company* means any independent or 3<sup>rd</sup> party inspection and testing agencies/companies.”

#### 1.12 **OHSA**

- (a) Add new definition, “OHSA”, as follows:

*OHSA* means the Occupational Health and Safety Act (Ontario), as amended.”

#### 1.13 **Personal Information**

- (a) Add new definition, “Personal Information” as follows:

*Personal Information* has the meaning as set out for the term in *FIPPA*.

#### 1.14 **Provisional Item(s)**

- (a) Add new definition, “Provisional Item(s) as follows:

*Provisional Item(s)* are one or more components of the Work that are to be exercised at the sole discretion of Metrolinx.

#### 1.15 **Railway**

- (a) Add new definition, “Railway”, as follows:



## SUPPLEMENTARY DEFINITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 4 of 6

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*Railway* or *Railways* means one or more of the Canadian National Railway Company, Canadian Pacific Railway Company, or The Toronto Terminals Railway Company Limited owning or operating the *Railway Right-of-Way* on which all or part of the *Work* may be performed.”

#### 1.16 **Railway’s Engineer**

- (a) Add new definition, “Railway’s Engineer”, as follows:

*Railway’s Engineer* means the person designated as such by the applicable *Railway* or the *Owner*.”

#### 1.17 **Railway Flag Person**

- (a) Add new definition, “Railway Flag Person”, as follows:

*Railway Flag Person* means the person designated as such by the applicable *Railway* or the *Owner* to provide flagging services.”

#### 1.18 **Railway Right-of-Way**

- (a) Add new definition, “Railway Right-of-Way”, as follows:

*Railway Right-of-Way* means the land, property, trackage, equipment and facilities of the *Railway*, including main tracks, side tracks, branch lines, yards and terminals owned or controlled by the *Railway* or the *Owner*.”

#### 1.19 **Submittals**

- (a) Add new definition, “Submittals”, as follows:

*Submittals* are any or all documents or items required by the *Contract Documents* to be provided by the *Contractor* to the *Owner* or the *Consultant*, including but not limited to:

- Shop Drawings, samples, models, specifications, mock-ups to indicate details or characteristics, before the portion of the *Work* that they represent can be incorporated into the *Work*;
- Construction Schedule;
- As-built drawings and manuals to provide instructions for the operation; and
- safety plans, schedules or policies; and

- documents related to the warranty or maintenance of the *Work*.”

**1.20 Standard of Care**

- (a) Add new definition, “Standard of Care”, as follows:

*Standard of Care* shall have the meaning set out in GC 3.15.”

**1.21 Total Performance of the Work**

- (a) Add new definition, “Total Performance of the Work”, as follows:

*Total Performance of the Work* means when the entire *Work*, except for those items arising from GC 12.3 – WARRANTY, has been performed in accordance with the requirements of the *Contract Documents* and is so certified by the *Consultant*.”

**1.22 Toxic and Hazardous Substances**

- (a) Add new definition, “Toxic and Hazardous Substances”, as follows:

*Toxic and Hazardous Substances* means, collectively, any contaminant, waste, subject waste, pollutant, toxic substance, dangerous goods, asbestos, petroleum, its derivatives, by-products or other hydrocarbons, as defined in or pursuant to any applicable laws, regulations, by-laws, guidelines or orders rendered by any governmental authority having jurisdiction or any other substance or material which, when released to, or present in, the natural environment, is likely to cause in some immediate or foreseeable future time, material harm or degradation of the natural environment or material risk to human health.”

**1.23 Unit Price**

- (a) Add new definition “Unit Price”, as follows:

A Unit Price means an all-inclusive cost for goods and/or services, including customs duties, royalties, handling, transportation, overhead, profit and all other charges as it relates to SGC 4.3, Provisional Items.

**1.24 WSIB**

- (a) Add new definition, “WSIB”, as follows:

*WSIB* means the Workplace Safety and Insurance Board.”

**1.25 Working Days**

**SUPPLEMENTARY DEFINITIONS OF THE CONTRACT**

**INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
CONCOURSE WASHROOMS – UNION STATION**

**Contract No. IT-2018-STNS-255**

Page 6 of 6

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- (a) Delete the definition of “Working Days” in its entirety and replace with the following:

*Working Days* means any day other than: (a) a Saturday or Sunday and (b) any other day on which the *Owner’s* Head Office is not open for business. Each *Working Day* will end at 4:00 p.m. on that day.”

END OF SECTION

## **DEFINITIONS OF THE CONTRACT**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION**

**Contract No. IT-2018-STNS-255**

Page 1 of 1

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#### **1.0 Definitions**

The “Definitions” of CCDC 2 2008 Stipulated Price Contract shall constitute the “Definitions of the Contract” in their entirety as amended by the Supplementary Definitions herein. CCDC 2 2008 can be purchased at [www.ccdc.org](http://www.ccdc.org).

END OF SECTION

## DEFINITIONS

The following Definitions shall apply to all *Contract Documents*.

**1. Change Directive**

A *Change Directive* is a written instruction prepared by the *Consultant* and signed by the *Owner* directing the *Contractor* to proceed with a change in the *Work* within the general scope of the *Contract Documents* prior to the *Owner* and the *Contractor* agreeing upon adjustments in the *Contract Price* and the *Contract Time*.

**2. Change Order**

A *Change Order* is a written amendment to the *Contract* prepared by the *Consultant* and signed by the *Owner* and the *Contractor* stating their agreement upon:

- a change in the *Work*;
- the method of adjustment or the amount of the adjustment in the *Contract Price*, if any; and
- the extent of the adjustment in the *Contract Time*, if any.

**3. Construction Equipment**

*Construction Equipment* means all machinery and equipment, either operated or not operated, that is required for preparing, fabricating, conveying, erecting, or otherwise performing the *Work* but is not incorporated into the *Work*.

**4. Consultant**

The *Consultant* is the person or entity engaged by the *Owner* and identified as such in the Agreement. The *Consultant* is the Architect, the Engineer or entity licensed to practise in the province or territory of the *Place of the Work*. The term *Consultant* means the *Consultant* or the *Consultant's* authorized representative.

**5. Contract**

The *Contract* is the undertaking by the parties to perform their respective duties, responsibilities and obligations as prescribed in the *Contract Documents* and represents the entire agreement between the parties.

**6. Contract Documents**

The *Contract Documents* consist of those documents listed in Article A-3 of the Agreement - CONTRACT DOCUMENTS and amendments agreed upon between the parties.

**7. Contract Price**

The *Contract Price* is the amount stipulated in Article A-4 of the Agreement - CONTRACT PRICE.

**8. Contract Time**

The *Contract Time* is the time stipulated in paragraph 1.3 of Article A-1 of the Agreement - THE WORK from commencement of the *Work* to *Substantial Performance of the Work*.

**9. Contractor**

The *Contractor* is the person or entity identified as such in the Agreement. The term *Contractor* means the *Contractor* or the *Contractor's* authorized representative as designated to the *Owner* in writing.

**10. Drawings**

The *Drawings* are the graphic and pictorial portions of the *Contract Documents*, wherever located and whenever issued, showing the design, location and dimensions of the *Work*, generally including plans, elevations, sections, details, and diagrams.

**11. Notice in Writing**

A *Notice in Writing*, where identified in the *Contract Documents*, is a written communication between the parties or between them and the *Consultant* that is transmitted in accordance with the provisions of Article A-6 of the Agreement – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING.

**12. Owner**

The *Owner* is the person or entity identified as such in the Agreement. The term *Owner* means the *Owner* or the *Owner's* authorized agent or representative as designated to the *Contractor* in writing, but does not include the *Consultant*.

**13. Place of the Work**

The *Place of the Work* is the designated site or location of the *Work* identified in the *Contract Documents*.

**14. Product**

*Product or Products* means material, machinery, equipment, and fixtures forming the *Work*, but does not include *Construction Equipment*.

- 15. Project**  
The *Project* means the total construction contemplated of which the *Work* may be the whole or a part.
- 16. Provide**  
*Provide* means to supply and install.
- 17. Shop Drawings**  
*Shop Drawings* are drawings, diagrams, illustrations, schedules, performance charts, brochures, *Product* data, and other data which the *Contractor* provides to illustrate details of portions of the *Work*.
- 18. Specifications**  
The *Specifications* are that portion of the *Contract Documents*, wherever located and whenever issued, consisting of the written requirements and standards for *Products*, systems, workmanship, quality, and the services necessary for the performance of the *Work*.
- 19. Subcontractor**  
A *Subcontractor* is a person or entity having a direct contract with the *Contractor* to perform a part or parts of the *Work* at the *Place of the Work*.
- 20. Substantial Performance of the Work**  
*Substantial Performance of the Work* is as defined in the lien legislation applicable to the *Place of the Work*. If such legislation is not in force or does not contain such definition, or if the *Work* is governed by the Civil Code of Quebec, *Substantial Performance of the Work* shall have been reached when the *Work* is ready for use or is being used for the purpose intended and is so certified by the *Consultant*.
- 21. Supplemental Instruction**  
A *Supplemental Instruction* is an instruction, not involving adjustment in the *Contract Price* or *Contract Time*, in the form of *Specifications*, *Drawings*, schedules, samples, models or written instructions, consistent with the intent of the *Contract Documents*. It is to be issued by the *Consultant* to supplement the *Contract Documents* as required for the performance of the *Work*.
- 22. Supplier**  
A *Supplier* is a person or entity having a direct contract with the *Contractor* to supply *Products*.
- 23. Temporary Work**  
*Temporary Work* means temporary supports, structures, facilities, services, and other temporary items, excluding *Construction Equipment*, required for the execution of the *Work* but not incorporated into the *Work*.
- 24. Value Added Taxes**  
*Value Added Taxes* means such sum as shall be levied upon the *Contract Price* by the Federal or any Provincial or Territorial Government and is computed as a percentage of the *Contract Price* and includes the Goods and Services Tax, the Quebec Sales Tax, the Harmonized Sales Tax, and any similar tax, the collection and payment of which have been imposed on the *Contractor* by the tax legislation.
- 25. Work**  
The *Work* means the total construction and related services required by the *Contract Documents*.
- 26. Working Day**  
*Working Day* means a day other than a Saturday, Sunday, statutory holiday, or statutory vacation day that is observed by the construction industry in the area of the *Place of the Work*.

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 1 of 66

Where a General Condition or paragraph of the General Conditions of the Stipulated Price Contract of the CCDC2 2008 – Stipulated Price Contracts (hereinafter referred to as “General Conditions of the Contract” is deleted in its entirety by these Supplementary General Conditions, it shall be noted as “Intentionally left blank”. The numbering of the remaining General Conditions or paragraphs shall remain unchanged, and the numbering of the deleted item will be retained. The General Conditions of the Contract are hereby amended as follows:

#### 1.0 GC 1.1 - Contract Documents

##### 1.1 GC 1.1.7

- (a) Delete GC 1.1.7 in its entirety and replace with the following:

“1.1.7 If there is a conflict with the *Contract Documents*, it shall be resolved be in accordance with the order of priority set out in Article A-3 *Contract Documents* of the Agreement between the Owner and the Contractor.”

- (b) Add GC 1.1.7.5, as follows:

“1.1.7.5 In case of discrepancies, noted materials and annotations shall take precedence over graphic indications in the *Contract Documents*.”

##### 1.2 GC 1.1.8

- (a) Delete GC 1.1.8 in its entirety and replace with the following:

“1.1.8 The *Owner* shall provide the *Contractor*, without charge, up to ten copies of the *Contract Documents*. If requested by the *Contractor*, the *Owner* shall provide additional copies, at the cost of the *Contractor*.”

##### 1.3 GC 1.1.11

- (a) Add GC 1.1.11 as follows:

“1.1.11 Subject to paragraph 1.1.9, all surveys, reports, drawings, calculations, designs, plan, specifications and other data, information, materials, collected, compiled, drawn or produced, including computer printouts, pursuant to the Contract are the property of the Owner. The Contractor shall transfer the copyright, including an express waiver and release of all moral rights, of all Drawings, plans, Specifications, models, photos, and other written or graphic materials produced under the Contract to the Owner which will be free to use them as it sees fit. Any waiver or release obtained under this clause may include a reasonable exclusion of

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 2 of 66

liability regarding the use of materials for other projects. In the event of any dispute or disagreement pertaining to the Work between the Owner and the Contractor, the Owner will have the unqualified right and license to use the design as it may have evolved from time to time and any Drawings, Specifications, documents, materials of any nature and kind which may now or hereafter exist and which the Contractor may have any right, title, interest or copyright for the purpose of completing the design and construction of the Work for which they were prepared.”

#### 1.4 GC 1.1.12

(a) Add GC 1.1.12 as follows:

“1.1.12 Wherever in the Contract Documents items are noted as “N.I.C.” (“Not In Contract”) the Owner will provide such items either during or after the Contract Time. The Contractor shall accommodate the entry of such items into the Work when N.I.C. items are delivered to the Place of the Work.”

## 2.0 GC 1.2 - Law Of The Contract

1.1 Delete GC 1.2.1 in its entirety and replace with the following:

“1.2.1 The parties agree that the law of Ontario, Canada shall govern the interpretation of the *Contract* and irrevocably attorn to the exclusive jurisdiction of the courts of Ontario, Canada and all lawful courts to which decisions can be appealed therefrom.”

## 3.0 GC 1.3 – Rights and Remedies

3.1 Add GC 1.3.3 as follows:

“1.3.3 Notwithstanding paragraph 1.3.1, the Owner shall not be liable, whether in contract, tort or any other theory of law, for any claim arising from any prior negotiation, representation, or agreement, whether written or oral, which is superseded by the Contract under Article A-2 of the Agreement – Agreements and Amendments.”

## 4.0 GC 1.4 ASSIGNMENT

4.1 GC 1.4.1

(a) Delete GC 1.4.1 in its entirety and replace with the following:

“1.4.1 The *Contractor* shall not assign the *Contract*, either whole or in part, without the prior written consent of the *Owner*. The *Owner*



may assign the Contract, either in whole or in part, with written notice to the *Contractor*.”

**5.0 GC 1.5 ADVERTISING AND PUBLIC NOTICES**

5.1 Add GC 1.5 – ADVERTISING AND PUBLIC NOTICES as follows:

“GC 1.5 – ADVERTISING AND PUBLIC NOTICES

1.5.1 The *Contractor* will obtain the *Owner’s* prior written approval for any public advertising, written public sales promotions, press release or other general publicity matter, in which the name or trademarks of the *Owner* or any *Railway* are mentioned or used or in which words are used from which any connection with the *Owner* or any *Railway* or their trademarks may be inferred. The *Contractor* will not allow or permit any public ceremony in connection with the *Work* without the prior written permission of the *Owner*, which may be unreasonably withheld. The *Contractor* will not erect or permit the erection of any sign or advertising without the prior written approval of the *Owner*. The *Contractor* shall not publish, issue or make any public statements or news release, electronic or otherwise concerning the *Contract* or the *Work*, without the express written consent of the *Owner*, which may be unreasonably withheld”

**6.0 GC 1.6 CONFIDENTIAL INFORMATION AND PERSONAL INFORMATION**

6.1 Add GC 1.6 - CONFIDENTIAL INFORMATION AND PERSONAL INFORMATION as follows:

“GC 1.6 – CONFIDENTIAL INFORMATION AND PERSONAL INFORMATION

1.6.1 The *Contractor* shall not disclose or provide any Confidential Information to third parties who do not require that information or data to complete any portion of the *Work* and who are not authorized by the *Owner* to receive, or have access to, such Confidential Information.

1.6.2 The *Contractor* acknowledges that the *Owner* is a provincial crown agency subject to the *Freedom of Information and Protection of Privacy Act* (Ontario), and agrees that all *FIPPA Records* are subject to, and the collection, use, storage and treatment thereof, is governed by *FIPPA*. The *Contractor* agrees to keep all *FIPPA Records* secure and available, in accordance with the requirements of *FIPPA*. In the event of a conflict between the requirements of this Contract and the requirements of *FIPPA*, the requirements of *FIPPA* shall take precedence.

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 4 of 66

- 1.6.3 In the event that a request is made under *FIPPA* for the disclosure of any *FIPPA Records*, the Owner shall provide prompt written notice thereof to the Contractor and the Contractor shall provide any and all relevant *FIPPA Records* to the Owner on demand for the purposes of responding to an access request under *FIPPA*. In these circumstances, the Contractor shall provide all *FIPPA Records* requested to the Owner's Freedom of Information Coordinator (or equivalent) within seven (7) *Working Days* of receipt of the request from the Owner. Notwithstanding anything to the contrary in this Contract and subject to the Contractor's rights of appeal pursuant to Section 28(9) of *FIPPA*, the Owner shall determine what *FIPPA Records* will be disclosed in connection with any such request, in accordance with the requirements of *FIPPA* (including, without limitation, the requirements with respect to affected persons set out in Section 28 thereof).
- 1.6.4 For greater certainty, the Contractor shall advise its representatives and all Subcontractors of the requirements of this GC 1.6, and associated requirements set out elsewhere in this Contract, and take appropriate action to ensure compliance by such representatives with the terms of this GC 1.6. In addition to any other liabilities of the Contractor pursuant to this Contract or otherwise at law or in equity, the Contractor shall be liable for all claims arising from any non-compliance with this GC 1.6 by the Contractor, Subcontractors and their respective personnel."

## 7.0 GC 1.7 RECORDS AND AUDIT

- 7.1 Add GC 1.7 - RECORDS AND AUDIT as follows:

### "GC 1.7 - RECORDS AND AUDIT

- 1.7.1 The Contractor shall maintain complete and accurate books, payrolls, accounts, records and invoices in relation to the Contract and shall grant the Owner, full audit rights in respect of all said books, records, accounts and invoices relating to the performance of the Work. Such records shall include, but are not limited to:
- .1 a daily log or report containing details on weather conditions, the condition of the Place of the Work, work force of the Contractor, Subcontractor, Suppliers, third parties and any other forces on site at the Place of the Work, and also record general activities and performance for the day. Such log or report shall also include any extraordinary or emergency events which may occur;
  - .2 records with details on manpower and material resourcing of the Work, including records which document the activities of the

Contractor in connection with the construction schedule, and comparing that resourcing to the resourcing anticipated against the most recent version of the construction schedule; and

- .3 other information, reports, documents, records and the like pertaining to the physical condition of the Place of the Work, health and safety, fire safety, emergency preparedness, environmental matters, human resources or employee matters.

1.7.2 The *Owner* may inspect and audit such books, payrolls, accounts records and invoices of the *Contractor* from time to time, at any time as deemed necessary by the *Owner* prior to the date of Final Certificate for Payment and thereafter for a period of two (2) years to verify the *Contractor's* estimates, valuation of changes in the *Work*, the performance of the *Contractor*, and claims, and the *Contractor* shall supply certified copies of books, payrolls, accounts, invoices and other records to the *Owner* or access to same as required by the *Owner*. The books and records, together with the supporting or underlying documents and materials shall be made available, upon request, to the *Owner*, through its employees, agents, representatives, or other designees, during normal business hours at the *Contractor's* office or place of business. The *Contractor* shall ensure an equivalent provision to this GC 1.7.2 are part of each Subcontractor's and Supplier's contract (and shall require the Subcontractors and Suppliers to incorporate same into every level of contract thereunder) for any part of the *Work* and the *Contract*, to provide the *Owner* with access to project records as contemplated herein.

1.7.3 If the *Contractor* fails to keep, or fails to cause to be kept, adequate records to document the estimate, valuation of a change in the *Work*, the *Contractor's* performance, or claim or fails to provide certified copies or access to such records when requested, the *Contractor* shall forfeit all right to payment for the change in the *Work* or claim which it may otherwise have had. Any amount already paid by the *Owner* in respect of such change in *Work* or claim shall become immediately repayable to the *Owner* on demand for same."

## **8.0 GC 1.8 FURTHER ASSURANCES**

8.1 Add GC 1.8 - FURTHER ASSURANCES as follows:

"GC 1.8 - FURTHER ASSURANCES

1.8.1 Each party agrees that it shall at any time and from time to time, at its own expense, execute and deliver such further documents and do such further acts and things as the other party may reasonably request for the purpose of

giving effect to the *Contract* or carrying out the intention of facilitating the performance of the *Contract*.

- 1.8.2 Without limiting the generality of GC 1.8.1 and notwithstanding any other provisions of the *Contract*, the *Contractor* acknowledges that it may, from time to time during the *Contract Time*, be requested to provide its agreement to indemnify, or to directly indemnify third parties for any liability, damages or claims which may arise in connection with the performance of the *Work* and as a result of the acts or omissions of the *Contractor* or those persons or entities for who it is responsible at law, and the *Contractor* shall reasonably cooperate with the *Owner* and shall execute and deliver such documents and agreements as may be required and requested by the *Owner*.”

## **PART 2 ADMINISTRATION OF THE CONTRACT**

### **1.0 GC 2.1 AUTHORITY OF THE CONSULTANT**

- 1.1 Delete GC 2.1 in its entirety and replace with the following:

#### **"GC 2.1 AUTHORITY OF THE CONSULTANT**

- 2.1.1 The *Consultant* shall be appointed by the *Owner* and shall be the *Owner's* representative during construction and until the issuance by the *Consultant* of a certificate attesting to the Total Performance of the *Work*, or at a date specified by the *Owner*. All instructions to the *Contractor* including instructions from the *Owner* will be issued by the *Consultant*. The *Consultant* will have the authority to act on behalf of the *Owner* only to the extent provided in the *Contract Documents*.
- 2.1.2 The *Consultant* shall inspect the *Work* for its conformity with the plans and Specifications, and record the necessary data to establish payment quantities under the schedule of Contract quantities and unit prices or to make an assessment of the value of the *Work* completed in the case of a lump sum price contract.
- 2.1.3 The *Consultant* will investigate all claims of a change in the *Work* made by the *Contractor* and issue appropriate instructions
- 2.1.4 In the case of non-compliance with the provisions of the *Contract* by the *Contractor*, the *Consultant*, after consultation with the *Owner*, will have the authority to suspend the *Work* for such reasonable time as may be necessary to remedy such non-compliance. The *Contractor* shall not be entitled to any compensation for suspension of the *Work* in these circumstances.

2.1.5 The duties, responsibilities and limitations of authority of the *Consultant* as set forth in the *Contract Documents* may be modified or extended by the *Owner* in writing.

2.1.6 If the *Consultant's* employment is terminated, the *Owner* shall appoint a replacement *Consultant* whose status under the *Contract Documents* shall be that of the former *Consultant*."

## **2.0 GC 2.2 ROLE OF THE CONSULTANT**

### **2.1 GC 2.2.3**

(a) Delete the second sentence of GC 2.2.3.

### **2.2 GC 2.2.6**

(a) Add the word "schedules" after the word "techniques," in the second line.

### **2.3 GC 2.2.7**

(a) Delete GC 2.2.7 in its entirety and replace with the following:

"2.2.7 The *Consultant* will be, in the first instance, the interpreter of the requirements of the *Contract Document*."

### **2.4 GC 2.2.14**

(a) Delete the word "submittals," and replace with the words "Submittals which are provided" after the word "Contractor's" in the first line.

### **2.5 GC 2.2.16**

(a) Delete GC 2.2.16 in its entirety and replace with the following:

"2.2.16 The Consultant will conduct reviews of the Work to determine the dates of *Substantial Performance of the Work* and *Total Performance of the Work*."

## **3.0 GC 2.3 REVIEW AND INSPECTION OF THE WORK**

### **3.1 GC 2.3.8**

(a) Add 2.3.8 as follows:

“2.3.8 The *Contractor* shall immediately inform the *Owner* and the *Consultant* of any notices, warnings or asserted violations issued by any regulatory or government agencies having jurisdiction relating to the *Work*.”

3.2 GC 2.3.9

(a) Add GC 2.3.9 as follows:

“2.3.9 The *Owner* or the *Consultant* shall have the right to:

- .1 review and inspect the progress of the *Work*; and
- .2 review, approve or accept any Submittals.

The *Owner's* or the *Consultant's* review, inspection, approval and/or acceptance is for the sole benefit of *Owner* and shall not constitute a transfer of liability from the *Contractor* to the *Owner* or the *Consultant*, nor shall it constitute a waiver by the *Owner* or the *Consultant* of the *Contractor's* liability. The *Contractor* remains liable and responsible for its actions, errors or omissions, and its obligations to carry out the *Work* in accordance with the *Contract Documents*, *Applicable Law* and the *Required Standard of Care* regardless of any such review, inspection, approval or acceptance by the *Owner*. ”

3.3 GC 2.3.10

(a) Add GC 2.3.10 as follows:

“2.3.10 Where standards of performance are specified in the *Contract Documents* and the *Work* does not comply with the performance specified, such deficiency shall be corrected as directed by the *Consultant*. Any testing of work identified as defective in accordance with GC 2.4, including retesting required by the *Owner* to verify performance, shall be done at the *Contractor's* expense.”

**4.0 GC 2.4 DEFECTIVE WORK**

4.1 GC 2.4.1

(a) Delete GC 2.4.1 in its entirety and replace with the following:

“2.4.1 The *Contractor* shall promptly correct defective work that has been rejected by the *Consultant* as failing to conform to the *Contract Documents* whether or not the defective work has been

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 9 of 66

incorporated into the *Work* and whether or not the defect is the result of poor workmanship, use of defective products or damage through carelessness or other act or omission of the *Contractor* at no additional cost to the *Owner*. If the said defective work was in any way identified as a result of, or during the course of, an inspection by the *Owner*, the *Contractor* shall reimburse the *Owner* in full for any costs or expenses incurred by the *Owner* in respect of, or as a result of, the inspection.

- .1 The *Contractor* shall rectify, in a manner acceptable to the *Owner* and the *Consultant*, all defective *Work* and deficiencies throughout the *Work*, whether or not they are specifically identified by the *Consultant*.
- .2 The *Contractor* shall prioritize the correction of any defective *Work* which, in the sole discretion of the *Owner*, adversely affects the day to day operations of the *Owner*."

#### 4.2 GC 2.4.3

- (a) Delete the words "the difference in value between the work as performed and that called for by" and replace with "the value of such work as is necessary to correct any non-compliance with" in the second and third lines of GC 2.4.3.

## PART 3 EXECUTION OF THE WORK

### 1.0 GC 3.1 CONTROL OF THE WORK

#### 1.1 GC 3.1.2

- (a) Add the word "schedules" after the word "techniques" in the first line.

#### 1.2 GC 3.1.3

- (a) Add GC 3.1.3 as follows:

"3.1.3 Notwithstanding paragraphs 3.1.1 and 3.1.2, the *Contractor* agrees that it shall fully comply with all policies and procedures of the *Owner* which are relevant to any activity of the *Contractor* to be performed under the *Contract*. The *Contractor* further agrees that it will use reasonable efforts to inquire from the *Owner* if such policies or procedures exist which are relevant to any activity of the *Contractor* to be performed under the *Contract*. The *Owner* agrees that it will use reasonable efforts to communicate to the

*Contractor* all policies or procedures it may have which are relevant to any such activity.”

1.3 GC 3.1.4

(a) Add GC 3.1.4 as follows:

“3.1.4 Prior to commencing individual procurement, fabrication and construction activities, the *Contractor* shall verify, at the *Place of the Work*, all relevant measurements and levels necessary for proper and complete fabrication, assembly and installation of the *Work* and shall further carefully compare such field measurements and conditions with the requirements of the *Contract Documents*. Where dimensions are not included or exact locations are not apparent, the *Contractor* shall immediately notify the *Consultant* in writing and obtain written instructions from the *Consultant* before proceeding with any part of the affected work.”

**2.0 GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS**

2.1 GC 3.2.2

(a) Delete GC 3.2.2 in its entirety.

**3.0 GC 3.4 DOCUMENT REVIEW**

3.1 GC 3.4.1

(a) Delete GC 3.4.1 in its entirety and replace with the following:



“3.4.1 The *Contractor* shall review the *Contract Documents* and shall report promptly to the *Consultant* any error, inconsistency or omission the *Contractor* may discover. Such review by the *Contractor* shall comply with the standard of care described in GC 3.15 STANDARD OF CARE. Except for its obligation to make such review and report the result, the *Contractor* does not assume any responsibility to the *Owner* or to the *Consultant* for the accuracy of the *Contract Documents*. The *Contractor* shall not be liable for damage or costs resulting from such errors, inconsistencies, or omissions in the *Contract Documents*, which the *Contractor* could not reasonably have discovered. If the *Contractor* does discover any error, inconsistency or omission in the *Contract Documents*, the *Contractor* shall not proceed with the *Work* affected until the *Contractor* has received corrected or missing information from the *Consultant*.”

3.2 GC 3.4.2

(a) Add GC 3.4.2 as follows:

“3.4.2 If the *Contractor* finds discrepancies in or omissions from the *Contract Documents* or has any doubt as to the meaning or intent of any part thereof, the *Contractor* shall immediately notify the *Consultant*, who will provide written instructions or explanations. Neither the *Owner* nor the *Consultant* will be responsible for oral instructions.”

**4.0 GC 3.5 CONSTRUCTION SCHEDULE**

4.1 GC 3.5.1

(a) Delete GC 3.5.1 in its entirety and replace with the following:

“3.5.1 The *Contractor* shall submit to the *Owner* and *Consultant* within five (5) *Working Days* of the date that *the Agreement Between Owner and Contractor* has been fully executed by the *Owner*, and thereafter from time to time in accordance with GC 3.5.2, a construction schedule in computerized form in accordance with the following requirements, for acceptance by the *Owner* and *Consultant*, each in its sole discretion:

.1 takes into account the sequence of construction and completion dates;

- .2 demonstrates and indicates the logic and timing of major activities of the Work with sufficient detail of critical events and their inter-relationship to demonstrate the *Work* will be performed in conformity with the *Contract Time*;
- .3 indicates proposed start dates and estimated duration for activities; and
- .4 with sufficient detail to identify the *Contractor* and each specific *Subcontractor* and their respective parts of the *Work* and specific location thereof.

If the *Owner* or the *Consultant* identifies deficiencies, problems, discrepancies or omissions in the construction schedule, the *Contractor* shall promptly revise the schedule to incorporate such comments and re-submit to the *Owner* and the *Consultant* as many times as required, all at the cost of the *Contractor*, until the construction schedule is acceptable to the *Owner* and the *Consultant*. The *Contractor* is responsible for providing a complete and sufficient constructions schedule in accordance with the requirements set out herein and there shall be no claims for delays or costs as a result of the failure to provide an acceptable schedule.”

4.2 GC 3.5.2

- (a) Add GC 3.5.2 as follows:

“3.5.2 The *Contractor* shall monitor the progress of the *Work* relative to the construction schedule and provide an updated schedule that is acceptable to the *Owner* in its sole discretion, subject to the requirements set out in GC 3.5.1, on a monthly basis or as requested by the *Owner*. The *Contractor* shall submit such updated and accepted schedule with every application for progress payment in accordance with GC 5.2.8.”

4.3 GC 3.5.3

- (a) Add GC 3.5.3 as follows:

“3.5.3 The *Contractor* shall immediately advise the *Consultant* of any revisions required to the schedule as the result of extensions of the *Contract Time* as provided in Part 6 of the General Conditions – CHANGES IN THE WORK.”

4.4 GC 3.5.4

- (a) Add GC 3.5.4 as follows:

“3.5.2 If the *Contract Price* is greater than \$500,000.00, the schedule shall be prepared using the critical path method and the *Contractor* shall submit with the schedule a Gantt Chart (a list of tasks and related information, including duration, with a bar type chart showing tasks and durations over time) and a PERT Chart (a network diagram showing all tasks and task dependencies).”

4.5 GC 3.5.5

- (a) Add GC 3.5.5 as follows:

“3.5.5 If, at any time, it should appear to the *Owner* or the *Consultant* that the actual progress of the *Work* is behind schedule or is likely to become behind schedule, or if the *Contractor* has given notice of such to the *Owner* or the *Consultant* pursuant to GC 3.5.2, the *Contractor* shall take appropriate steps to cause the actual progress of the *Work* to conform to the schedule or minimize the resulting delay and shall produce and present to the *Owner* and the *Consultant* a recovery plan demonstrating how the *Contractor* will achieve recovery of the schedule.”

**5.0 GC 3.6 SUPERVISION**

5.1 GC 3.6.1

- (a) Add the words “with the prior consent of the Owner” at the end of GC 3.6.1.

5.2 GC 3.6.3

- (a) Add GC 3.6.3 as follows:

“3.6.3 The *Contractor* shall provide the *Owner* and the *Consultant* with the name, address, and telephone number of the representative referred to in GC 3.6.1 and other responsible persons who may be contacted for emergency and other reasons during non-working hours throughout the course of the *Work*.”

5.3 GC 3.6.4

- (a) Add GC 3.6.4 as follows:

“3.6.4 The *Owner* may, at any time, object to any representative or employee of the *Contractor*, *Subcontractors* or *Suppliers* and require the *Contractor* to remove, dismiss or replace, or cause to be removed, dismissed or replaced, the said representative or employee.”

## **6.0 GC 3.7 SUBCONTRACTS AND SUPPLIERS**

### **6.1 GC 3.7.1.4**

(a) Add GC 3.7.1.4 as follows:

“4 ensure that the *Contractor*, all *Subcontractors* and *Suppliers*, and anyone employed or engaged by them directly or indirectly, have the qualifications, technical skills, levels of experience and knowledge required, and all applicable permits, licences and approvals necessary, to discharge the work to be performed by them in accordance with the terms of the *Contract*.”

### **6.2 GC 3.7.3**

(a) Delete GC 3.7.3 in its entirety and replace with the following:

“3.7.3 The *Contractor* may subcontract any part of the *Work*, subject to these General Conditions and the terms set out in the *Contract Documents*.”

### **6.3 GC 3.7.4**

(a) Delete GC 3.7.4 in its entirety and replace with the following:

“3.7.4 The *Contractor* shall notify the *Consultant*, in writing, of its intention to subcontract. Such notification shall identify the part or parts of the *Work* and the *Subcontractor* with whom it is proposing to subcontract. The *Owner* may object to the use of any *Subcontractor*, in which case the *Contractor* shall nominate an alternative *Subcontractor* for review by the *Owner*.”

### **6.4 GC 3.7.5**

(a) Delete GC 3.7.5 in its entirety and replace with the following:

“3.7.5 The *Contractor* shall not, without the written consent of the *Owner*, and whose consent may be unreasonably withheld, change a *Subcontractor* who has been engaged in accordance with this General Condition.”

6.5 GC 3.7.7

- (a) Add GC 3.7.7 as follows:

“3.7.7 The *Contractor* shall preserve and protect the rights of the *Owner* with respect to that part of the *Work* to be performed under subcontract and shall enter into agreements with the intended *Subcontractors* to require them to perform their *Work* in accordance with the *Contract Documents* and shall be as fully responsible to the *Owner* for acts and omissions of the *Contractor's Subcontractors* and of persons directly and indirectly employed by them as for acts and omissions of persons employed directly by the *Contractor*.”

6.6 GC 3.7.8

- (a) Add GC 3.7.8 as follows:

“3.7.8 The *Owner's* consent to subcontracting by the *Contractor* shall not be construed as relieving the *Contractor* from any obligation under the *Contract* and shall not impose any liability on the *Owner*. Nothing contained in the *Contract Documents* shall create a contractual relationship between a *Subcontractor* and the *Owner*. The *Contractor* shall be solely responsible for scheduling, coordinating and reviewing the work of its *Subcontractors and Suppliers*. ”

6.7 GC 3.7.9

- (a) Add GC 3.7.9 as follows:

“3.7.9 Subcontracting shall be conducted in a manner consistent with the principles of open, fair and transparent procurement, and the *Contractor* shall keep records demonstrating compliance with this requirement in accordance with GC 1.7 RECORDS AND AUDIT.”

6.8 GC 3.7.10

- (a) Add GC 3.7.10 as follows:

“3.7.10 The *Contractor* shall not be entitled to compensation by the *Owner* or any extension to the *Contract Time* arising out of, or in any way relating to, any breach of contract or failure to perform work by any *Subcontractor* or *Supplier* for any reason, including but not

limited to, the insolvency or bankruptcy of the *Subcontractor* or *Supplier*, even though the *Subcontractor* or *Supplier* may have been designated or pre-qualified by the *Owner* or the *Consultant*.”

**7.0 GC 3.8 LABOUR AND PRODUCTS**

7.1 GC 3.8.2

- (a) Add the following sentence to the end of GC 3.8.2:

“The *Contractor* shall not change the source of supply of any *Product* without the written authorization of the *Consultant*.”

7.2 GC 3.8.3

- (a) Add the words “and qualified” after the word “skilled” in the first line.

7.3 GC 3.8.4

- (a) Add GC 3.8.4 as follows:

“3.8.4 The *Owner* may at any time, for reasonable cause, require the *Contractor* to promptly remove from the *Place of the Work* any employee of the *Contractor* as well as any *Subcontractor* or employee of any *Subcontractor*.”

7.4 GC 3.8.5

- (a) Add GC 3.8.5 as follows:

“3.8.5 The *Contractor* is responsible for the safe on-site storage of *Products* and their protection (including *Products* supplied by the *Owner* and other contractors to be installed under the *Contract*) in such ways as to avoid dangerous conditions or contamination to the *Products* or other persons or property and in locations at the *Place of the Work* to the satisfaction of the *Owner* and the *Consultant*. The *Owner* shall provide all relevant information to the *Contractor* in relation to the *Products* to be supplied by the *Owner*.”

7.5 GC 3.8.6

- (a) Add GC 3.8.6 as follows:

“3.8.6 The *Contractor* shall ensure that all *Products* are of good quality, fit for their intended purpose and maintained in a safe, serviceable

condition in accordance with this *Contract* and good industry practice.”

7.6 GC 3.8.7

(a) Add GC 3.8.7 as follows:

“3.8.7 Where more than one *Product* is specified for a use, the *Contractor* may select any of the *Products* so specified unless the *Specifications*, *Drawings* or *Contract Documents* indicate otherwise. The *Contractor* shall assume all responsibility for liabilities and additional costs that may arise as a result of the *Contractor’s* choice to use one of the named *Products*.”

7.7 GC 3.8.8

(a) Add GC 3.8.8 as follows:

“3.8.8 The *Contractor* may apply to the *Consultant* to substitute a *Product* for an equivalent *Product*. Such application shall be in writing and made at the earliest opportunity with sufficient time for the *Consultant* to assess the application. The application shall include the following: .1 reasons for the proposed substitution (eg. significant delay in delivery, strikes, unavailability, improved quality or field service, amount of contract cost reduction etc.); and .2 sufficient description and technical information, specifications, references and samples and any other information requested by the *Consultant*; in order for the *Consultant* to thoroughly assess the proposed substitution and compare the proposed substitute with that specified.”

7.8 GC 3.8.9

(a) Add GC 3.8.9 as follows:

“3.8.9 The *Consultant’s* assessment of proposed substitutions shall include, but not limited to, criteria such as quality, durability, performance, ease of operation, safety, technical support, service and parts, availability and estimated cost of warranty and adherence to *Specifications*. All applications and submissions related to the proposed substitution shall only be made by the *Contractor* and not by any *Subcontractors* or *Suppliers*.”

7.9 GC 3.8.10

(a) Add GC 3.8.10 as follows:

“3.8.10 The approval or rejection of a proposed substitution shall be at the discretion of the *Consultant*, whose decision shall be final. Regardless of the *Consultant*’s decision on a proposed substitution, the *Owner* reserves the right to assess and apply to the *Contractor*, all costs related to the *Consultant*’s and the *Owner*’s review of the proposed substitution.”

7.10 GC 3.8.11

(a) Add GC 3.8.11 as follows:

“3.8.11 The *Contractor*’s prices shall be based on the *Products* specified. The Contract shall not be based on a presumed acceptance by the *Consultant* of a substitute *Product*.”

7.11 GC 3.8.12

(a) Add GC 3.8.12 as follows:

“3.8.12 Acceptance by the *Consultant* of an equivalent *Product* shall apply to this *Contract* only and shall not set any precedent for other Contracts.”

7.12 GC 3.8.13

(a) Add GC 3.8.13 as follows:

“3.8.13 The *Contractor* shall assume all responsibility for liabilities and additional costs that may subsequently arise as a result of his proposed substitution being accepted by the *Consultant*.”

7.13 GC 3.8.14

(a) Add GC 3.8.14 as follows:

“3.8.14 Any changes necessitated by the use of the substituted *Products* shall be at the expense of the *Contractor*. The *Contractor* shall be responsible for assuring the proper fit and matching of all substituted *Products* to the surrounding materials.”

**8.0 GC 3.10 SHOP DRAWINGS AND OTHER SUBMITTALS**

8.1 GC 3.10

(a) Add the words “AND OTHER SUBMITTALS” to the end of the heading for GC 3.10 – SHOP DRAWINGS.



- (b) Add the words “and Other Submittals” after the words “Shop Drawings” in GC’s 3.10.1, 3.10.2, 3.10.3, 3.10.4, 3.10.5, 3.10.7, 3.10.8, 3.10.8.2, 3.10.9, 3.10.10, 3.10.11 and 3.10.12.

- (c) Add the following to the end of GC 3.10.1:

“All *Shop Drawings* and *Other Submittals*, shall be submitted electronically on a FTP site supplied by the *Contractor*, and should be kept up-to-date during the *Contract*.”

## **9.0 GC 3.11 USE OF THE WORK**

### **9.1 GC 3.11.1**

- (a) Add the words “the Owner’s reasonable instructions,” after the word “permits,” in the second line.

### **9.2 GC 3.11.2**

- (a) Add the words “, individuals and the areas adjacent to the work.” to the end of GC 3.11.2.

### **9.3 GC 3.11.3**

- (a) Add GC 3.11.3 as follows:

“3.11.3 Subject to paragraph 9.4.6 of GC 9.4 - CONSTRUCTION SAFETY, The *Owner* shall have the right to enter and occupy the *Place of the Work* in whole or in part for the purpose of placing materials, fittings, and equipment, or for any other use at any time before completion of the *Contract* if, in the reasonable opinion of the *Consultant*, such entry and occupation does not prevent or interfere with the *Contractor* in achieving *Substantial Performance of the Work* within the *Contract Time* stipulated in the *Contract*.”

### **9.4 GC 3.11.4**

- (a) Add GC 3.11.4 as follows:

“3.11.4 No entry or occupation by the *Owner* as referenced in paragraph 3.11.3 shall constitute or be considered as acceptance of the *Work* in whole or in part, or in any way relieve the *Contractor* of its responsibility to complete the *Contract*.”

**10.0 GC 3.13 CLEANUP**

10.1 GC 3.13.2

- (a) Add the words “all to the satisfaction of the *Consultant* and the *Owner*, acting reasonably.” to the end of GC 3.13.2.

10.2 GC 3.13.4

- (a) Add GC 3.13.4 as follows:

“3.13.4 The *Owner* shall have the right to back charge the cost of cleaning and removal if such cleaning and removal is not completed within twenty-four (24) hours of written notice to clean or remove. The *Owner* shall also have the right to back charge the cost of damage to the *Place of the Work* caused by the *Contractor’s*, *Subcontractor’s* or *Supplier’s* transportation in and out of the *Place of the Work* if not repaired within five (5) *Working Days* of written notice to repair or before final payment, whichever is earlier.”

**11.0 GC 3.14 INTERFERENCE**

11.1 GC 3.14

- (a) Add GC 3.14 INTERFERENCE as follows:

**“GC 3.14 INTERFERENCE**

3.14.1 If the *Work*, in whole or in part, involves the renovation of, or addition to, existing and occupied premises:

- .1 the *Contractor* shall maintain normal business operations and traffic flow, with a minimum of inconvenience to the tenants and occupants of the *Place of the Work*;
- .2 subject to the provisions of the *Contract Documents*, the *Contractor* shall ensure that no essential services such as electric power, water supply or other public utilities are interrupted;
- .3 in every case where an interruption to existing services or utilities is to occur during execution of the *Work*, the *Contractor* shall give the *Owner* five (5) *Working Days* prior written notice. The *Contractor* shall reschedule any

such interruption if requested to do so in writing by the *Owner*; and

- .4 any work by the *Contractor* that generates excessive noise shall be subject to the restrictions set out elsewhere in the *Contract Documents*.”

**12.0 GC 3.15 – PERFORMANCE BY CONTRACTOR AND STANDARD OF CARE**

- 12.1 Add GC 3.15 PERFORMANCE BY CONTRACTOR AND STANDARD OF CARE as follows:

“GC 3.15 PERFORMANCE BY CONTRACTOR AND STANDARD OF CARE

3.15.1 In performing its services and obligations under the *Contract*, the *Contractor* shall exercise a standard of care, skill and diligence that would normally be provided by an experienced and prudent contractor supplying similar services for similar projects (“Standard of Care”). The *Contractor* acknowledges and agrees that throughout the *Contract*, the *Contractor’s* obligations, duties and responsibilities shall be interpreted in accordance with this standard. The *Contractor* shall exercise the same standard of due care and diligence in respect of any *Products*, personnel, or procedures which it may recommend to the *Owner*.

3.15.2 The *Contractor* further represents covenants and warrants to the *Owner* that:

- .1 the personnel it assigns are appropriately experienced and qualified;
- .2 it has a sufficient staff of qualified and competent personnel to replace its designated supervisor and project manager, subject the *Owner’s* approval, in the event of death, incapacity, removal or resignation; and
- .3 there are no pending, threatened, or anticipated claims that would have a material effect on the financial ability of the *Contractor* to perform its work under the *Contract*.”

**13.0 GC 3.16 – RISK OF LOSS AND TITLE**

- 13.1 Add GC 3.16 RISK OF LOSS AND TITLE as follows:

“3.16 RISK OF LOSS AND TITLE

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 22 of 66

3.16.1 Title to portions of the *Work* completed or in the process of being completed and title to all *Product* and material produced and received by the *Contractor* shall pass to the *Owner* on the earlier of payment by the *Owner* or the delivery of any such portion of the *Work* and materials to the *Owner*; provided that the *Owner* is then in compliance with its payment obligations under the *Contract* and that the total value of such portion of the *Work*, *Products* and materials is not greater than the amount of money paid by the *Owner* at that time, to the *Contractor* under this *Contract*.

3.16.2 Risk of loss or damage to any part of the *Work* or *Products* shall remain with the *Contractor* until issuance of the *Consultant's* certificate of *Total Performance of the Work*.

3.16.3 The *Contractor* shall take reasonable and proper care of all property, title to which is vested in the *Owner*, while the same is in, on or about the plant and premises of the *Contractor* or otherwise in his possession or subject to his control and shall be responsible for any loss or damage resulting from his failure to do so other than loss or damage caused by ordinary wear and tear.”

## PART 4 ALLOWANCES AND PROVISIONAL ITEMS

### 1.0 PART 4 ALLOWANCES AND PROVISION ITEMS

1.1 Add the words “AND PROVISIONAL ITEMS” to the end of the heading for PART 4 ALLOWANCES.

### 2.0 GC 4.1 CASH ALLOWANCE

2.1 GC 4.1.3

(a) Delete GC 4.1.3 in its entirety and replace with following:

“4.1.3 *Cash Allowances* shall be used and expended solely for purposes specified and at the sole discretion of *Owner*, and work under a *Cash Allowance* is not guaranteed. The *Contract Price* includes the *Contractor's* overhead and profit, including but not limited to administering the *Cash Allowance* or soliciting bids for such *Cash Allowances*, in connection with such *Cash Allowances*. Where costs under a *Cash Allowance* exceed the amount of the allowance allocated to such *Cash Allowance* item, unexpended amounts from other *Cash Allowances* may be reallocated at the *Owner's* direction in its sole discretion to cover the shortfall without additional

overhead or profit charges being attributed to the *Contractor*. A markup for overhead and profit may only be charged to overruns on the total of all *Cash Allowances* in accordance with the percentages set out for such markup in GC 6.1.3. *Cash Allowance* items shall be administered and authorized as follows:

- .1 The *Owner*, via the *Consultant*, shall notify the *Contractor* a request to proceed with a *Cash Allowance* item.
- .2 Upon receipt of such request from the *Consultant*, the *Contractor* shall, in respect of the identified *Cash Allowance* item provide to the *Owner* a response setting out: the schedule for the *Work* and expected milestones and completion date; the personnel and *Subcontractors* which the *Contractor* proposes to perform the *Work* and the costs of such *Work*, with up to three (3) quotations for any or all of the *Work* if requested by the *Owner*; and any other information requested by the *Owner*. If one of the quotations is from the *Consultant*, then all quotations shall be caused by the *Consultant* to be submitted to the *Owner* directly from all vendors.”
- .3 Upon receipt and review of such response, the *Owner*, via the *Consultant*, shall approve such *Cash Allowance* item in writing. No amounts shall be payable in respect of any *Cash Allowance* items unless and until the *Owner* has approved such expenditure in writing.”

2.2 GC 4.1.4

- (a) Delete “the Contract Documents” from GC 4.1.4 and replace with “GC 6.1.3”.

**3.0 GC 4.3 – Provisional Items**

3.1 Add new GC 4.3 – PROVISIONAL ITEMS as follows:

“GC 4.3 – *Provisional Items*

- 4.3.1 The *Contract Price* includes the *Provisional Items*, if any, stated in the *Contract Documents*.

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 24 of 66

- 4.3.2 The *Provisional Items* shall be authorized individually in writing by the *Owner* through the *Consultant*. The Contractor shall not proceed with any *Provisional Item* without such prior written authorization.
- 4.3.3 The prices stated for any and all items identified as “*Provisional Items*” in Article A-4 *Contract Price* of Supplementary Agreement Between Owner and Contractor shall be for the completed *Work* “in place” and shall be inclusive of all costs related thereto including, but not necessarily limited to, all overhead, profit and applicable taxes, except Harmonized Sales Tax, unless otherwise specified by the *Owner*. In the event the *Owner* decides, in its sole discretion, not to proceed with any or all of the identified *Provisional Items*, the *Contract Price* shall be adjusted by the Extended Price for the applicable Item No.’s stated in Article A-4 *Contract Price* of Supplementary Agreement Between Owner and Contractor for such *Provisional Item(s)*.
- 4.3.4 In the event changes are made to the stated estimated quantities for a *Provisional Item*, the Extended Price for that *Provisional Item* as stated in Article A-4 *Contract Price* of the Supplementary Agreement Between Owner and Contractor shall be adjusted based on the actual quantity of work performed and the Unit Price for that *Provisional Item*.”
- .1 *Provisional Items* are options to be exercised at the sole discretion of the *Owner*. In the event the *Owner* decides, in its sole discretion, to:
- .1 not proceed with any or all of the identified *Provisional Items*; or
  - .2 proceed with any or all of the identified *Provisional Items* but increases or reduces the quantity of such *Provisional Items*;
- the *Contract Price* shall be adjusted proportionally based on the Extended Price stated for such *Provisional Items* in Article A-4. The Extended Price shall form the basis of all adjustments without any additional compensation or markup. For greater certainty, the markups provided in GC 6.1.3 and GC 6.7.4 are not applicable to *Provisional Items*.”

## PART 5 PAYMENT

### 1.0 GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

#### 1.1 GC 5.1.1

- (a) Delete GC 5.1.1 in its entirety.

1.2 GC 5.1.2

- (a) Delete GC 5.1.2 in its entirety.

**2.0 GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT**

2.1 GC 5.2.4

- (a) Delete the words “calendar days” and replace with “Working Days” in the first line.

2.2 GC 5.2.7

- (a) Add the following sentence to the end of GC 5.2.7:

“Any *Products* delivered to the *Place of the Work* but not yet incorporated into the *Work* shall remain at the risk of the Contractor notwithstanding that title has passed to the Owner pursuant to GC 3.16 RISK OF LOSS AND TITLE.”

2.3 GC 5.2.8

- (a) Add GC 5.2.8 as follows:

“5.2.8 The *Contractor* shall submit, with each application for progress payment after the first, a *WSIB* clearance certificate, an updated schedule acceptable to the Owner in accordance with GC 3.5 CONSTRUCTION SCHEDULE, and a Statutory Declaration, on an original form of CCDC Document 9A-2001 Statutory Declaration of Progress Payment Distribution by Contractor, stating that payments in connection with the *Work*, as noted in the Statutory Declaration, have been made to the end of the period immediately preceding that covered by the current application and, if requested by the *Owner*, a Statutory Declaration from any *Subcontractor*, as may be identified by the Owner, on an original form of CCDC Document 9B-2001 Statutory Declaration of Progress Payment Distribution by Subcontractor. The Statutory Declarations shall be dated the same date as the *Contractor's* application for payment.”

2.4 GC 5.2.9

- (a) Add GC 5.2.9 as follows:

“5.2.9 The *Contractor* shall prepare and maintain current as-built drawings which shall consist of the *Drawings* and *Specifications* revised by the *Contractor* during the *Work*, showing changes to the *Drawings* and *Specifications*, including but not limited to architectural, structural, mechanical, electrical, cabling, *Shop Drawings*, single-line diagrams and any other graphical representations, and shall be maintained by the *Contractor* and made available to the *Consultant* for review with each application for progress payment.”

2.5 GC 5.2.10

(a) Add GC 5.2.10 as follows:

“5.2.10 Payment for bonds and insurance will be paid one hundred percent (100%) on the first progress payment, provided that respective invoices are submitted as proof of payment.”

**3.0 GC 5.3 PROGRESS PAYMENT**

3.1 GC 5.3.1.2

(a) Add the following sentence to the end of GC 5.3.1.2:

“For clarity, the 10 calendar day period referenced herein shall not commence until such time as the *Consultant* has determined that he has received from the *Contractor* all required documents supporting the invoice and evidencing the *Work* being invoiced, including but not limited to the documents listed in GC 5.2.8 and GC 5.2.9, all to the *Consultant's* satisfaction.”

3.2 GC 5.3.1.3

(a) Delete GC 5.3.1.3 in its entirety and replace with following:

“3 the *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement – Payment no later than twenty (20) calendar days after the date of issuance by the *Consultant* of a certificate for payment.”

3.3 GC 5.3.3

(a) Add GC 5.3.3 as follows:



“5.3.3 Certificates for payment may provide for retention of amounts as determined by the *Consultant* to ensure correction or replacement of deficient work done or unacceptable product provided.”

**4.0 GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK**

**4.1 GC 5.4.3**

(a) Delete GC 5.4.3 in its entirety and replace with the following:

“5.4.3 Immediately prior to the issuance of the certificate of *Substantial Performance* of the *Work*, the *Contractor*, in consultation with the *Consultant*, shall establish a schedule for completion of the *Work* and correcting deficiencies in the *Work*, and the construction schedule shall be deemed to be amended to include this completion schedule.”

**4.2 GC 5.4.4**

(a) Add GC 5.4.4 as follows:

“5.4.4 Prior to submitting its written application for *Substantial Performance of the Work*, the *Contractor* shall submit to the *Consultant* all:

- .1 guarantees;
- .2 warranties, completed as per GC 12.3;
- .3 certificates;
- .4 testing and balancing reports;
- .5 distribution system diagrams;
- .6 spare parts;
- .7 maintenance/operation manuals;
- .8 training manuals;
- .9 samples;
- .10 reports and correspondence from authorities having jurisdiction in the Place of the Work;

- .11 Shop Drawings, and marked up Drawings;
- .12 completed as-built drawings in the latest edition of a Computer Assisted Design Drawing software program;
- .13 inspection certificates;
- .14 and other materials or documentation required to be submitted under the *Contract*, together with written proof acceptable to the *Owner* and the *Consultant* that the *Work* has been substantially performed in conformance with the requirements of municipal, governmental and utility authorities having jurisdiction in the *Place of the Work*.”

**5.0 GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK**

5.1 GC 5.5.1.2

- (a) Add the words “and, if requested by the Owner, as Statutory Declaration from any Subcontractor, as may be identified by the Owner, on an original form of CCDC Document 9B – 2001 Statutory Declaration of Progress Payment Distribution by Subcontractor.” to the end of GC 5.5.1.2.

5.2 GC 5.5.2

- (a) Delete the words “the statement” and replace with the words “the documents” in the first line of GC 5.5.2.

5.3 GC 5.5.3

- (a) Delete GC 5.5.3 in its entirety.

5.4 GC 5.5.4

- (a) Delete GC 5.5.4 in its entirety and replace with the following:

“5.5.4 The *Contract* shall be subject to the *Construction Act (Ontario)* (the “*Act*”). In accordance with the *Act*, the *Owner* may retain any amounts which are: required by law to satisfy any liens against the *Work*, in respect of claims of third parties made to the *Owner* in respect of the *Contract* or the *Work*, and in respect of any claims the *Owner* may have against the *Contractor*.”

5.5 GC 5.5.5

- (a) Delete GC 5.5.5 in its entirety.

**6.0 GC 5.6 PROGRESSIVE RELEASE OF HOLDBACK**

**6.1 GC 5.6.1**

- (a) Delete 5.6.1 in its entirety and replace with following:

“5.6.1 Where the work of a *Subcontractor or Supplier* has been performed prior to *Substantial Performance of the Work* and is certified as completed in accordance with the *Act* and evidence of such is submitted by the *Contractor*, along with a clearance certificate or letter from the *Workplace Safety and Insurance Board* relating to the subcontract, to the satisfaction of the *Consultant*, the *Owner* shall pay the *Contractor* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, on the first calendar day following the expiration of the holdback period for such work stipulated in the *Act*. The *Owner* may retain out of the holdback amount any sums required by law to satisfy any liens against the *Work* and any amounts in respect of claims of third parties made to the *Owner* in respect of the *Contract* or the *Work*.”

**7.0 GC 5.7 FINAL PAYMENT**

**7.1 GC 5.7.1**

- (a) Delete GC 5.7.1 in its entirety and replace with the following:

“5.7.1 When the *Contractor* considers that the *Work* has been totally performed, the *Contractor* shall submit an application for final payment, together with a written application for review by the *Consultant* to establish *Total Performance of the Work*, and any other documents or materials not yet delivered pursuant to GC 5.4.4 and as listed in GC 5.7.5. The *Work* shall not be deemed to have been performed until all of the aforementioned documents and materials have been delivered, and the *Owner* may withhold payment in respect of the delivery of any documents or materials in an amount determined by the *Consultant* in accordance with the provisions of GC 5.8 WITHHOLDING OF PAYMENT and GC 12.1 INDEMNIFICATION. The *Consultant* shall advise the *Contractor* upon receipt of an application for final payment if additional documents or materials are required pursuant to this GC 5.7.1 and the *Contractor* shall respond promptly with such documents or materials.”

7.2 GC 5.7.2

- (a) Delete GC 5.7.2 in its entirety and replace with following:

“5.7.2 The *Consultant* will, no later than 10 calendar days after the receipt of an application from the *Contractor* for final payment, review the *Work* to verify the validity of the application and:

- .1 advise the *Contractor* in writing that the *Work* is not totally performed and give reasons why, or
- .2 state the date of *Total Performance of the Work* in a certificate and issue a copy of that certificate to each of the *Owner* and the *Contractor*.”

The above time period for response shall not commence until all documents and materials required pursuant to GC 5.7.1 have been received by the *Consultant*.”

7.3 GC 5.7.3

- (a) Delete the words “finds the *Contractor*’s application for final payment valid” and substitute the words “issues the certificate of Total Performance of the *Work*” in the first line.

7.4 GC 5.7.4

- (a) Delete the number “5” and replace with “15” in the second line.

7.5 GC 5.7.5

- (a) Add GC 5.7.5 as follows:

“5.7.5 The *Contractor* shall submit to the *Consultant*, with the application for final payment, the following documentation:

- .1 all closeout documentation required by the *Contract Documents*, including but not limited to, warranties, manuals, guarantees, as-built drawings and all other relevant literature from *Suppliers* and manufacturers including, but not limited to:
  - .1 equipment, maintenance and operations manuals;
  - .2 equipment specifications, data sheets and brochures, parts lists and assembly drawings, performance curves and other related data;

- .3 line drawings, value charts and control sequences with description of the sequence of operations;
  - .4 warranty documents;
  - .5 service and maintenance reports as applicable;
  - .6 specifications;
  - .7 shop drawings;
  - .8 testing results;
  - .8 commissioning and quality assurance documentation, and
  - .9 HVAC balance reports.
- .2 a Statutory Declaration, on an original form of CCDC Document 9A – 2001, stating that payments in connection with the *Work*, as noted in the statutory declaration, have been made to the end of the period immediately preceding that covered by the application for final payment and, if requested by the *Owner*, as Statutory Declaration from any *Subcontractor*, as may be identified by the *Owner*, on an original form of CCDC Document 9B – 2001 Statutory Declaration of Progress Payment Distribution by Subcontractor.”

## **8.0 GC 5.8 WITHHOLDING OF PAYMENT**

### **8.1 GC 5.8**

- (a) Add “Subject to GC 12.1 INDEMNIFICATION,” at the beginning of GC 5.8.1.

## **9.0 GC 5.10 CLAIMS FOR LIEN**

### **9.1 GC 5.10**

- (a) Add GC 5.10 Claims for Lien as follows:

#### **“GC 5.10 CLAIMS FOR LIEN**

- 5.10.1 The *Contractor* shall cause any and all construction liens and certificates of action relating to the *Work* registered or preserved by any *Subcontractor*, *Supplier*, *Contractor’s* employees, or any other party to whom the *Contractor* is or may be responsible at

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 32 of 66

law, to be discharged or vacated, or cause to be discharged or vacated, immediately but in any case no later than five (5) *Working Days* of the date of registration or reservation, all at the *Contractor's* sole expense. The *Contractor* shall not be entitled to receive any payment from the *Owner* until all such claims for lien and certificates of action have been vacated or discharged.

5.10.2 The *Contractor* shall cause any and all written notices of lien relating to the *Work* given to any person, including, but not limited to, the *Owner* by any *Subcontractor*, sub-subcontractor, *Supplier*, *Contractor's* employees, or any party to whom the *Contractor* is or may be responsible at law, to be withdrawn, and the *Contractor* shall do so immediately but in any case no later than five (5) *Working Days* of the written notice of lien having been given, all at the *Contractor's* sole expense.

5.10.3 If the *Contractor* fails to discharge or vacate any such lien or certificate of action, or to have any such written notice of lien withdrawn, within five (5) days, then the *Owner* shall have the right but not the obligation, do so and set off and deduct from any amount owing to the *Contractor*, all costs and expenses of so doing, and of defending any related action, including without limitation, the costs of borrowing the appropriate cash, letter of credit or bond as security, and legal fees and disbursements on a full indemnity basis. If there is no amount owing by the *Owner* to the *Contractor*, then the *Contractor* shall reimburse the *Owner* for all of the said costs and expenses of so doing.”

## 10.0 GC 6.1 OWNER'S RIGHT TO MAKE CHANGES

### 10.1 GC 6.1.3

(a) Add GC 6.1.3 as follows:

“6.1.3 For the purpose of valuing *Cash Allowances* pursuant to GC 4.1.4, *Contingency Allowances* or *Optional Items* pursuant to GC 4.2.2, changes which result in an increase in the *Contract Price*, and any other items under the *Contract Documents* which provide for payment to the *Contractor* of overhead and profit, allowances for overhead and profit shall be included as follows:

- .1 *Contractor's* combined mark-up for overhead and profit shall be fifteen percent (15%) on work and services completed by its own forces, and five percent (5%) on work and services completed by its *Subcontractors*.

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 33 of 66

- .2 *Subcontractors'* combined mark-up for overhead and profit shall be fifteen percent (15%) on work and services completed by their own forces, and five percent (5%) on work and services completed by their subcontractors."

#### 10.2 GC 6.1.4

- (a) Add GC 6.1.4 as follows:

"6.1.4 The mark-ups provided for in GC 6.1.3 shall constitute the only compensation *the Contractor* shall be entitled to for any and all overhead and profit related to the change, *Cash Allowance* or *Contingency Allowance*."

#### 10.3 GC 6.1.5

- (a) Add GC 6.1.5 as follows:

"6.1.5 The *Contractor's* and *Subcontractor's* overhead as set out in GC 6.1.3 shall be deemed to include direct and indirect costs arising from: preparation of change order, change directive, supplemental instruction; obtaining quotations and preparation and submission of any documentation or materials; computer services; cleaning and cleaning services; any increase in the cost of obtaining or maintaining all bonds and insurance policies; any increase in performance, labour and materials payment bonds values and durations; any increase in insurance and workplace safety insurance values and durations; any increase in warranty or guaranty values or durations; estimating, costing, accounting, payroll administration; office administration, processing correspondence, timekeeping, material consumed in the construction contract administration and management process; reproduction, office, shop drawing review and preparation; permits and statutory fees; plant and equipment including operators and equipment rentals; vehicles; place of work office and head office overheads; place of work site contractor and subcontractor superintendence, supervisors and assistants; material re-handling; safety equipment, safety wear and first aid; security; technical staff; telephone, mobile phone, and facsimile services and charges; temporary heat, light and power; temporary protection; temporary place of work offices, trailers and storage compounds; timekeeping and the like."

**11.0 GC 6.2 – Change Order**

11.1 GC 6.2.1 is amended as follows:

- (a) Delete the words “promptly present,” and substitute the words “, within five (5) Working Days of receiving the written description, present” in the second line of paragraph 6.2.1.

11.2 GC 6.2.2:

- (a) Renumber existing paragraph “6.2.2” to paragraph number “6.2.3”.
- (b) Add new paragraph 6.2.2 as follows:

“6.2.2 The method of adjustment of the *Contract Price* presented by the *Contractor* may be:

- .1 by estimate and acceptance in a lump sum or *Unit Price* quotation,
- .2 by *Unit Prices* set out in the *Contract* or subsequently agreed upon, or
- .3 by the actual cost of the change in the *Work*, plus an agreed fixed or percentage fee.”

11.3 GC 6.2.4

- (a) Add GC 6.2.4 as follows:

“6.2.4 When the *Contractor* submits an invoice from a *Subcontractor* or *Supplier* as part of its detailed breakdown of the cost of a change, as may be required by GC 6.2 CHANGE ORDER or GC 6.3 CHANGE DIRECTIVE, the *Contractor* is deemed to represent and warrant to the *Owner* that the amount shown on the invoice is the amount that the *Contractor* is liable to pay for the services and materials described in the invoice, net of all discounts, unless the *Contractor* indicates otherwise when submitting its detailed breakdown. When the *Contractor* submits an estimate or quotation from a *Subcontractor* or *Supplier* as part of its detailed breakdown of the estimated cost of a change, the *Contractor* is deemed to represent and warrant to the *Owner* that, subject to any qualifications on the face of the estimate or quotation and any qualifications made by the *Contractor* within the detailed breakdown, that the amount set out in the estimate or quotation is the amount the *Contractor* has agreed to pay should the *Contractor*



be authorized to proceed with the change, net of all discounts. Notwithstanding the foregoing, the *Contractor* shall be entitled to take a commercially reasonable early payment discount (if offered) when the *Contractor* pays its *Subcontractor* or *Supplier* prior to receiving payment from the *Owner*.”

11.4 GC 6.2.5

- (a) Add GC 6.2.5 as follows:

“6.2.5 In the event any of the change in the *Work*, contains items or parts that, in the opinion of the *Consultant*, are the same or equivalent to items for which the *Contractor* submitted prices under *Options*, in the Submission, then such prices shall be used to calculate the amount paid by the *Owner* for that work or parts of the *Work* in respect of any such change in the *Work*.”

11.5 GC 6.2.6

- (a) Add GC 6.2.6 as follows:

“6.2.6 No compensation for any change in the *Work* shall be allowed unless such change is first ordered in writing by the *Consultant* and authorized by the *Owner*.”

**12.0 GC 6.3 CHANGE DIRECTIVE**

12.1 GC 6.3.7

- (a) Delete GC 6.3.7.1 in its entirety and replace with following:

- “1 salaries, wages and benefits paid to personnel in the direct employ of the *Contractor*, applying the labour rates set out in the wage schedule in the *Contract Documents* or as otherwise agreed between the *Owner* and *Contractor* for personnel,
- .2 carrying out the *Work* on-site at the *Place of the Work*, including necessary supervisory services;
- .3 engaged in expediting the production or transportation of material or equipment, at shops or on the road;
- .4 engaged in the preparation of *Shop Drawings*, fabrication drawings, coordination drawings and *Contract* as-built drawings, or,

.5 carrying out clerical work to process changes in the *Work*."

12.2 GC 6.3.8

- (a) Add the words "except for GC 6.3.14" after the word "Contract" in the first line.

12.3 GC 6.3.14

- (a) Add GC 6.3.14 as follows:

"6.3.14 For greater certainty, any adjustment of the *Contract Price* for the *Work* attributable to the *Change Directive* shall not include, and no payment shall be made for:

- .1 head office salaries and benefits and all other overhead or general expenses, except only for the salaries, wages and benefits of personnel described in paragraph 6.3.7.1 and the contributions, assessments or taxes referred to in paragraphs 6.3.7.2;
- .2 capital expenses and interest on capital;
- .3 general clean-up, except where the performance of the *Work* in the *Change Directive* causes specific additional clean-up requirements;
- .4 wages paid for project managers, superintendents, assistants, watch persons and administrative personnel, provided the *Change Directive* does not result in an extension of *Contract Time*;
- .5 wages, salaries, rentals, or other expenses that exceed the rates that are standard in the locality of the *Place of the Work* that are otherwise deemed unreasonable by the *Consultant*;
- .6 any costs or expenses attributable to the negligence, improper *Work*, deficiencies, or breaches of *Contract* by the *Contractor* or *Subcontractor*; and
- .7 any cost of quality assurance, such as inspection and testing services, charges levied by authorities, and any legal fees unless any such costs or fees are pre-approved in writing by the *Owner*."

**13.0 GC 6.4 CONCEALED OR UNKNOWN CONDITIONS**

13.1 GC 6.4.5

- (a) Add GC 6.4.5 as follows:

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 37 of 66

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“6.4.5 The *Contractor* confirms that, prior to bidding, it carefully investigated the character of the *Work*, the *Place of the Work*, and all local conditions which might affect its obligations and that it has satisfied itself as to the nature and extent of the *Work*, the *Contract Documents* and the *Contract* and as to the facilities and difficulties in attending and completing the execution of the *Work*. The *Owner* shall, upon written request, co-operate with, and provide reasonable assistance to, the *Contractor* during such investigations. The *Contractor* confirms that it has applied to its investigations as aforesaid the degree of care and skill described in paragraph 3.15.1. The *Contractor* is not entitled to compensation or to an extension of the *Contract Time* for conditions which could reasonably have been ascertained by the *Contractor* by such careful investigation undertaken prior to the submission of its bid.”

#### 13.2 GC 6.4.6

(a) Add GC 6.4.6 as follows:

“6.4.6 To the extent the *Contractor* has not investigated as referenced in paragraph 6.4.5, the *Contractor* willingly assumes responsibility for all losses, damages, costs, expenses (including all legal costs on a full indemnity basis), liabilities, claims, actions, and demands, whether arising under statute, contract or at common law, which such investigations might have avoided or reduced and shall indemnify and save harmless the *Owner* from all risk which might make it more onerous and more expensive to fulfill or perform the *Work* than was contemplated or known when the *Contract* was signed, and for any and all liability, responsibility and obligations which the *Owner* may have to any third parties resulting from any failure to investigate.”

#### 13.3 GC 6.4.7

(a) Add GC 6.4.7 as follows:

“6.4.7 If the finding made pursuant to paragraph 6.4.2 is that the subsurface or otherwise concealed physical conditions differ materially and this would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, and if the said conditions were otherwise discoverable by the *Contractor* in the proper performance of its duties and obligations under the *Contract*, all costs and expenses resulting from any delay (excluding, for clarity, the direct cost of remediating the said conditions) in the completion of the *Work* that is caused, or

contributed to, as a result of the said conditions, will be borne by the *Contractor*.”

**14.0 GC 6.5 DELAYS**

**14.1 GC 6.5.1 and GC 6.5.2**

- (a) Add after the phrase “as the result of such delay” at the end of GC 6.5.1 and GC 6.5.2, respectively, the following:

“, as determined by the *Consultant*, subject to GC 6.5.9 and the following:

- .1 the *Contractor* shall not be reimbursed for any consequential, incidental, indirect or special damages including, without limitation, loss of profits, loss of opportunity or loss of productivity resulting from such delay; and
- .2 the *Contractor* shall not be reimbursed for any costs which, regardless of the delay, would be expected to have been incurred in the regular course of business, including but not limited to the costs of the *Contractor’s* head office personnel during or in relation to such delay.”

**14.2 GC 6.5.6**

- (a) Add GC 6.5.6 as follows:

“6.5.6 If the *Contractor* is delayed in the performance of the *Work* by an act or omission of the *Contractor*, any *Subcontractor*, or anyone employed or engaged by them, directly or indirectly, or by any cause within the *Contractor’s* control, the *Contractor* shall devote such additional resources and take all steps necessary (all at the *Contractor’s* own cost and expense), to ensure that the date for attaining *Substantial Performance of the Work* and *Total Performance of the Work* under the *Contract*, as may have been amended in accordance with the provisions of Part 6 of the General Conditions – Changes in the Work, is met. The *Owner* shall be reimbursed by the *Contractor* for all reasonable costs incurred by the *Owner* as a result of such delay, as determined by the *Consultant*.”

**14.3 GC 6.5.7**

- (a) Add GC 6.5.7 as follows:

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 39 of 66

“6.5.7 The *Contractor* shall be responsible for the care, maintenance and protection of the *Work* in the event of any suspension of construction as a result of the delay described in paragraphs 6.5.1, 6.5.2 or 6.5.3. In the event of such suspension, the *Contractor* shall be reimbursed by the *Owner* for the reasonable costs incurred by the *Contractor* for such care, maintenance and protection. The *Contractor's* entitlement to costs pursuant to this paragraph 6.5.7, if any, shall be in addition to amounts, if any, to which the *Contractor* is entitled pursuant to paragraphs 6.5.1, 6.5.2 or 6.5.3.”

#### 14.4 GC 6.5.8

(a) Add GC 6.5.8 as follows:

“6.5.8 Without limiting the obligations of the *Contractor* described in GC 3.2 – CONSTRUCTION BY OWNER OR OTHER CONTRACTORS and GC 9.4 – CONSTRUCTION SAFETY, the *Owner* may, by *Notice in Writing*, direct the *Contractor* to stop the *Work* or stop parts of the *Work* where the *Owner* determines that there is an imminent risk to the safety of persons or property at the *Place of the Work*. In the event that the *Contractor* receives such notice, it shall immediately stop the *Work*, secure the *Place of the Work*, rectify the safety issue to the satisfaction of the *Owner*, and make up any lost time due to the safety issue, all at the *Contractor's* cost. The *Contractor* shall not be entitled to an extension of the *Contract Time* or to an increase in the *Contract Price*.”

#### 14.5 GC 6.5.9

(a) Add GC 6.5.9 as follows:

“6.5.9 Regardless of the reason or cause of delay, the *Contractor* shall:

- .1 have a duty to mitigate the expenses or costs which may be incurred as a result of any delay, which mitigation measures shall include, but not be limited to, reducing the number of the *Contractor's* and *Subcontractor's* personnel at the *Place of the Work*, reducing the amount of supplies or the use of *Equipment*, and there shall be no reimbursement for any costs or expenses that could reasonably have been mitigated; and
- .2 keep such records and documentation as may be necessary to support any claim for reimbursement for expenses or

costs which may be incurred as a result of any delay, including any records or documentation which demonstrates compliance with GC 6.5.9.1, and there shall be no reimbursement for any costs that are not sufficiently supported by such necessary records and documentation, as determined by the *Consultant*.”

14.6 GC 6.5.10

- (a) Add GC 6.5.10 as follows:

“6.5.10 Any finding or recommendation of the *Consultant* under GC 6.5 not accepted by either party shall be settled in accordance with PART 8 DISPUTE RESOLUTION.”

**PART 7 DEFAULT NOTICE**

**1.0 GC 7.1 OWNER’S RIGHT TO PERFORM THE WORK, SUSPEND THE WORK, TERMINATE THE CONTRACTOR’S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT**

1.1 GC 7.1

- (a) Add the words “suspend the work” after the words “perform the work” in the first line of the heading for GC 7.1.

1.2 GC 7.1.5.5

- (a) Add GC 7.1.5.5 as follows:

“.5 charge the *Contractor* for any damages the *Owner* may have sustained as a result of the default.”

1.3 GC 7.1.7

- (a) Add GC 7.1.7 as follows:

“7.1.7 The *Owner* may, if conditions arise which make it necessary for reasons other than as provided in paragraphs 7.1.1 and 7.1.4, suspend performance of the *Work*, terminate the *Contractor’s* right to continue with the *Work* or terminate the *Contract*, in whole or in part, by giving *Notice in Writing* to that effect to the *Contractor*. Such suspension or termination shall be effective in the manner specified in said notice and shall be without prejudice to any claims which either party may have against the other. The *Owner’s*

entitlement to so terminate or suspend shall be absolute and unconditional and exercisable by the *Owner* in its sole discretion.”

1.4 GC 7.1.8

(a) Add GC 7.1.8 as follows:

“7.1.8 The *Contractor* upon receiving notice of suspension or termination from the *Owner* shall suspend all operations as soon as reasonably possible except for work which, in the *Contractor’s* opinion, is necessary for the safety of personnel and for the care and preservation of the *Work*, the materials and plant. Subject to any directions in the notice of suspension or termination, the *Contractor* shall discontinue ordering materials, facilities, and supplies and make every reasonable effort to delay delivery of existing orders and, in the event of termination, to cancel existing orders on the best terms available.”

1.5 GC 7.1.9

(a) Add GC 7.1.9 as follows:

“7.1.9 During any period of suspension, the *Contractor* shall not remove from the site any part of the *Work*, or any *Product* or materials without the consent of the *Owner*.”

1.6 GC 7.1.10

(a) Add GC 7.1.10 as follows:

“7.1.10 If the *Work* should be suspended for a period of sixty (60) consecutive calendar days or less, the *Contractor*, upon the expiration of the period of suspension, shall resume the performance of the *Work* in accordance with the *Contract Documents*. If the suspension was not due to an act or omission of the *Contractor*, the *Contract Price* and *Contract Time* shall be adjusted as provided in paragraph 6.5.1 of GC 6.5 - Delays.”

1.7 GC 7.1.11

(a) Add GC 7.1.11 as follows:

“7.1.11 If after sixty (60) consecutive calendar days from the date of notice of suspension of the *Work*, the *Owner* and the *Contractor* agree to continue with and complete the *Work*, the *Contractor* shall resume operations and complete the *Work* in accordance

with any terms and conditions agreed upon by the *Owner* and the *Contractor*. Failing such an agreement, the provisions of paragraph 7.2.2 shall become applicable.”

1.8 GC 7.1.12

(a) Add GC 7.1.12 as follows:

“7.1.12 If the *Owner* terminates the *Contract* pursuant to paragraph 7.1.7, the *Contractor* shall only be entitled to receive payment for all work performed up to the date of termination as certified by the *Consultant* and the direct costs associated with the termination incurred by the *Contractor*, including the costs of the demobilization, losses sustained on *Products* and *Construction Equipment* and *Subcontractor* and sub-subcontractor cancellation costs (which costs shall not include loss of profit claims) reasonably incurred by the *Contractor*. The *Contractor* shall not be entitled to any additional reimbursement on account of the termination including, without limitation, indirect, incidental, special, consequential or other damages, including loss of profits, notwithstanding any other provision of the *Contract Documents*.”

**2.0 GC 7.2 CONTRACTOR’S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT**

2.1 GC 7.2.1

(a) Delete GC 7.2.1 in its entirety.

2.2 GC 7.2.2

(a) Delete the words “20 Working Days” and substitute the words “sixty (60) consecutive calendar days” in the first line of paragraph 7.2.2.

2.3 GC 7.2.3.1

(a) Delete GC 7.2.3.1 in its entirety.

2.4 GC 7.2.3.3

(a) Add the words “, except where the *Owner* has a claim against the *Contractor* for set-off,” after the word *Consultant*” in GC 7.2.3.3.

2.5 GC 7.2.3.4



- (a) Delete the words “, except for GC 5.1 – FINANCING INFORMATION REQUIRED OF THE OWNER,” from the first and second lines of GC 7.2.3.4.

2.6 GC 7.2.4

- (a) Add the following to the end of GC 7.2.4:

“If the default cannot be corrected within the 5 *Working Days* specified herein, the *Owner* shall be deemed to have cured the default if it

.1 commences the correction of the default within the specified time; and

.2 provides the *Contractor* with an acceptable schedule for such correction; and

.3 completes the correction in accordance with such schedule.”

2.7 GC 7.2.5

- (a) Delete GC 7.2.5 in its entirety and replace with following:

“7.2.5 If the *Contractor* terminates the *Contract* under the conditions set out above, the *Contractor* shall be entitled to be paid for all work performed to the date of termination. The *Contractor* shall also be entitled to recover the direct costs associated with termination, including the costs of demobilization, and losses sustained on *Products* and *Construction Equipment*. The *Contractor* shall not be entitled to any additional reimbursement on account of any such termination including, without limitation, indirect, incidental, special, consequential or other damages, including loss of profits, notwithstanding any other provision of the *Contract Documents*.”

2.8 GC 7.2.6

- (a) Add GC 7.2.6 as follows:

“7.2.6 The *Owner’s* withholding of a progress payment, holdback payment or final payment due to the *Contractor’s* failure to pay a *Subcontractor* or *Supplier*, to protect the *Owner’s* interest in the event of the registration of a lien or receipt of notice of lien, or otherwise pursuant to the terms of the *Contract*, shall not constitute a default under paragraph 7.2.3 which would permit the *Contractor*

to stop the *Work* or terminate the *Contract*. In such circumstances, the *Contractor* shall continue with the *Work*.”

2.9 GC 7.2.7

(a) Add GC 7.2.7 as follows:

“7.2.7 If the *Contractor* stops the *Work* or terminates the *Contract* in accordance with this GC 7.2 – Contractor’s Right To Suspend The Work Or Terminate The Contract, the *Contractor* shall leave the *Place of the Work* and the *Work* in a secure condition.”

**PART 8 – DISPUTE RESOLUTION**

**1.0 GC 8.1 AUTHORITY OF THE CONSULTANT**

1.1 GC 8.1.3

(a) Delete GC 8.1.3 in its entirety and replace with following:

“8.1.3 Unless the *Contract* has been terminated or completed, the *Contractor* shall in every case, regardless of claim or dispute, continue to proceed with the *Work* with due diligence in accordance with the *Consultant*’s instructions. It is understood by the parties that such actions will not jeopardize any claim that the parties may have.”

**2.0 GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION**

2.1 GC 8.2.6

(a) Delete GC 8.2.6 in its entirety and replace with following:

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 45 of 66

“8.2.6 When a dispute has not been resolved through negotiation or mediation, within 10 *Working Days* after the date of termination of the mediated negotiations under GC 8.2.5, either party may give a *Notice in Writing* to the other Party and to the *Consultant* inviting the other Party to agree to submit the dispute to be resolved by arbitration pursuant to the Arbitration Act, 1991. If the other party wishes to accept the invitation to submit the dispute to arbitration, it shall so indicate by the delivery of a responding *Notice in Writing* within 10 *Working Days* of receipt of the invitation. If, within the required times, no invitation is made, or, if made, is not accepted, either Party may refer the dispute to the courts or any other form of dispute resolution, which they have agreed to use.”

#### 2.2 GC 8.2.7

- (a) Delete GC 8.2.7 in its entirety.

#### 2.3 GC 8.2.8

- (a) Delete GC 8.2.8 in its entirety.

## PART 9 – PROTECTION OF PERSONS AND PROPERTY

### 1.0 GC 9.1 PROTECTION OF WORK AND PROPERTY

#### 1.1 GC 9.1.1

- (a) Delete GC 9.1.1 in its entirety and replace with following:

“9.1.1 The *Contractor* shall be responsible for security at the *Place of the Work* and will take such other security measures as may be necessary in respect of the *Work* and the *Place of the Work*, as determined by the *Owner* in its sole discretion, and shall protect the *Work*, the *Place of the Work*, the *Railway Property*, and the *Owner's* property and property adjacent to the *Place of the Work* and the *Railway Property* from damage which may arise as the result of the *Contractor's* operations under the *Contract*, and shall be responsible for such damage, except damage which occurs as the result of:

- .1 errors in the *Contract Documents* which the *Contractor* could not have discovered applying the Standard of Care;
- .2 acts or omissions by the *Owner*, the *Consultant*, other contractors, and their agents and employees.”

1.2 GC 9.1.2

- (a) Delete GC 9.1.2 in its entirety and replace with the following:

“9.1.2 Before commencing any *Work*, the *Contractor* shall determine the locations of all underground utilities and structures indicated in or inferable from the *Contract Documents*, or that are inferable from an inspection of the *Place of the Work*.”

1.3 GC 9.1.3

- (a) Add the words “Railway property,” after the word “Work,” in the first line.

1.4 GC 9.1.4

- (a) Add the words, “Railway’s property,” after the word “Work” in the first line and add the words “and Railway’s property” after the word “property” in the second line.

**2.0 GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES**

2.1 GC 9.2.1, 9.2.2, 9.2.3, 9.2.4, 9.2.5, 9.2.6, 9.2.7 and 9.2.8

- (a) Delete the words “toxic and hazardous substances” from GC 9.2.1, 9.2.2, 9.2.3, 9.2.4, 9.2.5, 9.2.6, 9.2.7 and 9.2.8 and substitute the words “Toxic and Hazardous Substances” in their place.

2.2 GC 9.2.5.5

- (a) Add GC 9.2.5.5 as follows:

“9.2.5.5 take all reasonable steps to mitigate the impact on *Contract Time* and *Contract Price*.”

2.3 GC 9.2.7.4

- (a) Delete GC 9.2.7.4 in its entirety.

2.4 GC 9.2.8.2

- (a) Add the words “Railway’s property,” after the words “damage to the Work,” in the first line.

**3.0 GC 9.4 CONSTRUCTION SAFETY**

3.1 GC 9.4.1

- (a) Delete 9.4.1 in its entirety and replace with the following:

"9.4.1 The *Contractor* shall be solely responsible for construction safety at the *Place of the Work* and for compliance with the rules, regulations and practices required by the applicable construction health and safety legislation and shall be responsible for initiating, maintaining and supervising all safety precautions and programs, in connection with the performance of the *Work*."

3.2 GC 9.4.2

- (a) Add GC 9.4.2 as follows:

"9.4.2 The *Contractor* shall assume the role of contractor, constructor, prime contractor, or principal contractor as may apply in accordance with applicable Occupational Health and Safety Legislation at the *Place of the Work* and provide to the *Owner* copies of the related Health and Safety notices and documents."

GC 9.4.3

- (b) Add GC 9.4.3 as follows:

"9.4.3 The *Contractor* represents and warrants that it is familiar with the obligations imposed on an "employer" as defined in the *Occupational Health and Safety Act (Ontario)*, and that it has in place a health and safety program to ensure the health and safety of all workers for which it has responsibility under the said *Act*."

3.3 GC 9.4.4

- (a) Add GC 9.4.4 as follows:

"9.4.4 The *Contractor* shall comply in all respects with the requirements of the *Occupational Health and Safety Act (Ontario)* and its own health and safety program to take all steps reasonable in the circumstances to ensure the health and safety of all workers for which it has responsibility under the said *Act*. The *Contractor* shall maintain and strictly enforce its health and safety program. The *Contractor* shall also provide such information within such timeframes as may be required in order to allow the *Owner* to fulfill its obligations pursuant to the *Occupational Health and Safety Act (Ontario)*, including, without limitation, the obligation to notify the Director under such *Act* in the event of an accident causing personal injury."

3.4 GC 9.4.5

(a) Add GC 9.4.5 as follows:

“9.4.5 The *Contractor* shall comply with all requirements of the Workplace Hazardous Materials System (WHMIS) regarding the use, handling and storage of controlled products.”

3.5 GC 9.4.6

(a) Add GC 9.4.6 as follows:

“9.4.6 Prior to commencing the *Work* the *Contractor* shall:

- .1 ensure that all prescribed posting requirements are posted on site for all workers to view;
- .2 provide a copy of the *Contractor's* Health & Safety Policy to the *Owner*;
- .3 prepare and submit to the *Owner* a Site Specific Safety Plan (Job Safety Analysis);
- .4 review and comply with facility specific hazard, safety and orientation requirements as applicable; and
- .5 prepare and submit site-specific hazardous assessment plans as applicable pertaining to but not limited to: live power work, lock out/tag out/shut down/switch covers, confined space entry, cranes and crane lifts, and other hazardous assessment plans as required.”

3.6 GC 9.4.7

(a) Add GC 9.4.7 as follows:

“9.4.7 The *Contractor* shall indemnify and save harmless the *Owner*, its agents, officers, directors, employees, consultants, successors and assigns from and against the consequences of any and all safety infractions committed by the *Contractor* or any of its *Subcontractors* or their subcontractors under the construction health and safety legislation applicable to the *Place of the Work*, including but not limited to, payment of legal fees and disbursements on a full indemnity basis.”

3.7 GC 9.4.8

- (a) Add GC 9.4.8 as follows:

“9.4.8 The *Owner* and/or the *Consultant* shall have the right, from time to time during the performance of the *Work*, to perform or cause to be performed, an on-site safety audit of the *Work* and the *Place of the Work*. The *Owner* may identify specific safety issues or Safety Incidents as set out in GC 17, and the *Contractor* shall address such issues or Safety Incidents promptly to the satisfaction of the *Owner*, at the *Contractor's* cost, and provide the *Owner* with sufficient evidence of correction. No act or omission of the *Owner* during the audit shall constitute a transfer of liability from the *Contractor* to the *Owner*. The *Contractor* remains responsible for ensuring safety of the *Work* and the *Place of the Work*.”

#### **4.0 GC 9.5 MOULD**

##### **4.1 GC 9.5.2.2**

- (a) Add the words “Railway’s property,” after the words “damage to the Work,” in the first line.

##### **4.2 GC 9.5.3.4**

- (a) Delete paragraph 9.5.3.4 in its entirety.

### **PART 10 GOVERNING REGULATIONS**

#### **1.0 GC 10.1 TAXES AND DUTIES**

##### **1.1 GC 10.1.2**

- (a) Add the following to the end of GC 10.1.2:

“For greater certainty, the *Contractor* shall not be entitled to any mark-up for overhead or profit on any increase in such taxes and duties.”

##### **1.2 GC 10.1.3**

- (a) Add GC 10.1.3 as follows:

“10.1.3 Where the *Owner* is entitled to an exemption or a recovery of sales taxes, customs duties, excise taxes or *Value Added Taxes* (including Harmonized Sales Tax) applicable to the *Contract*, the *Contractor* shall, at the request of the *Owner* or the *Owner's* representative, assist with the application for any exemption, recovery or refund of all such taxes and duties and all amounts

recovered or exemptions obtained shall be for the sole benefit of the *Owner*. The *Contractor* agrees to endorse over to the *Owner* any cheques received from the federal or provincial governments, or any other taxing authority, as may be required to give effect to this section.”

1.3 GC 10.1.4

(a) Add GC 10.1.4 as follows:

“10.1.4 The *Contractor* shall maintain accurate records of *Construction Equipment, Product* and component costs reflecting the taxes, customs duties, excise taxes and *Value Added Taxes* paid.”

1.4 GC 10.1.5

(a) Add GC 10.1.5 as follows:

“10.1.5 Any refund of taxes, including, without limitation, any government sales tax, customs duty, excise tax or *Value Added Tax*, whether or not paid, which is found to be inapplicable or for which exemption may be obtained, is the sole and exclusive property of the *Owner*. The *Contractor* agrees to cooperate with the *Owner* and to obtain from all *Subcontractors and Suppliers* cooperation with the *Owner* in the application for any refund of any taxes, which cooperation shall include but not be limited to, making or concurring in the making of an application for any such refund or exemption, and providing to the *Owner* copies, or where required, originals of records, invoices, purchase orders and other documentation necessary to support such applications or exemptions or refunds. All such refunds shall either be paid to the *Owner*, or shall be a credit to the *Owner* against the *Price*, at the *Owner's* discretion. The *Contractor* agrees to enable, assist with and submit to any reasonable audit requested by the *Owner* with respect the potential refunds under this section.”

1.5 GC 10.1.6

(a) Add 10.1.6 as follows:

“10.1.6 Customs duties penalties, or any other penalty, fine or assessment levied against the *Contractor*, shall not be treated as a tax or customs duty for the purpose of this GC 10.1.”



**2.0 GC 10.2 LAWS, NOTICES, PERMITS AND FEES**

**2.1 GC 10.2.1**

- (a) Add the following at the end of GC 10.2.1:

“The *Contractor* shall comply with all *Applicable Law*.”

**2.2 GC 10.2.3**

- (a) Add the words “The Contractor shall provide the Owner with copies of all such permits, licenses, inspections and certificates.” at the end of GC 10.2.3.

**2.3 GC 10.2.4**

- (a) Delete the word “laws” and substitute the words “Applicable Laws” in the first line.
- (b) Delete the words “or codes” and substitute the words “codes, and industry best practices and guidelines” after the word “regulations,” in the first line.
- (c) Add the words “to the environment,” after the words “relate to the Work,” in the second line.
- (d) Add the words “The Contractor shall provide the Owner with copies of all such required notices and related health and safety documents.” at the end of GC 10.2.4.

**2.4 GC 10.2.5**

- (a) Delete the word “The” and substitute the words “Subject to GC 3.4.1, the” at the beginning of GC 10.2.5.
- (b) Delete the words “applicable laws” and substitute the words “Applicable Laws” in the third line.

**2.5 GC 10.2.6**

- (a) Delete GC 10.2.6 in its entirety and replace with the following:

“10.2.6 If the *Contractor* fails to notify the *Owner* and the *Consultant* in writing, fails to obtain direction as required in GC 10.2.5, and/or performs work that it knows or ought to have known that contravenes *Applicable Laws*, ordinances, guidelines, standards, permits, statutes, by-laws, rules, regulations, or codes, the

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 52 of 66

*Contractor* shall be responsible for and shall correct the violations thereof, and shall bear the costs, expenses, and damages attributable to the failure to comply with the provisions of such laws, ordinances, guidelines, standards, permits, statutes, by-laws, rules, regulations, or codes, and, notwithstanding any limitations described in GC 12.1.1, shall indemnify and hold harmless the *Owner* and the *Consultant* from and against any claims, demands, losses, costs, damages, actions, suits or proceedings resulting from such failure or breach of law."

#### 2.6 GC 10.2.8

(a) Add GC 10.2.8 as follows:

"10.2.8 Without limiting the generality of any other provision in the *Contract Documents*, the *Contractor* shall cause all certificates to be furnished that are required by or given by the appropriate governmental or quasi-governmental authorities as evidence that the *Work* as installed conforms with *Applicable Laws* and regulations of any authorities having jurisdiction over the *Place of the Work*, including, without limitation, certificates of compliance for the *Owner's* occupancy or partial occupancy. The certificates are to be final certificates giving complete clearance of the *Work*, in the event that such governmental or quasi- governmental authorities furnish such certificates."

### 3.0 GC 10.4 WORKER'S COMPENSATION

#### 3.1 GC 10.4.1

- (a) Add the words "with each application for progress payment," after the word "Work," in the first line.
- (b) Add the words "the Certificate of Clearance and" after the word "provide" in the third line .

## PART 11 INSURANCE AND CONTRACT SECURITY

### 1.0 GC 11.1 INSURANCE

#### 1.1 GC 11.1

- (a) Delete GC 11.1 INSURANCE in its entirety and replace with the following:  
"GC 11.1 INSURANCE

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 53 of 66

- 11.1.1 Without restricting the generality of GC 12.1 - INDEMNIFICATION, and unless the *Owner* and the *Contractor* agree to obtain project-specific insurance, or higher insurance limits, the Contractor shall provide, maintain, and pay for the minimum insurance coverages specified in GC 11.1 - INSURANCE.

.1 General Liability Insurance:

The policy shall be in the joint names of the *Contractor*, the *Owner* and the *Consultant* with limits of not less than five million dollars (\$5,000,000) per occurrence and with a property damage deductible of not more than ten thousand dollars (\$10,000). The insurance coverage shall not be less than the insurance required by IBC Forms 2100 and 2320, or their equivalent replacement. Umbrella or excess liability insurance may be used to achieve the desired limit. Where the *Contractor* maintains a single, blanket policy, the addition of the *Owner* is limited to liability arising out of the *Work* and all operations necessary or incidental thereto. Completed Operations Liability coverage shall be maintained continuously from the commencement of the *Construction* until two (2) years after the date of *Substantial Performance of the Work*. The policy shall include a waiver of subrogation against Owner.

.2 Automobile Liability Insurance

The policy covers for bodily injury, death, and damage to property with respect to all licensed vehicles owned or leased by the *Contractor*. The policy shall have limits of not less than five million dollars (\$5,000,000) inclusive per occurrence. If the policy is issued pursuant to a government-operated automobile insurance system, the *Contractor* shall provide the *Owner* with confirmation of automobile insurance coverage for all automobiles registered in the name of the *Contractor*.

.3 Aircraft and Watercraft Liability Insurance:

Not Applicable

.4 Property and Boiler and Machinery Insurance:

.1 All Risks Property Insurance

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 54 of 66

All Risks Property Insurance shall be in the joint names of the *Contractor*, the *Owner*, the *Consultant* and all *Subcontractors*. The insurance coverage shall not be less than the insurance required by IBC Forms 4042 and 4047, or their equivalent replacement. The insurance provided shall have limits of not less than the sum of the amount of the *Contract Price*, the applicable *Value Added Taxes*, and the full value of products provided by the *Owner* for incorporation into the *Work* as specified in the *Contract Documents*. The policy shall include a waiver of subrogation against the *Owner*.

.2 Boiler and Machinery Insurance

Not Applicable

.3 The policy/policies shall allow for partial or total use or occupancy of the *Work*. If because of such use or occupancy the *Contractor* is unable to provide coverage, the *Contractor* shall notify the *Owner* in writing. Prior to such use or occupancy, the *Owner* shall provide, maintain, and pay for all risk property and boiler insurance in the amounts described in sub-paragraphs (1) and (2), including coverage for such use or occupancy and shall provide the *Contractor* with proof of such insurance. The policies shall be amended to include permission for completion of *Construction* and shall include all insureds as specified in subparagraph (1). The *Contractor* shall refund to the *Owner* the unearned premiums applicable to the *Contractor's* policies upon termination of coverage.

.4 The policy/policies shall provide that, in the case of a loss or damage, payment shall be made to the *Owner* and the *Contractor* as their respective interests may appear. The *Contractor* shall act on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Contractor* shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract*

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 55 of 66

except that the *Contractor* shall be entitled to a reasonable extension of *Contract Time*.

.5 The *Contractor* shall be entitled to receive from the *Owner*, in addition to the amount due under the *Contract*, the amount at which the *Owner's* interest in restoration of the *Work* has been appraised, such amount to be paid as the restoration of the *Work* proceeds and as provided in GC 5.2 - APPLICATIONS FOR PROGRESS PAYMENT and GC 5.3 - PROGRESS PAYMENT. In addition the *Contractor* shall be entitled to receive from the payments made by the insurer the amount of the *Contractor's* interest in the restoration of the *Work*.

.6 In the case of loss or damage to the *Work* arising from the work of another contractor, or *Owner's* own forces, the *Owner*, in accordance with the *Owner's* obligations under paragraph 3.2.2.4 of GC 3.2 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, shall pay the *Contractor* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as provided in GC 5.2 - APPLICATIONS FOR PROGRESS PAYMENT and GC 5.3 - PROGRESS PAYMENT.

.5 Equipment Insurance:

Not Applicable

11.1.2 Unless otherwise stipulated, the duration of each insurance policy shall be from the date of *Commencement of the Work* until the date of the final certificate for payment.

11.1.3 The *Contractor* shall be responsible for deductible amounts under the policies except where otherwise provided in GC 11.1 - INSURANCE or where such amounts may be excluded from the *Contractor's* responsibility by the terms of GC 9.1 - PROTECTION OF WORK AND PROPERTY and GC 9.2 - DAMAGES AND MUTUAL RESPONSIBILITY.

11.1.4 Proof of Insurance Coverage:

.1 Prior to *Commencement of Work* and upon the placement, renewal, amendment, or extension of all or any part of the

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 56 of 66

insurance, the *Contractor* shall promptly provide the *Owner* with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements.

- .2 Certificates for General Liability Insurance shall include, in addition to the *Contractor* the following as additional insureds:

- .1 Metrolinx;
- .2 Planmac Engineering Inc.
- .3 City of Toronto

- .3 Certificates of All Risks Property Insurance and Boiler and Machinery Insurance shall include the *Owner*, *Consultant* and all *Subcontractors* as additional insureds.

- .4 All Certificates of Insurance shall also include the *Contract* name and number.

11.1.5 Where the full insurable value of the *Work* is substantially less than the *Contract Price*, the *Owner* may reduce the amount of insurance required or waive one or more of the types of insurance requirement.

11.1.6 If the *Contractor* fails to provide or maintain insurance as required by the *Contract Documents*, then the *Owner* shall have the right to provide and maintain such insurance and give evidence to the *Contractor* and the *Consultant*. The *Contractor* shall pay the cost thereof to the *Owner* on demand or the *Owner* may deduct the amount which is due or may become due to the *Contractor*.

11.1.7 All required insurance policies shall be placed with insurers licensed to underwrite insurance in the jurisdiction of the *Place of the Work*.

11.1.8 All required insurance policies shall be endorsed to provide the *Owner* with not less than thirty (30) days' notice in writing in advance of any cancellation and material amendment or change restricting coverage.

11.1.9 All insureds shall cooperate with the *Contractor* to comply with any reporting requirements of the insurance policies in order to maintain the policies in good standing, to give notice in writing of any incidents which may result in a claim or loss covered by the policies and to provide documentation necessary in the defence or settlement of claims.

**2.0 GC 11.2 CONTRACT SECURITY**

**2.1 GC 11.2.1**

- (a) Add the following to the end of GC 11.2.1:

“The *Contractor* shall provide and maintain the following *Contract* security:

- .1 Performance Bond and a Labour and Materials Payment Bond each equal to fifty percent (50%) of the *Contract Price*”

**2.2 GC 11.2.3**

- (a) Add GC 11.2.3 as follows:

“11.2.3 The premiums for the bonds required by the *Contract Documents* are included in the *Contract Price*. Prior to commencement of the Work, the *Contractor* shall promptly provide the *Owner* with confirmation of the *Contract* security with documentary evidence and thereafter provide confirmation and evidence of up-to-date *Contract* security from time to time upon request by the *Owner*. If approved changes pursuant to the *Contract* result in approved increases to the *Contract Price*, the *Contractor* shall promptly acquire additional bonding and provide the *Owner* with confirmation and evidence of the up-to-date *Contract* security.”

**PART 12 INDEMNIFICATIONS, WAIVER OF CLAIMS AND WARRANTY**

**1.0 GC 12.1 INDEMNIFICATION**

**1.1 GC 12.1.1**

- (a) Delete paragraph 12.1.1 in its entirety and replace with the following:

“12.1.1 Without restricting the *Contractor's* obligation to indemnify as described in paragraph 12.1.4, the *Contractor* shall indemnify and hold harmless the *Owner* from and against all claims, demands, losses, costs, damages, actions, suits or proceedings whether in respect to losses suffered by the *Owner* or in respect to claims by third parties that arise out of, or are attributable in any respect to the *Contractor's* involvement as a party to this *Contract*, provided such claims are caused by:

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 58 of 66

- .1 the negligent acts or omissions of the *Contractor* or anyone for whose acts or omissions the *Contractor* is liable, or
- .2 a failure of the *Contractor* to fulfil the terms or conditions of the *Contract*; and
- .3 made by *Notice in Writing* within a period of six years from the date of *Substantial Performance of the Work* as set out in the certificate of *Substantial Performance of the Work* issued pursuant to paragraph 5.4.2.2 of GC 5.4 – SUBSTANTIAL PERFORMANCE THE WORK or within such shorter period as may be prescribed by any limitation statute of the Province of Ontario.
- .4 The *Owner* expressly waives the right to indemnity for claims other than those provided for in this *Contract*.”

#### 1.2 GC 12.1.2

- (a) Delete GC 12.1.2 in its entirety.

#### 1.3 GC 12.1.3

- (a) Delete the words “either party to indemnify the other” and substitute the words “the Contractor to indemnify the Owner” in the first line of GC 12.1.3.

#### 1.4 GC 12.1.4

- (a) Delete the words “The Owner and the Contractor shall indemnify and hold harmless the other” and substitute the words “The Contractor shall indemnify and hold harmless the Owner” in the first line of GC 12.1.4.
- (b) Delete the word “their” and substitute the words “the Contractor’s” in the second line of GC 12.1.4.

#### 1.5 GC 12.1.5

- (a) Delete GC 12.1.5 in its entirety.

#### 1.6 GC 12.1.6

- (a) Delete the words “or the Contractor” from the first line.

#### 1.7 GC 12.1.6.2



- (a) Delete GC 12.1.6.2 in its entirety and replace with the following:

“12.1.6.2        Should the *Contractor* be required as a result of its obligation to indemnify the *Owner* to pay or satisfy a final order, judgment or award made against the *Owner*, then the *Contractor* upon assuming all liability for any costs that might result shall have the right to appeal in the name of the *Owner* until such rights of appeal have been exhausted.”

1.8      GC 12.1.7

- (a) Add GC 12.1.7 as follows:

“12.1.7 Notwithstanding anything contained in the *Contract Documents* to the contrary, the *Owner* shall have the right to set-off the amount of any claims for which *Notice in Writing* has been given by the *Owner* to the *Contractor* in accordance with GC 6.6 CLAIMS FOR A CHANGE TO CONTRACT PRICE or GC 12.1 INDEMNIFICATION against any amounts which may be otherwise owing or payable to the *Contractor* pursuant to the terms of the *Contract*.”

1.9      GC 12.1.8

- (a) Add GC 12.1.8 as follows:

“12.1.8 In addition to and without limiting any other rights the *Owner* may have under this *Contract* and at law, the *Owner* may retain from monies owing to the *Contractor* under this *Contract*, at any time, an amount sufficient to cover any outstanding or disputed liabilities including the cost to remedy deficiencies in the *Work*, the reduction in value of substandard portions of the *Work*, claims for damages by third parties, undetermined claims by the *Owner*, and any assessment due to the *Workplace Safety and Insurance Board*.”

**2.0      GC 12.2 WAIVER OF CLAIMS**

2.1      GC 12.2.1.2 and 12.2.1.3

- (a) Delete GC 12.2.1.2 and GC 12.2.1.3 in their entirety.

2.2      GC 12.2.2

- (a) Delete the words “those referred in paragraphs 12.2.1.2 and 12.2.1.3 and”.

**3.0 GC 12.3 WARRANTY**

**3.1 GC 12.3.1**

- (a) Delete the words “one year” and substitute the words “two years” in the first line.
- (b) Add the words “The warranty on replaced or rectified parts and workmanship shall be extended for a period of two (2) years from the date of acceptance by the Owner of the replacement or rectification of the parts and workmanship” at the end of GC 12.3.1.

**3.2 GC 12.3.2**

- (a) Delete the word “The” and substitute the words “Subject to paragraph 3.4.1, the” at the beginning of GC 12.3.2.

**3.3 GC 12.3.3**

- (a) Delete the words “one year” from the second line of GC 12.3.3.

**3.4 GC 12.3.4**

- (a) Delete the words “one year” from the second line of GC 12.3.4.

**3.5 GC 12.3.6**

- (a) Add the words “in a form acceptable to the Consultant, and to submit said warranties to the Consultant upon Substantial Performance of the Work or at such earlier date as may be required by the Consultant, acting reasonably” after the words “from the warrantor” in the fourth line of GC 12.3.6.

**4.0 GC 13 FRENCH LANGUAGE SERVICES**

- (a) Add GC 13 FRENCH LANGUAGE SERVICES as follows:

**“GC 13 FRENCH LANGUAGE SERVICES**

**13.1 Definitions**

- .1 “French Language Services Act” means the French Language Services Act, R.S.O. 1990, c.F. 32, as amended.

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 61 of 66

- .2 "French-designated Area" means an area designated from time to time in the Schedule to the French Language Services Act (Ontario). A map and complete listing of French-designated areas is available at <http://www.ofa.gov.on.ca/en/flsa-mapdesig.html>.

#### 13.2 French Language Services

- .1 Insofar as this *Contract* relates to the provision of Services directly to the public on behalf of the *Owner*, the French Language Services Act, R.S.O. 1990, c. F. 32 and any amendments thereto (hereinafter referred to as "the FLSA") shall be applicable.
- .2 A person has the right in accordance with the FLSA to communicate in French with, and to receive available services in French where the *Contractor's* work is located in or serves an area designated in the FLSA Schedule. It shall be the *Contractor's* responsibility to provide translation services to any person making such a request as per R.S.O. 1990, c. F.32, s. 5(1).
- .3 A service refers to any service or procedure provided to the public, including communications.
- .4 Services being provided in French must be equivalent to those offered in English, available within the same timeframe and of the same quality.
- .5 Services and communications in designated areas include, but are not limited to:

##### (i) Consultations/Public Meetings

- (ii) Presentation materials, displays, comment cards/feedback mechanism or other materials are available in French. *Contractor* has at least one bilingual staff or interpreter on hand able to answer questions and discuss technical drawings/documents in French. When relevant, the *Contractor* will compile and analyze the views of Francophones separately, because they may have different concerns.
- (iii) Construction contracts may from time to time involve erecting temporary signage to redirect or

warn the public of hazards. Such signage will be bilingual.

- (iv) Communication plans, customer impact documents, information bulletins, notices of service disruption and public relations information will be bilingual.
- (v) Advertising, promotion, publicity will be undertaken in English and French. A list of Francophone media is available at: <http://www.ofa.gov.on.ca/en/franco-media.html>.
- (vi) The *Contractor* will have a bilingual staff available to attend consultations or public meetings.
- (vii) The *Contractor* will have a staff or procure the services of a professional translator or interpreter, accredited by the Association of Translators and Interpreters of Ontario. <http://www.atio.on.ca/>

## **5.0 GC 14 CONTRACTOR WORK PERFORMANCE RATING**

5.1 Add GC 14 CONTRACTOR WORK PERFORMANCE RATING, as follows:

### **“GC 14 CONTRACTOR WORK PERFORMANCE RATING**

- 14.1 The *Owner* shall during the term of the *Contract*, maintain a record of the performance of the *Contractor* completing *Work* for the *Owner*. This information shall be used to complete a “Contract Performance Appraisal” report, a copy of which will be forwarded to the *Contractor* upon completion of *Total Performance of the Work*. Interim “Contractor Performance Appraisal” reports may be issued, as deemed appropriate by the *Owner*, at any time during the term of the *Contract*. A copy of the Contract Performance Appraisal template can be found under “Attachments”.
- 14.2 The overall history of the *Contractor* in performing work for the *Owner*, including the *Contractor*’s performance pursuant to this Contract, will be considered in the evaluation of future submissions from the *Contractor*.
- 14.3 The *Owner* reserves the right during any procurement process, to reject any submissions by the *Contractor* due to unsatisfactory performance history with the *Owner*.

- 14.4 Non-compliance with *Contract* requirements will be identified to the *Contractor*.14.5 The information contained in the “Contract Performance Appraisal” may be provided to the Ministry of Transportation, other ministries and other government agencies. Such performance reviews may be relied upon to reject the Contractor’s submission on any procurement processes.

## **6.0 GC 15 CONFLICT OF INTEREST**

- 6.1 Add GC 15 CONFLICT OF INTEREST, as follows:

### **“GC 15 CONFLICT OF INTEREST**

- 15.1 For the purposes of this *Contract*, a “Conflict of Interest” includes any situation or circumstances where, in relation to the performance of its contractual obligations in this *Contract*, the *Contractor’s* other commitments, relationships or financial interests:

- .1 could or could be seen to exercise an improper influence over the objective, unbiased and impartial exercise of its independent judgment; or
- .2 could or could be seen to compromise, impair or be incompatible with the effective performance of its contractual obligations.

- 15.2 The *Contractor* shall:

- .1 avoid all Conflict of Interest in the performance of its contractual obligations;
- .2 disclose to the *Owner* without delay any actual or potential Conflict of Interest that arises during the performance of its contractual obligations; and
- .3 comply with any requirements prescribed by the *Owner* to resolve any Conflict of Interest.

- 15.3 In addition to all other contractual rights or rights available at law or in equity, *Owner* shall have the right to immediately terminate this *Contract*, by giving *Notice in Writing* to the *Contractor*, where:

- .1 the *Contractor* fails to disclose an actual or potential Conflict of Interest;

## SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION

Contract No. IT-2018-STNS-255

Page 64 of 66

.2 the *Contractor* fails to comply with any requirements prescribed by *Owner* to resolve a Conflict of Interest; or

.3 the *Contractor's* Conflict of Interest cannot be resolved.

15.4 This section shall survive any termination or expiry of this *Contract*.

**NOTE TO CLIENT – The language of each section below has been reviewed and approved by legal for inclusion in tenders. Please note that requests for inclusion of bonuses and liquidated damages in your tender require Procurement's final approval. Sufficient justification must be provided explaining why inclusion of bonuses or liquidated damages is necessary.**

#### 7.0 GC 16 PERFORMANCE INCENTIVE BONUS

7.1 Not Applicable

#### 8.0 GC 17 LIQUIDATED DAMAGES

8.1 Add GC 17 LIQUIDATED DAMAGES, as follows:

“GC 17 – Liquidated Damages

##### 17.1 LIQUIDATED DAMAGES FOR FAILURE TO ACHIEVE SUBSTANTIAL PERFORMANCE OF THE WORK

.1 The *Contractor* acknowledges and agrees that the *Owner* will suffer harm in the event the *Work* is delayed and the date for *Substantial Performance of the Work* is not met. The *Contractor* further acknowledges and agrees that it is extremely difficult to determine the actual damages that the *Owner* will suffer as a result of such late *Substantial Performance of the Work* and that the amounts stated herein represent a reasonable estimate of such damages. .2 The *Contractor* shall be assessed liquidated damages as follows:

.1 Liquidated Damages in the amount of Three Thousand Dollars (\$3,000.00) per *Working Day* for each and every *Working Day* that the completion of the *Work* for *Substantial Performance of the Work*, as may be amended by *Change Order*, exceeds the date of *Substantial Completion of the Work*. The maximum amount assessed for liquidated damages pertaining to *Substantial Performance of the Work* shall not exceed Thirty Thousand Dollars (\$30,000.00).

##### 17.5 LIQUIDATED DAMAGES FOR SAFETY INCIDENTS

## **SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION**

**Contract No. IT-2018-STNS-255**

Page 65 of 66

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- .1 The Contractor acknowledges and agrees that the Owner will suffer harm in the event of any breach, contemplated breach, act or omission of the Contractor that does or can reasonably be expected to create a threat to the health, safety or security of any person or user at the Place of the Work including other members of the public (each, a “Safety Incident”). Whether a Safety Incident has occurred, and the categorization of it as Major Safety Incident or Minor Safety Incident, shall be determined in accordance with this provision by the Owner in its sole discretion. If there is a Safety Incident, the Contractor shall pay to the Owner, the following:
  - .1 For Major Safety Incidents, the lump sum amount of Fifteen Thousand dollars (\$15,000), and a daily amount of Five Thousand dollars (\$5,000) for every day that the Major Safety Incident is not corrected or addressed by the Contractor to the satisfaction of the Owner after being informed by the Owner of the occurrence of a Major Safety Incident. Where the Owner is required to take action or instruct the Contractor in order to avoid a Major Safety Incident, that occurrence shall be deemed to be a Major Safety Incident, and the lump sum and daily amounts shall accrue accordingly depending on the length of time that the Contractor takes to address the Major Safety Incident; or
  - .2 For Minor Safety Incidents, the lump sum amount of Five Thousand dollars (\$5,000), and a daily amount of \$500dollars (\$500) for every day that the Minor Safety Incident is not corrected by the Contractor to the satisfaction of the Owner after being informed by the Owner of the occurrence of a Minor Safety Incident.
  - .3 For the purpose of this section:
    - .1 A Major Safety Incident is a material breach or threat to the health, safety or security of any person or user of the Place of Work, and may include, but is not limited to: work proceeding without an approved work plan, incident causing injury to a person, risk to public safety, or incident giving rise to a report to, or charge or stop work order by the Ministry of Labour.
    - .2 A Minor Safety Incident is an incident giving rise to health, safety or security concerns, but not a Major Safety Event, and may include, but is not limited to:

failure to notify the Owner of a safety issue or incident, or a failure to wear personal protective equipment.

- .4      The liquidated damages for Safety Incidents is limited to direct administrative costs to the Owner to respond and manage the Safety Incident. For greater certainty, nothing in this section shall limit the rights of Metrolinx to place the Contractor in default for any Safety Incident.

- 17.6      The *Contractor* acknowledges and agrees that any amounts payable pursuant to this GC 17 - Liquidated Damages shall not be construed as a penalty imposed on the *Contractor* by the *Owner*. The Contractor agrees that it is, and shall be, estopped from alleging that any liquidated damages set out in this GC 17 are a penalty and not liquidated damages, or are otherwise unenforceable for any reason, including that such damages were not incurred. The Contractor acknowledges and agrees that all liquidated damages pursuant to GC 17 shall be payable whether or not the Owner incurs or mitigates these damages, and that Owner shall have no obligation to mitigate these damages.
- 17.7      The *Owner* shall have the right to deduct the amount of any and all liquidated damages assessed against the *Contractor* under this GC 17 – Liquidated Damages from any amount due to the *Contractor* at any time.
- 17.8      Except as expressly provided herein, nothing in this GC 17 shall restrict, limit, prejudice or in any other way impair the rights or remedies of the Owner under any other provision of the Contract.”

END OF SECTION



## **GENERAL CONDITIONS OF THE CONTRACT**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION**

**Contract No. IT-2018-STNS-255**

Page 1 of 1

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#### **General Conditions of the Contract**

The “General Conditions of the Stipulated Price Contract” of CCDC 2 2008 Stipulated Price Contract are herein called the General Conditions of the Contract and shall constitute the General Conditions of this Contract in their entirety as amended by the Supplementary General Conditions of the Contract herein. CCDC 2 2008 is available for purchase on [www.ccdc.org](http://www.ccdc.org).

END OF SECTION

## GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

### PART 1 GENERAL PROVISIONS

#### GC 1.1 CONTRACT DOCUMENTS

- 1.1.1 The intent of the *Contract Documents* is to include the labour, *Products* and services necessary for the performance of the *Work* by the *Contractor* in accordance with these documents. It is not intended, however, that the *Contractor* shall supply products or perform work not consistent with, not covered by, or not properly inferable from the *Contract Documents*.
- 1.1.2 Nothing contained in the *Contract Documents* shall create any contractual relationship between:
  - .1 the *Owner* and a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any portion of the *Work*.
  - .2 the *Consultant* and the *Contractor*, a *Subcontractor*, a *Supplier*, or their agent, employee, or other person performing any portion of the *Work*.
- 1.1.3 The *Contract Documents* are complementary, and what is required by any one shall be as binding as if required by all.
- 1.1.4 Words and abbreviations which have well known technical or trade meanings are used in the *Contract Documents* in accordance with such recognized meanings.
- 1.1.5 References in the *Contract Documents* to the singular shall be considered to include the plural as the context requires.
- 1.1.6 Neither the organization of the *Specifications* nor the arrangement of *Drawings* shall control the *Contractor* in dividing the work among *Subcontractors* and *Suppliers*.
- 1.1.7 If there is a conflict within the *Contract Documents*:
  - .1 the order of priority of documents, from highest to lowest, shall be
    - the Agreement between the *Owner* and the *Contractor*,
    - the Definitions,
    - Supplementary Conditions,
    - the General Conditions,
    - Division 1 of the *Specifications*,
    - technical *Specifications*,
    - material and finishing schedules,
    - the *Drawings*.
  - .2 *Drawings* of larger scale shall govern over those of smaller scale of the same date.
  - .3 dimensions shown on *Drawings* shall govern over dimensions scaled from *Drawings*.
  - .4 later dated documents shall govern over earlier documents of the same type.
- 1.1.8 The *Owner* shall provide the *Contractor*, without charge, sufficient copies of the *Contract Documents* to perform the *Work*.
- 1.1.9 *Specifications*, *Drawings*, models, and copies thereof furnished by the *Consultant* are and shall remain the *Consultant's* property, with the exception of the signed *Contract* sets, which shall belong to each party to the *Contract*. All *Specifications*, *Drawings* and models furnished by the *Consultant* are to be used only with respect to the *Work* and are not to be used on other work. These *Specifications*, *Drawings* and models are not to be copied or altered in any manner without the written authorization of the *Consultant*.
- 1.1.10 Models furnished by the *Contractor* at the *Owner's* expense are the property of the *Owner*.

#### GC 1.2 LAW OF THE CONTRACT

- 1.2.1 The law of the *Place of the Work* shall govern the interpretation of the *Contract*.

#### GC 1.3 RIGHTS AND REMEDIES

- 1.3.1 Except as expressly provided in the *Contract Documents*, the duties and obligations imposed by the *Contract Documents* and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.
- 1.3.2 No action or failure to act by the *Owner*, *Consultant* or *Contractor* shall constitute a waiver of any right or duty afforded any of them under the *Contract*, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

## **GC 1.4 ASSIGNMENT**

- 1.4.1 Neither party to the *Contract* shall assign the *Contract* or a portion thereof without the written consent of the other, which consent shall not be unreasonably withheld.

## **PART 2 ADMINISTRATION OF THE CONTRACT**

### **GC 2.1 AUTHORITY OF THE CONSULTANT**

- 2.1.1 The *Consultant* will have authority to act on behalf of the *Owner* only to the extent provided in the *Contract Documents*, unless otherwise modified by written agreement as provided in paragraph 2.1.2.
- 2.1.2 The duties, responsibilities and limitations of authority of the *Consultant* as set forth in the *Contract Documents* shall be modified or extended only with the written consent of the *Owner*, the *Contractor* and the *Consultant*.
- 2.1.3 If the *Consultant's* employment is terminated, the *Owner* shall immediately appoint or reappoint a *Consultant* against whom the *Contractor* makes no reasonable objection and whose status under the *Contract Documents* shall be that of the former *Consultant*.

### **GC 2.2 ROLE OF THE CONSULTANT**

- 2.2.1 The *Consultant* will provide administration of the *Contract* as described in the *Contract Documents*.
- 2.2.2 The *Consultant* will visit the *Place of the Work* at intervals appropriate to the progress of construction to become familiar with the progress and quality of the work and to determine if the *Work* is proceeding in general conformity with the *Contract Documents*.
- 2.2.3 If the *Owner* and the *Consultant* agree, the *Consultant* will provide at the *Place of the Work*, one or more project representatives to assist in carrying out the *Consultant's* responsibilities. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in writing to the *Contractor*.
- 2.2.4 The *Consultant* will promptly inform the *Owner* of the date of receipt of the *Contractor's* applications for payment as provided in paragraph 5.3.1.1 of GC 5.3 – PROGRESS PAYMENT.
- 2.2.5 Based on the *Consultant's* observations and evaluation of the *Contractor's* applications for payment, the *Consultant* will determine the amounts owing to the *Contractor* under the *Contract* and will issue certificates for payment as provided in Article A-5 of the Agreement - PAYMENT, GC 5.3 - PROGRESS PAYMENT and GC 5.7 - FINAL PAYMENT.
- 2.2.6 The *Consultant* will not be responsible for and will not have control, charge or supervision of construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs required in connection with the *Work* in accordance with the applicable construction safety legislation, other regulations or general construction practice. The *Consultant* will not be responsible for the *Contractor's* failure to carry out the *Work* in accordance with the *Contract Documents*. The *Consultant* will not have control over, charge of or be responsible for the acts or omissions of the *Contractor*, *Subcontractors*, *Suppliers*, or their agents, employees, or any other persons performing portions of the *Work*.
- 2.2.7 Except with respect to GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER, the *Consultant* will be, in the first instance, the interpreter of the requirements of the *Contract Documents*.
- 2.2.8 Matters in question relating to the performance of the *Work* or the interpretation of the *Contract Documents* shall be initially referred in writing to the *Consultant* by the party raising the question for interpretations and findings and copied to the other party.
- 2.2.9 Interpretations and findings of the *Consultant* shall be consistent with the intent of the *Contract Documents*. In making such interpretations and findings the *Consultant* will not show partiality to either the *Owner* or the *Contractor*.
- 2.2.10 The *Consultant's* interpretations and findings will be given in writing to the parties within a reasonable time.
- 2.2.11 With respect to claims for a change in *Contract Price*, the *Consultant* will make findings as set out in GC 6.6 – CLAIMS FOR A CHANGE IN CONTRACT PRICE.
- 2.2.12 The *Consultant* will have authority to reject work which in the *Consultant's* opinion does not conform to the requirements of the *Contract Documents*. Whenever the *Consultant* considers it necessary or advisable, the *Consultant* will have authority to require inspection or testing of work, whether or not such work is fabricated, installed or completed. However, neither the authority of the *Consultant* to act nor any decision either to exercise or not to exercise such authority shall give rise to any duty or responsibility of the *Consultant* to the *Contractor*, *Subcontractors*, *Suppliers*, or their agents, employees, or other persons performing any of the *Work*.

- 2.2.13 During the progress of the *Work* the *Consultant* will furnish *Supplemental Instructions* to the *Contractor* with reasonable promptness or in accordance with a schedule for such instructions agreed to by the *Consultant* and the *Contractor*.
- 2.2.14 The *Consultant* will review and take appropriate action upon *Shop Drawings*, samples and other *Contractor's* submittals, in accordance with the *Contract Documents*.
- 2.2.15 The *Consultant* will prepare *Change Orders* and *Change Directives* as provided in GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.
- 2.2.16 The *Consultant* will conduct reviews of the *Work* to determine the date of *Substantial Performance of the Work* as provided in GC 5.4 - SUBSTANTIAL PERFORMANCE OF THE WORK.
- 2.2.17 All certificates issued by the *Consultant* will be to the best of the *Consultant's* knowledge, information and belief. By issuing any certificate, the *Consultant* does not guarantee the *Work* is correct or complete.
- 2.2.18 The *Consultant* will receive and review written warranties and related documents required by the *Contract* and provided by the *Contractor* and will forward such warranties and documents to the *Owner* for the *Owner's* acceptance.

### **GC 2.3 REVIEW AND INSPECTION OF THE WORK**

- 2.3.1 The *Owner* and the *Consultant* shall have access to the *Work* at all times. The *Contractor* shall provide sufficient, safe and proper facilities at all times for the review of the *Work* by the *Consultant* and the inspection of the *Work* by authorized agencies. If parts of the *Work* are in preparation at locations other than the *Place of the Work*, the *Owner* and the *Consultant* shall be given access to such work whenever it is in progress.
- 2.3.2 If work is designated for tests, inspections or approvals in the *Contract Documents*, or by the *Consultant's* instructions, or by the laws or ordinances of the *Place of the Work*, the *Contractor* shall give the *Consultant* reasonable notification of when the work will be ready for review and inspection. The *Contractor* shall arrange for and shall give the *Consultant* reasonable notification of the date and time of inspections by other authorities.
- 2.3.3 The *Contractor* shall furnish promptly to the *Consultant* two copies of certificates and inspection reports relating to the *Work*.
- 2.3.4 If the *Contractor* covers, or permits to be covered, work that has been designated for special tests, inspections or approvals before such special tests, inspections or approvals are made, given or completed, the *Contractor* shall, if so directed, uncover such work, have the inspections or tests satisfactorily completed, and make good covering work at the *Contractor's* expense.
- 2.3.5 The *Consultant* may order any portion or portions of the *Work* to be examined to confirm that such work is in accordance with the requirements of the *Contract Documents*. If the work is not in accordance with the requirements of the *Contract Documents*, the *Contractor* shall correct the work and pay the cost of examination and correction. If the work is in accordance with the requirements of the *Contract Documents*, the *Owner* shall pay the cost of examination and restoration.
- 2.3.6 The *Contractor* shall pay the cost of making any test or inspection, including the cost of samples required for such test or inspection, if such test or inspection is designated in the *Contract Documents* to be performed by the *Contractor* or is designated by the laws or ordinances applicable to the *Place of the Work*.
- 2.3.7 The *Contractor* shall pay the cost of samples required for any test or inspection to be performed by the *Consultant* or the *Owner* if such test or inspection is designated in the *Contract Documents*.

### **GC 2.4 DEFECTIVE WORK**

- 2.4.1 The *Contractor* shall promptly correct defective work that has been rejected by the *Consultant* as failing to conform to the *Contract Documents* whether or not the defective work has been incorporated in the *Work* and whether or not the defect is the result of poor workmanship, use of defective products or damage through carelessness or other act or omission of the *Contractor*.
- 2.4.2 The *Contractor* shall make good promptly other contractors' work destroyed or damaged by such corrections at the *Contractor's* expense.
- 2.4.3 If in the opinion of the *Consultant* it is not expedient to correct defective work or work not performed as provided in the *Contract Documents*, the *Owner* may deduct from the amount otherwise due to the *Contractor* the difference in value between the work as performed and that called for by the *Contract Documents*. If the *Owner* and the *Contractor* do not agree on the difference in value, they shall refer the matter to the *Consultant* for a determination.

## PART 3 EXECUTION OF THE WORK

### GC 3.1 CONTROL OF THE WORK

- 3.1.1 The *Contractor* shall have total control of the *Work* and shall effectively direct and supervise the *Work* so as to ensure conformity with the *Contract Documents*.
- 3.1.2 The *Contractor* shall be solely responsible for construction means, methods, techniques, sequences, and procedures and for co-ordinating the various parts of the *Work* under the *Contract*.

### GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

- 3.2.1 The *Owner* reserves the right to award separate contracts in connection with other parts of the *Project* to other contractors and to perform work with own forces.
- 3.2.2 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Owner* shall:
- .1 provide for the co-ordination of the activities and work of other contractors and *Owner's* own forces with the *Work* of the *Contract*;
  - .2 assume overall responsibility for compliance with the applicable health and construction safety legislation at the *Place of the Work*;
  - .3 enter into separate contracts with other contractors under conditions of contract which are compatible with the conditions of the *Contract*;
  - .4 ensure that insurance coverage is provided to the same requirements as are called for in GC 11.1 - INSURANCE and co-ordinate such insurance with the insurance coverage of the *Contractor* as it affects the *Work*; and
  - .5 take all reasonable precautions to avoid labour disputes or other disputes on the *Project* arising from the work of other contractors or the *Owner's* own forces.
- 3.2.3 When separate contracts are awarded for other parts of the *Project*, or when work is performed by the *Owner's* own forces, the *Contractor* shall:
- .1 afford the *Owner* and other contractors reasonable opportunity to store their products and execute their work;
  - .2 cooperate with other contractors and the *Owner* in reviewing their construction schedules; and
  - .3 promptly report to the *Consultant* in writing any apparent deficiencies in the work of other contractors or of the *Owner's* own forces, where such work affects the proper execution of any portion of the *Work*, prior to proceeding with that portion of the *Work*.
- 3.2.4 Where the *Contract Documents* identify work to be performed by other contractors or the *Owner's* own forces, the *Contractor* shall co-ordinate and schedule the *Work* with the work of other contractors and the *Owner's* own forces as specified in the *Contract Documents*.
- 3.2.5 Where a change in the *Work* is required as a result of the co-ordination and integration of the work of other contractors or *Owner's* own forces with the *Work*, the changes shall be authorized and valued as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.
- 3.2.6 Disputes and other matters in question between the *Contractor* and other contractors shall be dealt with as provided in Part 8 of the General Conditions - DISPUTE RESOLUTION provided the other contractors have reciprocal obligations. The *Contractor* shall be deemed to have consented to arbitration of any dispute with any other contractor whose contract with the *Owner* contains a similar agreement to arbitrate.

### GC 3.3 TEMPORARY WORK

- 3.3.1 The *Contractor* shall have the sole responsibility for the design, erection, operation, maintenance, and removal of *Temporary Work*.
- 3.3.2 The *Contractor* shall engage and pay for registered professional engineering personnel skilled in the appropriate disciplines to perform those functions referred to in paragraph 3.3.1 where required by law or by the *Contract Documents* and in all cases where such *Temporary Work* is of such a nature that professional engineering skill is required to produce safe and satisfactory results.

- 3.3.3 Notwithstanding the provisions of GC 3.1 - CONTROL OF THE WORK, paragraphs 3.3.1 and 3.3.2 or provisions to the contrary elsewhere in the *Contract Documents* where such *Contract Documents* include designs for *Temporary Work* or specify a method of construction in whole or in part, such designs or methods of construction shall be considered to be part of the design of the *Work* and the *Contractor* shall not be held responsible for that part of the design or the specified method of construction. The *Contractor* shall, however, be responsible for the execution of such design or specified method of construction in the same manner as for the execution of the *Work*.

#### **GC 3.4 DOCUMENT REVIEW**

- 3.4.1 The *Contractor* shall review the *Contract Documents* and shall report promptly to the *Consultant* any error, inconsistency or omission the *Contractor* may discover. Such review by the *Contractor* shall be to the best of the *Contractor's* knowledge, information and belief and in making such review the *Contractor* does not assume any responsibility to the *Owner* or the *Consultant* for the accuracy of the review. The *Contractor* shall not be liable for damage or costs resulting from such errors, inconsistencies or omissions in the *Contract Documents*, which the *Contractor* did not discover. If the *Contractor* does discover any error, inconsistency or omission in the *Contract Documents*, the *Contractor* shall not proceed with the work affected until the *Contractor* has received corrected or missing information from the *Consultant*.

#### **GC 3.5 CONSTRUCTION SCHEDULE**

- 3.5.1 The *Contractor* shall:
- .1 prepare and submit to the *Owner* and the *Consultant* prior to the first application for payment, a construction schedule that indicates the timing of the major activities of the *Work* and provides sufficient detail of the critical events and their inter-relationship to demonstrate the *Work* will be performed in conformity with the *Contract Time*;
  - .2 monitor the progress of the *Work* relative to the construction schedule and update the schedule on a monthly basis or as stipulated by the *Contract Documents*; and
  - .3 advise the *Consultant* of any revisions required to the schedule as the result of extensions of the *Contract Time* as provided in Part 6 of the General Conditions - CHANGES IN THE WORK.

#### **GC 3.6 SUPERVISION**

- 3.6.1 The *Contractor* shall provide all necessary supervision and appoint a competent representative who shall be in attendance at the *Place of the Work* while work is being performed. The appointed representative shall not be changed except for valid reason.
- 3.6.2 The appointed representative shall represent the *Contractor* at the *Place of the Work*. Information and instructions provided by the *Consultant* to the *Contractor's* appointed representative shall be deemed to have been received by the *Contractor*, except with respect to Article A-6 of the Agreement – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING.

#### **GC 3.7 SUBCONTRACTORS AND SUPPLIERS**

- 3.7.1 The *Contractor* shall preserve and protect the rights of the parties under the *Contract* with respect to work to be performed under subcontract, and shall:
- .1 enter into contracts or written agreements with *Subcontractors* and *Suppliers* to require them to perform their work as provided in the *Contract Documents*;
  - .2 incorporate the terms and conditions of the *Contract Documents* into all contracts or written agreements with *Subcontractors* and *Suppliers*; and
  - .3 be as fully responsible to the *Owner* for acts and omissions of *Subcontractors*, *Suppliers* and of persons directly or indirectly employed by them as for acts and omissions of persons directly employed by the *Contractor*.
- 3.7.2 The *Contractor* shall indicate in writing, if requested by the *Owner*, those *Subcontractors* or *Suppliers* whose bids have been received by the *Contractor* which the *Contractor* would be prepared to accept for the performance of a portion of the *Work*. Should the *Owner* not object before signing the *Contract*, the *Contractor* shall employ those *Subcontractors* or *Suppliers* so identified by the *Contractor* in writing for the performance of that portion of the *Work* to which their bid applies.
- 3.7.3 The *Owner* may, for reasonable cause, at any time before the *Owner* has signed the *Contract*, object to the use of a proposed *Subcontractor* or *Supplier* and require the *Contractor* to employ one of the other subcontract bidders.
- 3.7.4 If the *Owner* requires the *Contractor* to change a proposed *Subcontractor* or *Supplier*, the *Contract Price* and *Contract Time* shall be adjusted by the differences occasioned by such required change.

- 3.7.5 The *Contractor* shall not be required to employ as a *Subcontractor* or *Supplier*, a person or firm to which the *Contractor* may reasonably object.
- 3.7.6 The *Owner*, through the *Consultant*, may provide to a *Subcontractor* or *Supplier* information as to the percentage of the *Subcontractor's* or *Supplier's* work which has been certified for payment.

### **GC 3.8 LABOUR AND PRODUCTS**

- 3.8.1 The *Contractor* shall provide and pay for labour, *Products*, tools, *Construction Equipment*, water, heat, light, power, transportation, and other facilities and services necessary for the performance of the *Work* in accordance with the *Contract*.
- 3.8.2 Unless otherwise specified in the *Contract Documents*, *Products* provided shall be new. *Products* which are not specified shall be of a quality consistent with those specified and their use acceptable to the *Consultant*.
- 3.8.3 The *Contractor* shall maintain good order and discipline among the *Contractor's* employees engaged on the *Work* and shall not employ on the *Work* anyone not skilled in the tasks assigned.

### **GC 3.9 DOCUMENTS AT THE SITE**

- 3.9.1 The *Contractor* shall keep one copy of current *Contract Documents*, submittals, reports, and records of meetings at the *Place of the Work*, in good order and available to the *Owner* and the *Consultant*.

### **GC 3.10 SHOP DRAWINGS**

- 3.10.1 The *Contractor* shall provide *Shop Drawings* as required in the *Contract Documents*.
- 3.10.2 The *Contractor* shall provide *Shop Drawings* to the *Consultant* to review in orderly sequence and sufficiently in advance so as to cause no delay in the *Work* or in the work of other contractors.
- 3.10.3 Upon request of the *Contractor* or the *Consultant*, they shall jointly prepare a schedule of the dates for provision, review and return of *Shop Drawings*.
- 3.10.4 The *Contractor* shall provide *Shop Drawings* in the form specified, or if not specified, as directed by the *Consultant*.
- 3.10.5 *Shop Drawings* provided by the *Contractor* to the *Consultant* shall indicate by stamp, date and signature of the person responsible for the review that the *Contractor* has reviewed each one of them.
- 3.10.6 The *Consultant's* review is for conformity to the design concept and for general arrangement only.
- 3.10.7 *Shop Drawings* which require approval of any legally constituted authority having jurisdiction shall be provided to such authority by the *Contractor* for approval.
- 3.10.8 The *Contractor* shall review all *Shop Drawings* before providing them to the *Consultant*. The *Contractor* represents by this review that:
- .1 the *Contractor* has determined and verified all applicable field measurements, field construction conditions, *Product* requirements, catalogue numbers and similar data, or will do so, and
  - .2 the *Contractor* has checked and co-ordinated each *Shop Drawing* with the requirements of the *Work* and of the *Contract Documents*.
- 3.10.9 At the time of providing *Shop Drawings*, the *Contractor* shall expressly advise the *Consultant* in writing of any deviations in a *Shop Drawing* from the requirements of the *Contract Documents*. The *Consultant* shall indicate the acceptance or rejection of such deviation expressly in writing.
- 3.10.10 The *Consultant's* review shall not relieve the *Contractor* of responsibility for errors or omissions in the *Shop Drawings* or for meeting all requirements of the *Contract Documents*.
- 3.10.11 The *Contractor* shall provide revised *Shop Drawings* to correct those which the *Consultant* rejects as inconsistent with the *Contract Documents*, unless otherwise directed by the *Consultant*. The *Contractor* shall notify the *Consultant* in writing of any revisions to the *Shop Drawings* other than those requested by the *Consultant*.
- 3.10.12 The *Consultant* will review and return *Shop Drawings* in accordance with the schedule agreed upon, or, in the absence of such schedule, with reasonable promptness so as to cause no delay in the performance of the *Work*.

### **GC 3.11 USE OF THE WORK**

- 3.11.1 The *Contractor* shall confine *Construction Equipment*, *Temporary Work*, storage of *Products*, waste products and debris, and operations of employees and *Subcontractors* to limits indicated by laws, ordinances, permits, or the *Contract Documents* and shall not unreasonably encumber the *Place of the Work*.
- 3.11.2 The *Contractor* shall not load or permit to be loaded any part of the *Work* with a weight or force that will endanger the safety of the *Work*.

### **GC 3.12 CUTTING AND REMEDIAL WORK**

- 3.12.1 The *Contractor* shall perform the cutting and remedial work required to make the affected parts of the *Work* come together properly.
- 3.12.2 The *Contractor* shall co-ordinate the *Work* to ensure that the cutting and remedial work is kept to a minimum.
- 3.12.3 Should the *Owner*, the *Consultant*, other contractors or anyone employed by them be responsible for ill-timed work necessitating cutting or remedial work to be performed, the cost of such cutting or remedial work shall be valued as provided in GC 6.1 – OWNER’S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.
- 3.12.4 Cutting and remedial work shall be performed by specialists familiar with the *Products* affected and shall be performed in a manner to neither damage nor endanger the *Work*.

### **GC 3.13 CLEANUP**

- 3.13.1 The *Contractor* shall maintain the *Work* in a safe and tidy condition and free from the accumulation of waste products and debris, other than that caused by the *Owner*, other contractors or their employees.
- 3.13.2 Before applying for *Substantial Performance of the Work* as provided in GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK, the *Contractor* shall remove waste products and debris, other than that resulting from the work of the *Owner*, other contractors or their employees, and shall leave the *Place of the Work* clean and suitable for use or occupancy by the *Owner*. The *Contractor* shall remove products, tools, *Construction Equipment*, and *Temporary Work* not required for the performance of the remaining work.
- 3.13.3 Prior to application for the final payment, the *Contractor* shall remove any remaining products, tools, *Construction Equipment*, *Temporary Work*, and waste products and debris, other than those resulting from the work of the *Owner*, other contractors or their employees.

## **PART 4 ALLOWANCES**

### **GC 4.1 CASH ALLOWANCES**

- 4.1.1 The *Contract Price* includes the cash allowances, if any, stated in the *Contract Documents*. The scope of work or costs included in such cash allowances shall be as described in the *Contract Documents*.
- 4.1.2 The *Contract Price*, and not the cash allowances, includes the *Contractor's* overhead and profit in connection with such cash allowances.
- 4.1.3 Expenditures under cash allowances shall be authorized by the *Owner* through the *Consultant*.
- 4.1.4 Where the actual cost of the *Work* under any cash allowance exceeds the amount of the allowance, the *Contractor* shall be compensated for the excess incurred and substantiated plus an amount for overhead and profit on the excess as set out in the *Contract Documents*. Where the actual cost of the *Work* under any cash allowance is less than the amount of the allowance, the *Owner* shall be credited for the unexpended portion of the cash allowance, but not for the *Contractor's* overhead and profit on such amount. Multiple cash allowances shall not be combined for the purpose of calculating the foregoing.
- 4.1.5 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the amount of each cash allowance and the actual cost of the work under that cash allowance.
- 4.1.6 The value of the work performed under a cash allowance is eligible to be included in progress payments.
- 4.1.7 The *Contractor* and the *Consultant* shall jointly prepare a schedule that shows when the *Consultant* and *Owner* must authorize ordering of items called for under cash allowances to avoid delaying the progress of the *Work*.



## **GC 4.2 CONTINGENCY ALLOWANCE**

- 4.2.1 The *Contract Price* includes the contingency allowance, if any, stated in the *Contract Documents*.
- 4.2.2 The contingency allowance includes the *Contractor's* overhead and profit in connection with such contingency allowance.
- 4.2.3 Expenditures under the contingency allowance shall be authorized and valued as provided in GC 6.1 – OWNER’S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.
- 4.2.4 The *Contract Price* shall be adjusted by *Change Order* to provide for any difference between the expenditures authorized under paragraph 4.2.3 and the contingency allowance.

## **PART 5 PAYMENT**

### **GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER**

- 5.1.1 The *Owner* shall, at the request of the *Contractor*, before signing the *Contract*, and promptly from time to time thereafter, furnish to the *Contractor* reasonable evidence that financial arrangements have been made to fulfill the *Owner's* obligations under the *Contract*.
- 5.1.2 The *Owner* shall give the *Contractor Notice in Writing* of any material change in the *Owner's* financial arrangements to fulfill the *Owner's* obligations under the *Contract* during the performance of the *Contract*.

### **GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT**

- 5.2.1 Applications for payment on account as provided in Article A-5 of the Agreement - PAYMENT may be made monthly as the *Work* progresses.
- 5.2.2 Applications for payment shall be dated the last day of each payment period, which is the last day of the month or an alternative day of the month agreed in writing by the parties.
- 5.2.3 The amount claimed shall be for the value, proportionate to the amount of the *Contract*, of *Work* performed and *Products* delivered to the *Place of the Work* as of the last day of the payment period.
- 5.2.4 The *Contractor* shall submit to the *Consultant*, at least 15 calendar days before the first application for payment, a schedule of values for the parts of the *Work*, aggregating the total amount of the *Contract Price*, so as to facilitate evaluation of applications for payment.
- 5.2.5 The schedule of values shall be made out in such form and supported by such evidence as the *Consultant* may reasonably direct and when accepted by the *Consultant*, shall be used as the basis for applications for payment, unless it is found to be in error.
- 5.2.6 The *Contractor* shall include a statement based on the schedule of values with each application for payment.
- 5.2.7 Applications for payment for *Products* delivered to the *Place of the Work* but not yet incorporated into the *Work* shall be supported by such evidence as the *Consultant* may reasonably require to establish the value and delivery of the *Products*.

### **GC 5.3 PROGRESS PAYMENT**

- 5.3.1 After receipt by the *Consultant* of an application for payment submitted by the *Contractor* in accordance with GC 5.2 - APPLICATIONS FOR PROGRESS PAYMENT:
  - .1 the *Consultant* will promptly inform the *Owner* of the date of receipt of the *Contractor's* application for payment,
  - .2 the *Consultant* will issue to the *Owner* and copy to the *Contractor*, no later than 10 calendar days after the receipt of the application for payment, a certificate for payment in the amount applied for, or in such other amount as the *Consultant* determines to be properly due. If the *Consultant* amends the application, the *Consultant* will promptly advise the *Contractor* in writing giving reasons for the amendment,
  - .3 the *Owner* shall make payment to the *Contractor* on account as provided in Article A-5 of the Agreement - PAYMENT on or before 20 calendar days after the later of:
    - receipt by the *Consultant* of the application for payment, or
    - the last day of the monthly payment period for which the application for payment is made.

#### GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK

- 5.4.1 When the *Contractor* considers that the *Work* is substantially performed, or if permitted by the lien legislation applicable to the *Place of the Work* a designated portion thereof which the *Owner* agrees to accept separately is substantially performed, the *Contractor* shall, within one *Working Day*, deliver to the *Consultant* and to the *Owner* a comprehensive list of items to be completed or corrected, together with a written application for a review by the *Consultant* to establish *Substantial Performance of the Work* or substantial performance of the designated portion of the *Work*. Failure to include an item on the list does not alter the responsibility of the *Contractor* to complete the *Contract*.
- 5.4.2 The *Consultant* will review the *Work* to verify the validity of the application and shall promptly, and in any event, no later than 20 calendar days after receipt of the *Contractor's* list and application:
- .1 advise the *Contractor* in writing that the *Work* or the designated portion of the *Work* is not substantially performed and give reasons why, or
  - .2 state the date of *Substantial Performance of the Work* or a designated portion of the *Work* in a certificate and issue a copy of that certificate to each of the *Owner* and the *Contractor*.
- 5.4.3 Immediately following the issuance of the certificate of *Substantial Performance of the Work*, the *Contractor*, in consultation with the *Consultant*, shall establish a reasonable date for finishing the *Work*.

#### GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

- 5.5.1 After the issuance of the certificate of *Substantial Performance of the Work*, the *Contractor* shall:
- .1 submit an application for payment of the holdback amount,
  - .2 submit CCDC 9A 'Statutory Declaration' to state that all accounts for labour, subcontracts, *Products*, *Construction Equipment*, and other indebtedness which may have been incurred by the *Contractor* in the *Substantial Performance of the Work* and for which the *Owner* might in any way be held responsible have been paid in full, except for amounts properly retained as a holdback or as an identified amount in dispute.
- 5.5.2 After the receipt of an application for payment from the *Contractor* and the statement as provided in paragraph 5.5.1, the *Consultant* will issue a certificate for payment of the holdback amount.
- 5.5.3 Where the holdback amount required by the applicable lien legislation has not been placed in a separate holdback account, the *Owner* shall, 10 calendar days prior to the expiry of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*, place the holdback amount in a bank account in the joint names of the *Owner* and the *Contractor*.
- 5.5.4 In the common law jurisdictions, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable on the first calendar day following the expiration of the holdback period stipulated in the lien legislation applicable to the *Place of the Work*. Where lien legislation does not exist or apply, the holdback amount shall be due and payable in accordance with other legislation, industry practice or provisions which may be agreed to between the parties. The *Owner* may retain out of the holdback amount any sums required by law to satisfy any liens against the *Work* or, if permitted by the lien legislation applicable to the *Place of the Work*, other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.
- 5.5.5 In the Province of Quebec, the holdback amount authorized by the certificate for payment of the holdback amount is due and payable 30 calendar days after the issuance of the certificate. The *Owner* may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken, or could be taken, against the *Work* or other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.

#### GC 5.6 PROGRESSIVE RELEASE OF HOLDBACK

- 5.6.1 In the common law jurisdictions, where legislation permits and where, upon application by the *Contractor*, the *Consultant* has certified that the work of a *Subcontractor* or *Supplier* has been performed prior to *Substantial Performance of the Work*, the *Owner* shall pay the *Contractor* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, on the first calendar day following the expiration of the holdback period for such work stipulated in the lien legislation applicable to the *Place of the Work*. The *Owner* may retain out of the holdback amount any sums required by law to satisfy any liens against the *Work* or, if permitted by the lien legislation applicable to the *Place of the Work*, other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.

- 5.6.2 In the Province of Quebec, where, upon application by the *Contractor*, the *Consultant* has certified that the work of a *Subcontractor* or *Supplier* has been performed prior to *Substantial Performance of the Work*, the *Owner* shall pay the *Contractor* the holdback amount retained for such subcontract work, or the *Products* supplied by such *Supplier*, no later than 30 calendar days after such certification by the *Consultant*. The *Owner* may retain out of the holdback amount any sums required to satisfy any legal hypothecs that have been taken, or could be taken, against the *Work* or other third party monetary claims against the *Contractor* which are enforceable against the *Owner*.
- 5.6.3 Notwithstanding the provisions of the preceding paragraphs, and notwithstanding the wording of such certificates, the *Contractor* shall ensure that such subcontract work or *Products* are protected pending the issuance of a final certificate for payment and be responsible for the correction of defects or work not performed regardless of whether or not such was apparent when such certificates were issued.

#### **GC 5.7 FINAL PAYMENT**

- 5.7.1 When the *Contractor* considers that the *Work* is completed, the *Contractor* shall submit an application for final payment.
- 5.7.2 The *Consultant* will, no later than 10 calendar days after the receipt of an application from the *Contractor* for final payment, review the *Work* to verify the validity of the application and advise the *Contractor* in writing that the application is valid or give reasons why it is not valid.
- 5.7.3 When the *Consultant* finds the *Contractor's* application for final payment valid, the *Consultant* will promptly issue a final certificate for payment.
- 5.7.4 Subject to the provision of paragraph 10.4.1 of GC 10.4 - WORKERS' COMPENSATION, and any lien legislation applicable to the *Place of the Work*, the *Owner* shall, no later than 5 calendar days after the issuance of a final certificate for payment, pay the *Contractor* as provided in Article A-5 of the Agreement - PAYMENT.

#### **GC 5.8 WITHHOLDING OF PAYMENT**

- 5.8.1 If because of climatic or other conditions reasonably beyond the control of the *Contractor*, there are items of work that cannot be performed, payment in full for that portion of the *Work* which has been performed as certified by the *Consultant* shall not be withheld or delayed by the *Owner* on account thereof, but the *Owner* may withhold, until the remaining portion of the *Work* is finished, only such an amount that the *Consultant* determines is sufficient and reasonable to cover the cost of performing such remaining work.

#### **GC 5.9 NON-CONFORMING WORK**

- 5.9.1 No payment by the *Owner* under the *Contract* nor partial or entire use or occupancy of the *Work* by the *Owner* shall constitute an acceptance of any portion of the *Work* or *Products* which are not in accordance with the requirements of the *Contract Documents*.

### **PART 6 CHANGES IN THE WORK**

#### **GC 6.1 OWNER'S RIGHT TO MAKE CHANGES**

- 6.1.1 The *Owner*, through the *Consultant*, without invalidating the *Contract*, may make:
- .1 changes in the *Work* consisting of additions, deletions or other revisions to the *Work* by *Change Order* or *Change Directive*, and
  - .2 changes to the *Contract Time* for the *Work*, or any part thereof, by *Change Order*.
- 6.1.2 The *Contractor* shall not perform a change in the *Work* without a *Change Order* or a *Change Directive*.

#### **GC 6.2 CHANGE ORDER**

- 6.2.1 When a change in the *Work* is proposed or required, the *Consultant* will provide the *Contractor* with a written description of the proposed change in the *Work*. The *Contractor* shall promptly present, in a form acceptable to the *Consultant*, a method of adjustment or an amount of adjustment for the *Contract Price*, if any, and the adjustment in the *Contract Time*, if any, for the proposed change in the *Work*.
- 6.2.2 When the *Owner* and *Contractor* agree to the adjustments in the *Contract Price* and *Contract Time* or to the method to be used to determine the adjustments, such agreement shall be effective immediately and shall be recorded in a *Change Order*. The value of the work performed as the result of a *Change Order* shall be included in the application for progress payment.

### GC 6.3 CHANGE DIRECTIVE

- 6.3.1 If the *Owner* requires the *Contractor* to proceed with a change in the *Work* prior to the *Owner* and the *Contractor* agreeing upon the corresponding adjustment in *Contract Price* and *Contract Time*, the *Owner*, through the *Consultant*, shall issue a *Change Directive*.
- 6.3.2 A *Change Directive* shall only be used to direct a change in the *Work* which is within the general scope of the *Contract Documents*.
- 6.3.3 A *Change Directive* shall not be used to direct a change in the *Contract Time* only.
- 6.3.4 Upon receipt of a *Change Directive*, the *Contractor* shall proceed promptly with the change in the *Work*.
- 6.3.5 For the purpose of valuing *Change Directives*, changes in the *Work* that are not substitutions or otherwise related to each other shall not be grouped together in the same *Change Directive*.
- 6.3.6 The adjustment in the *Contract Price* for a change carried out by way of a *Change Directive* shall be determined on the basis of the cost of the *Contractor's* actual expenditures and savings attributable to the *Change Directive*, valued in accordance with paragraph 6.3.7 and as follows:
- .1 If the change results in a net increase in the *Contractor's* cost, the *Contract Price* shall be increased by the amount of the net increase in the *Contractor's* cost, plus the *Contractor's* percentage fee on such net increase.
  - .2 If the change results in a net decrease in the *Contractor's* cost, the *Contract Price* shall be decreased by the amount of the net decrease in the *Contractor's* cost, without adjustment for the *Contractor's* percentage fee.
  - .3 The *Contractor's* fee shall be as specified in the *Contract Documents* or as otherwise agreed by the parties.
- 6.3.7 The cost of performing the work attributable to the *Change Directive* shall be limited to the actual cost of the following:
- .1 salaries, wages and benefits paid to personnel in the direct employ of the *Contractor* under a salary or wage schedule agreed upon by the *Owner* and the *Contractor*, or in the absence of such a schedule, actual salaries, wages and benefits paid under applicable bargaining agreement, and in the absence of a salary or wage schedule and bargaining agreement, actual salaries, wages and benefits paid by the *Contractor*, for personnel
    - (1) stationed at the *Contractor's* field office, in whatever capacity employed;
    - (2) engaged in expediting the production or transportation of material or equipment, at shops or on the road;
    - (3) engaged in the preparation or review of *Shop Drawings*, fabrication drawings, and coordination drawings; or
    - (4) engaged in the processing of changes in the *Work*.
  - .2 contributions, assessments or taxes incurred for such items as employment insurance, provincial or territorial health insurance, workers' compensation, and Canada or Quebec Pension Plan, insofar as such cost is based on wages, salaries or other remuneration paid to employees of the *Contractor* and included in the cost of the *Work* as provided in paragraph 6.3.7.1;
  - .3 travel and subsistence expenses of the *Contractor's* personnel described in paragraph 6.3.7.1;
  - .4 all *Products* including cost of transportation thereof;
  - .5 materials, supplies, *Construction Equipment*, *Temporary Work*, and hand tools not owned by the workers, including transportation and maintenance thereof, which are consumed in the performance of the *Work*; and cost less salvage value on such items used but not consumed, which remain the property of the *Contractor*;
  - .6 all tools and *Construction Equipment*, exclusive of hand tools used in the performance of the *Work*, whether rented from or provided by the *Contractor* or others, including installation, minor repairs and replacements, dismantling, removal, transportation, and delivery cost thereof;
  - .7 all equipment and services required for the *Contractor's* field office;
  - .8 deposits lost;
  - .9 the amounts of all subcontracts;
  - .10 quality assurance such as independent inspection and testing services;
  - .11 charges levied by authorities having jurisdiction at the *Place of the Work*;
  - .12 royalties, patent licence fees and damages for infringement of patents and cost of defending suits therefor subject always to the *Contractor's* obligations to indemnify the *Owner* as provided in paragraph 10.3.1 of GC 10.3 - PATENT FEES;
  - .13 any adjustment in premiums for all bonds and insurance which the *Contractor* is required, by the *Contract Documents*, to purchase and maintain;
  - .14 any adjustment in taxes, other than *Value Added Taxes*, and duties for which the *Contractor* is liable;
  - .15 charges for long distance telephone and facsimile communications, courier services, expressage, and petty cash items incurred in relation to the performance of the *Work*;
  - .16 removal and disposal of waste products and debris; and
  - .17 safety measures and requirements.

- 6.3.8 Notwithstanding any other provisions contained in the General Conditions of the *Contract*, it is the intention of the parties that the cost of any item under any cost element referred to in paragraph 6.3.7 shall cover and include any and all costs or liabilities attributable to the *Change Directive* other than those which are the result of or occasioned by any failure on the part of the *Contractor* to exercise reasonable care and diligence in the *Contractor's* attention to the *Work*. Any cost due to failure on the part of the *Contractor* to exercise reasonable care and diligence in the *Contractor's* attention to the *Work* shall be borne by the *Contractor*.
- 6.3.9 The *Contractor* shall keep full and detailed accounts and records necessary for the documentation of the cost of performing the *Work* attributable to the *Change Directive* and shall provide the *Consultant* with copies thereof when requested.
- 6.3.10 For the purpose of valuing *Change Directives*, the *Owner* shall be afforded reasonable access to all of the *Contractor's* pertinent documents related to the cost of performing the *Work* attributable to the *Change Directive*.
- 6.3.11 Pending determination of the final amount of a *Change Directive*, the undisputed value of the *Work* performed as the result of a *Change Directive* is eligible to be included in progress payments.
- 6.3.12 If the *Owner* and the *Contractor* do not agree on the proposed adjustment in the *Contract Time* attributable to the change in the *Work*, or the method of determining it, the adjustment shall be referred to the *Consultant* for determination.
- 6.3.13 When the *Owner* and the *Contractor* reach agreement on the adjustment to the *Contract Price* and to the *Contract Time*, this agreement shall be recorded in a *Change Order*.

#### **GC 6.4 CONCEALED OR UNKNOWN CONDITIONS**

- 6.4.1 If the *Owner* or the *Contractor* discover conditions at the *Place of the Work* which are:
- .1 subsurface or otherwise concealed physical conditions which existed before the commencement of the *Work* which differ materially from those indicated in the *Contract Documents*; or
  - .2 physical conditions, other than conditions due to weather, that are of a nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the *Contract Documents*,
- then the observing party shall give *Notice in Writing* to the other party of such conditions before they are disturbed and in no event later than 5 *Working Days* after first observance of the conditions.
- 6.4.2 The *Consultant* will promptly investigate such conditions and make a finding. If the finding is that the conditions differ materially and this would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Consultant*, with the *Owner's* approval, will issue appropriate instructions for a change in the *Work* as provided in GC 6.2 - CHANGE ORDER or GC 6.3 - CHANGE DIRECTIVE.
- 6.4.3 If the *Consultant* finds that the conditions at the *Place of the Work* are not materially different or that no change in the *Contract Price* or the *Contract Time* is justified, the *Consultant* will report the reasons for this finding to the *Owner* and the *Contractor* in writing.
- 6.4.4 If such concealed or unknown conditions relate to toxic and hazardous substances and materials, artifacts and fossils, or mould, the parties will be governed by the provisions of GC 9.2 - TOXIC AND HAZARDOUS SUBSTANCES, GC 9.3 - ARTIFACTS AND FOSSILS and GC 9.5 - MOULD.

#### **GC 6.5 DELAYS**

- 6.5.1 If the *Contractor* is delayed in the performance of the *Work* by an action or omission of the *Owner*, *Consultant* or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the *Contract Documents*, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay.
- 6.5.2 If the *Contractor* is delayed in the performance of the *Work* by a stop work order issued by a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Contractor* or any person employed or engaged by the *Contractor* directly or indirectly, then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The *Contractor* shall be reimbursed by the *Owner* for reasonable costs incurred by the *Contractor* as the result of such delay.

- 6.5.3 If the *Contractor* is delayed in the performance of the *Work* by:
- .1 labour disputes, strikes, lock-outs (including lock-outs decreed or recommended for its members by a recognized contractors' association, of which the *Contractor* is a member or to which the *Contractor* is otherwise bound),
  - .2 fire, unusual delay by common carriers or unavoidable casualties,
  - .3 abnormally adverse weather conditions, or
  - .4 any cause beyond the *Contractor's* control other than one resulting from a default or breach of *Contract* by the *Contractor*,
- then the *Contract Time* shall be extended for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor*. The extension of time shall not be less than the time lost as the result of the event causing the delay, unless the *Contractor* agrees to a shorter extension. The *Contractor* shall not be entitled to payment for costs incurred by such delays unless such delays result from actions by the *Owner*, *Consultant* or anyone employed or engaged by them directly or indirectly.
- 6.5.4 No extension shall be made for delay unless *Notice in Writing* of the cause of delay is given to the *Consultant* not later than 10 *Working Days* after the commencement of the delay. In the case of a continuing cause of delay only one *Notice in Writing* shall be necessary.
- 6.5.5 If no schedule is made under paragraph 2.2.13 of GC 2.2 - ROLE OF THE CONSULTANT, then no request for extension shall be made because of failure of the *Consultant* to furnish instructions until 10 *Working Days* after demand for such instructions has been made.

## **GC 6.6 CLAIMS FOR A CHANGE IN CONTRACT PRICE**

- 6.6.1 If the *Contractor* intends to make a claim for an increase to the *Contract Price*, or if the *Owner* intends to make a claim against the *Contractor* for a credit to the *Contract Price*, the party that intends to make the claim shall give timely *Notice in Writing* of intent to claim to the other party and to the *Consultant*.
- 6.6.2 Upon commencement of the event or series of events giving rise to a claim, the party intending to make the claim shall:
- .1 take all reasonable measures to mitigate any loss or expense which may be incurred as a result of such event or series of events, and
  - .2 keep such records as may be necessary to support the claim.
- 6.6.3 The party making the claim shall submit within a reasonable time to the *Consultant* a detailed account of the amount claimed and the grounds upon which the claim is based.
- 6.6.4 Where the event or series of events giving rise to the claim has a continuing effect, the detailed account submitted under paragraph 6.6.3 shall be considered to be an interim account and the party making the claim shall, at such intervals as the *Consultant* may reasonably require, submit further interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. The party making the claim shall submit a final account after the end of the effects resulting from the event or series of events.
- 6.6.5 The *Consultant's* findings, with respect to a claim made by either party, will be given by *Notice in Writing* to both parties within 30 *Working Days* after receipt of the claim by the *Consultant*, or within such other time period as may be agreed by the parties.
- 6.6.6 If such finding is not acceptable to either party, the claim shall be settled in accordance with Part 8 of the General Conditions - DISPUTE RESOLUTION.

## **PART 7 DEFAULT NOTICE**

### **GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK OR TERMINATE THE CONTRACT**

- 7.1.1 If the *Contractor* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Contractor's* insolvency, or if a receiver is appointed because of the *Contractor's* insolvency, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, terminate the *Contractor's* right to continue with the *Work*, by giving the *Contractor* or receiver or trustee in bankruptcy *Notice in Writing* to that effect.
- 7.1.2 If the *Contractor* neglects to prosecute the *Work* properly or otherwise fails to comply with the requirements of the *Contract* to a substantial degree and if the *Consultant* has given a written statement to the *Owner* and *Contractor* that sufficient cause exists to justify such action, the *Owner* may, without prejudice to any other right or remedy the *Owner* may have, give the *Contractor Notice in Writing* that the *Contractor* is in default of the *Contractor's* contractual obligations and instruct the *Contractor* to correct the default in the 5 *Working Days* immediately following the receipt of such *Notice in Writing*.

- 7.1.3 If the default cannot be corrected in the 5 *Working Days* specified or in such other time period as may be subsequently agreed in writing by the parties, the *Contractor* shall be in compliance with the *Owner's* instructions if the *Contractor*:
- .1 commences the correction of the default within the specified time, and
  - .2 provides the *Owner* with an acceptable schedule for such correction, and
  - .3 corrects the default in accordance with the *Contract* terms and with such schedule.
- 7.1.4 If the *Contractor* fails to correct the default in the time specified or in such other time period as may be subsequently agreed in writing by the parties, without prejudice to any other right or remedy the *Owner* may have, the *Owner* may:
- .1 correct such default and deduct the cost thereof from any payment then or thereafter due the *Contractor* provided the *Consultant* has certified such cost to the *Owner* and the *Contractor*, or
  - .2 terminate the *Contractor's* right to continue with the *Work* in whole or in part or terminate the *Contract*.
- 7.1.5 If the *Owner* terminates the *Contractor's* right to continue with the *Work* as provided in paragraphs 7.1.1 and 7.1.4, the *Owner* shall be entitled to:
- .1 take possession of the *Work* and *Products* at the *Place of the Work*; subject to the rights of third parties, utilize the *Construction Equipment* at the *Place of the Work*; finish the *Work* by whatever method the *Owner* may consider expedient, but without undue delay or expense, and
  - .2 withhold further payment to the *Contractor* until a final certificate for payment is issued, and
  - .3 charge the *Contractor* the amount by which the full cost of finishing the *Work* as certified by the *Consultant*, including compensation to the *Consultant* for the *Consultant's* additional services and a reasonable allowance as determined by the *Consultant* to cover the cost of corrections to work performed by the *Contractor* that may be required under GC 12.3 - WARRANTY, exceeds the unpaid balance of the *Contract Price*; however, if such cost of finishing the *Work* is less than the unpaid balance of the *Contract Price*, the *Owner* shall pay the *Contractor* the difference, and
  - .4 on expiry of the warranty period, charge the *Contractor* the amount by which the cost of corrections to the *Contractor's* work under GC 12.3 - WARRANTY exceeds the allowance provided for such corrections, or if the cost of such corrections is less than the allowance, pay the *Contractor* the difference.
- 7.1.6 The *Contractor's* obligation under the *Contract* as to quality, correction and warranty of the work performed by the *Contractor* up to the time of termination shall continue after such termination of the *Contract*.

## **GC 7.2 CONTRACTOR'S RIGHT TO SUSPEND THE WORK OR TERMINATE THE CONTRACT**

- 7.2.1 If the *Owner* is adjudged bankrupt, or makes a general assignment for the benefit of creditors because of the *Owner's* insolvency, or if a receiver is appointed because of the *Owner's* insolvency, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, terminate the *Contract* by giving the *Owner* or receiver or trustee in bankruptcy *Notice in Writing* to that effect.
- 7.2.2 If the *Work* is suspended or otherwise delayed for a period of 20 *Working Days* or more under an order of a court or other public authority and providing that such order was not issued as the result of an act or fault of the *Contractor* or of anyone directly or indirectly employed or engaged by the *Contractor*, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, terminate the *Contract* by giving the *Owner* *Notice in Writing* to that effect.
- 7.2.3 The *Contractor* may give *Notice in Writing* to the *Owner*, with a copy to the *Consultant*, that the *Owner* is in default of the *Owner's* contractual obligations if:
- .1 the *Owner* fails to furnish, when so requested by the *Contractor*, reasonable evidence that financial arrangements have been made to fulfill the *Owner's* obligations under the *Contract*, or
  - .2 the *Consultant* fails to issue a certificate as provided in GC 5.3 - PROGRESS PAYMENT, or
  - .3 the *Owner* fails to pay the *Contractor* when due the amounts certified by the *Consultant* or awarded by arbitration or court, or
  - .4 the *Owner* violates the requirements of the *Contract* to a substantial degree and the *Consultant*, except for GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER, confirms by written statement to the *Contractor* that sufficient cause exists.
- 7.2.4 The *Contractor's* *Notice in Writing* to the *Owner* provided under paragraph 7.2.3 shall advise that if the default is not corrected within 5 *Working Days* following the receipt of the *Notice in Writing*, the *Contractor* may, without prejudice to any other right or remedy the *Contractor* may have, suspend the *Work* or terminate the *Contract*.
- 7.2.5 If the *Contractor* terminates the *Contract* under the conditions set out above, the *Contractor* shall be entitled to be paid for all work performed including reasonable profit, for loss sustained upon *Products* and *Construction Equipment*, and such other damages as the *Contractor* may have sustained as a result of the termination of the *Contract*.

## PART 8 DISPUTE RESOLUTION

### GC 8.1 AUTHORITY OF THE CONSULTANT

- 8.1.1 Differences between the parties to the *Contract* as to the interpretation, application or administration of the *Contract* or any failure to agree where agreement between the parties is called for, herein collectively called disputes, which are not resolved in the first instance by findings of the *Consultant* as provided in GC 2.2 - ROLE OF THE CONSULTANT, shall be settled in accordance with the requirements of Part 8 of the General Conditions - DISPUTE RESOLUTION.
- 8.1.2 If a dispute arises under the *Contract* in respect of a matter in which the *Consultant* has no authority under the *Contract* to make a finding, the procedures set out in paragraph 8.1.3 and paragraphs 8.2.3 to 8.2.8 of GC 8.2 - NEGOTIATION, MEDIATION AND ARBITRATION, and in GC 8.3 - RETENTION OF RIGHTS apply to that dispute with the necessary changes to detail as may be required.
- 8.1.3 If a dispute is not resolved promptly, the *Consultant* will give such instructions as in the *Consultant's* opinion are necessary for the proper performance of the *Work* and to prevent delays pending settlement of the dispute. The parties shall act immediately according to such instructions, it being understood that by so doing neither party will jeopardize any claim the party may have. If it is subsequently determined that such instructions were in error or at variance with the *Contract Documents*, the *Owner* shall pay the *Contractor* costs incurred by the *Contractor* in carrying out such instructions which the *Contractor* was required to do beyond what the *Contract Documents* correctly understood and interpreted would have required, including costs resulting from interruption of the *Work*.

### GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION

- 8.2.1 In accordance with the Rules for Mediation of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing, the parties shall appoint a Project Mediator
- .1 within 20 *Working Days* after the *Contract* was awarded, or
  - .2 if the parties neglected to make an appointment within the 20 *Working Days*, within 10 *Working Days* after either party by *Notice in Writing* requests that the Project Mediator be appointed.
- 8.2.2 A party shall be conclusively deemed to have accepted a finding of the *Consultant* under GC 2.2 - ROLE OF THE CONSULTANT and to have expressly waived and released the other party from any claims in respect of the particular matter dealt with in that finding unless, within 15 *Working Days* after receipt of that finding, the party sends a *Notice in Writing* of dispute to the other party and to the *Consultant*, which contains the particulars of the matter in dispute and the relevant provisions of the *Contract Documents*. The responding party shall send a *Notice in Writing* of reply to the dispute within 10 *Working Days* after receipt of such *Notice in Writing* setting out particulars of this response and any relevant provisions of the *Contract Documents*.
- 8.2.3 The parties shall make all reasonable efforts to resolve their dispute by amicable negotiations and agree to provide, without prejudice, frank, candid and timely disclosure of relevant facts, information and documents to facilitate these negotiations.
- 8.2.4 After a period of 10 *Working Days* following receipt of a responding party's *Notice in Writing* of reply under paragraph 8.2.2, the parties shall request the Project Mediator to assist the parties to reach agreement on any unresolved dispute. The mediated negotiations shall be conducted in accordance with the Rules for Mediation of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing.
- 8.2.5 If the dispute has not been resolved within 10 *Working Days* after the Project Mediator was requested under paragraph 8.2.4 or within such further period agreed by the parties, the Project Mediator shall terminate the mediated negotiations by giving *Notice in Writing* to the *Owner*, the *Contractor* and the *Consultant*.
- 8.2.6 By giving a *Notice in Writing* to the other party and the *Consultant*, not later than 10 *Working Days* after the date of termination of the mediated negotiations under paragraph 8.2.5, either party may refer the dispute to be finally resolved by arbitration under the Rules for Arbitration of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing. The arbitration shall be conducted in the jurisdiction of the *Place of the Work*.
- 8.2.7 On expiration of the 10 *Working Days*, the arbitration agreement under paragraph 8.2.6 is not binding on the parties and, if a *Notice in Writing* is not given under paragraph 8.2.6 within the required time, the parties may refer the unresolved dispute to the courts or to any other form of dispute resolution, including arbitration, which they have agreed to use.



- 8.2.8 If neither party, by *Notice in Writing*, given within 10 *Working Days* of the date of *Notice in Writing* requesting arbitration in paragraph 8.2.6, requires that a dispute be arbitrated immediately, all disputes referred to arbitration as provided in paragraph 8.2.6 shall be
- .1 held in abeyance until
    - (1) *Substantial Performance of the Work*,
    - (2) the *Contract* has been terminated, or
    - (3) the *Contractor* has abandoned the *Work*,whichever is earlier; and
  - .2 consolidated into a single arbitration under the rules governing the arbitration under paragraph 8.2.6.

### **GC 8.3 RETENTION OF RIGHTS**

- 8.3.1 It is agreed that no act by either party shall be construed as a renunciation or waiver of any rights or recourses, provided the party has given the *Notice in Writing* required under Part 8 of the General Conditions - DISPUTE RESOLUTION and has carried out the instructions as provided in paragraph 8.1.3 of GC 8.1 – AUTHORITY OF THE CONSULTANT.
- 8.3.2 Nothing in Part 8 of the General Conditions - DISPUTE RESOLUTION shall be construed in any way to limit a party from asserting any statutory right to a lien under applicable lien legislation of the jurisdiction of the *Place of the Work* and the assertion of such right by initiating judicial proceedings is not to be construed as a waiver of any right that party may have under paragraph 8.2.6 of GC 8.2 – NEGOTIATION, MEDIATION AND ARBITRATION to proceed by way of arbitration to adjudicate the merits of the claim upon which such a lien is based.

## **PART 9 PROTECTION OF PERSONS AND PROPERTY**

### **GC 9.1 PROTECTION OF WORK AND PROPERTY**

- 9.1.1 The *Contractor* shall protect the *Work* and the *Owner's* property and property adjacent to the *Place of the Work* from damage which may arise as the result of the *Contractor's* operations under the *Contract*, and shall be responsible for such damage, except damage which occurs as the result of:
- .1 errors in the *Contract Documents*;
  - .2 acts or omissions by the *Owner*, the *Consultant*, other contractors, their agents and employees.
- 9.1.2 Before commencing any work, the *Contractor* shall determine the location of all underground utilities and structures indicated in the *Contract Documents* or that are reasonably apparent in an inspection of the *Place of the Work*.
- 9.1.3 Should the *Contractor* in the performance of the *Contract* damage the *Work*, the *Owner's* property or property adjacent to the *Place of the Work*, the *Contractor* shall be responsible for making good such damage at the *Contractor's* expense.
- 9.1.4 Should damage occur to the *Work* or *Owner's* property for which the *Contractor* is not responsible, as provided in paragraph 9.1.1, the *Contractor* shall make good such damage to the *Work* and, if the *Owner* so directs, to the *Owner's* property. The *Contract Price* and *Contract Time* shall be adjusted as provided in GC 6.1 – OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.

### **GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES**

- 9.2.1 For the purposes of applicable legislation related to toxic and hazardous substances, the *Owner* shall be deemed to have control and management of the *Place of the Work* with respect to existing conditions.
- 9.2.2 Prior to the *Contractor* commencing the *Work*, the *Owner* shall,
- .1 take all reasonable steps to determine whether any toxic or hazardous substances are present at the *Place of the Work*, and
  - .2 provide the *Consultant* and the *Contractor* with a written list of any such substances that are known to exist and their locations.
- 9.2.3 The *Owner* shall take all reasonable steps to ensure that no person's exposure to any toxic or hazardous substances exceeds the time weighted levels prescribed by applicable legislation at the *Place of the Work* and that no property is damaged or destroyed as a result of exposure to, or the presence of, toxic or hazardous substances which were at the *Place of the Work* prior to the *Contractor* commencing the *Work*.
- 9.2.4 Unless the *Contract* expressly provides otherwise, the *Owner* shall be responsible for taking all necessary steps, in accordance with applicable legislation in force at the *Place of the Work*, to dispose of, store or otherwise render harmless toxic or hazardous substances which were present at the *Place of the Work* prior to the *Contractor* commencing the *Work*.

- 9.2.5 If the *Contractor*
- .1 encounters toxic or hazardous substances at the *Place of the Work*, or
  - .2 has reasonable grounds to believe that toxic or hazardous substances are present at the *Place of the Work*, which were not brought to the *Place of the Work* by the *Contractor* or anyone for whom the *Contractor* is responsible and which were not disclosed by the *Owner* or which were disclosed but have not been dealt with as required under paragraph 9.2.4, the *Contractor* shall
  - .3 take all reasonable steps, including stopping the *Work*, to ensure that no person's exposure to any toxic or hazardous substances exceeds any applicable time weighted levels prescribed by applicable legislation at the *Place of the Work*, and
  - .4 immediately report the circumstances to the *Consultant* and the *Owner* in writing.
- 9.2.6 If the *Owner* and *Contractor* do not agree on the existence, significance of, or whether the toxic or hazardous substances were brought onto the *Place of the Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, the *Owner* shall retain and pay for an independent qualified expert to investigate and determine such matters. The expert's report shall be delivered to the *Owner* and the *Contractor*.
- 9.2.7 If the *Owner* and *Contractor* agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous substances were not brought onto the place of the *Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, the *Owner* shall promptly at the *Owner's* own expense:
- .1 take all steps as required under paragraph 9.2.4;
  - .2 reimburse the *Contractor* for the costs of all steps taken pursuant to paragraph 9.2.5;
  - .3 extend the *Contract* time for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor* and the expert referred to in 9.2.6 and reimburse the *Contractor* for reasonable costs incurred as a result of the delay; and
  - .4 indemnify the *Contractor* as required by GC 12.1 - INDEMNIFICATION.
- 9.2.8 If the *Owner* and *Contractor* agree or if the expert referred to in paragraph 9.2.6 determines that the toxic or hazardous substances were brought onto the place of the *Work* by the *Contractor* or anyone for whom the *Contractor* is responsible, the *Contractor* shall promptly at the *Contractor's* own expense:
- .1 take all necessary steps, in accordance with applicable legislation in force at the *Place of the Work*, to safely remove and dispose the toxic or hazardous substances;
  - .2 make good any damage to the *Work*, the *Owner's* property or property adjacent to the place of the *Work* as provided in paragraph 9.1.3 of GC 9.1 – PROTECTION OF WORK AND PROPERTY;
  - .3 reimburse the *Owner* for reasonable costs incurred under paragraph 9.2.6; and
  - .4 indemnify the *Owner* as required by GC 12.1 - INDEMNIFICATION.
- 9.2.9 If either party does not accept the expert's findings under paragraph 9.2.6, the disagreement shall be settled in accordance with Part 8 of the General Conditions - Dispute Resolution. If such disagreement is not resolved promptly, the parties shall act immediately in accordance with the expert's determination and take the steps required by paragraph 9.2.7 or 9.2.8 it being understood that by so doing, neither party will jeopardize any claim that party may have to be reimbursed as provided by GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES.

### GC 9.3 ARTIFACTS AND FOSSILS

- 9.3.1 Fossils, coins, articles of value or antiquity, structures and other remains or things of scientific or historic interest discovered at the *Place or Work* shall, as between the *Owner* and the *Contractor*, be deemed to be the absolute property of the *Owner*.
- 9.3.2 The *Contractor* shall take all reasonable precautions to prevent removal or damage to discoveries as identified in paragraph 9.3.1, and shall advise the *Consultant* upon discovery of such items.
- 9.3.3 The *Consultant* will investigate the impact on the *Work* of the discoveries identified in paragraph 9.3.1. If conditions are found that would cause an increase or decrease in the *Contractor's* cost or time to perform the *Work*, the *Consultant*, with the *Owner's* approval, will issue appropriate instructions for a change in the *Work* as provided in GC 6.2 - CHANGE ORDER or GC 6.3 CHANGE DIRECTIVE.

### GC 9.4 CONSTRUCTION SAFETY

- 9.4.1 Subject to paragraph 3.2.2.2 of GC 3.2 - CONSTRUCTION BY OWNER OR OTHER CONTRACTORS, the *Contractor* shall be solely responsible for construction safety at the *Place of the Work* and for compliance with the rules, regulations and practices required by the applicable construction health and safety legislation and shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the *Work*.

## GC 9.5 MOULD

- 9.5.1 If the *Contractor* or *Owner* observes or reasonably suspects the presence of mould at the *Place of the Work*, the remediation of which is not expressly part of the *Work*,
- .1 the observing party shall promptly report the circumstances to the other party in writing, and
  - .2 the *Contractor* shall promptly take all reasonable steps, including stopping the *Work* if necessary, to ensure that no person suffers injury, sickness or death and that no property is damaged as a result of exposure to or the presence of the mould, and
  - .3 if the *Owner* and *Contractor* do not agree on the existence, significance or cause of the mould or as to what steps need be taken to deal with it, the *Owner* shall retain and pay for an independent qualified expert to investigate and determine such matters. The expert's report shall be delivered to the *Owner* and *Contractor*.
- 9.5.2 If the *Owner* and *Contractor* agree, or if the expert referred to in paragraph 9.5.1.3 determines that the presence of mould was caused by the *Contractor*'s operations under the *Contract*, the *Contractor* shall promptly, at the *Contractor*'s own expense:
- .1 take all reasonable and necessary steps to safely remediate or dispose of the mould, and
  - .2 make good any damage to the *Work*, the *Owner*'s property or property adjacent to the *Place of the Work* as provided in paragraph 9.1.3 of GC 9.1 - PROTECTION OF WORK AND PROPERTY, and
  - .3 reimburse the *Owner* for reasonable costs incurred under paragraph 9.5.1.3, and
  - .4 indemnify the *Owner* as required by GC 12.1 - INDEMNIFICATION.
- 9.5.3 If the *Owner* and *Contractor* agree, or if the expert referred to in paragraph 9.5.1.3 determines that the presence of mould was not caused by the *Contractor*'s operations under the *Contract*, the *Owner* shall promptly, at the *Owner*'s own expense:
- .1 take all reasonable and necessary steps to safely remediate or dispose of the mould, and
  - .2 reimburse the *Contractor* for the cost of taking the steps under paragraph 9.5.1.2 and making good any damage to the *Work* as provided in paragraph 9.1.4 of GC 9.1 - PROTECTION OF WORK AND PROPERTY, and
  - .3 extend the *Contract Time* for such reasonable time as the *Consultant* may recommend in consultation with the *Contractor* and the expert referred to in paragraph 9.5.1.3 and reimburse the *Contractor* for reasonable costs incurred as a result of the delay, and
  - .4 indemnify the *Contractor* as required by GC 12.1 - INDEMNIFICATION.
- 9.5.4 If either party does not accept the expert's finding under paragraph 9.5.1.3, the disagreement shall be settled in accordance with Part 8 of the General Conditions - DISPUTE RESOLUTION. If such disagreement is not resolved promptly, the parties shall act immediately in accordance with the expert's determination and take the steps required by paragraphs 9.5.2 or 9.5.3, it being understood that by so doing neither party will jeopardize any claim the party may have to be reimbursed as provided by GC 9.5 - MOULD.

## PART 10 GOVERNING REGULATIONS

### GC 10.1 TAXES AND DUTIES

- 10.1.1 The *Contract Price* shall include all taxes and customs duties in effect at the time of the bid closing except for *Value Added Taxes* payable by the *Owner* to the *Contractor* as stipulated in Article A-4 of the Agreement - CONTRACT PRICE.
- 10.1.2 Any increase or decrease in costs to the *Contractor* due to changes in such included taxes and duties after the time of the bid closing shall increase or decrease the *Contract Price* accordingly.

### GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

- 10.2.1 The laws of the *Place of the Work* shall govern the *Work*.
- 10.2.2 The *Owner* shall obtain and pay for development approvals, building permit, permanent easements, rights of servitude, and all other necessary approvals and permits, except for the permits and fees referred to in paragraph 10.2.3 or for which the *Contract Documents* specify as the responsibility of the *Contractor*.
- 10.2.3 The *Contractor* shall be responsible for the procurement of permits, licences, inspections, and certificates, which are necessary for the performance of the *Work* and customarily obtained by contractors in the jurisdiction of the *Place of the Work* after the issuance of the building permit. The *Contract Price* includes the cost of these permits, licences, inspections, and certificates, and their procurement.
- 10.2.4 The *Contractor* shall give the required notices and comply with the laws, ordinances, rules, regulations, or codes which are or become in force during the performance of the *Work* and which relate to the *Work*, to the preservation of the public health, and to construction safety.

- 10.2.5 The *Contractor* shall not be responsible for verifying that the *Contract Documents* are in compliance with the applicable laws, ordinances, rules, regulations, or codes relating to the *Work*. If the *Contract Documents* are at variance therewith, or if, subsequent to the time of bid closing, changes are made to the applicable laws, ordinances, rules, regulations, or codes which require modification to the *Contract Documents*, the *Contractor* shall advise the *Consultant* in writing requesting direction immediately upon such variance or change becoming known. The *Consultant* will make the changes required to the *Contract Documents* as provided in GC 6.1 - OWNER'S RIGHT TO MAKE CHANGES, GC 6.2 - CHANGE ORDER and GC 6.3 - CHANGE DIRECTIVE.
- 10.2.6 If the *Contractor* fails to advise the *Consultant* in writing; and fails to obtain direction as required in paragraph 10.2.5; and performs work knowing it to be contrary to any laws, ordinances, rules, regulations, or codes; the *Contractor* shall be responsible for and shall correct the violations thereof; and shall bear the costs, expenses and damages attributable to the failure to comply with the provisions of such laws, ordinances, rules, regulations, or codes.
- 10.2.7 If, subsequent to the time of bid closing, changes are made to applicable laws, ordinances, rules, regulations, or codes of authorities having jurisdiction which affect the cost of the *Work*, either party may submit a claim in accordance with the requirements of GC 6.6 – CLAIMS FOR A CHANGE IN CONTRACT PRICE.

### **GC 10.3 PATENT FEES**

- 10.3.1 The *Contractor* shall pay the royalties and patent licence fees required for the performance of the *Contract*. The *Contractor* shall hold the *Owner* harmless from and against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor's* performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention by the *Contractor* or anyone for whose acts the *Contractor* may be liable.
- 10.3.2 The *Owner* shall hold the *Contractor* harmless against claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of the *Contractor's* performance of the *Contract* which are attributable to an infringement or an alleged infringement of a patent of invention in executing anything for the purpose of the *Contract*, the model, plan or design of which was supplied to the *Contractor* as part of the *Contract Documents*.

### **GC 10.4 WORKERS' COMPENSATION**

- 10.4.1 Prior to commencing the *Work*, again with the *Contractor's* application for payment of the holdback amount following *Substantial Performance of the Work* and again with the *Contractor's* application for final payment, the *Contractor* shall provide evidence of compliance with workers' compensation legislation at the *Place of the Work*, including payments due thereunder.
- 10.4.2 At any time during the term of the *Contract*, when requested by the *Owner*, the *Contractor* shall provide such evidence of compliance by the *Contractor* and *Subcontractors*.

## **PART 11 INSURANCE AND CONTRACT SECURITY**

### **GC 11.1 INSURANCE**

- 11.1.1 Without restricting the generality of GC 12.1 - INDEMNIFICATION, the *Contractor* shall provide, maintain and pay for the following insurance coverages, the minimum requirements of which are specified in CCDC 41 – CCDC Insurance Requirements in effect at the time of bid closing except as hereinafter provided:
- 1 General liability insurance in the name of the *Contractor* and include, or in the case of a single, blanket policy, be endorsed to name, the *Owner* and the *Consultant* as insureds but only with respect to liability, other than legal liability arising out of their sole negligence, arising out of the operations of the *Contractor* with regard to the *Work*. General liability insurance shall be maintained from the date of commencement of the *Work* until one year from the date of *Substantial Performance of the Work*. Liability coverage shall be provided for completed operations hazards from the date of *Substantial Performance of the Work*, as set out in the certificate of *Substantial Performance of the Work*, on an ongoing basis for a period of 6 years following *Substantial Performance of the Work*.
  - 2 Automobile Liability Insurance from the date of commencement of the *Work* until one year after the date of *Substantial Performance of the Work*.
  - 3 Aircraft or Watercraft Liability Insurance when owned or non-owned aircraft or watercraft are used directly or indirectly in the performance of the *Work*
  - 4 "Broad form" property insurance in the joint names of the *Contractor*, the *Owner* and the *Consultant*. The policy shall include as insureds all *Subcontractors*. The "Broad form" property insurance shall be provided from the date of commencement of the *Work* until the earliest of:
    - (1) 10 calendar days after the date of *Substantial Performance of the Work*;

- (2) on the commencement of use or occupancy of any part or section of the *Work* unless such use or occupancy is for construction purposes, habitational, office, banking, convenience store under 465 square metres in area, or parking purposes, or for the installation, testing and commissioning of equipment forming part of the *Work*;
- (3) when left unattended for more than 30 consecutive calendar days or when construction activity has ceased for more than 30 consecutive calendar days.
- .5 Boiler and machinery insurance in the joint names of the *Contractor*, the *Owner* and the *Consultant*. The policy shall include as insureds all *Subcontractors*. The coverage shall be maintained continuously from commencement of use or operation of the boiler and machinery objects insured by the policy and until 10 calendar days after the date of *Substantial Performance of the Work*.
- .6 The "Broad form" property and boiler and machinery policies shall provide that, in the case of a loss or damage, payment shall be made to the *Owner* and the *Contractor* as their respective interests may appear. In the event of loss or damage:
  - (1) the *Contractor* shall act on behalf of the *Owner* for the purpose of adjusting the amount of such loss or damage payment with the insurers. When the extent of the loss or damage is determined, the *Contractor* shall proceed to restore the *Work*. Loss or damage shall not affect the rights and obligations of either party under the *Contract* except that the *Contractor* shall be entitled to such reasonable extension of *Contract Time* relative to the extent of the loss or damage as the *Consultant* may recommend in consultation with the *Contractor*;
  - (2) the *Contractor* shall be entitled to receive from the *Owner*, in addition to the amount due under the *Contract*, the amount which the *Owner's* interest in restoration of the *Work* has been appraised, such amount to be paid as the restoration of the *Work* proceeds in accordance with the progress payment provisions. In addition the *Contractor* shall be entitled to receive from the payments made by the insurer the amount of the *Contractor's* interest in the restoration of the *Work*; and
  - (3) to the *Work* arising from the work of the *Owner*, the *Owner's* own forces or another contractor, the *Owner* shall, in accordance with the *Owner's* obligations under the provisions relating to construction by *Owner* or other contractors, pay the *Contractor* the cost of restoring the *Work* as the restoration of the *Work* proceeds and as in accordance with the progress payment provisions.
- .7 *Contractors' Equipment Insurance* from the date of commencement of the *Work* until one year after the date of *Substantial Performance of the Work*.
- 11.1.2 Prior to commencement of the *Work* and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the *Contractor* shall promptly provide the *Owner* with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements applicable to the *Work*.
- 11.1.3 The parties shall pay their share of the deductible amounts in direct proportion to their responsibility in regards to any loss for which the above policies are required to pay, except where such amounts may be excluded by the terms of the *Contract*.
- 11.1.4 If the *Contractor* fails to provide or maintain insurance as required by the *Contract Documents*, then the *Owner* shall have the right to provide and maintain such insurance and give evidence to the *Contractor* and the *Consultant*. The *Contractor* shall pay the cost thereof to the *Owner* on demand or the *Owner* may deduct the cost from the amount which is due or may become due to the *Contractor*.
- 11.1.5 All required insurance policies shall be with insurers licensed to underwrite insurance in the jurisdiction of the *Place of the Work*.
- 11.1.6 If a revised version of CCDC 41 – INSURANCE REQUIREMENTS is published, which specifies reduced insurance requirements, the parties shall address such reduction, prior to the *Contractor's* insurance policy becoming due for renewal, and record any agreement in a *Change Order*.
- 11.1.7 If a revised version of CCDC 41 – INSURANCE REQUIREMENTS is published, which specifies increased insurance requirements, the *Owner* may request the increased coverage from the *Contractor* by way of a *Change Order*.
- 11.1.8 A *Change Directive* shall not be used to direct a change in the insurance requirements in response to the revision of CCDC 41 – INSURANCE REQUIREMENTS.

## GC 11.2 CONTRACT SECURITY

- 11.2.1 The *Contractor* shall, prior to commencement of the *Work* or within the specified time, provide to the *Owner* any *Contract* security specified in the *Contract Documents*.

- 11.2.2 If the *Contract Documents* require surety bonds to be provided, such bonds shall be issued by a duly licensed surety company authorized to transact the business of suretyship in the province or territory of the *Place of the Work* and shall be maintained in good standing until the fulfillment of the *Contract*. The form of such bonds shall be in accordance with the latest edition of the CCDC approved bond forms.

## PART 12 INDEMNIFICATION, WAIVER OF CLAIMS AND WARRANTY

### GC 12.1 INDEMNIFICATION

- 12.1.1 Without restricting the parties' obligation to indemnify as described in paragraphs 12.1.4 and 12.1.5, the *Owner* and the *Contractor* shall each indemnify and hold harmless the other from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings whether in respect to losses suffered by them or in respect to claims by third parties that arise out of, or are attributable in any respect to their involvement as parties to this *Contract*, provided such claims are:

- .1 caused by:
  - (1) the negligent acts or omissions of the party from whom indemnification is sought or anyone for whose acts or omissions that party is liable, or
  - (2) a failure of the party to the *Contract* from whom indemnification is sought to fulfill its terms or conditions; and
- .2 made by *Notice in Writing* within a period of 6 years from the date of *Substantial Performance of the Work* as set out in the certificate of *Substantial Performance of the Work* issued pursuant to paragraph 5.4.2.2 of GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK or within such shorter period as may be prescribed by any limitation statute of the province or territory of the *Place of the Work*.

The parties expressly waive the right to indemnity for claims other than those provided for in this *Contract*.

- 12.1.2 The obligation of either party to indemnify as set forth in paragraph 12.1.1 shall be limited as follows:

- .1 In respect to losses suffered by the *Owner* and the *Contractor* for which insurance is to be provided by either party pursuant to GC 11.1 – INSURANCE, the general liability insurance limit for one occurrence as referred to in CCDC 41 in effect at the time of bid closing.
- .2 In respect to losses suffered by the *Owner* and the *Contractor* for which insurance is not required to be provided by either party in accordance with GC 11.1 – INSURANCE, the greater of the *Contract Price* as recorded in Article A-4 – CONTRACT PRICE or \$2,000,000, but in no event shall the sum be greater than \$20,000,000.
- .3 In respect to claims by third parties for direct loss resulting from bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, the obligation to indemnify is without limit. In respect to all other claims for indemnity as a result of claims advanced by third parties, the limits of indemnity set forth in paragraphs 12.1.2.1 and 12.1.2.2 shall apply.

- 12.1.3 The obligation of either party to indemnify the other as set forth in paragraphs 12.1.1 and 12.1.2 shall be inclusive of interest and all legal costs.

- 12.1.4 The *Owner* and the *Contractor* shall indemnify and hold harmless the other from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings arising out of their obligations described in GC 9.2 – TOXIC AND HAZARDOUS SUBSTANCES.

- 12.1.5 The *Owner* shall indemnify and hold harmless the *Contractor* from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings:

- .1 as described in paragraph 10.3.2 of GC 10.3 – PATENT FEES, and
- .2 arising out of the *Contractor's* performance of the *Contract* which are attributable to a lack of or defect in title or an alleged lack of or defect in title to the *Place of the Work*.

- 12.1.6 In respect to any claim for indemnity or to be held harmless by the *Owner* or the *Contractor*:

- .1 *Notice in Writing* of such claim shall be given within a reasonable time after the facts upon which such claim is based became known;
- .2 should any party be required as a result of its obligation to indemnify another to pay or satisfy a final order, judgment or award made against the party entitled by this contract to be indemnified, then the indemnifying party upon assuming all liability for any costs that might result shall have the right to appeal in the name of the party against whom such final order or judgment has been made until such rights of appeal have been exhausted.

## GC 12.2 WAIVER OF CLAIMS

- 12.2.1 Subject to any lien legislation applicable to the *Place of the Work*, as of the fifth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*, the *Contractor* waives and releases the *Owner* from all claims which the *Contractor* has or reasonably ought to have knowledge of that could be advanced by the *Contractor* against the *Owner* arising from the *Contractor's* involvement in the *Work*, including, without limitation, those arising from negligence or breach of contract in respect to which the cause of action is based upon acts or omissions which occurred prior to or on the date of *Substantial Performance of the Work*, except as follows:
- .1 claims arising prior to or on the date of *Substantial Performance of the Work* for which *Notice in Writing* of claim has been received by the *Owner* from the *Contractor* no later than the sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*;
  - .2 indemnification for claims advanced against the *Contractor* by third parties for which a right of indemnification may be asserted by the *Contractor* against the *Owner* pursuant to the provisions of this *Contract*;
  - .3 claims for which a right of indemnity could be asserted by the *Contractor* pursuant to the provisions of paragraphs 12.1.4 or 12.1.5 of GC 12.1 – INDEMNIFICATION; and
  - .4 claims resulting from acts or omissions which occur after the date of *Substantial Performance of the Work*.
- 12.2.2 The *Contractor* waives and releases the *Owner* from all claims referenced in paragraph 12.2.1.4 except for those referred in paragraphs 12.2.1.2 and 12.2.1.3 and claims for which *Notice in Writing* of claim has been received by the *Owner* from the *Contractor* within 395 calendar days following the date of *Substantial Performance of the Work*.
- 12.2.3 Subject to any lien legislation applicable to the *Place of the Work*, as of the fifth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*, the *Owner* waives and releases the *Contractor* from all claims which the *Owner* has or reasonably ought to have knowledge of that could be advanced by the *Owner* against the *Contractor* arising from the *Owner's* involvement in the *Work*, including, without limitation, those arising from negligence or breach of contract in respect to which the cause of action is based upon acts or omissions which occurred prior to or on the date of *Substantial Performance of the Work*, except as follows:
- .1 claims arising prior to or on the date of *Substantial Performance of the Work* for which *Notice in Writing* of claim has been received by the *Contractor* from the *Owner* no later than the sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*;
  - .2 indemnification for claims advanced against the *Owner* by third parties for which a right of indemnification may be asserted by the *Owner* against the *Contractor* pursuant to the provisions of this *Contract*;
  - .3 claims for which a right of indemnity could be asserted by the *Owner* against the *Contractor* pursuant to the provisions of paragraph 12.1.4 of GC 12.1 - INDEMNIFICATION;
  - .4 damages arising from the *Contractor's* actions which result in substantial defects or deficiencies in the *Work*. “Substantial defects or deficiencies” mean those defects or deficiencies in the *Work* which affect the *Work* to such an extent or in such a manner that a significant part or the whole of the *Work* is unfit for the purpose intended by the *Contract Documents*;
  - .5 claims arising pursuant to GC 12.3 - WARRANTY; and
  - .6 claims arising from acts or omissions which occur after the date of *Substantial Performance of the Work*.
- 12.2.4 The *Owner* waives and releases the *Contractor* from all claims referred to in paragraph 12.2.3.4 except claims for which *Notice in Writing* of claim has been received by the *Contractor* from the *Owner* within a period of six years from the date of *Substantial Performance of the Work* should any limitation statute of the Province or Territory of the *Place of the Work* permit such agreement. If the applicable limitation statute does not permit such agreement, within such shorter period as may be prescribed by:
- .1 any limitation statute of the Province or Territory of the *Place of the Work*; or
  - .2 if the *Place of the Work* is the Province of Quebec, then Article 2118 of the Civil Code of Quebec.
- 12.2.5 The *Owner* waives and releases the *Contractor* from all claims referenced in paragraph 12.2.3.6 except for those referred in paragraph 12.2.3.2, 12.2.3.3 and those arising under GC 12.3 – WARRANTY and claims for which *Notice in Writing* has been received by the *Contractor* from the *Owner* within 395 calendar days following the date of *Substantial Performance of the Work*.
- 12.2.6 “*Notice in Writing* of claim” as provided for in GC 12.2 – WAIVER OF CLAIMS to preserve a claim or right of action which would otherwise, by the provisions of GC 12.2 – WAIVER OF CLAIMS, be deemed to be waived, must include the following:
- .1 a clear and unequivocal statement of the intention to claim;
  - .2 a statement as to the nature of the claim and the grounds upon which the claim is based; and
  - .3 a statement of the estimated quantum of the claim.
- 12.2.7 The party giving “*Notice in Writing* of claim” as provided for in GC 12.2 – WAIVER OF CLAIMS shall submit within a reasonable time a detailed account of the amount claimed.

- 12.2.8 Where the event or series of events giving rise to a claim made under paragraphs 12.2.1 or 12.2.3 has a continuing effect, the detailed account submitted under paragraph 12.2.7 shall be considered to be an interim account and the party making the claim shall submit further interim accounts, at reasonable intervals, giving the accumulated amount of the claim and any further grounds upon which it is based. The party making the claim shall submit a final account after the end of the effects resulting from the event or series of events.
- 12.2.9 If a *Notice in Writing* of claim pursuant to paragraph 12.2.1.1 is received on the seventh or sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*, the period within which *Notice in Writing* of claim shall be received pursuant to paragraph 12.2.3.1 shall be extended to two calendar days before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*.
- 12.2.10 If a *Notice in Writing* of claim pursuant to paragraph 12.2.3.1 is received on the seventh or sixth calendar day before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*, the period within which *Notice in Writing* of claim shall be received pursuant to paragraph 12.2.1.1 shall be extended to two calendar days before the expiry of the lien period provided by the lien legislation applicable at the *Place of the Work*.

### **GC 12.3 WARRANTY**

- 12.3.1 Except for extended warranties as described in paragraph 12.3.6, the warranty period under the *Contract* is one year from the date of *Substantial Performance of the Work*.
- 12.3.2 The *Contractor* shall be responsible for the proper performance of the *Work* to the extent that the design and *Contract Documents* permit such performance.
- 12.3.3 The *Owner*, through the *Consultant*, shall promptly give the *Contractor Notice in Writing* of observed defects and deficiencies which occur during the one year warranty period.
- 12.3.4 Subject to paragraph 12.3.2, the *Contractor* shall correct promptly, at the *Contractor's* expense, defects or deficiencies in the *Work* which appear prior to and during the one year warranty period.
- 12.3.5 The *Contractor* shall correct or pay for damage resulting from corrections made under the requirements of paragraph 12.3.4.
- 12.3.6 Any extended warranties required beyond the one year warranty period as described in paragraph 12.3.1, shall be as specified in the *Contract Documents*. Extended warranties shall be issued by the warrantor to the benefit of the *Owner*. The *Contractor's* responsibility with respect to extended warranties shall be limited to obtaining any such extended warranties from the warrantor. The obligations under such extended warranties are solely the responsibilities of the warrantor.



## **GENERAL REQUIREMENTS: GENERAL INSTRUCTIONS**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

**Section 01000**

**Page 1 of 5**

---

#### **1.0 Documents Required**

1.1 Maintain at the Place of Work, one (1) copy of following:

- (a) Contract Drawings;
- (b) Specifications;
- (c) Addenda;
- (d) Reviewed Shop Drawings;
- (e) Change Orders;
- (f) Other modifications to Contract;
- (g) Field test reports; and
- (h) Contractor's Occupational Health and Safety Policy, the program to implement the Occupational Health and Safety Policy and the Site Safety Plan.

#### **2.0 Work Schedule**

2.1 Interim reviews of Work progress based on schedule submitted by the Contractor will be conducted. Update Contractor's schedule and cash flow chart when requested by Consultant.

#### **3.0 Hours of Work**

3.1 The Contractor's hours of Work for this Contract are 1:00 a.m. to 5:00 a.m. Monday to Friday, statutory holidays excluded. Work can be done on the weekend from Saturday 5:00 a.m. to Monday at 5:00 a.m. previous Metrolinx approval. Statutory holidays excluded. Washrooms should remain open and in service during Station operational time. Work can be scheduled by stages, with minimum impact to customers.

3.2 Hours other than those stated in 3.1 may be allowed with prior written approval from the Owner.

#### **4.0 Subcontractors and Suppliers**

4.1 The Contractor shall submit within five (5) Working Days of execution of the Contract a complete list of Subcontractors and Suppliers that shall include the names of all Subcontractors and Suppliers that will be employed to perform or supply the following Divisions or Sections of the Work:

## **GENERAL REQUIREMENTS: GENERAL INSTRUCTIONS**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

**Section 01000**

**Page 2 of 5**

---

- (a) Electrical work
- (b) Plumbing and Mechanical work

#### **5.0 Certificate of Recognition**

5.1 The Contractor shall maintain a valid COR<sup>TM</sup> "Certified" status with IHSA throughout the Term of the Contract, unless one of the following criteria has been met:

- (a) The Contractor maintains a valid OHSAS 18001 certification and has initiated the process to obtain COR<sup>TM</sup> Certified status in Ontario, through IHSA. Prior to commencement of the Work, the Contractor shall provide proof of COR<sup>TM</sup> Registered status. The Contractor shall achieve COR<sup>TM</sup> Certified status through IHSA, within eighteen (18) months from the commencement date of the Work of this Contract.
- (b) The Contractor maintains a valid Out-of-Province COR<sup>TM</sup> Certified status and has initiated the process to obtain COR<sup>TM</sup> Certified status in Ontario, through IHSA. Prior to commencement of the Work, the Contractor shall provide proof of COR<sup>TM</sup> Registered status. The Contractor shall achieve COR<sup>TM</sup> Certified status through IHSA, within eighteen (18) months from the commencement date of the Work of this Contract.

5.2 For more information about COR<sup>TM</sup> and the certification process in Ontario, please contact:

- (a) Infrastructure Health and Safety Association (IHSA)  
5110 Creekbank Road, Suite 400  
Mississauga, Ontario  
L4W 0A1  
Email: cor@ihsa.ca  
Website: www.ihsa.ca/cor  
Telephone: 1-800-263-5024

#### **6.0 Contractor's Use of Site**

- 6.1 Perform Work in a manner that will interfere as little as possible with the Owner's operations.
- 6.2 Storage of materials and equipment and Contractor's temporary office must be contained within designated Contractor's area(s).
- 6.3 Schedule deliveries to interfere as little as possible with the Owner's operations.

## **GENERAL REQUIREMENTS: GENERAL INSTRUCTIONS**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

**Section 01000**

**Page 3 of 5**

---

6.4 Park on site only within the designated Contractor's area.

#### **7.0 Codes and Standards**

7.1 Perform Work in accordance with Ontario Building Code, Ontario Hydro Electrical Safety Code and applicable acts administered by other authorities having jurisdiction.

7.2 Work to meet or exceed requirements of specified standards, codes and referenced documents.

7.3 Codes, specification standards, manuals and installation, application and maintenance instructions, referred to in the Contract Documents shall be of latest published editions at date of closing of Tender.

#### **8.0 Project Meetings**

8.1 Hold project meetings at times and locations approved by Consultant.

8.2 Notify parties concerned of meetings, to ensure proper co-ordination of Work.

8.3 Designated parties shall take required action on decisions made at meeting. Consultant will record minutes of meetings and distribute to parties prior to next meeting.

#### **9.0 Sublet of Work**

9.1 Administration, supply and installation of Work specified is the sole responsibility of Contractor.

#### **10.0 Examination**

10.1 Examine site of Work, and investigate all matters relating to nature of Work to be undertaken.

10.2 Examine areas to receive specific Work and ensure that conditions are satisfactory to receive subsequent Work. Do not proceed with subsequent work, until unsatisfactory conditions are corrected.

#### **11.0 Setting Out of Work**

11.1 Setting out of Work is sole responsibility of the Contractor.

11.2 Lay out Work in accordance with Contract Drawings.

## **GENERAL REQUIREMENTS: GENERAL INSTRUCTIONS**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

**Section 01000**

**Page 4 of 5**

---

- 11.3 Verify all grades, lines, and levels and dimensions indicated, and report errors or inconsistencies to the Consultant before commencing Work or as soon as discovered.

#### **12.0 Location of Equipment and Fixtures**

- 12.1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate. Final actual placement location within a reasonable distance from that shown on Drawings shall be carried out at no additional cost to the Owner.
- 12.2 Locate equipment, fixtures and outlets to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- 12.3 Obtain manufacturer's literature for roughing in and hook-up of equipment and fixtures.
- 12.4 Inform the Consultant of impending installation and obtain his approval for final actual location.
- 12.5 Submit field drawings to indicate relative position of various services and equipment when requested by Consultant.

#### **13.0 Concealment**

- 13.1 Conceal wiring in wall and ceiling construction of finished areas except where indicated otherwise.
- 13.2 Cutting, Fitting and Patching
  - (a) Execute cutting, fitting and patching required to make Work fit properly together.
  - (b) Where new Work connects with existing and where existing Work is altered, cut, patch and make good to match existing Work.
- 13.3 Obtain Consultant's approval before cutting, boring or sleeving load-bearing members.
- 13.4 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.

## **GENERAL REQUIREMENTS: GENERAL INSTRUCTIONS**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

**Section 01000**

**Page 5 of 5**

---

#### **14.0 Existing Services**

- 14.1 Before commencing Work, establish location and extent of service lines in area of Work and notify the Owner of findings.
- 14.2 Where unknown services are encountered, immediately advise authorities having jurisdiction and Consultant and confirm findings in writing.
- 14.3 Record locations of maintained, re-routed and abandoned service lines.

#### **15.0 Protection**

- 15.1 Contractor is cautioned to use appropriate construction methods in order to fully protect existing building(s) or plant from any damage. These facilities shall be inspected prior to construction and existing defects noted in a written report, witnessed by Consultant. Repair or restore defects resulting from construction under this Contract to the satisfaction of the Owner, at no additional expense to the Owner.

#### **16.0 Trades Qualification**

- 16.1 The Contractor shall ensure that persons (trades workers) performing work that the Trades Qualification and Apprenticeship Act (TQAA) sets out certification requirements for, are properly qualified under the TQAA.
- 16.2 The Contractor shall further ensure these trades workers can, upon request, provide written proof of TQAA trades qualification, such as a certificate of qualification or apprenticeship contract, to the Owner, the Consultant or other authority having jurisdiction.

#### **17.0 Additional Drawings**

- 17.1 Consultant may furnish additional Drawings to assist proper execution of Work. These Drawings will be issued for clarification only. Such Drawings shall have the same meaning and intent as if they were included with the Contract Documents referred to in Article A-3 of the Agreement Between Owner and Contractor.

**END OF SECTION**

**1.0 General**

- 1.1 Submit to Consultant for review, product data specified.
- 1.2 Conform to General Condition No. GC 3.10 Shop Drawings.
- 1.3 Until submission is reviewed, work involving relevant product may not proceed.

**2.0 Product Data**

- 2.1 Manufacturer's standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and other standard descriptive data will only be accepted in lieu of Shop Drawings when authorized by Consultant.
- 2.2 Above will only be accepted if it conforms to the following:
  - (a) delete information which is not applicable to project;
  - (b) supplement standard information to provide additional information applicable to project;
  - (c) show dimensions and clearances required;
  - (d) show performance characteristics and capacities; and
  - (e) show wiring diagrams and controls.

**3.0 Shop Drawings**

- 3.1 Within five (5) Working Days of execution of the Contract, submit for review by the Consultant, a schedule of Shop Drawings indicating dates, review dates, fabrication and lead times.
- 3.2 Drawings to be originals prepared by Contractor, Subcontractor, Supplier or Distributor, which illustrate appropriate portion of Work, showing fabrication, layout, setting or erection details as specified in appropriate Sections.
- 3.3 Identify details by reference to sheet and detail numbers shown on Contract Drawings.
- 3.4 Maximum sheet size 48" x 36" (1220mm x 915mm).
- 3.5 All Shop Drawings of structural components shall show all pieces, dimensions, materials, weld types and sizes, material treatments and finish to a large scale (metric) suitable to the Product.

#### **4.0 Samples & Mock-Ups**

- 4.1 Submit samples in sizes and quantities specified.
- 4.2 Where specified, shown or considered necessary, submit duplicate samples for Consultant's approval.
- 4.3 Where colour, pattern or texture is criterion, submit full range of samples.
- 4.4 Samples must correspond in every aspect to materials supplied for the project.
- 4.5 Construct field samples and mock-ups at locations acceptable to Consultant.
- 4.6 Construct each sample of mock-up completely, including work of all trades required to finish.
- 4.7 Do not proceed with fabrication or delivery of materials until samples are approved.
- 4.8 Reviewed samples or mock-ups will become standards of workmanship and material against which installed work will be checked on project.
- 4.9 Approval of samples does not imply acceptance of finished work.

#### **5.0 Coordination of Submissions**

- 5.1 Review Shop Drawings, Product data and samples prior to submission. Any Shop Drawing not bearing evidence of having been checked by the Contractor will not be accepted by the Consultant.
- 5.2 Indicate on Shop Drawings that they have been checked by applying stamp "checked and certified for construction", including date and Contractor's signature.
- 5.3 No claim for delay will be considered as a result of time lost for Drawings returned because the Contractor has failed to check the Drawings as stated above.
- 5.4 Check Shop Drawings and Product data sheets before submission as follows:
  - (a) Against Contract Documents and other applicable Shop Drawings to ensure that work adjacent to and affecting other work is accurately detailed.
  - (b) To ensure work conforms to requirements of Contract Documents.
  - (c) Verify field measurements, field construction criteria, catalogue number and similar data.

- 5.5 Coordinate each submission with requirements of Work and Contract Documents. Individual Shop Drawings will not be reviewed until all related drawings are available.
- 5.6 Consultant's review of Shop Drawings and data sheets pertain to general design only. Errors in dimensions, quantities or interference will be marked if noticed, but this will not in any way relieve the Contractor from his responsibility to complete the Work as shown and specified.
- 5.7 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by the Consultant's review of submission, unless Consultant gives written acceptance of specified deviations.
- 5.8 Notify Consultant, in writing at time of submission, of deviations from requirements of Contract Documents.
- 5.9 Do not proceed with Work covered by Shop Drawings and data sheets until reviewed by Consultant. Any such installation will not be considered for payment until Shop Drawings are approved.
- 5.10 After Consultant's review, distribute copies to all trades affected.

**6.0 Submission Requirements**

- 6.1 Schedule submissions at least ten (10) Working Days before dates reviewed submissions will be needed.
- 6.2 Submissions shall be as follows:
  - (a) Four (4) white prints of Shop Drawings and Product data bearing the review stamp of the Contractor, three (3) of which will be retained by the Consultant;
  - (b) The fourth set will be returned to the Contractor, who is responsible for preparing all additional copies for distribution, and distributing to all required parties; and
  - (c) Submit final Shop Drawings as noted in Section 01800 Project Closeout.
- 6.3 Additional copies of Shop Drawings, Product data, reports, procedures, plans and certificates shall be required for distribution by the Contractor.

END OF SECTION



## **GENERAL REQUIREMENTS: QUALITY CONTROL**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01400

Page 1 of 3

---

#### **1.0 Inspection**

- 1.1 Refer to GC 2.3 - REVIEW AND INSPECTION OF THE WORK.
- 1.2 The materials furnished by the Contractor shall be inspected by the Consultant or owner representative at the time of delivery and at such other times as the Consultant may elect.
- 1.3 The Owner and the Consultant shall have access to the work. If parts of the work are in preparation at locations other than the Place of the Work, access shall be given to such work whenever it is in progress.
- 1.4 The Consultant may order any part of the work to be examined if such work is suspected to be not in accordance with the Contract. If, upon examination such work is found not in accordance with the Contract, correct such work and pay the cost of examination and correction. If such Work is found in accordance with the Contract, the Owner will pay the cost of examination and replacement.
- 1.5 The review of the information covering materials and equipment by the Consultant shall in no release the Contractor from his responsibility for the proper design, installation and performance of any material, equipment or arrangement or from the liability to replace same should it prove defective or deficient.

#### **2.0 Independent Inspection Agencies**

- 2.1 Independent Inspection/Testing Agencies will be engaged by the owner or Consultant for inspecting and/or testing portions of work.
- 2.2 Cost of such services will be borne by the Contractor under the appropriate Cash Allowance item in the Form of Tender.
- 2.3 Provide samples and/or assistance required for inspection and testing by the appointed agencies.
- 2.4 Employment of Inspection/Testing Agencies does not remove the responsibility to perform Work in accordance with the Contract Documents.
- 2.5 If defects are revealed during inspection and/or testing, the appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defects and irregularities as advised by the Consultant at no cost to the Owner. Pay costs for retesting and re-inspection.

## **GENERAL REQUIREMENTS: QUALITY CONTROL**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01400

Page 2 of 3

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#### **3.0 Procedures**

- 3.1 Notify the appropriate agency and Consultant a minimum of two (2) working days in advance of the requirement for tests, in order that arrangements can be made with the testing company.
- 3.2 Submit samples and/or materials required for testing, as specifically requested in Specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in the Work.
- 3.3 Provide labour and equipment to obtain and handle samples and materials on site.

#### **4.0 Rejected Work**

- 4.1 Refer to GC 2.4 - DEFECTIVE WORK.
- 4.2 If, in the opinion of the owner representative or Consultant, it is not expedient to correct defective work, or work not performed in accordance with the Contract Documents, the Owner may deduct from the Contract Price the difference in value between the work performed and that called for by the Contract Documents, the amount of which shall be determined by the Consultant.

#### **5.0 Reports**

- 5.1 Reports on materials testing as arranged by the Consultant shall contain the following information:
  - (a) Date and time of inspection or test.
  - (b) Weather conditions and ambient air temperatures during the inspection.
  - (c) Testing method employed by proper standard reference and specific paragraph or other detailed information as applicable.
  - (d) Inspection description and detailed and other relevant information.
  - (e) Test results in detail, complete with applicable graphs and other clarifying documents and information.
  - (f) Printed name and signature of person having conducted inspection or test, and name, title and signature of Supervisor having verified the report.
- 5.2 Inspection and Testing Agency shall provide a written report for each inspection and test made, three copies to the Consultant; three copies to the Contractor direct, who shall forward one copy to the Subcontractor, supplier or manufacturer concerned.

**GENERAL REQUIREMENTS: QUALITY CONTROL**

**INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
CONCOURSE WASHROOMS – UNION STATION  
Contract No. IT-2018-STNS-255**

Section 01400

Page 3 of 3

---

**GENERAL REQUIREMENTS: TEMPORARY FACILITIES**

**INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK  
CONCOURSE WASHROOMS – UNION STATION  
Contract No. IT-2018-STNS-255**

**Section 01500**

Page 1 of 1

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**1.0 Access**

- 1.1 The Contractor shall be limited to using access onto the site as further directed.

**2.0 Power**

- 2.1 Contractor may connect into the Owner's electrical power supply in the existing building for power for construction requirements. All such connections shall be first approved by the Owner.
- 2.2 The Contractor shall be responsible for all claims and damages resulting from unauthorized or misuse of the Owner's electrical power supply. Verify all circuit and circuit protection capacities with the Owner's Manager of Station Operations of the respective region before making any connections.

END OF SECTION

**1.0 Fires**

- 1.1 Fire and burnings of rubbish at the Place of Work will not be permitted.

**2.0 Disposal of Wastes**

- 2.1 Do not bury rubbish and waste materials on site.
- 2.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- 2.3 Except as indicated otherwise, surplus materials shall become the property of the Contractor and shall be removed from the premises promptly as they become surplus, at the cost of the Contractor.

**3.0 Drainage**

- 3.1 Divert surface drainage water away from excavation.
- 3.2 Provide temporary drainage and pumping as necessary to keep excavations and site free from water from whatever source until backfill operations are completed.
- 3.3 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- 3.4 Provide pumping units of sufficient number to comply with the above requirements and keep a minimum of one (1) unit in operating condition as a spare on site.

**4.0 Pollution Control**

- 4.1 Operations generating smoke, fumes, gases, dusts, vapours and odours shall be exhausted at source in a manner approved by the Consultant.
- 4.2 Take precautions necessary to keep dust, smoke, fumes, dirt and vibration to an acceptable level as determined by the Consultant.
- 4.3 Prevent extraneous materials from contaminating the environment immediately to and beyond the application area, by providing temporary enclosures or other appropriate preventative measures.

**5.0 Noise**

- 5.1 Prevent excessive noise which will be disturbing to the occupant of building. Machine tools which are set up in fixed locations shall be so located to minimize noise and suitable sound deflectors shall be used if directed by the Consultant.

- 5.2 Use air compressors and pneumatic hammers only with the expressed authorization of the Consultant.

**6.0 Spills**

- 6.1 The Contractor shall provide the Owner with a written program for spills response and reporting. Copies of training records shall also be provided.
- 6.2 All spills shall immediately be reported to the Rail Operations Control Centre, (416) 601-2174, or as directed by the Consultant.

**7.0 Dust Control**

- 7.1 The Contractor shall take any and all steps necessary to prevent a dust nuisance occurring as a result of his performance of the Work.
- 7.2 Where the Work requires the sawing or grinding of concrete, wet type blades and grinders shall be used together with sufficient water to prevent the occurrence of dust. Cost of all such preventative measures shall be borne by the Contractor.

END OF SECTION

## GENERAL REQUIREMENTS: SAFETY REQUIREMENTS

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255

Section 01600

Page 1 of 6

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#### 1.0 Construction Safety Measures

- 1.1 For the purposes of the Contract, the term “Constructor”, as defined in Ontario’s *Occupational Health and Safety Act* (OHSA), shall mean the entity that shall be responsible for ensuring that the provisions of the statutes, regulations and by-laws pertaining to the safe performance of the Work are to be observed. The “Constructor” shall submit the Notice of Project to the Ministry of Labour, if required by the Work as defined by the Construction Projects Regulation. The Contractor shall be listed as the Constructor and Metrolinx listed as the Owner.
- 1.2 The Contractor’s Site Supervisor shall be defined as and perform all the functions of the “Supervisor” of the “Constructor” for the “Project”, where these terms have the same meanings as defined in Section 1 of the OHSA. The "Supervisor" shall also be deemed to be the "Supervisor" designated by the "Owner" should the Owner also fit the definition of a "Constructor" under OHSA. The supervisor shall not be changed except for valid reason.
- 1.3 The Contractor’s Site Supervisor shall be present at the Place of Work during the performance of the Work. In the case of the Contractor’s Site Supervisor’s absence, the Contractor will name another person, in writing to the Consultant, who is competent to assume these responsibilities as the Contractor’s Site Supervisor.

#### 2.0 Project Responsibilities

- 2.1 The Contractor and the Contractor’s representative shall ensure that:
  - (a) All measures and procedures prescribed by the most recent version of the following documents are carried out at the Place of Work;
    - (i) The Occupational Health and Safety Act and applicable Regulations made thereunder;
    - (ii) The Rail Safety Act and applicable Regulations made thereunder;
    - (iii) The *Environmental Protection Act* and applicable Regulations made thereunder;
    - (iv) The Smoke-Free Ontario Act and Regulation;
    - (v) Metrolinx’s Construction Safety Management Program (CSMP); and
    - (vi) Any other legislation, regulations and standards as applicable.

## GENERAL REQUIREMENTS: SAFETY REQUIREMENTS

### INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255

Section 01600

Page 2 of 6

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- 2.2 The Contractor shall ensure that every employer and every worker performing work at the Place of Work shall comply with all measures and procedures prescribed by the latest versions of the following Acts, Regulations and Metrolinx documents referred to in Section 2.1 above.
- 2.3 The Contractor shall ensure that the health and safety of workers and the general public are protected in relation to the work performed on site. The Contractor shall comply with, or cause to be complied, all occupational health and safety legislation, including every employer and every worker performing Work at the Place of Work, who shall demonstrate a willingness to participate in occupational health and safety program(s).

### 3.0 Deliverables

- 3.1 The Contractor shall, within five (5) Working Days of the date of final execution of the Agreement Between Owner and Contractor, submit the following to the Owner for its review:
  - (a) A copy of the Contractor's Occupational Health and Safety Policy and Program, which shall comply with all applicable legislation; and
  - (b) A copy of the Contractor's Site Specific Safety Plan that includes site-specific hazard and risk assessment plans that will effectively prevent and control incidents and/or accidents.
- 3.2 Work shall not commence at Place of Work until the Owner has received the above referenced documents. The Contractor shall not be entitled to claim for any extension to the Contract Time or the Contract Price as a result of the Contractor's failure to submit an Occupational Health and Safety and/or program and Site Specific Safety Plan that are acceptable to the Owner.
- 3.3 The Contractor shall, within five (5) Working Days of the date of final execution of the Agreement Between Owner and Contractor, deliver to the Owner copies of all training records for Occupational Health and Safety related courses taken by a "competent person" as defined by the *Occupational Health and Safety Act*, and designated as the Contractor's Site Supervisor as per OHSA Section 25(2)(c). Relevant course subjects may, without limitation, include or be similar to the following:
  - (a) Certified Joint Health and Safety Committee Member Training;
  - (b) Basics of Supervising;
  - (c) Construction Health and Safety Representative;



## **GENERAL REQUIREMENTS: SAFETY REQUIREMENTS**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01600

Page 3 of 6

---

- (d) Occupational Health and Safety legislation;
- (e) Due Diligence;
- (f) Accident Investigation and Reporting; and
- (g) Any other courses that relate directly to the Occupational Health and Safety Act.

3.4 The Contractor shall deliver to the owner or their representative as required:

- (a) A copy of all weekly inspection reports made by the Contractor in compliance with the Constructor's responsibility under O.Reg.213/91, the Construction Projects Regulation.
- (b) A copy of all safety information pertaining to the Contract made and furnished by the Contractor's own "Safety Officer" or outside consultants/advisers engaged for the purpose of inspecting the workplace for occupational health and safety.
- (c) A copy of the Contractor's Emergency and Evacuation Plans for review by the Owner.
- (d) A copy of Access / Traffic Control Plans for review by the Owner.
- (e) A copy of the Contractor's risk assessment documents.
- (f) Where requested, copies of all injury and accident reports for occurrences on site. This shall include copies of all remedial measures taken to prevent recurrence.
- (g) Copies of all weekly safety talks shall be maintained on file for review by the Owner upon request.
- (h) Statistical information for the purpose of determining injury frequency and severity rates (hours worked, first-aid injuries, medical aid/reportable injuries, lost time injuries, restricted workday injuries, incident/accident and significant occurrence data), in a timely manner on a monthly basis or as required by the Owner.
- (i) The immediate reporting to CMO of all instances that are defined in the *Occupational Health and Safety Act* as "Notices of Injuries" and "Occurrences" under Sections 51, 52 and 53 and any other incidents as prescribed by applicable Metrolinx Construction Safety documents.

## **GENERAL REQUIREMENTS: SAFETY REQUIREMENTS**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01600

Page 4 of 6

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- (j) The Owner reserves the right to require additional or amended deliverables pertaining to safety during the duration of the Work at no additional cost to the Owner.

#### **4.0 Due Diligence**

- 4.1 The Contractor acknowledges that it has read and understands the measures and procedures relating to occupational health and safety as prescribed in Section 2 above. The Contractor acknowledges and understands its duties as therein set out and hereby expressly undertakes and agrees to comply with all such requirements and standards in their entirety and at the Contractor's expense.
- 4.2 The Contractor further agrees to fully cooperate with all health and safety requirements, rules, regulations, standards and criteria set out in the Contract Documents, which agreement is in furtherance of the Contractor's duties and responsibilities under occupational health and safety legislation.
- 4.3 The Contractor agrees that if, in the opinion of the Owner, the health and safety of a person or persons is endangered or the effective operation of the system put in place to ensure the health and safety of workers on the Place of Work is not being implemented, the Owner may take such action as it deems necessary and appropriate in the circumstances, including, without limitation, the following:
  - (a) Require the Contractor to correct the condition forthwith at no expense to the Owner;
  - (b) Require that the Place of Work be shut down in whole or in part until such time as the condition has been corrected. The Owner will not reimburse the Contractor for any costs caused by such a delay nor will the Owner extend the time to complete the Work of the Contract because of such a delay;
  - (c) Correct the problem and deduct the cost thereof from any payment then or thereafter due the Contractor; and/or
  - (d) Terminate the Contract in whole or in part.

#### **5.0 Barricades**

- 5.1 Observe all necessary precautions and provide, erect and maintain suitable signs, barricades and lights to protect all persons from injury and all vehicles from damage during the progress of the work, in accordance with the Construction Safety Management Program (CSMP) to the approval of the Consultant, or any authority having jurisdiction at this location.

## **GENERAL REQUIREMENTS: SAFETY REQUIREMENTS**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01600

Page 5 of 6

---

5.2 Provide all means necessary to prevent the entrance of unauthorized personnel onto the work site and from using access roads.

5.3 Protect the work in conformity with the Contract.

#### **6.0 Hot Work Permit**

6.1 Where hot work will be performed within an existing operational facility or adjacent to one such that operations or passengers may be negatively affected, the Contractor shall not undertake any Hot Work or otherwise cause a source of ignition to be created at the Place of Work without being issued a Hot Work Permit by the Owner and ensuring all measures have been implemented to prevent a fire from starting.

#### **7.0 Site Safety Personnel**

7.1 In the event the Owner deems it necessary, because of the Work and/or Safety Performance, the Contractor shall assign to the Place of Work a full time “Safety Officer” to assist the Contractor’s representative in the discharging of safety responsibility on site, at no additional costs.

7.2 The Contractor shall ensure that the Safety Officer has the training, experience and credentials to ensure compliance to the Occupational Health and Safety Act at the Place of Work.

#### **8.0 Site Security**

8.1 The Contractor shall ensure all personnel employed at the Place of Work, whether its own employees or a subcontractor’s, wear an identification badge. At Owner locations where access is restricted the Owner shall supply the identification badges. At all other locations it shall be the Contractor’s responsibility to provide the identification badges.

8.2 The Contractor shall maintain a daily site log of all persons granted access to the “Place of Work” under the control and custody of the Contractor.

8.3 The Contractor shall ensure that all required documentation is available upon request by the Consultant.

8.4 The Contractor shall not allow “Unauthorized” persons to access the “Place of Work”.

## **GENERAL REQUIREMENTS: SAFETY REQUIREMENTS**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01600

Page 6 of 6

---

#### **9.0 Site Requirements**

- 9.1 For night work activities, the Contractor shall supply and maintain adequate temporary lighting and associated generators at the Site such that all the work in these areas can be carried out safely and in a workmanlike manner. The Contractor shall use quiet available generators to minimize noise levels. At no time shall the Contractor direct the lights in such a manner that will impede or affect any adjacent properties.

END OF SECTION

## **GENERAL REQUIREMENTS: MATERIALS AND EQUIPMENT**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01700

Page 1 of 3

---

#### **1.0 General**

- 1.1 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.
- 1.2 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.

#### **2.0 Manufacturer's Instructions**

- 2.1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.
- 2.2 Notify the Owner in writing of any conflict between these Specifications and manufacturer's instructions. The Owner will designate which document is to be followed.

#### **3.0 Fastenings**

- 3.1 Provide metal fastenings and accessories in same texture, colour and finish as base metal in which they occur. Prevent electrolytic action between dissimilar metals. Use non-corrosive fasteners, anchors and spacers for securing exterior work.
- 3.2 Space anchors within limits of load bearing or shear capacity and ensure that they provide positive permanent anchorage. Wood plugs are not acceptable.
- 3.3 Keep exposed fastenings to minimum, space evenly and lay out neatly.
- 3.4 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.
- 3.5 Do not use explosive actuated fastening devices.

#### **4.0 Fastening Equipment**

- 4.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- 4.2 Use heavy hexagon heads, semi-finished unless otherwise specified.
- 4.3 Bolts may not project more than one diameter beyond nuts.
- 4.4 Use plain type washers on equipment, sheet metal and shaft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

## **GENERAL REQUIREMENTS: MATERIALS AND EQUIPMENT**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01700

Page 2 of 3

---

#### **5.0 Delivery and Storage**

- 5.1 Deliver, store and maintain packaged material and equipment with manufacturer's seals and labels intact.
- 5.2 Prevent damage, adulteration and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected material and equipment from the site.
- 5.3 Store material and equipment in accordance with suppliers' instructions.
- 5.4 Touch-up damaged factory finished surfaces to the Owner's satisfaction. Use primer or enamel to match original. Do not paint over name plates.

#### **6.0 Origin of Materials**

- 6.1 Materials, plant and equipment supplied for Work shall be as far as possible and unless otherwise specified, of Canadian manufacture.

#### **7.0 Ownership of Materials**

- 7.1 Unless otherwise specified, materials existing on site at time of signing Contract shall remain the property of Owner.
- 7.2 Equipment and materials delivered on site to form part of Work shall be property of the Owner but the Owner shall not be liable for any loss or damage from any cause.
- 7.3 Contractor shall remove surplus or rejected materials off site when notified by Consultant as required by site conditions.

#### **8.0 Specified Material and Equipment**

- 8.1 Materials and equipment shall be as specified.

#### **9.0 Substitutions After Contract Execution**

- 9.1 Request for substitutions of specified materials and equipment other than alternatives accepted during the in-market tendering period and prior to tender closing, will not be considered unless the request is accompanied by a written statement from Contractor giving reasons why specified item cannot or should not be used, evidence of quality of substitution and amount of change in Contract amount.
- 9.2 Written statement shall include full details, stating clearly name of manufacturer or supplier, together with a detailed description of substitutions, and stating

## **GENERAL REQUIREMENTS: MATERIALS AND EQUIPMENT**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01700

Page 3 of 3

---

reduction from or addition to the Contract Price, if any for the use of alternative material or equipment.

- 9.3 The Consultant reserves right to accept or reject substitution as he sees fit and also to claim for the Owner financial benefit of substitution if accepted. Rejection by Consultant of proposed alternative material or equipment is final and does not become obligated to give any reason for his action.
- 9.4 Approved equipment substitutions must not exceed space requirements allocated on Drawings. Be responsible for additional cost resulting from acceptance of a substitute piece of equipment for this Division of Work.
- 9.5 Substitutions shall not be considered accepted unless authorized in writing by the Consultant.

#### **10.0 Date-Related Compliance**

- 10.1 All materials, equipment, systems and components thereof used in connection with the provision of the Work, individually or in combination as the case may be, shall accurately and automatically process any and all date and date-related data including, but not limited to calculating, comparing and sequencing when used in accordance with the documentation provided by the Contractor.

END OF SECTION

## **GENERAL REQUIREMENTS: CLEANING**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01710

Page 1 of 1

---

#### **1.0 General**

- 1.1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
- 1.2 Store volatile wastes in covered metal containers, and remove from premises daily.
- 1.3 Prevent accumulation of wastes which create hazardous conditions.
- 1.4 Provide adequate ventilation during use of volatile or noxious substances.

#### **2.0 Products**

- 2.1 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

#### **3.0 Execution**

##### **3.1 Cleaning During Construction**

- (a) Ensure that the work site is kept clean and tidy at all times throughout the construction period. Remove all rubbish and debris promptly as it accumulates. Ensure that all sub-trades conform similarly.
- (b) Promptly remove from site and dispose of surplus materials.
- (c) Do not accumulate scrap piles at any time. Fires will not be permitted on the site.
- (d) Provide on-site containers for collection of waste materials, and rubbish.
- (e) Vacuum clean interior work areas when ready to receive finish painting, and continue vacuum cleaning on an as-needed basis until work area is ready for substantial completion or occupancy.
- (f) Schedule cleaning operations so that resulting dust and other contaminants will not fall on wet, newly painted surfaces.

END OF SECTION



## **GENERAL REQUIREMENTS: PROJECT CLOSEOUT**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01800

Page 1 of 3

---

#### **1.0 Final Cleaning**

- 1.1 Remove dust and soil from all surfaces affected by Work by vacuuming, damp mopping, washing or scrubbing, as required.
- 1.2 Clean all equipment and accessories.
- 1.3 Remove all temporary labels, protective coatings, markings and tags, and thoroughly clean adhesive off surfaces.
- 1.4 Avoid contamination of surrounding surfaces with cleaning fluids. Install temporary protection, if required, and remove same immediately upon completion of cleaning operation involved.
- 1.5 Methods of cleaning shall be in accordance with Manufacturer's recommendations of the finishes involved.
- 1.6 Soaps, detergents, waxes, and other cleaning materials and methods shall be as recommended by Manufacturer of finish surface material involved.
- 1.7 Use a heavy duty type industrial machine for all vacuum cleaning.
- 1.8 Exercise extreme care with abrasive and chemical cleaning agents and verify their compatibility with finish and material to be cleaning.

#### **2.0 Systems Demonstration**

- 2.1 Prior to final inspection, demonstrate operation of each system to the Owner.
- 2.2 Instruct personnel in operation, adjustment, and maintenance of equipment and systems, using provided operation and maintenance data as basis for instruction.

#### **3.0 Project Record Drawings**

- 3.1 The Consultant will provide one set of white prints for each major trade section of this Contract for recording "as constructed" information.
- 3.2 The Contractor shall co-ordinate and maintain project "as-constructed" record drawings and record accurately significant deviations from Contract Documents caused by site conditions and changes ordered by Consultant and approved by the Owner.
- 3.3 Record following information:
  - (a) field changes of dimension and detail; and
  - (b) changes made by Change Order or Field Instructions.

## **GENERAL REQUIREMENTS: PROJECT CLOSEOUT**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01800

Page 2 of 3

---

- 3.4 At each project meeting "as-constructed" record drawings shall be reviewed for completeness.
- 3.5 At completion of project and prior to final inspection, submit "as-constructed" drawings to Consultant.

#### **4.0 Operations and Maintenance Data**

- 4.1 On completion of project, submit to Consultant four (4) copies of Operations Data and Maintenance Manual, made up as follows:
  - (a) bind data in vinyl, hard covered, three ring, loose leaf binder for 215 x 280mm sized paper;
  - (b) enclose title sheet, labelled "Operation Data and Maintenance Manual", project name, date and list of contents; and
  - (c) organize contents into applicable sections of work. Mark each section by labelled tabs protected with celluloid covers fastened to hard paper dividing sheets.
- 4.2 Include following information plus data specified:
  - (a) description operation and maintenance instructions for equipment and systems, including a complete list of equipment and parts list. Indicate nameplate information such as make, size, capacity, serial number;
  - (b) names, addresses and phone numbers of subcontractors and suppliers;
  - (c) guarantees, warranties and bonds showing:
    - (i) name and address of projects;
    - (ii) guarantee commencement date (date of Final Certificate of Completion);
    - (iii) duration of guarantee;
    - (iv) clear indication of what is being guaranteed and what remedial action will be taken under guarantee; and
    - (v) signature and seal of Contractor; and
    - (vi) additional material used in project listed under various sections showing name of manufacturer and source supply.

## **GENERAL REQUIREMENTS: PROJECT CLOSEOUT**

### **INSTALLATION OF DUAL FAUCETS HAND DRYERS AT YORK CONCOURSE WASHROOMS – UNION STATION Contract No. IT-2018-STNS-255**

Section 01800

Page 3 of 3

---

- 4.3 Neatly type lists and notes. Use clear Drawings, diagrams or manufacturer's literature.
- 4.4 Include four complete sets of final Shop Drawings, bound separately, indicating corrections and changes made during fabrication and installation.

#### **5.0 Inspection/Takeover Procedures**

- 5.1 Procedures for Substantial and Total Performance of Work and completion takeover procedures shall be according to OAA/OGCA Document No. 100, December 12, 2007.

#### **6.0 Date-Related Compliance**

- 6.1 The Owner may, at no additional cost to itself, require the Contractor to demonstrate Date-Related Compliance as specified by General Requirements: Material and Equipment and/or compliance techniques and test procedures the Contractor followed in order to comply with these requirements.

END OF SECTION

## BASIC MECHANICAL REQUIREMENTS

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15010  
PAGE 1 OF 9**

**JUNE 2018**

### **1. General**

- (a) Scope of work
  - (i) This section is intended to provide basic identification of the work, for the Contractor to determine upfront, the nature of the work involved in this Contract. In no way shall this article be interpreted as being a full representation of the work of this Contract.
  - (ii) It is the Contractor's sole responsibility to examine all of the Commercial Documents, Specifications and Drawings issued.
  - (iii) The work involves the following:
    - (A) Mechanical building systems for the subject building including provision of:
      - (I) Complete plumbing system as shown on the Drawings and as specified herein including all plumbing equipment, fixtures, fittings, piping, etc.
      - (II) Cutting, patching and painting as required.
- (b) Scheduling of the work
  - (i) Co-ordinate all mechanical work with the work of other trades, and schedule and complete the work as required coinciding with the completion date established for the Project.
- (c) Codes, Regulations and Standards
  - (i) Comply with Municipal or Provincial Codes, Rules and Regulations and/or Authorities having jurisdiction, including TSSA.
  - (ii) Revisions issue: latest version as amended to date.
- (d) Permits, Certificates, Equipment Registration and Fees
  - (i) Make application and pay all required fees for permits, registration, inspections, etc. for all equipment and systems installed including those required by TSSA, local utility companies and municipalities.
  - (ii) Upon substantial completion of work, supply and turn over to the Consultant all required inspection certificates from governing authorities to certify that the work as installed conforms to the rules and regulations of the governing authorities.
  - (iii) Permits
    - (A) Obtain permits required for the installation of mechanical trades work including:
      - (I) Plumbing inspection
      - (II) Electrical inspection
    - (B) Arrange for inspections and tests and pay all fees and costs for the permits, inspections and tests. Obtain permits immediately after

## BASIC MECHANICAL REQUIREMENTS

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15010  
PAGE 2 OF 9**

**JUNE 2018**

notification of award of Contract.

- (C) Obtain copies of Drawings from the Consultant for submission with application for permits.
- (iv) Material approvals
  - (A) Obtain special inspection and approvals by CSA and/or local authorities, for materials and equipment where required or as specified.
  - (B) Obtain such approval for the particular installation with the co-operation of the material supplier.
- (e) Working Drawings and Documents
  - (i) Design Drawing Intent
    - (A) The design Drawings are schematic in arrangement, and describe the general design intent but do not show the exact details for the installation. They are not fabrication or installation Drawings.
    - (B) The overall scope of work is suitably outlined on the Drawings with regard to sizes, locations, general arrangements and installation details, and has been generally coordinated for routing of services. The routing of piping and equipment arrangement are shown more or less in diagrammatic form except where in certain cases the Drawings may include details giving the exact locations and arrangements required.
    - (C) The location of equipment and the associated arrangement of piping and other material describes the general requirements of the work. Final location is dependent on the actual equipment supplied. The Consultant reserves the right to make reasonable adjustment of up to 1 m to the location of equipment and routing of major piping, at no additional cost to the Owner.
    - (D) In order to provide clarity to the arrangement of the work, not all details including valves, fittings, etc. are shown on the plan Drawings. Refer to schematic Drawings, standard details and the specification for these requirements. In the absence of specific details, the Contractor is expected to follow generally accepted good installation practices. Alternatively, the Contractor shall submit a written request for Information (RFI) to the Owner/Consultant prior to submission of the bids and obtain a ruling prior to bidding or proceeding with the work.
    - (E) Where specific installation dimensions for location of equipment and access space requirements are indicated on the Drawings, install to these requirements.
    - (F) Where Standard Details are provided, these show the general installation requirements, and are applicable to each occurrence in the work, unless otherwise specified or shown.
    - (G) Do not proceed with work where an obvious ambiguity is noted between

## **BASIC MECHANICAL REQUIREMENTS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15010  
PAGE 3 OF 9**

**JUNE 2018**

tender documents. Notify the Engineer and obtain proper direction prior to proceeding with procurement or related construction work on site.

- (ii) Review before proceeding (HOLD)
  - (A) Where the word "HOLD" appears on Drawings and other Contract Documents, the work is included in the Contract.
  - (B) Execute such work only after verification of dimensions, verification of materials and obtaining Consultant's written permission to proceed.
- (iii) Coordination and Cooperation with Other Trades
  - (A) Review design drawings of all other related disciplines including electrical. Coordinate scope of work between all trades and allow for adequate costs for all related work. Coordinate work with all trades to ensure a proper and complete installation of fully functioning system that can be properly maintained in future.
  - (B) Notify all trades concerned of the requirements for openings, sleeves, insets and other hardware necessary for the installation and , where work is to be integrated with the work of other trades or is to be installed in close proximity with the work of the trades, carefully coordinate the work prior to installation.
- (f) Coordination and Examination
  - (i) Examination
    - (A) Carefully examine work and Drawings of all related trades and thoroughly plan the work in advance so as to avoid interferences.
    - (B) Report defects which would adversely affect the work. Do not commence installation until such defects have been corrected.
  - (ii) Coordination
    - (A) Coordinate work of Division 15 such that items will properly interface with work of other Divisions. Prepare installation and interference Drawings of all critical locations and submit to the Consultant for review.
    - (B) Architectural Drawings, or in their absence, Mechanical Drawings govern all locations.
- (g) Submittals
  - (i) Shop Drawings
    - (A) Shop drawing shall be submitted electronically.
    - (B) Conform to general conditions of contract and the following.
    - (C) Shop Drawings showing more than one size or model will not be

## BASIC MECHANICAL REQUIREMENTS

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15010  
PAGE 4 OF 9**

**JUNE 2018**

considered unless properly marked up.

- (D) For electrically driven appliances, provide the following information:
  - (I) Electrical characteristics including voltage, phase, frequency and power rating.
- (E) For other equipment include the following information:
  - (I) Equipment performance ratings, including flow rates, pressures drops.
  - (II) Electrical control power requirements
- (F) For all equipment, include the following:
  - (I) Equipment dimensions and weights.
  - (II) Itemized product description with optional items clearly marked as being included.
- (G) Provide wiring Shop Drawings:
  - (I) Wiring diagrams and schematics for all equipment which has electrical controls or devices furnished with the equipment.
  - (II) Wiring diagrams alone are not sufficient; schematic and interconnecting Detailed drawings and sequence of operation of all equipment are required for review.
  - (III) Clearly indicate the materials and/or equipment being supplied:
    - (1) Details of construction, finish, accurate dimensions, capacities and performance.
    - (2) Certify Drawings correct for construction by the manufacturer, before submission.
    - (3) Identify Equipment Shop Drawings with designations as shown on the Drawings or in the Specifications.
    - (4) If not complied with, Shop Drawings will not be reviewed and will be returned to the Contractor.
  - (IV) Coordinate equipment which attaches to and/or where external wiring provided connects to other equipment.
    - (5) Do such coordination whether such equipment is supplied under this or other contracts or subcontracts, for which relevant information will be provided by Owner/Consultant.
- (h) "As-Built" Record Drawings
  - (i) Reference
    - (A) Maintain an accurate dimensional record of all underground piping and all deviations and changes in aboveground piping and equipment.
    - (B) On completion of the project, provide a CD containing as-built Drawings in Auto Cad format. Include CD's and hard copies of the as-built Drawings in each O&M manual.
  - (i) Installation and Start-up Instructions
    - (i) Reference

## BASIC MECHANICAL REQUIREMENTS

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15010  
PAGE 5 OF 9**

**JUNE 2018**

- (A) Submit copies of installation instructions and copies of start-up instructions for any item of equipment when requested by the Consultant.
- (j) Operating and Maintenance Instruction Manuals
  - (i) Reference
    - (A) In addition, include the following in the manuals:
      - (I) Non-dimensional layout showing location of all electrical devices on mechanical equipment.
      - (II) Operating instructions
      - (III) List of spare parts.
    - (B) All the above applies to component parts of equipment whether they are manufactured by the supplier of the equipment or are supplied as a component part of an item of equipment.
- (k) Cleaning, Testing and Approval Records
  - (i) Records
    - (A) Maintain records of all pressure tests, inspections and approvals by the Plumbing Inspector.
    - (B) Forward these tests to the Owner on completion of the work.
    - (C) Forward to the Consultant, copy of records on site on completion of each test, cleaning operation, etc.
- (l) Dimensions and Quantities
  - (i) Dimensions
    - (A) Dimensions shown on Drawings are approximate.
    - (B) Verify dimensions by reference to Shop Drawings and field measurement.
  - (ii) Quantities
    - (A) Quantities or lengths indicated in any of the Contract Documents are approximate only and shall not be held to gauge or limit the work.

## **2. Products**

- (a) Materials and Equipment
  - (i) Materials
    - (A) Use new materials and equipment, free from defects impairing strength and durability, as specified or specified equivalent.
    - (B) Of Canadian manufacture wherever possible.
    - (C) Labelled or listed as required Code and/or inspection authorities.



## BASIC MECHANICAL REQUIREMENTS

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15010  
PAGE 6 OF 9**

**JUNE 2018**

- (D) Design of mechanical systems has been based on the first listed supplier and model number/size stated on the Equipment Schedules on the Drawings. Bear all costs due to physical or performance differences between stated equipment and proposed equipment. These differences include but are not limited to size, layout, arrangement, connection size, location and/or quantity of connections, or performance differences such as noise, power requirements, flow, throw, etc.
- (ii) Equipment/Structure Coordination
  - (A) Be responsible to verify the actual size requirements of the openings, and notify the Consultant immediately in case the dimension of the unit supplied and the connecting piping, etc. are at variance with the dimensions given on the Drawings.
  - (B) Bear all costs for modification of ceiling and wall/floor openings resulting from failure to notify the Consultant prior to the fabrication or construction of opening framing.
- (b) Standard Specifications
  - (i) Product Quality
    - (A) Ensure that the chemical and physical properties, design, performance characteristics and methods of construction of all Products provided comply with the latest issue of applicable Standard Specifications issued by Authorities having jurisdiction.
    - (B) Do not apply such Standard Specifications to decrease the quality of workmanship, products and services required by the Contract Documents.
  - (c) Manufacturer's Nameplates
    - (i) Metal Nameplates
      - (A) Provided with raised or recessed lettering, on each piece of equipment.
      - (B) Mechanically fasten nameplate on a metal stand-off bracket arranged to clear insulation.
      - (C) Mount on same stand-off Underwriters Laboratories and/or CSA registration plates.
    - (ii) Nameplate Data
      - (A) Indicate:
        - (I) Size
        - (II) Capacity
        - (III) Equipment model
        - (IV) Manufacturer's name
        - (V) Serial number
        - (VI) Voltage

- (VII) Frequency
- (VIII) Phases

**3. Execution**

**(a) General**

- (i) Execute work in accordance with requirements specified in the various Sections of Division 15.
- (ii) Coordinate all installation details and service requirements of equipment and accessories with other trades to eliminate conflicts prior to installation.
- (iii) Mechanical equipment and accessories shall be installed in a manner that provides adequate access to equipment and also assists in reducing the effort for maintenance. Equipment shall only be installed at heights or in spaces that can be easily reached by a standard height ladder (i.e. not exceeding 3 metres). In case space constraints on site require installation of equipment in other locations or heights, contractor shall bring this to the Engineer's attention and direction, prior to commencing work.
- (iv) Lay out work of each trade so that it does not interfere with work under other Divisions of Specifications.
- (v) Make good any damage to Owner's property or other trade's work caused by improperly locating or carrying out of work.
- (vi) Supply anchor bolts and templates for installation by other Divisions.
- (vii) Location of pipes, ductwork, raceways and equipment may be altered without extra cost provided alteration is made before installation.

**(b) Spare Parts**

- (i) Furnish spare parts
  - (A) One set of cartridge and a set of filter media for each filter or filter bank installed.

**(c) Protection**

- (i) Protect work and materials before, during and after erection from weather and other hazards and keep in a clean and orderly manner.
- (ii) Protect pipe ends, valves and parts of equipment left unconnected to prevent damage or intrusion of foreign matter. Provide pipe caps for threaded male connections and plugs for threaded female connections.
- (iii) Protect plumbing fixtures or mechanical equipment having a baked enamel finish by covering with polyethylene sheet securely held in place.
- (iv) Protect finished floor slabs from scuffing, cracking, chipping, staining, cutting and other damage resulting from work of this Contract.

## BASIC MECHANICAL REQUIREMENTS

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15010  
PAGE 8 OF 9**

**JUNE 2018**

- (A) Place 19 mm thick plywood under laid with 25 mm thick polystyrene insulation board adhered to same, over floor areas when working from, or over, such surfaces. Provide such protection below hoist rigs, ladders, pallets of material, and in other circumstances where the flooring is exposed to potential damage. Work damaged due to failure in providing such protection is to be removed and replaced, or repaired, as directed by the Owner, at no increase in Contract Price.
- (d) Painting
  - (i) With the exception of prime painting of miscellaneous steel or any other specific requirements as specified under the respective Sections of Division 15, all equipment shall be factory painted.
  - (ii) Factory applied finish painting:
    - (A) Factory prime and final coats applied to pumps, air moving units, un-insulated pressure vessels, unit heaters, convectors, grilles, diffusers and bare metal equipment items, in exposed to view applications such as boiler rooms, mechanical rooms and fan rooms.
    - (B) Use heat resistant paint where conditions require (i.e. equipment/accessories installed in the vicinity of heaters or boilers). Protect factory finished equipment during construction, and clean at completion of work.
  - (iii) Factory applied prime painting:
    - (A) Factory prime paint other equipment fabricated from iron or steel including access doors, dampers, metal radiation enclosures, and fire hose cabinets.
    - (B) In occupied areas of the building, touch up any damage to prime coat resulting from shipping or installation and leave ready for final painting under Division 9.
  - (iv) Field painting:
    - (A) Except where specifically noted in this section, all paint shall be ready-mixed and pre-tinted. Agitate all paint prior to and during application to ensure uniform color, gloss, and consistency.
    - (B) Thinner addition shall not exceed manufacturer's printed recommendations. Do not use kerosene or other organic solvents to thin water-based paints.
    - (C) Where paint is to be sprayed, thin according to manufacturer's current guidelines.
    - (D) Apply each coat to uniform coating thickness in accordance with manufacturer's instructions, not exceeding manufacturer's specified maximum spread rate for indicated surface; thins, brush marks, roller marks, orange-peel or other application imperfections are not permitted.

**BASIC MECHANICAL REQUIREMENTS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15010  
PAGE 9 OF 9**

**JUNE 2018**

- (E) Allow manufacturer's specified drying time and ensure correct coating adhesion, for each coat before applying next coat.
- (F) Inspect each coat before applying next coat; touch-up surface imperfections with coating material, feathering and sanding if required; touch-up areas to achieve flat, uniform surface without surface defects visible from 1500mm (5'-0").
- (G) Remove dust and other foreign materials from substrate immediately prior to applying each coat.
- (H) Where paint application abuts other materials or other coating color, terminate coating with a clean sharp termination line without coating overlap.
- (I) Where colour changes occur between adjoining spaces, through framed openings that are of same colour as adjoining surfaces, change colour at outside stop corner nearest to face of closed door.
- (J) Re-prepare and re-coat unsatisfactory finishes; refinish entire area to corners or other natural terminations.

**END OF SECTION**

**1. General**

- (a) Related work
  - (i) Other Divisions
    - (A) Refer to other divisions of the Specifications and to the Drawings for work related to the mechanical work to avoid interferences with work of other trades (and other contractors) and to ensure proper completion of the work as a whole.
- (b) General Construction Requirements
  - (i) Applicable Codes and Standards
    - (A) Ontario Building Code-2012
    - (B) Occupational Health and Safety Act and Regulations for Construction Projects, Ontario Regulation 691.
    - (C) Owners Health and Safety Requirements
  - (ii) Measurements and Deviations
    - (A) Where any parts of the mechanical work are specifically located by dimensions on the Drawings, check and verify these dimensions on site prior to installation.
    - (B) Before installing piping, review electrical Drawings with mechanical Drawings
      - (I) Where interference may occur and departures from arrangements as shown are required, consult with other trades involved, come to agreement as to changed locations or elevations and obtain approval of the Consultant for proposed changes before proceeding with the work.
    - (C) Examine work of other trades or contractors, prior to commencement of mechanical installations.
      - (I) Report in writing, to the Consultant, any discrepancies which will affect mechanical installations.
      - (II) Failure to do so shall be considered acceptance of the conditions.
    - (D) Where site conditions require minor deviations from indicated arrangements or locations, make such changes on approval of the Consultant without additional cost to the Owner.
    - (E) Should any discrepancies occur during installation of mechanical work which will necessitate major revisions to the mechanical trades work or the work of other trades or contractors, notify the Consultant immediately and obtain written authorization before proceeding with the work.
  - (iii) Building Attachments:

- (A) Obtain prior written Consultant's approval before drilling, cutting or welding of the building steel or building structure for erection of materials or equipment.
- (iv) Overloading
  - (A) During installation of mechanical work, do not load any part of the building structure with a load greater than it is capable of bearing.
    - (I) Should any accident occur or damage result through the violation of this requirement, the contractor shall be held solely responsible.
  - (B) Design temporary supports used during installation as being equivalent to permanent supports.
  - (C) Remove temporary supports at completion of work.
- (v) Cutting and Patching
  - (A) Do not cut, remove or burn structural parts or sections of the building, whether they are steel, concrete or masonry without the written authorization of the Consultant.
  - (B) Should cutting, repairing, and patching of previously finished work of other trades be required to allow installation of mechanical work, pay all costs for the trade concerned to perform the work.

**2. Products**

- (a) Building Attachments
  - (i) Welding Studs
    - (A) Maximum size: 10 mm (3/8") for attaching miscellaneous materials and equipment to building steel.
    - (B) If the weight of materials or equipment require bolts or studs larger than 10mm (3/8") diameter, use steel clips or brackets, secured to building steel by (welding or) bolting as approved by the Consultant.
    - (C) Acceptable Manufacturers:
      - (I) Graham
      - (II) Omark
      - (III) Nelson
      - (IV) Or approved equivalent
  - (ii) Self drilling expansion type concrete inserts:
    - (A) To secure miscellaneous equipment and materials to masonry or concrete construction already in place.
    - (B) Of sufficient number and size to prevent concrete from breaking away.

- (C) The use of powder or power actuated fasteners will not be allowed unless prior written approval is obtained from the Consultant.
- (D) Acceptable Manufacturers:
  - (I) ITW "Redhead"
  - (II) Star "SSS"
  - (III) USM "Parabolt"
  - (IV) Or approved equivalent
- (iii) Supports for any suspended items:
  - (A) Do not fasten/attach to or extend through steel pan type roofs or through concrete slab roofs.
- (iv) Beam clamps:
  - (A) 2-bolt design and of such type that the rod load is transmitted only concentrically to the beam web centreline.
  - (B) The use of "C" and "I" beam side clamps, etc., will not be allowed without written consent of the Consultant.
  - (C) Acceptable Manufacturers:
    - (I) Grinnell
    - (II) Myatt
    - (III) Carpenter & Paterson
    - (IV) Or approved equivalent
- (v) Truss or steel joist roof or floor framing:
  - (A) Locate hangers at or within 150mm (6") of the joist top or bottom chord panel points
  - (B) Otherwise provide additional structural steel as required where hanger spacing does not coincide with joist spacing.
  - (C) Transmit hanger load only concentrically to the supporting truss or joist.
- (vi) Secondary structural steel members between trusses and/or joists:
  - (A) Locate at or within 150mm (6") of top or bottom chord panel points.
  - (B) Where the secondary structural steel member cannot be located at or near a truss or joist panel point, provide additional diagonal structural steel web member/members designed for the applicable load to the nearest panel point in the opposite chord member.
    - (I) The above condition may be waived if the load to be suspended between panel points is not in excess of 45kg (100 LB).
  - (C) Diagonal hangers which will induce lateral stresses in the chord members of the joist will not be permitted.

- (b) Sealants, Concrete and Grouts
  - (i) Pipe Sleeve Seals
    - (A) Acceptable Manufacturers:
      - (I) Thunderline "Link-Seal" Series LS
      - (II) Century-Line
      - (III) Metraflex
      - (IV) Or approved equivalent
  - (ii) Concrete
    - (A) Strength: Unless otherwise noted, 25 MPa concrete: to CSA-A23.1/A23.2
  - (iii) Concrete Grouts
    - (A) Acceptable Manufacturers:
      - (I) Sternson "M-Bed Standard"
      - (II) Sika "SikagROUT 212"
      - (III) Master Builders "Construction Grout"
      - (IV) Meadows "CG-86"
      - (V) Euclid "Euco NS Grout"
      - (VI) CPD "Non-Shrink Grout"
      - (VII) Or approved equivalent
  - (iv) Bonding Agents
    - (A) Acceptable Manufacturers:
      - (I) Sika "Sikadur 32" Hi-Mod
      - (II) Or approved equivalent
  - (v) Caulking Compounds
    - (A) Acceptable Manufacturers:
      - (I) Denso-Plast
      - (II) Or approved equivalent
  - (vi) Firestopping
    - (A) ULC listed fire stopping assembly
    - (B) Rating to suit wall and floor penetrations
    - (C) Acceptable Manufacturers:
      - (I) Hilti
      - (II) Fire Stop Systems
      - (III) Dow Corning
      - (IV) 3M
      - (V) Tremco
      - (VI) A/D Fire Protection System
      - (VII) Johns Manville
      - (VIII) Or approved equivalent



- (c) Miscellaneous
  - (i) Access Doors
    - (A) Size:
      - (I) Minimum size: 300mm x 300mm (12" x 12") size, unless otherwise specified on the Drawings or in other divisions of the Specifications, or as required to replace or repair said equipment.
      - (II) Provide 600 x 600 size access doors where personnel entry is required.
      - (III) Where access doors are required to be located in fire rated walls, floors and ceilings, provide ULC listed and labelled units having a minimum rating in hours per OBC for the structure being penetrated.
    - (B) Material:
      - (I) Fabricated of 2.5mm (12 ga) bonderized steel.
      - (II) Fabricated of 2.5mm (12 ga) stainless steel in areas finished with tile or marble surfaces.
      - (III) Flush mounted, concealed hinges and screwdriver lock.
      - (IV) Plast lock and anchor straps.
      - (V) Doors to be of a type and fire rating to suit the particular type of wall or ceiling construction in which they are to be installed.
    - (C) Acceptable Manufacturers:
      - (I) E.H. Price
      - (II) Titus
      - (III) Controlled Air
      - (IV) Williams (S.M.S.)
      - (V) Acudor
  - (ii) Or approved equivalent Isolating Unions
    - (A) Acceptable Manufacturers:
      - (I) Epco
      - (II) Marpac "Petro"
      - (III) Corrosion Service
      - (IV) Or approved equivalent

### 3. Execution

- (a) Equipment
  - (i) General
    - (A) Install equipment in a compact, neat and workmanlike manner.
      - (I) Align, level and adjust for satisfactory operation.
      - (II) Install in such a manner that connecting and disconnecting of piping and accessories can be made readily and that all parts are easily accessible for inspection, operation, maintenance and repair.

- (B) Install and start up items of equipment in accordance with the manufacturer's printed installation and operating instructions.
- (ii) Ceiling or Wall Mounting
  - (A) Where ceiling or wall mounting is indicated or required, provide a suspended bracket or shelf.
  - (B) Materials: standard steel members and steel plates of welded construction throughout.
  - (C) Attach to building steel with rod hangers and beam clamps, or attach to precast structure as the case may be.
  - (D) Place additional structural steel as required between building steel where beam spacing does not meet requirements.
  - (E) Do not use inserts unless specifically shown on the Drawings or approved by the Consultant for any particular item of equipment.
  - (F) Attach brackets or shelves to vertical member or sections of the building structure as hereinbefore specified.
- (iii) Suspended Equipment Support: Provide double locknuts on suspended equipment supports as follows:
  - (A) Upper attachment
    - (I) Beam clamp: provide a double nut on end of beam clamp tie rod.
    - (II) Supplemental steel: double nut all mechanical fasteners fixing supplemental steel to building structural steel.
  - (B) Middle attachment
    - (I) Upper load bearing point, to beam clamp: not applicable.
    - (II) Upper load bearing point, to supplemental steel: double nut on top of load bearing point, single locknut on underside of bearing point
    - (III) Lower load bearing point, all: double nut on underside of bearing point, single locknut on top of bearing point.
  - (C) Lower attachment
    - (I) Trapeze hanger or equipment fastening: refer to middle attachment requirements above.
  - (D) Apply Loctite 242 to the second nut (and matchmark both nuts).
- (b) Miscellaneous Steel
  - (i) General
    - (A) Hang or support equipment, piping etc., with miscellaneous structural supports, platforms, braces as may be required unless Drawings or other Sections of the Specifications state otherwise.
  - (ii) Materials and Fabrication

- (A) Conform to:
  - (I) CAN/CSA-S16.1-M Limit Status Design of Steel Structures.
  - (II) CSA-G40.20/G40.21 grade 300W for General requirement for rolled or welded Structural Quality Steel CSA W47.1 - for qualification of welders.
  - (III) CSA W48.1-M - for electrodes (only coated rods allowed).
  - (IV) CSA W59-M - Welded Steel Construction (Metal Arc Welding).
  - (V) CSA W117.2 - for safety in welding.
- (B) Construction:
  - (I) Welded construction wherever practicable.
  - (II) Chip welds to remove slag, and grind smooth.
  - (III) Bolted joints allowed for field assembly using high strength steel bolts.
- (iii) Painting and Cleaning
  - (A) Clean steel to Steel Structures Painting Council SSPC-SP6, Commercial Blast Cleaning.
  - (B) Apply one coat of oil alkyd primer conforming to CISC/CPMA 2.75 to all miscellaneous steel.
  - (C) In the field, touch up all bolt heads and nuts, previously unpainted connections and surfaces damaged during erection with primer as hereinbefore specified.
  - (D) Apply two coats of primer to all surfaces which will be inaccessible after erection.
  - (E) Thoroughly remove all foreign matter from steelwork on completion of installation.
- (c) Concrete Inserts
  - (i) General
    - (A) Install inserts required for attachment of hangers, either for suspension of piping or equipment.
    - (B) For masonry or poured concrete construction use expansion type units. Insert into the concrete after concrete has cured. Do not use anchors or inserts installed by explosive means.
- (d) Fire Stopping
  - (i) Submittals
    - (A) Submit shop Drawings, including the following information:
      - (I) ULC/CUL listing number
      - (II) Installation Drawings for each type of penetration
      - (III) Installation materials

- (ii) General
  - (A) Seal piping, ductwork, conduits and miscellaneous support steel penetrating fire separations.
  - (B) Install fire stopping in accordance with manufacturer's instructions and ULC listing requirements.
  - (C) Provide a written report on completion of fire stopping, by area or floor if necessary, indicating the work is completed and ready for inspection. Do not cover over fire stopping, including installation of walls and ceilings, until work is inspected.
- (e) Access Doors
  - (i) General
    - (A) Supply access doors for installation by other trades in walls or ceilings where accessibility is required for the operation and/or maintenance of:
      - (I) Concealed valves
      - (II) Traps
      - (III) Cleanouts
      - (IV) Controls equipment
- (f) Adjustment and Operation of Systems
  - (i) General
    - (A) When the work is complete:
      - (I) Adjust equipment items of the various systems for proper operation within the framework of design intent, and the operating characteristics as published by the equipment manufacturer.
      - (II) Complete additional instructions are specified under the respective Sections of Division 15.
    - (B) The Consultant reserves the right to require the services of an authorized representative of the manufacturer in the event that any item of equipment is not adjusted properly.
      - (I) Arrange for such services and pay all costs thereof.
      - (II) After completion of adjustments, place systems in full operating condition and advise the Consultant that the work is ready for acceptance.
- (g) Acceptance
  - (i) General
    - (A) After all equipment has been installed and adjusted and all systems balanced:
      - (I) Conduct performance tests in the presence of the Consultant and the Owner.

- (II) Arrange the time for these tests at the convenience of the Consultant and the Owner.
    - (III) Conduct tests under climatic circumstances to ensure complete and comprehensive tests and of such a manner and duration as the Consultant may deem necessary.
  - (B) During these tests:
    - (I) Demonstrate the correct performance of all equipment items and of the systems they comprise.
    - (II) Should any system or any equipment item fail to function as required, make such changes, adjustments or replacements necessary to meet performance requirements.
    - (III) Repeat tests until requirements have been fully satisfied and all systems accepted by the Consultant.
- (h) Coordination With Testing and Balancing work
  - (i) General
    - (A) Review with the Mechanical Contractor before fabrication:
      - (I) Location of balancing devices
      - (II) Test connections
      - (III) Access openings
    - (B) Report conditions which could affect optimum system performance.
    - (C) Inspection:
      - (I) Assure that all testing, balancing and metering devices are installed properly and in pre-selected locations.
      - (II) Report any errors to the Consultant.
  - (ii) Mechanical Contractor Coordination
    - (A) Cooperate with the Testing and Balancing Firm.
    - (B) Provide the following assistance and/or services:
      - (I) Provide immediate labour from pertinent mechanical trades and tools, equipment and materials to make equipment and system alterations and adjustments, as required including control adjustments.
      - (II) Make available all equipment data (Shop Drawing performance data and operating instructions) to the Testing and Balancing Firm.
    - (C) As part of the coordination effort, the Mechanical Contractor shall be fully responsible for systems constructed, installed and adjusted to Provide optimum performance as required by design intent. Any re-adjusting required as the result of spot checks by the Consultant shall be done at no increase in Contract Price.

- (D) Nothing contained in this Section voids the responsibility of the Mechanical Contractor (Subcontractor) for systems constructed, installed and adjusted to achieve the design intent.

**END OF SECTION**

## PIPES, HANGERS AND SUPPORTS

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 15060  
PAGE 1 OF 7

JUNE 2018

### 1. General

#### (a) Submittals

##### (i) Shop Drawings

- (A) Submit Shop Drawings in accordance with 15010 “Basic Mechanical Requirements”.
- (B) Submit layout Drawings showing each type and placement of manufactured, pre-fabricated roof piping support system. Submit details for fixing roofing pad to roof.

### 2. Products

#### (a) Materials

##### (i) Acceptable Manufacturers

- (A) Hangers:
  - (I) Anvil
  - (II) Myatt
  - (III) Carpenter & Paterson
  - (IV) Hunt
  - (V) B-Line
  - (VI) Or approved equivalent
- (B) Insulation shields:
  - (I) Anvil
  - (II) Myatt
  - (III) Pipe Shields Inc.
  - (IV) Or approved equivalent

##### (ii) Lower Attachment

- (A) Clevis hanger – steel pipe
  - (I) Standard weight black steel clevis hangers with level adjustment and locknut
  - (II) Anvil figures 260 and 300.
  - (III) For figure 260, provide clevis bolt spacer on insulated piping.
  - (IV) Or approved equivalent
- (B) Clevis hanger – copper pipe
  - (I) Light weight black steel clevis hangers with copper coloured finish and plastic insert to suit local authority requirements, with level adjustment and locknut.
  - (II) Anvil figure CT-65.
  - (III) Or approved equivalent
- (C) Roller hanger
  - (I) Adjustable roller type hangers with locknuts.

## PIPES, HANGERS AND SUPPORTS

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 15060  
PAGE 2 OF 7

JUNE 2018

- (II) Rollers of sufficient width to clear the outside diameter of the insulation on the piping.
  - (III) Support rollers at both ends, either by a yoke, swivel type hanger or by two adjustable rods with locknuts (double locknuts).
  - (IV) Anvil figure 177 or 171 as applicable.
  - (V) Or approved equivalent
- (iii) Insulation Protection
- (A) Insulation saddles, for welding to pipe:
    - (I) Anvil figure 160-165 as applicable.
    - (II) Or approved equivalent
  - (B) Insulation shields :
    - (I) Either shop fabricated, or manufactured plates of the size required to properly fit the outside diameter of the pipe insulation.
    - (II) Anvil figure 167, modified with holes at each end to suit 12 mm wide. stainless steel band clamps.
    - (III) Shop fabricate bearing plates conforming to the following table for various pipe sizes:

Pipe Size (NPS)	Length of Plate mm	Thickness of Plate mm
½ to 2	300	1.2
3 to 4	300	1.52
    - (IV) Form the bearing plates to the O.D. of the adjoining pipe insulation and extend the plate up to the horizontal centre line of the pipe.
- (iv) Middle Attachment
- (A) Machine threaded rods
    - (I) Black steel finish in concealed areas.
    - (II) Galvanized finish in mechanical rooms and exposed areas.
- (v) Upper Attachments
- (A) Beam clamps:
    - (I) Malleable iron C-Clamp with retaining clip, FM approved: Anvil figure 87, NPS ½ to NPS 2; maximum load: 180 kg.
    - (II) Malleable beam clamp FM approved: Anvil figure 218, NPS 2½ to NPS 8; maximum load: 540 kg.
    - (III) For pipes NPS 10 and larger, provide supplementary steel members supported from structural steel.
    - (IV) Do not use top beam clamps.
  - (B) Concrete inserts (new construction):
    - (I) Single hanger: Malleable iron body and nut, universal nut style: Anvil figure 282, to NPS 8.



## PIPES, HANGERS AND SUPPORTS

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 15060  
PAGE 3 OF 7

JUNE 2018

- (II) Continuous hanger: cold formed hot dipped galvanized strip steel with end caps: Power-Strut PS 449.
- (C) Concrete clevis plates (existing concrete):
  - (I) Carbon steel plate, with clevis attachment.
  - (II) Anvil figure 49.
  - (III) Do not use explosive driven anchors.
  - (IV) Or approved equivalent
- (vi) Pipe Guides
  - (A) Outer hinged housing with sliding spider clamp.
    - (I) Carbon steel, black steel finish.
    - (II) Anvil figure 256.
    - (III) Or approved equivalent

### 3. Execution

#### (a) Installation

##### (i) General

- (A) Support or suspend piping with necessary hangers, structural supports and/or brackets, to prevent sagging, warping and vibration and to allow for movement due to expansion and contraction. Provide adequate number of expansion compensators of suitable materials as required to allow movement of pipe work.
- (B) Place hangers and supports close to fittings, elbows, valves and/or other heavy parts.
- (C) Do not allow loads of any nature to be transmitted through the piping connections to equipment not specifically designed for such loads.
  - (I) Where flexible connections are not called for at connections to equipment, support the pipe by stands attached to both pipe and supporting structure so that force in any direction is not transmitted to the equipment.
- (D) Place suitably dampened spring hangers at the first three supports from the equipment connection on piping subject to excessive movement or shock from any source, thermal expansion and contraction.
  - (I) Where it is evident that no undue loads will be transmitted to the equipment by the system concerned, i.e. small bore connections to comparatively large equipment, cold service piping not subject to shock, etc., then spring hangers may be omitted and standard hangers used.
- (E) Do not hang pipe from another pipe unless specifically shown on the Drawings.

##### (ii) Hanger Selection

## PIPES, HANGERS AND SUPPORTS

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 15060  
PAGE 4 OF 7

JUNE 2018

- (A) Select lower attachment and insulation protection based on the following, unless otherwise shown on Drawings:

Pipe Size NPS	Operating Temperature		
	Less than 21°C	Between 21°C and 43°C	Greater than 43°C
	Insulated	Non-insulated	Insulated
2 and less, steel	Clevis and Shield	Clevis only	Clevis
2½ to 8, steel	Clevis and Shield	Clevis only	Roller and Saddle
½ to 4, copper	Clevis and Shield	Clevis	Clevis and Shield

- (B) Install temporary spacers between the insulation Shield and the pipe equal to the thickness of insulation specified. Refer to Section 15080 "Mechanical Thermal Insulation".
- (iii) Saddles and Roller Supports
- (A) Place saddles at roller supports for piping carrying liquids at 43°C (110°F) or higher.
- (B) Weld saddles to black or galvanized steel piping.
- (C) Refinish galvanized surfaces destroyed by the welding with a zinc rich paint such as W.R. Meadows "Galvafroid", Kerry Industries "ZRC" or Niagara Paint Inc. "PL052898" or Approved Equivalent.
- (iv) Insulation Shields
- (A) Place insulation shields at pipe supports for pipes carrying liquids at 21°C (70°F) or less.
- (B) Field or factory punch a hole at each end of the shield to allow a 12 mm stainless steel band clamp to pass through opening.
- (C) Secure shields with 2@ 12 mm stainless steel band clamps per shield.
- (v) Hanger Spacing - General
- (A) Horizontal runs of plumbing and drainage piping: to hanger spacing requirements of the Ontario Building Code.
- (B) Place additional hangers in locations where there are concentrated loads such as valves, specialties, etc.
- (vi) Hanger Spacing - Black Steel and Galvanized Pipe
- (A) For horizontal runs of black or galvanized steel pipe, other than for plumbing service:

# PIPES, HANGERS AND SUPPORTS

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15060  
PAGE 5 OF 7**

**JUNE 2018**

- (B) Maximum distances between supports and with minimum diameter rods as follows:

Pipe Size NPS	Rod Size mm	Spacing	
		Water Service m	Gas, Steam or Air m
½ Thru 1	10	2.0	2.7
1¼	10	2.0	2.7
1½	10	2.7	3.6
2	10	3.0	3.9
2½	12	3.3	4.2
3	12	3.6	4.5
4	16	4.2	5.0
6	19	5.0	6.4
8	22	5	6.8

- (vii) Hanger Spacing - Copper Tubing

- (A) For horizontal runs of copper tubing for services other than plumbing:
- (B) Maximum distances between supports and with minimum diameter rods as follows:

Pipe Size NPS	Rod Size mm	Spacing	
		Water Service m	Gas, Steam or Air m
Thru ¾	10	1.5	1.8
1	10	1.8	2.4
1¼	10	2.0	2.7
1½	10	2.4	3.0
2	10	2.4	3.3
2½	12	2.7	3.9
3	12	3.0	4.2
4	16	3.6	4.8

- (viii) Hanger Spacing - PVC or CPVC

- (A) For horizontal runs of PVC or CPVC for services other than plumbing.
- (B) Maximum distances between supports and with minimum rods sizes for un-insulated pipe as follows.

Pipe Size nps	Rod Size mm	Spacing			
		PVC 40	CPVC 40	PVC 80	CPVC 80
½	6	1.2	1.2	1.2	1.2
¾	6	1.2	1.2	1.2	1.5

## PIPES, HANGERS AND SUPPORTS

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 15060  
PAGE 6 OF 7

JUNE 2018

Pipe Size nps	Rod Size mm	Spacing			
		PVC 40	CPVC 40	PVC 80	CPVC 80
1	6	1.2	1.5	1.5	1.8
1¼	6	1.2	1.5	1.5	1.8
1½	6	1.5	1.8	1.8	1.8
2	6	1.5	1.8	1.8	2.0
2½	6	1.8	2.0	1.8	2.4
3	6	1.8	2.0	2.0	2.4
4	6	2.0	2.4	2.4	2.7
6	6	2.4	2.4	2.7	3.0

- (C) For insulated pipe, reduce spacing by 30%.
- (D) Do not restrain axial movement
- (E) Spacing based on fluids with specific gravity of 1.0 and 26°C 80°F. For other conditions, use other published data approved by the Consultant.
- (ix) Anchors and Guides
  - (A) Provide anchors as required to maintain permanent location of pipe lines.
    - (I) Construct anchors for steel or galvanized pipe of approved steel straps and/or rods.
    - (II) For anchoring copper lines, use copper plated anchors, or use insulation bands between tubing and clamps if steel straps or rods are used.
  - (B) Provide minimum two (2) pipe guides on each side of an expansion joint and expansion compensator.
    - (I) 1200 mm between each guide.
    - (II) Not more than 900 mm between last guide and start of expansion joint or expansion compensator.
  - (C) For special expansion joint/compensator or for special applications, where more than two guides on each side are required, follow manufacturer recommendations for location of guides.
- (x) Inserts
  - (A) In new construction, set inserts onto formwork prior to pouring of concrete.
    - (I) Provide a 200 mm length of rebar and wire through insert.
  - (B) Mechanical rooms and other areas of multiple pipe runs.
    - (I) Provide continuous type insert channels at 1800 mm intervals along route of piping.
    - (II) Provide a 200 mm length of rebar and wire through insert.
- (xi) Upper Attachments - Structural Steel
  - (A) For pipe size NPS 10 and larger supported from structural steel:

**PIPES, HANGERS AND SUPPORTS**

**UNION STATION**

**INSTALLATION OF DUAL FAUCETS HANDRYERS**

**AT YORK CONCOURSE WASHROOMS**

**CONTRACT NO.IT-2018-STNS-255**

**SECTION 15060**

**PAGE 7 OF 7**

**JUNE 2018**

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- (I) Provide supplementary structural steel and weld or bolt to structural steel.
- (II) Submit plan Drawings and details to the structural engineer for review.

**END OF SECTION**

**1. General**

- (a) Related Work
  - (i) Trenching, bedding and backfill:
    - (A) For all buried services and drainage structures.
  - (ii) Pipe Hangers and Supports
    - (A) To Section 15060 "Pipes, Hangers and Supports".
  - (iii) Piping
    - (A) Plumbing General Requirements Section 15400
- (b) Reference Standards
  - (i) Plumbing piping fabrication and installation
    - (A) Ontario Plumbing Code.
    - (B) Submit documentation of this certification with bid documents.
- (c) Submittals
  - (i) Shop Drawings
    - (A) Submit Shop Drawings in accordance with Section 15010 "Basic Mechanical requirements".
    - (B) Submit shop Drawings for the following items and indicate where they are used and with which system
      - (I) Pipe materials
      - (II) Fittings
      - (III) Valves
  - (ii) Operation and Maintenance Data:
    - (A) Submit printed operation instructions and maintenance data in accordance with Section 15010 "Basic Mechanical requirements".

**2. Products**

- (a) Escutcheon Plates
  - (i) Materials:
    - (A) Heavy chrome plated cast brass or stamped metal.
    - (B) Two piece construction complete with substantial hinges and positive latches.
    - (C) Fit all plates with tempered springs to ensure positive attachment to the pipe.

## PIPES, FITTINGS AND VALVES

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15110  
PAGE 2 OF 15**

**JUNE 2018**

- (b) Pipe and Fittings – Pressure Pipe – Non Ferrous (use for domestic cold water, hot water and hot water recirc system)
  - (i) Copper Tubing
    - (A) Tubing
      - (I) Type “L” hard drawn copper tubing: to ASTM B88
    - (B) Fittings
      - (I) Wrought copper, solder joint, pressure type
      - (II) Solder to threaded adaptors as screwed valves or equipment
    - (C) Unions
      - (I) All bronze construction with ground joint
      - (II) Either solder joint or screwed ends as required
  - (ii) Copper Pipe
    - (A) Pipe
      - (I) Seamless copper pipe standard sizes: to ASTM B42 , or,
      - (II) Seamless red brass pipe standard sizes: to ASTM B43
    - (B) Fittings
      - (I) Brass or bronze threaded water fittings: to ANSI B16.15 “Cast Bronze Threaded Fittings (Classes 125 and 250)”
    - (C) Flanges and Flange Fittings
      - (I) Brass or bronze flanges and flange fittings: to ANSI B16.24 “Bronze Pipe Flanges and Flanged Fittings (Class 150 and 300)”
    - (D) Flange Gaskets
      - (I) 1.6 mm thick red rubber, full face type
    - (E) Flange Bolting
      - (I) Semi-finished hex head machine bolts, carbon steel: to ASTM A193 Grade B7
      - (II) Semi-finished hex nuts, carbon steel: to ASTM A194 Grade 2H
- (c) Valves
  - (i) General
    - (A) Gate valves re-packable under pressure, when fully open
    - (B) Plug valves packed with lubricant suitable for service
    - (C) Globe and check valves provided with composition discs suitable for type of service
    - (D) Renewable seats on iron body valves
    - (E) Materials

ASTM B62	Bronze valves - gate, globe and check - steam rated 125 and 150 psig
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**PIPES, FITTINGS AND VALVES**

**UNION STATION  
 INSTALLATION OF DUAL FAUCETS HANDRYERS  
 AT YORK CONCOURSE WASHROOMS  
 CONTRACT NO.IT-2018-STNS-255**

**SECTION 15110  
 PAGE 3 OF 15**

**JUNE 2018**

ASTM B61	Bronze valves - gate, globe and check - steam rated 200 and 350 psig
ASTM B283 C3770	Brass valves - ball valves
ASTM A126 Class B	Iron valves - gate, globe and check

(F) Markings

MSS-SP-25	Steam or WOG (water, oil and gas) rated pressure, manufacturer's trademark, size
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(G) End Connections

ANSI B2-1	Threaded ends
ANSI B16.18	Soldered ends
ANSI B16.10	Face to face dimensions

(H) Testing and Materials

MSS-SP-80	Bronze valves, gate, globe and check
MSS-SP-70	Iron gate valves
MSS-SP-85	Iron globe valves
MSS-SP-71	Iron check valves
MSS-SP-67	Butterfly valves

(ii) Gate Valves

(A) GTV 1

- (I) Class 125 bronze body, screwed ends, solid or split wedge disc, rising stem
- (1) Crane Fig 1700
- (2) Jenkins Fig 990AJ
- (3) Grinnell Fig 3010
- (4) Newman Hattersley Fig T607
- (5) Toyo Red-White Fig 293
- (6) Kitz Fig 24
- (7) or Approved Equivalent

(B) GTV 2

- (I) Class 125 iron body, OS&Y bronze mounted, flanged ends
- (1) Crane Fig 465 ½
- (2) Jenkins Fig 454J
- (3) Grinnell Fig 6020A
- (4) Newman Hattersley Fig 504



**PIPES, FITTINGS AND VALVES**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15110  
PAGE 4 OF 15**

**JUNE 2018**

- (5) Toyo Red-White Fig 421JA
- (6) Kitz Fig 72
- (7) or Approved Equivalent
- (C) GTV 3
  - (I) Class 125 bronze body, screwed ends, rising stem, wedge disc, screw-in bonnet
  - (1) Crane Fig 428
  - (2) Jenkins Fig 990AJ
  - (3) Grinnell Fig 3010
  - (4) Newman Hattersley Fig 608
  - (5) Toyo Red-White Fig 293
  - (6) Kitz Fig 24
  - (7) or Approved Equivalent
- (D) GTV 4
  - (I) 175 psi working pressure, to AWWA C-500, non-rising stem, iron body, bronze mounted, renewable seat rings, stuffing box and packing gland, mechanical joint ends. Valve box to grade, with guide plate and cover identifying the service. Valves and valve box finish: two heavy coats of coal tar enamel. Provide one extension key for each valve box installed.
  - (II) Valve
    - (1) Jenkins Fig 2397A
    - (2) or Approved Equivalent
  - (III) Box
    - (1) Bibby VB Series
    - (2) Canada Valve Fig 1322
    - (3) Mueller Fig A769
    - (4) or Approved Equivalent
- (E) GTV 5
  - (I) 175 psi WOG, ULC and FM approved, iron body, bronze mounted, cast iron disc, resilient seat, mechanical joint ends, non-rising stem, square operating nut. Finish: two heavy coats of coal tar enamel
  - (1) Clow
  - (2) Mueller Canada
  - (3) or Approved Equivalent
- (F) GTV 6
  - (I) 175 psi WOG, ULC and FM approved, iron body, bronze mounted, OS&Y, flanged ends
  - (1) Clow
  - (2) Mueller Canada
  - (3) or Approved Equivalent
- (G) GTV 7
  - (I) Class 125, bronze body, wedge disc, non-rising stem, solder ends
  - (1) Crane Fig 1701
  - (2) Jenkins Fig 993AJ

## PIPES, FITTINGS AND VALVES

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 15110  
PAGE 5 OF 15

JUNE 2018

- (3) Toyo Red-White Fig 281
  - (4) Kitz Fig 41
  - (5) or Approved Equivalent
- (iii) Globe Valves
  - (A) GLV 1
    - (I) Class 125 bronze body, screwed ends, solid or split wedge disc, rising stem
    - (1) Crane Fig 7
    - (2) Jenkins Fig 106BJ
    - (3) Grinnell Fig 3240
    - (4) Newman Hattersley Fig 13
    - (5) Toyo Red-White Fig 221
    - (6) or Approved Equivalent
  - (B) GLV 2
    - (I) Class 125 iron body, bronze mounted, yoke bonnet, composition disc, renewable and regrindable bronze set ring, flanged
    - (1) Crane Fig 351
    - (2) Grinnell Fig 6200A
    - (3) Jenkins Fig 2342J
    - (4) Newman Hattersley Fig 731
    - (5) Toyo Red-White Fig 400
    - (6) Kitz Fig 76
    - (7) or Approved Equivalent
  - (C) GLV 3
    - (I) Class 125 bronze body, composition disc and solder ends
    - (1) Crane Fig 1702
    - (2) Jenkins Fig 995AJ
    - (3) Toyo Red-White Fig 222
    - (4) Grinnell Fig 3210SJ
    - (5) Kitz Fig 10
    - (6) or Approved Equivalent
- (iv) Ball Valves
  - (A) BV 1
    - (I) Class 150-600 WOG brass body, screwed ends, teflon ends, teflon seats, teflon packing, bronze or chrome plated, solid ball and lever handle with plastic protector, AGA and CGA approved for gas service
    - (1) Crane Fig F9203-B
    - (2) Jenkins Fig 201J
    - (3) Worcester Econ-O-Mite Fig 4211T
    - (4) Grinnell Fig 171-N
    - (5) Newman Hattersley Fig 1989
    - (6) Neles-Jamesbury Fig 351
    - (7) Toyo Red-White Fig 5044A
    - (8) Kitz Fig 58
    - (9) M.A.S. Fig B-3

## PIPES, FITTINGS AND VALVES

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 15110  
PAGE 6 OF 15

JUNE 2018

- (10) or Approved Equivalent
- (B) BV 2
  - (I) Class 150-600 WOG brass body, soldered ends, teflon ends, teflon seats, teflon packing, bronze or chrome plated, solid ball and lever handle with plastic protector, AGA and CGA approved for gas service
    - (1) Crane Fig F9223-B
    - (2) Jenkins Fig 201J or 202J
    - (3) Worcester Econ-O-Mite Fig 4211
    - (4) Grinnell Fig 171-S
    - (5) Newman Hattersley Fig 1969
    - (6) Neles-Jamesbury Fig 341
    - (7) Toyo Red-White Fig 5044A or 5049A
    - (8) Kitz Fig 58 or 59
    - (9) Apollo Fig 77-100 or 77-200
    - (10) or Approved Equivalent
- (v) Butterfly Valves
  - (A) BFV 1
    - (I) Class 150 full tapped lug type, cast iron body, bronze disc, 304 stainless steel shaft, EPDM seat, notched top plate
    - (II) Lever lock handle for valve sizes NPS 6 and smaller
    - (III) Worm gear operator with handwheel for valves NPS 8 and larger
      - (1) Crane Fig 44 BXZ
      - (2) Keystone Fig FH12-CBJ-2
      - (3) Jenkins Fig 2232Elj
      - (4) Newman Hattersley Fig 45-313321/45-313322
      - (5) Grinnell Fig LC-8281-3-SF/LC-8282-3-SF
      - (6) Centerline Fig 200 Series
      - (7) De Zurik Fig BGS, L1/632
      - (8) Victaulic Vic-300 MasterSeal BFV
      - (9) Apollo Fig Series 143
      - (10) Bray Fig 31-119
      - (11) Challenger Fig 20-CSSE
      - (12) or Approved Equivalent
  - (B) BFV 2
    - (I) 175 psi ULC and FM approved full lug, cast iron body, bronze disc, EPDM seat,
    - (II) Lever lock handle for valve sizes NPS 6 and smaller
    - (III) Worm gear operator with handwheel for valves NPS 8 and larger
    - (IV) Indicator flag painted "safety yellow" and provision for mounting supervisory switch
      - (1) Grinnell
      - (2) or Approved Equivalent
  - (C) BFV 3, Domestic Water
    - (I) 2-1/2" - 6" (DN65-DN150), 300 psi (2065 kPa) maximum pressure rating, with copper tubing sized grooved ends. Cast

## PIPES, FITTINGS AND VALVES

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 15110  
PAGE 7 OF 15

JUNE 2018

bronze body to UNS C87850. (Alloy code shall be cast or stamped into the valve body.) Elastomer encapsulated ductile iron disc, ASTM A-536, Grade 65-45-12, with integrally cast stem. Bubble tight, dead-end or bi-directional service, with memory stop for throttling, metering or balancing service. Valve may be automated with electric, pneumatic, or hydraulic operators. Victaulic Series 608 or Approved Equivalent

### 3. Execution

#### (a) General Piping Construction Methods

##### (i) General

##### (A) Standards:

- (I) To ANSI Sections B31.1 to B31.9 as applicable to service, unless specified otherwise herein.
- (II) Do not use soldered joints in compressed air piping.

##### (B) Inserts, sleeves and anchors:

- (I) Avoid unnecessary cutting of masonry.
- (II) Supply inserts, sleeves, and anchors to other trades for building in as the Work proceeds.
- (III) Arrange with other trades to leave openings, slots and chases to accommodate later installation of mechanical Work.

##### (C) Inspect pipe and fittings for soundness and clean off all dirt and other foreign matter immediately prior to installation.

- (I) Reject all damaged items.

##### (D) Pipe layout:

- (I) Install piping in the most direct, straight and functional manner possible.
- (II) Except where otherwise shown, install all vertical lines plumb, and run horizontal lines parallel to building walls.
- (III) Install piping close to walls, partitions and ceilings.
- (IV) On multiple runs of piping, space piping to allow for installation of insulation and for proper servicing of valves.

##### (E) Conceal piping in finished areas and rooms within walls or ceilings, and in furred spaces elsewhere.

- (I) Provide access doors or panels as hereinafter specified for access to concealed piping specialties, etc.

##### (ii) Expansion and Contraction

##### (A) Installation:

- (I) Install all piping free from strain and distortion due to expansion and contraction: to Section 6, Chapter 3 of ANSI B31.1, except as hereinafter modified.
- (II) Allow for expansion and contraction by offsets, expansion U-bends or loops.
- (III) Expansion joints of any type will not be allowed unless

## PIPES, FITTINGS AND VALVES

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15110  
PAGE 8 OF 15**

**JUNE 2018**

specifically indicated on the Drawings or specified under another Section of this Division for a particular installation.

- (B) Expansion/contraction allowance criteria:
    - (I) Steel pipe: 25 mm movement per 30 m of pipe.
    - (II) Brass and copper pipe: 38 mm movement per 30 m of pipe
    - (III) Temperature difference: for each 55°C (100°F) temperature difference from 21°C (70°F) ambient.
    - (IV) Fabricate expansion bends in steel pipe from pipe sections and long radius welding elbows.
  - (C) Swing and swivel joints:
    - (I) On steam or hot water heating piping for connections from mains to risers and from risers to radiation and other heating units.
    - (II) Use at least five fittings from main to riser including tee in main.
    - (III) Use at least four fittings from riser to heating unit including tee in riser.
- (iii) Lines, Grades and Slopes
- (A) Install piping in conformity with elevations and grades indicated on the Drawings using axis lines and bench marks provided under General Construction.
    - (I) Verify such axis lines and bench marks.
    - (II) Lay out the Work and be responsible for lines, elevations, measurements, etc., required for installation of the Work.
  - (B) Slopes:
    - (I) Slope piping drains and sewers as indicated on the Drawings.
    - (II) Install so that slope between elevations shown on the Drawings is even and constant.
    - (III) Install liquid and air lines free of pockets and pitch to drain at low points in the line with valves or traps installed as required for drainage of the lines.
  - (C) Minimum slopes:
    - (I) As shown on Drawings; if not shown, then as follows.
    - (II) Drainage piping, NPS 3 and less: 1:50.
    - (III) Drainage piping, NPS 4 and larger: 1:100.
    - (1) In special circumstances as provided for under the Codes and Regulations and the express approval of the Consultant, drains of NPS 4 size and larger may be laid at a lesser slope.
    - (IV) Domestic water lines: pitch to low points so that all lines may be completely drained.
    - (V) Hot water heating lines: slope up 1:500 in direction of flow.
    - (VI) Compressed air, natural gas, fuel oil: slope down 1:1000 in direction of flow.
  - (D) Where pipe slope causes pipe to rise to top of ceiling space, or fall to bottom of structural members, ceiling space or defined service space, Provide risers as follows:
    - (I) Domestic water lines: Provide drain valve at bottom of low

## PIPES, FITTINGS AND VALVES

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15110  
PAGE 9 OF 15**

**JUNE 2018**

- point, and Provide riser to increase elevation of piping.
    - (II) Hot water heating, chilled water and condenser water lines: provide automatic air vent, complete with drainage piping, at high point, provide drain valve at bottom of low point and Provide riser to lower elevation of pipes.
    - (III) Compressed air, fuel oil: Provide a minimum a 75 mm deep dirt pocket with capped end, drain valve and provide riser to increase elevation of piping.
    - (IV) Natural gas: Provide a drip pocket with capped end, drain valve and Provide riser to increase elevation of piping. Pocket depth to be the greater of: 75 mm deep or equal to diameter of pipe. Pocket diameter to be the lesser of: NPS 2 or gas main pipe diameter.
- (b) System Requirements
  - (i) Plumbing
    - (A) Install complete plumbing, drainage and vent piping for washrooms, etc, in accordance with the Ontario Building Code.
    - (B) Size vent lines based on developed pipe length and hydraulic load.
    - (C) Arrange piping within pipe spaces behind washroom fixtures to allow unimpeded access to piping for servicing.
  - (ii) Copper Pipe - Type L
    - (A) Provide dielectric unions or couplings at all connections between copper tubing and ferrous piping
  - (iii) Copper Pipe - Buried
    - (A) Provide dielectric unions at connection between cast iron or ductile iron water main and copper tubing
    - (B) When required by Municipal authority, provide 900 mm long copper gooseneck after corporation stop at connection to water main. Connection at water main to be at 45 degrees and gooseneck to have minimum 160 mm radius bend.
  - (iv) PVC - Buried - Pressure and Drainage Piping
    - (A) Provide a tracer wire directly over PVC pipe
  - (v) PVC Drainage, Waste and Vent Piping
    - (A) Below grade: install in accordance with CSA B182.11 and manufacturer's recommendations.
    - (B) Above grade: install in accordance with CSA B181.11 and B181.12 and manufacturer's recommendations.
    - (C) Provide fire stop seals on all fire separation penetrations, except at

## PIPES, FITTINGS AND VALVES

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15110  
PAGE 10 OF 15**

**JUNE 2018**

connections through concrete floor slabs to non-combustible water closets.

- (D) Do not use combustible piping in return air ceiling plenums or vertical riser shafts.

- (c) Sleeves

- (i) Installation Requirements

- (A) Provide where piping passes through foundations, above grade floors and walls.

- (B) Materials

- (I) Schedule 40 black steel pipe or type "K" copper tubing for installation in foundations or floors

- (II) 1 mm (20 ga.) galvanized sheet steel where installed in above grade walls.

- (C) Terminate sleeves flush with finished ceilings, walls and floors on grade.

- (I) For piping passing through floors above grade extend sleeve a minimum of 75 mm above the floor.

- (D) Sleeve sizes

- (I) Large enough to pass full thickness of pipe covering where same is used.

- (II) With sufficient clearance between pipe/insulation and sleeve to allow for any lateral movement of piping due to expansion and contraction.

- (E) Assume responsibility for the setting of all sleeves necessary for this Work in masonry walls during construction or in concrete forms before concrete is poured.

- (F) Coat exterior surface of all sleeves of ferrous material with a heavy asphalt emulsion.

- (ii) Foundation Sleeves

- (A) For pipes entering structures from below grade, seal the annular space between sleeve and pipe with prefabricated seals.

- (iii) Firestopping

- (A) Provide firestopping on pipes passing through firewalls, fire separation walls or through walls, partitions or floors which are considered as serving as firestops.

- (I) Provide at partitions around washrooms.

- (II) Seal the space around the pipe, in the sleeve, in accordance with Section 15050 "Basic Mechanical requirements".

- (iv) Future Services

- (A) Fill sleeves for future use with lime mortar.

## PIPES, FITTINGS AND VALVES

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15110  
PAGE 11 OF 15**

**JUNE 2018**

- (v) Escutcheon Plates
  - (A) Place escutcheon plates on bare piping passing through finished walls or floors.
- (d) Flashing
  - (i) Refer to Section 15050 "Basic Mechanical Material for details
- (e) Joints, Unions, Flanges and Fittings
  - (i) Pipe Joints
    - (A) Preparation
      - (I) Ream pipe ends and thoroughly clean all dirt, cuttings and foreign matter from pipe after cutting and threading.
      - (II) Thoroughly clean all fittings, valves and equipment before connections are made.
      - (III) Cut copper tubing with a tube cutter and clean the joining surfaces of the tubing and fitting with fine emery cloth. Wipe clean with a dry cloth.
    - (B) Soldered joints:
      - (I) Make soldered joints on copper tubing in accordance with the following usage:

	Service	Solder Type
1.	Domestic Hot and Cold Water	95/5 with matching flux
2.	Drainage, Waste, Vent	50/50 with matching flux
3.	Compressed air service	"Sil-Fos" silver solder or brazed.
  - (II) Do not use core type solder.
  - (C) Threaded joints:
    - (I) Use Teflon tape or Masters metallic compound with the compound applied to the male threads only and particular care taken to prevent the compound from reaching the interior of the pipe or fittings.
  - (ii) Unions and Flanges
    - (A) Provide unions or flanges in the following locations:
      - (I) For by-passes around equipment or control valves or devices in piping systems.
      - (II) At connection to steam traps and in by-passes around traps.
      - (III) At connections to equipment. Locate between shut-off valve and equipment.
      - (IV) In screwed or solder joint drainage tubing at inlet side of trap.
    - (B) If unions are concealed in walls, partitions or ceilings, build access



thereto.

- (C) Provide dielectric unions or isolating type companion flanges at all connections between copper tubing and ferrous piping.
  - (I) Brass body valves between ferrous piping and copper tubing is acceptable as a dielectric union.
- (D) Flange joints
  - (I) Assemble joints with appropriate flanges, gaskets and bolting.
  - (II) Allow clearance between flange faces such that the connections can be gasketed and bolted tight without undue strain on the piping system, with flange faces parallel and bores concentric.
  - (III) Centre gaskets on the flange faces so as not to project into the bore.
  - (IV) Lubricate bolts before assembly and Provide 2 hardened steel washers under the head of each unit to assure uniform bolt stressing.
  - (V) Machine off raised face flanges when joining to a flat companion flange and use a full face gasket.
  - (VI) Follow gasket manufacturer's instructions for correct bolting procedure.
  - (VII) Use calibrated torque wrench and tighten bolts in recommended sequence in four equal steps to required final torque value.
- (iii) Fittings
  - (A) Couplings
    - (I) Minimize couplings on runs of pipes.
    - (II) Do not use running couplings in any pipeline.
    - (III) NPS 2 and smaller: threaded coupling.
    - (IV) NPS 2½ and larger: welded joints.
  - (B) Fittings and ancillary items installed in systems operating at pressures in excess of 103 kPa:
    - (I) Register in accordance with CSA B51-M.
  - (C) Eccentric reducer fittings
    - (I) To provide proper drainage or venting of the lines.
    - (II) At change of pipe sizes.
    - (III) At connections to equipment and control valves.
    - (IV) Do not use bushings.
  - (D) Tee connections in welded piping
    - (I) Factory fabricated standard butt weld fittings.
    - (II) Bonney Forge "Weldolets", "Thredolets" or "Sockolets".
    - (III) Mitering, notching or direct welding of branches to mains is not permitted.
  - (E) Change of direction
    - (I) Use standard pipe fittings.
    - (II) Use long radius welded steel elbows unless short radius elbows are specifically authorized by the Consultant.

## PIPES, FITTINGS AND VALVES

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 15110  
PAGE 13 OF 15

JUNE 2018

- (III) Mitered joints or field fabricated pipe bends are not permitted.
- (F) Tees, copper tubing
  - (I) Direct connection of branch into main using "T-Drill" method may be used where allowed by the Code, in lieu of manufactured tee fittings.
- (f) Valves
  - (i) Installation
    - (A) General
      - (I) Wherever possible, source valves from one manufacturer.
    - (B) Where required
      - (I) At locations shown on the Drawings.
      - (II) At all piping connections to equipment.
      - (III) At all connections to control valves or control devices.
      - (IV) Where required for sectionalizing a system or floor.
      - (V) Check valves wherever required to ensure flow of liquid in one direction.
    - (C) Type
      - (I) Shut-off service: gate, butterfly type, and ball (quarter-turn).
      - (II) Throttling service: double regulating, globe or plug type for throttling purposes.
    - (D) Drain valves
      - (I) Hose thread outlet connection or valve with long nipple on outlet at all low points of each water system and above all riser or branch stop valves for proper drainage of lines.
    - (E) Valve chains
      - (I) Provide chain wheel operators and operating chain for valves located more than 2000 mm above floor or walkway.
      - (II) Provide chain of sufficient length to extend to within 2000 mm of operating platform or floor for free handing chains, or to within 1500 mm of floor in locations where chain can be secured to wall or column. Secure chain to wall or column with a wall hook.
      - (III) Chain wheels using rustproof chain complete with guide and of size recommended by valve manufacturer for proper operation of valve.
  - (g) Inspection and Testing
    - (i) Pressure Leak Testing
      - (A) Make specified pressure tests on all piping included in this Contract.
      - (B) Furnish all pumps, compressors, gauges and connectors necessary for the tests.
      - (C) Test sections as authorized by the Consultant to accommodate

## PIPES, FITTINGS AND VALVES

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15110  
PAGE 14 OF 15**

**JUNE 2018**

construction schedule. However, test complete systems on completion of the Work.

- (D) Conduct tests in the presence of:
    - (I) Consultant
    - (II) Personnel of governing authorities having jurisdiction
  - (E) Notify above personnel in ample time to permit them to be present.
  - (F) Conduct tests before piping is painted, covered or concealed.
  - (G) Disconnect pumps or compressors used for applying the test pressure, during the test period.
  - (H) Disconnect and/or remove equipment or specialties not designed to withstand the test pressure during the test and reconnect same after completion of test.
  - (I) Promptly correct any defects that develop through tests and re-test to the complete satisfaction of the Consultant and other parties involved.
  - (J) Forward copies of all final tests on all pressure and drainage piping and a copy of governing authority approvals to the Consultant immediately on acceptance of tests and/or approvals.
  - (K) Final payment for the Work will not be made until the above has been received.
- (ii) Hydrostatic Tests
- (A) Conduct tests for a minimum period of 2 hours, or longer when requested by the Consultant or governing authority at the test pressure specified under the respective Section of the Specifications.
  - (B) Test requirements:
    - (I) Pressure to remain constant over test period to a pressure of 1½ times the operating pressure but not to exceed the material pressure class rating.
    - (II) Exterior surfaces of pipe or fittings free of cracks or other form of leak.
    - (III) Tests to be performed at a constant ambient temperature.
- (iii) Pneumatic Tests
- (A) Initially pressurize the system with air to approximately one-half the specified operating pressure but not to exceed 345 kPa.
    - (I) Examine joints for leaks with a soapsuds solution.
    - (II) Repair leaks as detected.
    - (III) Repeat test and repairs until soap test passes.
  - (B) Provide a final pressure test on the system with air to the test pressure specified under the respective Section of the Specifications.
- (iv) Natural Gas Piping

## **PIPES, FITTINGS AND VALVES**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 15110  
PAGE 15 OF 15**

**JUNE 2018**

- (A) Conduct final tests in accordance with the requirements of the local Utility or governing authority.
- (B) If feasible, make tests when ambient air temperature is approximately constant.
  - (I) Corrections for pressure change due to temperature differential shall be allowed as approved by the Consultant.
- (v) Drainage and Potable Water Testing
  - (A) Test drainage piping and potable water piping in accordance with requirements of The Ontario Building Code, latest edition, and any additional requirements of applicable local by-laws.
- (vi) Specific Test Requirements
  - (A) Test the following services with compressed air or inert gas at 1½ times the working pressure, but in no event less than 345 kPa.
    - (I) Natural Gas Piping
    - (II) Distilled Water Piping
    - (III) Vacuum Piping
- (h) Pre-Operational Cleaning
  - (i) Temporary Connections
    - (A) Make temporary cross-overs, blank-off equipment connections, install drain and fill lines for circulating cleaning fluid through piping.
  - (ii) Flushing of Piping Systems
    - (A) Flush water piping with water flowing at a velocity of not less than 1.8 m/sec, for a period of 15 minutes or longer as required to remove all dirt, scale, and cuttings from the entire length of the piping.
    - (B) Thoroughly clean, prior to fabrication, sections of new piping which cannot be isolated for flushing purposes.
    - (C) Thoroughly clean, insofar as possible, welded joints by swabbing interior of pipe with swabs soaked with a caustic solution.
    - (D) Flush stainless steel piping with water as described above, then immediately flush with design product fluid. Do not leave city water or chlorinated water in piping.

**END OF SECTION**

**1. General**

(a) General

- (i) Provide Work of this Section in accordance with the Contract Documents including, but not limited to, the following:

(A) Piping Systems:

- (I) Domestic cold, hot and re-circulating water piping to plumbing fixtures within building  
(II) Excavation, bedding, and backfilling of pipe trenches for buried piping inside building and to 1.5 m outside the building.

(B) Equipment:

- (I) Plumbing specialties  
(II) Plumbing fixtures and fittings

(b) Related Work

- (i) Work performed under other Sections

(A) Finish painting: Section 09900-Painting.

(B) Electrical wiring: Division 16.

(c) Codes and Regulations; Permits, Costs and Fees

- (i) Comply with latest issue of Codes, Standards and Regulations, including revisions and amendments thereto as adopted and published at date of tender closing:

(A) Ontario Building Code.

(B) Ontario Water Resources Act, Ministry of Housing Regulation No. 815.

(C) Local Municipal Authorities.

(d) Submittals

- (i) Shop Drawings

(A) Submit Shop Drawings in accordance with Section 01300 "Shop Drawings and other Submittals and 15010 "Basic Mechanical Requirements".

- (ii) Operation and Maintenance Data

(A) Submit printed operation instructions and maintenance data in accordance with Section 01700 "Material and Equipment" and 15010 "Basic Mechanical Requirements".

(e) Testing and Inspection

- (i) Testing

## PLUMBING GENERAL REQUIREMENTS

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 15400  
PAGE 2 OF 3

JUNE 2018

- (A) To Section 15110 "Pipes, Fittings and Valves"
- (ii) Flushing and Sterilization
  - (A) Sterilize water piping connected to Municipal water supply in accordance with local municipal requirements. Flush each system after completion by allowing full flow of water through the system for a period of 15 minutes or longer when directed by the Consultant.
  - (B) After flushing of the system is completed, perform a 24 hour contact sterilization treatment by treating the water with 50 ppm of chlorine as recommended in AWWA Specification C-651.
  - (C) After sterilization period has elapsed, flush system to reduce chlorine content to an acceptable level, but not less than 30 minutes.
  - (D) Remove and clean strainer screens after flushing operation is completed. Repeat two weeks after initial operation of systems and within two weeks after Substantial Completion.

### 2. Products

- (a) Piping
  - (i) Refer to Section 15110 "Pipes Fittings and Valves" and relevant sections.
- (b) Plumbing and Drainage Products
  - (i) Refer to relevant sections.

### 3. Execution

- (a) Installation
  - (i) General
    - (A) Install complete plumbing, drainage and vent piping within washrooms, etc. in accordance with the Ontario Building Code, standard trade practice and as specified herein.
    - (B) Arrange piping within pipe spaces behind washroom fixtures to allow unimpeded access to piping for servicing.
- (b) Equipment Installation
  - (i) General Requirements
    - (A) Set equipment in place, align, connect and place in operation with:
    - (B) Controls set for efficient, stable operation.
    - (C) Initial lubrication and oil sumps filled.
    - (D) Connections and required safety devices installed.
    - (E) Protect equipment from damage during and after installation, and on

**PLUMBING GENERAL REQUIREMENTS**

**UNION STATION**

**INSTALLATION OF DUAL FAUCETS HANDRYERS**

**AT YORK CONCOURSE WASHROOMS**

**CONTRACT NO.IT-2018-STNS-255**

**SECTION 15400**

**PAGE 3 OF 3**

**JUNE 2018**

completion of the Work ensure that equipment is free from cracks, scratches, discolouration, tool marks, and other defects.

- (F) Thoroughly clean finished surfaces before acceptance of the Work.
- (G) Install heater vents complete with necessary supports, hangers, braces, roof flashing, storm collar, and round top.

**END OF SECTION**

## PLUMBING FIXTURES

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 15410  
PAGE 1 OF 2

JUNE 2018

### 1. General

- (a) General
  - (i) Design is based on Dyson Airblade plumbing fixtures.
  - (ii) or Approved Equivalent
- (b) Submittals
  - (i) Shop Drawings
    - (A) Submit Shop Drawings in accordance with 15010 “Basic Mechanical Requirements”.
    - (B) Operation and Maintenance Data
    - (C) Submit printed operation instructions and maintenance data in accordance with Section 15010 “Basic Mechanical Requirements”.

### 2. Products

- (a) Plumbing Fixtures
  - (i) General Requirements
    - (A) CSA approved plumbing fixtures and fittings, of make, type and size specified herein.
    - (B) Comply with the current water saving ratings of the Ontario Building Code, and ASHRAE/IEEE 90.1.
    - (C) Plumbing supplies and fixture trim material to be of CSA approved plumbing brass with chrome plated finish, and of make and type specified.
    - (D) Each item to bear name of manufacturer or identifying trademark.
    - (E) Manufacturer's standard design and material specification as indicated by trade name and/or catalogue number, and as described.
    - (F) Type number allocated to each style of fixture identifies that particular fixture on Drawings.
- (b) Lavatory Faucets
  - (i) Faucets, Barrier free.
    - (A) Faucets shall be touch-free sensor operated. Faucets shall have stainless steel construction. Controllers shall be recessed type and shall be c/w perforated stainless steel covers. Controllers shall have water protection ingress to IP35. Power supply shall be 120V/1ph/60 Hz, rated power of 1400 Watts. Motor shall be suitable for operating temperatures of 0 deg C. to 40 deg C. Motor shall be brushless DC motor. Controllers shall



## PLUMBING FIXTURES

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 15410  
PAGE 2 OF 2

JUNE 2018

have HEPA filters designed for removal of 99.97% bacteria. Controllers shall have operation lock-out period of 30 seconds. Air speed shall be 675 km/hr and air flow shall be 30 liters/sec. Water flow rate shall be 1.9 liters/minute.

- (B) Faucets shall be Dyson Air Blade Tap model AB09 or approved equivalent

- (c) Installation

- (i) Barrier Free Use

- (A) Rough-in and install plumbing fixtures at the recommended height for normal or handicapped use as applicable to location.

- (I) Lavatory:

- (1) Insulate exposed supplies and drain

### 3. Execution

- (a) Installation

- (i) Shock Absorbers

- (A) Locate shock absorbers in hot and cold water lines:

- (I) At far ends of mains

- (II) At branch lines to each flush valve and quick closing valve

- (III) At dead ends of branch piping or to groups of plumbing fixtures

- (IV) At isolated individual plumbing fixtures

- (V) As shown

END OF SECTION

## **ELECTRICAL GENERAL PROVISIONS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 1 OF 14**

**JUNE 2018**

### **1. General**

#### **(a) General**

- (i)** This Section 16010 Electrical General Provisions applies to and governs the Work of all sections of Division 16.
- (ii)** The electrical Specifications and Drawings specify complete systems. Include all labour and material required.
- (iii)** The intent is to provide the Owner a complete system and while no attempt has been made to detail or list each individual part required, include all parts and labour reasonably implied by these documents in order to deliver to the Owner the complete systems ready for operation.
- (iv)** Plans and specifications augment each other, and any item reasonably implied in one but omitted in the other is interpreted as sufficiently covered, and must be provided.
- (v)** Comply with all requirements herewith, so that the Contract and all Work to be done under it, can and will be carried on in a workmanlike manner, properly, satisfactorily, continuously, and expeditiously, to completion, in all respects, to the satisfaction of the Owner.

#### **(b) Scope of Work**

- (i)** This Section covers items common to Sections of Division 16. This section supplements requirements of Division 1. The Work described herein covers, but shall not necessarily be limited to the supply, installation, connection, testing and commissioning of electrical systems and auxiliary systems as follows:
  - (A)** Power distribution.
  - (B)** Conduits and power wiring
  - (C)** All materials, including wiring, conduit, boxes and devices for the above-mentioned systems, as shown on the Drawings and as required for a complete and functioning system.

#### **(c) General Requirements**

- (i)** This Division does not delegate functions or Work to any specific trade.
- (ii)** Where the term "Contractor" is used in any Section of Division 16, it shall mean the Company which has contracted to perform the Work of Division 16.
- (iii)** Do any required cuttings, altering, fitting, to Work, partially or entirely completed, to avoid interference with other Work.

## **ELECTRICAL GENERAL PROVISIONS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 2 OF 14**

**JUNE 2018**

- (d) Conflicts and Precedence
  - (i) Where such conflict, ambiguity, error or omission was discoverable at time of Tender, the Consultant's decision shall be final and binding in such matters, and no right to additional compensation of the Contractor shall arise.
- (e) Dimensions and Quantities
  - (i) Dimensions shown on Drawings are approximate. Verify dimensions by reference to Shop Drawings and field measurement.
  - (ii) Verify equipment access and coordinate with equipment supplier to ensure equipment can be physically transported to installation location. Under no circumstances will any claim be allowed for extra cost to disassemble and/or assemble equipment at the final location which shall be considered as part of equipment installation.
  - (iii) Make any necessary changes or additions to routing of conduit, cables, and the like to accommodate structural, mechanical and architectural conditions, without adjustment to Contract price upon written approval of the Consultant.
  - (iv) Provide Work in accordance with the approved schedule to meet completion date and specified interim schedules.
- (f) Codes, Permits and Inspections
  - (i) Comply with Ontario Electrical Safety Code, Electrical Safety Authority (ESA), all local, provincial and federal laws, where applicable and with requirements of the Canadian Standard Association when mandatory. Any changes or alterations required by authorized inspector of the authority having jurisdiction shall be made without adjustment to Contract Price.
  - (ii) Where materials are specified which require special inspection and approval of CSA and/or local authorities, Contractor shall obtain such approval for the particular installation with the co-operation of the material supplier.
  - (iii) In no instance shall the standards established by the Drawings and Specifications be reduced by any of the codes referred to in this division. Waivers or exceptions to Codes will NOT be accepted.
  - (iv) Obtain and pay for permits and inspections required for Work performed under this division.
  - (v) Submit required documents and Shop Drawings to authorities having jurisdiction in order to obtain approval for the Work. Copies of contract Drawings and Specifications may be used for this purpose. However,

## **ELECTRICAL GENERAL PROVISIONS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 3 OF 14**

**JUNE 2018**

Contractor shall prepare any additional information, details and Drawings which these authorities may require.

- (vi) After completion of the Work, furnish to Consultant a Certificate of Unconditional Approval from inspection authorities having jurisdiction.
- (vii) Carry out all changes and alterations required by the authorized inspector of any authority having jurisdiction without delay to the progress of the Work and without extra cost.
- (viii) Provide warning signs as specified or to meet requirements of Inspection Department and Consultant.
- (ix) Payments for all permits, deposits, inspections, service tests, and other fees necessary for the Work shall be included in the Tender price.
- (g) Working Drawings and Documents
  - (i) Do not deviate from design shown on the Drawings, or as herein specified, unless prior written approval is obtained from Consultant.
- (h) Submittals
  - (i) Provide the Consultant a copy of all fixture cut sheets
  - (ii) Provide to the Consultant cut sheets for all lamps, portable and hardwired, indicating their mercury content, lumen output and lamp life.
  - (iii) Manufacturer's Shop Drawings
    - (A) Before fabrication of any materials or equipment, submit detailed Drawings of equipment and apparatus to the Consultant for review. Do not order materials until review has been given. If corrections are required, copies will be returned with corrections noted. Corrected copies shall be re-submitted for review and distribution. Submissions shall be made in ample time to avoid delays in the Work.
    - (B) Shop Drawings must apply to the equipment under consideration. Advertising literature and comprehensive data sheets are not acceptable. The Drawings must contain the actual dimensions of unit and dimensioned location and size of all connections, model, range, capacity, voltage, etc., of all accessories listed in these Specifications, and/or being provided, and the operating points of the proposed equipment.
    - (C) Prior to submission, check that the drawings are in accordance with the requirements, and indicate approval, sign and date the Drawings.

## **ELECTRICAL GENERAL PROVISIONS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 4 OF 14**

**JUNE 2018**

- (D) Review of Shop Drawings shall be, and is mutually understood to be, in reference to general design only. If errors in the detailed dimensions or interference with the Works are noticed, the attention of the Contractor will be called to such errors or interference, but review of the Drawings shall not in any way relieve this Contractor of responsibility for said errors or interference, or from the necessity of furnishing such Works and materials as may be required for the completion of the Work at any time until formal acceptance.
- (iv) Reports
  - (A) For each test performed, prepare and submit a test report with the seal and signature of a Professional Engineer licensed to practice on the Province of Ontario.
  - (B) Each test report shall include date and time of test, environmental conditions, names of testing company, test Sub-Consultant and witness if required.
  - (C) Submit final test report confirming that electrical installation is ready for service.
- (v) Maintenance Data and Operating Instructions
  - (A) Refer to section 01800 Project Closeout.
  - (B) Submit the following:
    - (I) Complete set of reviewed Shop Drawings of equipment provided.
    - (II) Shop Drawings of Owner purchased equipment.
    - (III) Complete Bills of Material showing manufacturers' names, addresses, nearest replacement sources and telephone numbers.
    - (IV) List of recommended spare parts and quantity of each item to be stocked.
    - (V) Manufacturer's warranties.
    - (VI) Manufacturer's certified reports.
    - (VII) Appropriate troubleshooting and preventive maintenance instructions.
    - (VIII) Field testing and commissioning reports.
    - (IX) Single Line Diagram
    - (X) Verification Reports
- (vi) Record Drawings
  - (A) Submit record Drawings indicating:
    - (I) All changes and deviations from the original plans.

## **ELECTRICAL GENERAL PROVISIONS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 5 OF 14**

**JUNE 2018**

- (II) Where raceways or cables are buried dimension locations with respect to permanent structures.
  - (III) Certify these Drawings "Record Drawings". Drawings are not considered certified unless they are reviewed and signed by both the Contractor and Sub-Contractor.
- (i) Interconnection Diagrams
  - (i) Submit diagrams of interconnecting wiring between items of equipment including equipment supplied by Contractor and under other divisions of Work.
- (j) Coordination
  - (i) Carefully examine Work and Drawings of all related trades and thoroughly plan the Work so as to avoid interferences. Report defects which would adversely affect Work of this Contract. Do not commence installation until such defects have been corrected.
  - (ii) Arrange schedule, materials, equipment and method of operation to maintain construction schedule.
  - (iii) Provide electrical items in time to avoid any cutting or patching of new work.
  - (iv) At the request of Consultant concentrate on any particular phase of the Work as directed in order to ensure required completion dates.
  - (v) Co-ordinate Work of this Division such that items will properly interface with Work of other Divisions. Prepare installation drawings of critical locations and submit to Consultant for review.
  - (vi) The installation of the work shall not proceed until such interfaces have been resolved to the satisfaction of Consultant.
  - (vii) Under no circumstances will any claim be allowed for extra cost or for extension of time to complete the contract due to failure by Contractor to properly co-ordinate the Work.
  - (viii) If it should be found necessary to reconstruct any part of the Work, due to Contractor's failure to submit installation drawings, details or sketches before commencing, remove and relocate or replace Work to Consultant's satisfaction without adjustment to Contract price.
  - (ix) Where conflicts or site conditions require appreciable deviation from the Work as specified or indicated, notify Consultant before proceeding.
  - (x) Architectural Drawings, or in the absence of Architectural Drawings, Mechanical Drawings govern all locations.

## **ELECTRICAL GENERAL PROVISIONS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 6 OF 14**

**JUNE 2018**

- (k) Owner Supplied Equipment
  - (i) Work related to Owner supplied equipment:
    - (A) Offloading, storage and handling on site of equipment and responsibility for security of equipment.
    - (B) Installation of equipment as per manufacturer's recommendations. Provide all supports and fastenings as required.
    - (C) Wiring, terminations, testing and commissioning of equipment. Arrange and pay for manufacturer's representative to attend and supervise testing and commissioning.
- (l) Load Balance
  - (i) Measure phase current to panelboards with normal loads (power and lighting) operating at time of acceptance. Adjust branch circuit connections as required to obtain best balance of current between phases and record changes.
  - (ii) Measure phase voltages at loads and adjust transformer taps to within 2% of rated voltage of equipment.
  - (iii) Submit, at completion of Work, report listing phase and neutral currents on panelboards operating under normal load. State hour and date on which each load was measured, and voltage at time of test.
- (m) Manufacturer's Attendance
  - (i) Provide manufacturer's representatives to initially start-up each part of the Work, as specified, to check, adjust, calibrate and balance as applicable all components including controls and field wiring. Provide these services for such period and for as many visits as necessary to achieve complete working order in the subject Work.
- (n) Field Quality Control
  - (i) Conduct and pay for following tests:
    - (A) Power distribution system including short circuit and coordination study, phasing, voltage, grounding, arc flash study and load balancing.
    - (B) Circuits originating from branch distribution panels.
    - (C) Motors, heaters and associated control equipment including sequenced operation of systems where applicable.
  - (ii) Furnish manufacturer's certificate or letter confirming that entire installation as it pertains to each system has been installed to

## ELECTRICAL GENERAL PROVISIONS

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 7 OF 14**

**JUNE 2018**

manufacturer's instructions.

- (iii) Insulation resistance testing: megger circuits, feeders and equipment up to 350 V with a 1000 V instrument.
  - (iv) Check resistance to ground before energizing.
  - (v) Provide instruments, meters, equipment and personnel required to conduct tests during and at conclusion of Project.
- (o) Owner Right To Relocate Electrical Items
  - (i) The Owner reserves the right to relocate electrical items during construction, but prior to installation, without cost, assuming that the relocation per item does not exceed 3 m (10'-0") from the original location. No credits shall be anticipated where relocation per item of up to and including 3m reduces materials, products and labour.
  - (ii) Should relocations per item exceed 3m from the original location the Contract Price will be adjusted accordingly.
  - (iii) Necessary changes, due to lack of co-ordination, and as required and when approved, shall be made at no additional cost, to accommodate structural and building conditions. The location of pipes and other equipment shall be altered without charge to the Owner, if approved, provided the change is made before installation.
- (p) Job Conditions
  - (i) Shops: Provide own office, workshops, tools and materials storage, if necessary, and be responsible for any loss or damage thereto.
  - (ii) Visit the site and examine the existing conditions affecting the Work of this Section.
  - (iii) No claim for extra payment shall be made for extra work made necessary by circumstances encountered due to conditions which were visible upon, or reasonably inferable from an examination of the site prior to submission of the bid.
  - (iv) It is the responsibility of the Contractor to protect all existing equipment from damage or the ingress of dust during construction.

## **2. Products**

- (a) Approvals and Quality
  - (i) Provide new materials bearing approval stamp of CSA, or approval label of the Electrical Safety Authority or other authority having jurisdiction for the particular application and location in which they are used.



## ELECTRICAL GENERAL PROVISIONS

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 8 OF 14**

**JUNE 2018**

- (ii) Provide units of same manufacture where two or more units of same class or type of equipment are required.
  - (iii) Manufacturer's names are stated in this Specification to establish a definite basis for Tender submission and to clearly describe the quality of Product that is desired for the Work.
- (b) Standard Specifications
  - (i) The chemical and physical properties, design, performance characteristics and methods of construction of all Products provided shall comply with latest issue of applicable standard Specifications issued by authorities having jurisdiction, but such standard Specifications shall not be applied to decrease the quality of workmanship, Products and services required by the Contract Documents.
- (c) Contractor Furnished Products
  - (i) Maintain contact with all related trades and Work and verify quantity take-off of all Products provided under this division.
  - (ii) Delivery of Materials to Time and Expediting
    - (A) Be responsible for delivery of materials and equipment in ample time to allow their incorporation in the Work in conformity with construction schedule, and do all that is reasonably necessary to expedite their delivery.
    - (B) If at any time it appears that delivery of any materials or equipment will cause delay to construction schedule, Contractor shall immediately notify Consultant in writing and follow Consultant's instructions.
- (d) Miscellaneous Metal Fabrications
  - (i) Provide miscellaneous structural supports, platforms, braces, brackets and preformed channel struts necessary for suspension, attachment or support of electrical equipment

### **3. Execution**

- (a) Co-ordination
  - (i) Start Work and proceed as soon as possible after the Contract has been let and in accordance with the construction schedule.
  - (ii) All items to be built-in, including all anchors and bolts shall be supplied as and when required by the trades concerned, together with templates of measurements or both.

## **ELECTRICAL GENERAL PROVISIONS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 9 OF 14**

**JUNE 2018**

- (iii) Co-operate with other trades whose work attached to, or is affected by the Work of this Contract, to ensure a satisfactory installation and to avoid delays in the completion of all the Work concerned.
  - (iv) Co-operate with all other Contractors during progress of the Work, to ensure against conflicts of location of equipment. Where such conflicts arise, it shall be settled by the Consultant. Work forming part of this Contract shall be commenced only after coordination meetings with other trades under the direction of the Consultant.
  - (v) Alterations required due to failure to comply with this clause shall be done at this Contractor's expense.
- (b) Cutting and Patching
  - (i) Be responsible for all sleeves or openings required for this Work.
  - (ii) Cutting of holes and related patching, where required for electrical installations, provided by Division 16.
- (c) Finishes
  - (i) Shop finish metal enclosure surfaces by application of rust resistant primer inside and outside, and at least two coats of finish enamel.
  - (ii) Paint indoor switchgear and distribution enclosures light grey to EEMAC 2Y-1-1958.
  - (iii) Clean and touch up surfaces of shop-painted equipment scratched or marred during shipment or installation, to match original paint.
  - (iv) Clean and prime exposed non-galvanized hangers, racks and fastenings to prevent rusting.
- (d) Electric Motors, Equipment and Controls
  - (i) Supplier and installer responsibility is indicated in the equipment schedule on electrical Drawings.
  - (ii) All control wiring and conduit is specified in Division 16.
- (e) Identification and Labelling
  - (i) Label and identify all equipment, instruments, control and electrical devices etc. to indicate duty, nomenclature identification number, service/function, to the satisfaction of GO. Identifications shall be in English. Alternative methods of labelling may be submitted for approval.
  - (ii) Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations indicated in the Contract Documents or required by codes and standards. Use consistent

## **ELECTRICAL GENERAL PROVISIONS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 10 OF 14**

**JUNE 2018**

designations throughout Project. All designations shall be to client approval.

- (iii) In the event of any conflict arising between the local regulations, IEEE, IEE, IEC standards and / or the document, the more stringent of these are to be followed.
- (iv) Use a single type of identification product for each application category and colors prescribed by these guidelines.
- (v) Electrical Rooms are to have a framed Single Line Drawing of the Electrical Distribution System which is to be updated with any addition or deletion of part of the system.
- (vi) Provide products listed and classified by CSA, ESA and acceptable to authority having jurisdiction as suitable for purpose specified and shown.
- (vii) Wire Markers
  - (A) Each conductor in a panel board, pull boxes, outlet and junction boxes, patch panel, rack and each connection.
  - (B) Use one of the following:
    - (I) Heat shrink sleeves, blank;
    - (II) Clear plastic tape wrap-on strips with white writing section;
    - (III) Wrap-on strips, pre-numbered;
    - (IV) Slip-on identification bead markers or sleeves, blank or pre-numbered;
    - (V) Power& Lighting Circuits: Branch circuit/feeder number indicated on drawings;
    - (VI) Control Circuits: Control wire number indicated on schematic& interconnection diagrams on drawings & shop drawings.
- (viii) Nameplate Identification of Equipment
  - (A) Identify equipment with lamicoid nameplates as indicated in Equipment Identification Schedule.
  - (B) Nameplates
    - (I) Engraved three-layer laminated plastic, black letters on white background.
    - (II) Lamicoid Nameplates: 3 mm thick plastic engraving sheet, black face, white core, mechanically attached, sizes as follows:

## ELECTRICAL GENERAL PROVISIONS

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 16010  
PAGE 11 OF 14

JUNE 2018

NAME PLATE SIZES			
Name Plate	Size	Line	Height
Size 1	10 x 50 mm	1 Line	3 mm high letters
Size 2	12 x 70 mm	1 Line	5 mm high letters
Size 3	12 x 70 mm	2 Line	3 mm high letters
Size 4	20 x 90 mm	1 Line	8 mm high letters
Size 5	20 x 90 mm	2 Line	5 mm high letters
Size 6	25 x 100 mm	1 Line	12 mm high letters
Size 7	25 x 100 mm	2 Line	6 mm high letters
Size 8	53 X 100 mm	1 Line	25 mm high letters

(C) **Locations:** Each electrical distribution and control equipment enclosure.

(I) Nameplate Identification of Equipment

- (1) Panel board Directories;
- (2) Identification of Pull and Junction Boxes;
- (3) Colour Identification of Wiring;
- (4) Name/Number Identification of Wiring;
- (5) Identification of Receptacles; and
- (6) Equipment Identification Schedule.

(II) Use 6mm (1/4 inch) letters for identifying grouped equipment and loads.

(D) **Labels:** Embossed adhesive tape, with 5mm (3/16inch) white letters on black background. Use only for identification of individual wall switches and receptacles, control device, and junction boxes.

(E) Panel Board Directories

- (I) Identify loads controlled by each over current protective device in each panel board, by means of a typewritten panel board directory.

(F) Colour Identification of Wiring

## ELECTRICAL GENERAL PROVISIONS

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 12 OF 14**

**JUNE 2018**

- (I) Identify No. 4/0 AWG wiring and smaller by continuous insulation colour.
- (II) Identify wiring larger than No. 4/0 AWG by continuous insulation colour or by colour banding tape applied at each end and at splices.
- (III) Colour coding shall be in accordance with Canadian Electrical Code, and as follows:

COLOUR IDENTIFICATION OF WIRING		
Number	Voltage	Colour
1.	12V, 24V and 120 V dc	Blue
2.	120/208 V, 3 phase:(300V max)	Red, black and blue ( neutral White)
3.	120/208 V emergency: :(300V max)	Red, black and blue with Yellow tracer (neutral white)
4.	347/600 V 3 phase	Orange, brown and yellow. .( neutral White)
5.	347/600 V emergency	Orange, brown and yellow with red tracer. . (neutral White)
Where multi-conductor cables are used, use same colour-coding system for identification of wiring throughout each system. Maintain phase sequence and colour coding throughout each system.		

- (G) Name/Number Identification of Wiring
  - (I) Identify No 8 AWG wiring & smaller using wire identification methods.
  - (II) Types or print on blank wire identification materials using indelible black ink.
  - (III) Identify wiring at all pull boxes, junction boxes, and outlet boxes for all systems.
  - (IV) Identify each conductor as layout in section Labelling  
Nomenclature include in labelling panel & circuit, terminal, terminal numbers, system number scheme& polarization, as applicable.
- (H) Equipment Including Conduits, Boxes, Splitters and Panels
  - (I) Conduit Markers
    - (1) Provide markers for each conduit longer than 2m [6 ft.].
    - (2) Colour Banding Tape: Adhesive backed plastic tape, integrally coloured.
    - (3) Code conduits and cables where conduits or cables

## **ELECTRICAL GENERAL PROVISIONS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 13 OF 14**

**JUNE 2018**

enter or leave walls, ceilings or floors.

(4) Spacing: maximum spacing 6m [20feet] on centre.

(II) Colour: Prime colour to be 25 mm wide and the Auxiliary Colour to be 19 mm wide.

(I) Colour Identification of Equipment

(I) Conduits, boxes, splitters and Panels Electrical equipment shall be prefinished in coded colours designating voltage or system as indicated in Equipment Identification Schedule.)

(II) Voltage colour identification for line voltage equipment shall be as follows:

(f) Wiring Terminations

(i) Lugs, terminals, screws used for termination of wiring to be suitable for copper conductors.

(g) Manufacturer and CSA Labels

(i) Visible and legible after equipment is installed.

(h) Conduit and Cable Installation

(i) Install conduit and sleeves prior to pouring of concrete. Sleeves through concrete: schedule 40 steel pipe, sized for free passage of conduit, and protruding 50 mm.

(ii) If plastic sleeves are used in fire rated walls or floors, remove before conduit installation.

(iii) Install cables, conduits and fittings to be embedded or plastered over, neatly and close to building structure so furring can be kept to minimum.

(iv) Install polypropylene pull cords in all empty conduits. Cord shall have a tensile strength of 1000 N, shall extend 1 m beyond each end of the conduit and shall be fixed to prevent it from retracting inside the conduit.

(i) Mounting Heights

(i) Mounting height of equipment is from finished floor to centreline of equipment unless specified or indicated otherwise.

(ii) If mounting height of equipment is not specified or indicated, verify before proceeding with installation.

(j) Field Fabricated Metal Work

(i) Clean and prime paint field fabricated metal work.

(ii) After fabrication deburr, scrape, grind smooth, wire brush with power brush and degrease metal work.

## **ELECTRICAL GENERAL PROVISIONS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16010  
PAGE 14 OF 14**

**JUNE 2018**

- (iii) Prime paint steel with 1 coat of CISC/CPMA 2.75 oil alkyd primer.
- (iv) Prime paint aluminum as follows: wash with detergent solution and wipe down with SSPC-SP1 solvent. Apply Glidden #Y-5229 primer or approved equivalent to 1.5 mils DFT.
- (v) For brass and bronze alloy materials, prepare as for aluminum but apply 1 coat of CAN/CGSB-1.40-M zinc chromate primer.
- (k) Studies and Analyses
  - (i) Conduct an electrical arc flash hazard analysis as prescribed under (NFPA 70E) CSA Z462 and provide a written report to Owner summarizing the findings and recommended control measures to be taken. The arc flashing analysis results must be deemed acceptable before the equipment purchase.
  - (ii) The study shall be prepared for the entire electrical distribution system.
  - (iii) Provide arc flash labels on all electrical equipment.
  - (iv) Provide report in hard copy and electronic copy.

**END OF SECTION**

## **GROUNDING SYSTEM**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16062  
PAGE 1 OF 3**

**JUNE 2018**

### **1. General**

#### **(a) Related Work**

- |       |                               |               |
|-------|-------------------------------|---------------|
| (i)   | Product Data                  | Section 01300 |
| (ii)  | Electrical General Provisions | Section 16010 |
| (iii) | Wiring and Cables, 0-1000V    | Section 16122 |

#### **(b) Equipment Grounding Conductors**

- (i) Provide conductors, as indicated on the drawings or required by code, for equipment grounding. Provide conductors with green insulation. Grounding conductors shall be insulated and run in conduit.

### **2. Products**

#### **(a) Equipment**

- (i) Clamps for grounding of conductor: size as required to electrically conductive underground water pipe.
- (ii) Grounding conductors: bare stranded copper, soft annealed, size as indicated.
- (iii) Insulated grounding conductors: green, type RWU
- (iv) Non-corroding accessories necessary for grounding system, type, size, material as indicated, including but not necessarily limited to:
- (A) Grounding and bonding bushings.
  - (B) Protective type clamps.
  - (C) Bolted type conductor connectors.
  - (D) Thermit welded type conductor connectors.
  - (E) Bonding jumpers, straps.
  - (F) Pressure wire connectors.

### **3. Execution**

#### **(a) Installation General**

- (i) Install complete permanent, continuous grounding system including, conductors, connectors, accessories. Where rigid PVC is used, run ground wire in conduit.
- (ii) Install connectors in accordance with manufacturer's instructions.



## **GROUNDING SYSTEM**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16062  
PAGE 2 OF 3**

**JUNE 2018**

- (iii) Protect exposed grounding conductors from mechanical injury.
- (iv) Make buried connections, and connections to conductive water main, electrodes, using copper welding by thermit process.
- (v) Use mechanical connectors for grounding connections to equipment provided with lugs.
- (vi) Soldered joints not permitted.
- (vii) Install bonding wire for flexible conduit, connected at one end to grounding bushing, solderless lug, clamp or cup washer and screw. Neatly cleat bonding wire to exterior of flexible conduit.
- (viii) Install separate ground conductor to outdoor lighting standards.
- (ix) Connect metal Work to ground by welding copper to steel.
- (x) Make grounding connections in radial configuration only, with connections terminating at single grounding point. Avoid loop connections.
- (xi) Bond single conductor, metallic armoured cables to cabinet at supply end, and provide non-metallic entry plate at load end.
- (b) Cables
  - (i) Bond grounding conductor of multiconductor armoured and non-armoured cable to ground bus or lug in equipment enclosures.
- (c) Raceways
  - (i) On raceways, lock-up tight all couplers and connections to boxes and enclosures. Install bonding jumpers at expansion joints, and where necessary. Maintain ground continuity throughout run of raceway.
  - (ii) Install bonding jumpers on both ends of flexible conduit. Use grounding bushing, solderless lug, clamp or cup washer and screw connection. Install grounding conductor inside flexible conduit.
  - (iii) All: install insulated grounding conductor in raceway.
  - (iv) Branch and feeder circuits in rigid conduit: use raceway as bonding conductor.
- (d) Equipment Grounding
  - (i) Install grounding connections to typical equipment included in, but not necessarily limited to following list: Service equipment, duct systems, distribution panels.

## **GROUNDING SYSTEM**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16062  
PAGE 3 OF 3**

**JUNE 2018**

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- (e) Field Quality Control
  - (i) Perform tests in accordance with Section 16010 - Electrical General Requirements.
  - (ii) Perform ground continuity and resistance tests using method appropriate to site conditions and to approval of local authority having jurisdiction over installation.
  - (iii) Perform tests before energizing electrical system.

**END OF SECTION**

**1. General**

(a) References

- (i) CSA C22.2 No. 18-98, Outlet Boxes, Conduit Boxes, and Fittings
- (ii) CSA C22.2 No. 26-1952, Construction and Test of Wireways, Auxiliary Gutters and Associated Fittings
- (iii) CSA C22.2 No. 40-M1989, Junction Boxes
- (iv) CSA C22.2 No. 45-M1981, Rigid Metal Conduit
- (v) CSA C22.2 No. 56-1977, Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit
- (vi) CSA C22.2 No. 62-93, Surface Raceway Systems
- (vii) CSA C22.2 No. 83-M1985, Electrical Metallic Tubing

(b) Submittals

(i) Product Data

- (A) Ensure that raceway system manufacturers provide complete information regarding raceway assembly requirements. Owner will not be responsible for added cost of raceways and changes due to additional manufacturer's requirements.

(ii) Shop Drawings

- (A) Submit Shop Drawings in accordance with Section 01300 Product Data.

**2. Products**

(a) Support Channels

- (i) U-shape, size required or as detailed on drawings.

**3. Execution**

(a) Installation

- (i) Secure equipment to solid concrete surfaces with anchors of the appropriate size.
- (ii) Secure equipment to poured concrete with expendable inserts of the appropriate size.
- (iii) Secure equipment to hollow masonry walls or suspended ceilings with toggle bolts of the appropriate size.

## **FASTENINGS AND SUPPORTS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16071  
PAGE 2 OF 2**

**JUNE 2018**

- (iv) Support equipment, conduit or cables using clips, spring loaded bolts, cable clamps designed as accessories to basic channel members.
- (v) Fasten exposed conduit or cables to building construction or support system using straps and spacers:
- (vi) Hole steel straps to secure surface conduits to structural elements.
- (vii) Two-hole steel straps for conduits.
- (viii) Beam clamps to secure conduit to exposed steel Work.
- (ix) Provide metal brackets, frames, hangers, clamps and related types of support structures where indicated or as required to support conduit and cable runs as detailed.
- (x) Do not use wire lashing or perforated strap to support or secure raceways or cables.
- (xi) Do not use supports or equipment installed for other trades for conduit or cable support except with permission of other trade and approval of Consultant.
- (xii) Install fastenings and supports as required for each type of equipment cables and conduits, and in accordance with manufacturer's installation recommendations and as detailed.

**END OF SECTION**

**1. General**

(a) References

- (i) Conform to latest issues, amendments and supplements of following standards:

- (A) CAN3-C21.1-M - Control Cable - 600V
- (B) CAN3-C21.2-M - Control Cable for Low Energy Circuits 150V and 300V
- (C) CSA C22.2 No. 38-M - Thermoset Insulated Wires and Cables
- (D) CSA C22.2 No. 49 - Flexible Cords and Cables
- (E) CSA C22.2 No. 75-M - Thermoplastic Insulated Wires and Cables
- (F) CSA C22.2 No. 127 - Equipment Wires
- (G) CSA C22.2 No. 214-M - Communications Cables

(b) Product Data

- (i) Submit product data in accordance with Section 01300 – Shop Drawings and Other Submittals.

**2. Products**

(a) Wire - Low Voltage Up to 1000V Service

(i) Conductors

- (A) ASTM Class B, soft drawn, electrolytic copper
- (B) Stranded

(ii) Insulation

- (A) CSA type RW90 XLPE (-40°C)
  - (I) Heat and moisture resistant
  - (II) Low temperature, chemically cross-linked thermosetting polyethylene material
  - (III) 600V rated
  - (IV) For maximum 90°C conductor temperature
  - (V) For installation at minimum -40°C temperature
  - (VI) To CSA C22.2 No. 38

(b) Control Cables

- (i) 600V type cable with stranded copper conductors, sizes as indicated, with XLPE insulation and overall PVC jacket FT4 cable tray rated.

- (ii) Single 600V conductors, RW90 type for indoor control wiring in conduits. Yellow colour for conductors in conduits and red colour within cabinets. All conductors shall be stranded.
- (iii) Low Voltage: for low voltage thermostat applications #18AWG stranded soft annealed with thermoplastic insulation.

**3. Execution****(a) Installation of Wires in Conduits and Ducts**

- (i) Install wiring in conduit systems as follows:
  - (A) Do not pull spliced cables inside ducts.
  - (B) Install multiple cables in duct simultaneously.
  - (C) Use CSA approved lubricants of type compatible with cable jacket to reduce pulling tension.
  - (D) To facilitate matching of colour coded multi-conductor control cables reel off in same direction during installation.
  - (E) After installation of cables, seal duct ends with duct sealing compound.

**(b) Wire and Cable**

- (i) Install wiring in raceways unless noted otherwise.
- (ii) Minimum wire sizes:
  - (A) Power and lighting - No. 12 AWG
  - (B) Control - No. 14 AWG

**(iii) Wire and cable application and type:****(iv) Application    Type**

- (A) Lighting branch circuit indoors only                      RW90
- (B) Receptacle branch circuit indoors only                      RW90
- (C) Branch circuits other than those covered above                      RW90
- (D) Equipment feeders, circuits                                      RW90

**(c) Installation of Control Cables**

- (i) Install control cables in cable trays, conduits and underground ducts.
- (ii) Use CSA approved lubricants in conduits to reduce pulling tension.

- (d) Field Quality Control
  - (i) Perform tests in accordance with Section 16010 – Electrical-General Provisions.
  - (ii) Perform tests using qualified personnel. Provide necessary instruments and equipment.
  - (iii) Check phase rotation and identify each phase conductor of each feeder.
  - (iv) Check each feeder for continuity, short circuits and grounds. Ensure resistance to ground of circuits is not less than 50 megohms.
  - (v) Pre-acceptance tests.
    - (A) After installing cable but before splicing and terminating, perform insulation resistance test with 1000 V megger on each phase conductor. Megger cable for a minimum of one (1) minute.
    - (B) Check insulation resistance after each splice and/or termination to ensure that cable system is ready for acceptance testing.
  - (vi) Acceptance Tests
    - (A) Ensure that terminations and accessory equipment are disconnected.
    - (B) Ground shields, ground wires, metallic armour and conductors not under test.
    - (C) High Potential (Hipot) Testing: Conduct hipot testing in accordance with manufacturer's recommendations.
  - (vii) Provide Consultant with list of test results showing location at which each test was made, circuit tested and result of each test.
  - (viii) Remove and replace entire length of cable if cable fails to meet any of test criteria.

**END OF SECTION**

**1. General**

(a) Related Work

- |       |   |               |
|-------|---|---------------|
| (i)   | Product Data                              | Section 01300 |
| (ii)  | Electrical General Provisions             | Section 16010 |
| (iii) | Outlet, Junction and Conduit Boxes        | Section 16132 |
| (iv)  | Conduits, Fastenings and Conduit Fittings | Section 16133 |

**2. Products**

(a) Junction and Pull Boxes

- (i) Welded steel construction with screw-on flat covers for surface mounting.
- (ii) Rigid galvanized steel with epoxy coated cover.
- (iii) Stainless steel coverplates.
- (iv) Boxes installed in areas exposed to the weather shall be rigid galvanized steel, epoxy coated or stainless steel.
- (v) Boxes installed in public areas shall be lockable to the Owners approval.

(b) Wireways

- (i) Wireways and fittings: to CSA C22 No.26.
- (ii) Sheet steel with hinged cover to give uninterrupted access.
- (iii) Finish: baked grey enamel.
- (iv) Elbows, tees, couplings and hanger fittings manufactured as accessories to wireway supplied.

(c) Splitter Boxes/Troughs

- (i) CSA C22.2 No. 76, welded sheet metal enclosure complete with required mains and branch copper bus bars and lugs, or terminal blocks, 600 volts max.

(d) Pull Boxes

- (i) Steel sheet construction with hinged door and captive fasteners, surface or flush mounting, sized as required or as shown on Drawings.

(e) Terminal Boxes

- (i) Steel sheet construction with hinged door and captive lockable fasteners,



surface or flush mounting, complete with back inner panel or channels with terminal boards/blocks, sized as required or as specified or shown on Drawings.

(f) Nameplates

- (i) Identify electrical equipment with nameplates as follows: Lamicoid 3 mm thick plastic engraving sheet, black face, white core (red face with white core for fire alarm and emergency), mechanically attached with self tapping screws.

(A) Nameplate Size 4

**3. Execution**

(a) Installation

(i) General

- (A) Size and install boxes, splitters, and enclosures in accordance with applicable section(s) of Ontario Electrical Safety Code(OESC) and manufacturer's recommended installation procedures.
- (B) Fasten and support boxes and enclosures independent from raceway supports and ensure rigid installation.
- (C) Cut and drill entrance holes into boxes and enclosures for raceways and cutouts for inner panel and door mounted electrical devices, as per approved Shop Drawings on specified special boxes and enclosures.
- (D) Install boxes and enclosures so as to be accessible after building is complete, set flush with finished surface where recessed, aligned and levelled where surface mounted.
- (E) Use bushing and double locknuts to terminate conduits in metallic sheet boxes with conduit knockouts or drilled holes.
- (F) Provide approved hole plugs in unused conduit openings and holes.
- (G) Furnish boxes and enclosures with corrosion resistant machine screws.
- (H) Boxes and enclosures embedded in concrete for flush-mounting, shall be secured properly with connecting conduits and related works set in place before concrete is poured. Forms, when used, shall be able to be removed without disturbing installed boxes or enclosures.
- (I) In general, install boxes and enclosures to suit raceway installation, and location of communication, signal, and electrical equipment,

luminaires, and operational requirement, as shown on Drawings.

- (ii) Cutout and Pull Boxes
  - (A) Pull boxes: Provide required number of conduit holes/openings and size as per details shown on Drawings or specified herein.
  - (B) Cutout boxes: Provide necessary openings on door and accessories to mount specified electrical devices.
  - (C) Terminal boxes: Provide necessary terminal blocks and/or boards, as specified herein or shown on Drawings.
  - (D) Install terminal and pull boxes in inconspicuous but accessible locations.
  - (E) Use pull boxes for conduits larger than 32 mm (1-1/4").
  - (F) Do not use cutout and terminal boxes as pull boxes.
  - (G) Group all incoming and outgoing cables or wiring neatly tie-wrapped, and wiring identified. Maintain voltage class separation of wiring being terminated.
  - (H) All terminals shall have two (2) separate pressure clamping plates suitable for connections of incoming or outgoing conductors. Do not terminate more than two (2) conductors at same terminal.
- (iii) Wireway Installation
  - (A) Install wireways and auxiliary gutters.
  - (B) Keep number of elbows, offsets, connections to minimum.
  - (C) Install supports, elbows, tees, connectors, fittings.
  - (D) Install barriers where required.
  - (E) Install gutter to full length of equipment.
- (iv) Junction, Pull Boxes and Cabinets Installation
  - (A) Install pull boxes in inconspicuous but accessible locations.
  - (B) Pull boxes are not indicated. Install pull boxes so as not to exceed 30 m of conduit run between pull boxes and wherever necessary to facilitate pulling of wires.
- (v) Splitters
  - (A) Install splitter boxes at locations shown on Drawings, as specified herein or as shown on Drawings.

- (B) Provide at least 3 spare terminals on each set of lugs in splitters rated less than 400A.
- (vi) Identification
  - (A) Provide identification in accordance with Section 16010 - Electrical General Provisions.
- (b) Testing and Inspection
  - (i) Test overall installation using megger instrument for ground continuity after boxes and raceways are completely installed.

**END OF SECTION**

**1. General**

(a) References

- (i) Canadian Standards Association (CSA)
- (ii) CAN/CSA C22.2 No.18-92, Outlet Boxes, Conduit Boxes, and Fittings.
- (iii) CSA C22.2 No.45-M1981(R1992), Rigid Metal Conduit.
- (iv) CSA C22.2 No.56-1977(R1977), Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit.
- (v) CSA C22.2 No.83-M1985(R1992), Electrical Metallic Tubing.
- (vi) CSA C22.2 No.211.2-M1984(R1992), Rigid PVC (Unplasticized) Conduit.
- (vii) CAN/CSA C22.2 No.227.3-M91, Flexible Nonmetallic Tubing.

(b) Related Work

- (i) Product Data Section 01300
- (ii) Electrical General Provisions Section 16010
- (iii) Splitters, Junction, Pullboxes and Cabinets Section 16131
- (iv) Outlet, Junction and Conduit Boxes Section 16132

(c) Submittals

- (i) Product Data
  - (A) Ensure that raceway system manufacturers provide complete information regarding raceway assembly requirements. The Owner will not be responsible for added cost of raceways and changes due to additional manufacturer's requirements.
- (ii) Shop drawings
  - (A) Submit Shop Drawings in accordance with Section 01300 Product Data.

**2. Products**

(a) Conduits

- (i) Rigid metal conduit: to CSA C22.2 No.45, galvanized steel threaded.
- (ii) Flexible metal conduit: to CSA C22.2 No.56, liquid-tight flexible metal.

- (iii) Core-line conduit shall not be used on this Project in any way.
  - (iv) EMT conduit shall not be used on this Project in any way.
- (b) Fastenings
  - (i) One hole steel straps to secure surface conduits 53 mm and smaller. Two hole steel straps for conduits larger than 53 mm.
  - (ii) Beam clamps to secure conduits to exposed steel work.
  - (iii) Channel type supports for two or more conduits.
  - (iv) Threaded rods, 6 mm dia., to support suspended channels.
- (c) Conduit Fittings
  - (i) Fittings: manufactured for use with conduit specified. Coating: same as conduit.
  - (ii) Factory "ells" where 90 degree bends are required for 27 mm and larger conduits.
- (d) Fish Cord
  - (i) Polypropylene pull cord.

**3. Execution**

- (a) Examination
  - (i) The Contractor shall provide detailed conduit and raceway Drawings for approval by the Owner prior to installation. Drawings to include all surface conduit runs indicating number of conduits and sizes. Co-ordinate with other divisions concerned and field-verify routing to check for possible obstruction or interference.
- (b) Installation
  - (i) Install raceways system and boxes complete with appropriate fittings such as connectors, bushings, elbows, couplings, locknuts, expansion fittings, fasteners and supports and accessories supplied as necessary to comply with Ontario Electrical Safety Code (OESC) and other regulatory authorities' requirements.
  - (ii) Neatly install exposed raceway running parallel to and at right angles to building lines and equally spaced in groups.
  - (iii) Keep raceway ends parallel and on proper spacing to suit knockouts or raceway openings in equipment or enclosure.
  - (iv) Keep raceways at least 150 mm clear of steam pipes, flues and hot item

surfaces. Where required clearance cannot be provided, obtain written approval from the Owner to alter layout or to reduce clearance.

- (v) Conceal raceways in floor, wall and ceiling construction unless otherwise specified or indicated. Raceways may run exposed in electrical rooms. Obtain approval from the Owner prior to installation of any surface raceway in locations other than above specified areas.
- (vi) Provide expansion couplings, with bonding jumper and ground clamps where raceways cross building control joints.
- (vii) Raceways shall have established positive low resistance paths to ground and effectively isolate conductors so that any short-circuit arc is confined.
- (viii) Select appropriate fittings, such as grounding bushings, bonding and grounding straps, to maintain continuity and effectiveness of grounding of raceway system.
- (ix) Provide necessary fasteners and supports acceptable for type and size of raceways and boxes, to ensure rigid and complete assembly.
- (x) Provide suitable inserts or expansion type machine bolts for fastening raceways, fittings, boxes and equipment to concrete surfaces. Do not use wood screws, lag screws, expansion shields, rawl plugs and nylon inserts.
- (xi) Secure raceway and other associated work on tile and concrete block walls with approved toggle bolts.
- (xii) Thoroughly clean raceway and dry clear obstructions before pulling cable or wire.
- (xiii) Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.
- (xiv) Conceal conduits except in service rooms and in unfinished areas.
- (xv) Use rigid galvanized steel threaded conduit in all locations unless otherwise shown or specified.
- (xvi) Use liquid tight flexible metal conduit for connection to motors or vibrating equipment in damp, wet or corrosive locations.
- (xvii) Minimum conduit size for lighting and power circuits: 21 mm.
- (xviii) Bend conduit cold. Replace conduit if kinked or flattened more than 1/10th of its original diameter.
- (xix) Mechanically bend steel conduit over 21 mm dia.
- (xx) Field threads on rigid conduit must be of sufficient length to draw conduits up tight.

- (xxi) Install fish cord in empty conduits.
- (xxii) Remove and replace blocked conduit sections. Do not use liquids to clean out conduits.
- (xxiii) Dry conduits out before installing wire.
- (xxiv) All conduits shall contain an insulated green ground conductor.
- (c) Surface Conduits
  - (i) Run parallel or perpendicular to building lines.
  - (ii) Group conduits wherever possible on suspended channels.
  - (iii) Do not pass conduits through structural members except as indicated.
  - (iv) Do not locate conduits less than 75 mm parallel to hot water lines with minimum of 25 mm at crossovers.
- (d) Concealed Conduits
  - (i) Run parallel or perpendicular to building lines.
  - (ii) Do not install horizontal runs in masonry walls.
  - (iii) Do not install conduits in terrazzo or concrete toppings.

**END OF SECTION**

**1. General**

(a) References

- (i) CSA C22.2No.65-1956(R1965) Wire Connectors.
- (ii) EEMAC 1Y-2, 1961 Bushing Stud Connectors and Aluminum Adapters (1200 Ampere Maximum Rating). Canadian Standards Association (CSA)

(b) Submittals

- (i) Shop drawings: Submit Shop Drawings in accordance with section 01300 Product Data.

**2. Products**

(a) Materials

- (i) Pressure type wire connectors: with current carrying parts of copper sized to fit copper conductors as required.
- (ii) Fixture type splicing connectors: with current carrying parts of copper sized to fit copper conductors 10 AWG or less.
- (iii) Bushing stud connectors: to EEMAC 1Y-2 to consist of:
  - (A) Connector body and stud clamp for stranded copper conductors.
  - (B) Clamp for stranded copper conductors.
  - (C) Stud clamp bolts.
  - (D) Bolts for copper conductors.
  - (E) Sized for conductors as indicated.
- (iv) Clamps or connectors for armoured cable, aluminum sheathed cable, flexible conduit, as required.

(b) Wire Connectors

- (i) Use 3M “Scotchlock” or approved equivalent, self-insulated connectors for hand wire joints for lighting, small power and control wiring.
- (ii) Use T & B or approved equivalent non-insulated ring type compression lugs for terminating #10 AWG and smaller motor connections. Tape with rubber and scotch tape. Lugs to accept ten -32 x 3/8” machine bolts.
- (iii) Terminate conductors #8 AWG and larger with Thomas & Betts Colour-Keyed compression connectors Series 54000 or approved equivalent, or on lugs provided with equipment.



- (iv) Thomas & Betts “KOPR-SHIELD” compound Series CP8 or approved equivalent on all terminations for compression connectors.

**3. Execution**

(a) Installation

- (i) Remove insulation carefully from ends of conductors and:
  - (A) Apply coat of zinc joint compound on aluminum conductors prior to installation of connectors.
  - (B) Install mechanical pressure type connectors and tighten screws with appropriate compression tool recommended by manufacturer. Installation shall meet secureness tests in accordance with CSA C22.2 No.65.
  - (C) Install fixture type connectors and tighten. Replace insulating cap.
  - (D) Install bushing stud connectors in accordance with EEMAC 1Y-2.

(b) Wire Connectors

- (i) Select hand twist connectors for wire sizes and install tightly on conductors.
- (ii) Brush “KOPR-SHIELD” compound on terminations for compression connectors as recommended by the manufacture.
- (iii) Install compression connectors using methods and tools recommended by the manufacture.
- (iv) Do not install strand conductors under screw terminals unless compression lugs are installed.

**END OF SECTION**

## MOULDED CASE CIRCUIT BREAKERS

UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255

SECTION 16477  
PAGE 1 OF 2

JUNE 2018

### 1. General

- (a) Related Work
  - (i) Shop Drawings and Other Submittals Section 01300
  - (ii) Electrical General Provisions Section 16010
- (b) Shop Drawings And Product Data
  - (i) Submit Shop Drawings and product data in accordance with section 01300 Shop Drawings and Other Submittals.
  - (ii) Include time-current characteristic curves for breakers with ampacity of 400A and over or with interrupting capacity of 22,000 A symmetrical (rms) and over at systems voltage.

### 2. Products

- (a) Breakers General
  - (i) Bolt-on moulded case circuit breaker, quick-make, quick-break type, for manual and automatic operation with temperature compensation for 40°C ambient.
  - (ii) Common trip breakers with single handle for multipole applications.
  - (iii) Magnetic instantaneous trip elements in circuit breakers, to operate only when the value of current reaches setting. Trip settings on breakers with adjustable trips to range from 3 -10 times current rating.
  - (iv) Circuit breakers with interchangeable trips as indicated.
  - (v) Short circuit rating of 120V breakers to be 10kA rms sym.
  - (vi) Provide service entrance rated breaker where shown on contract drawings.
- (b) Thermal Magnetic Breakers Design A
  - (i) Moulded case circuit breaker to operate automatically by means of thermal and magnetic tripping devices to provide inverse time current tripping.
- (c) Manufacturers
  - (i) Acceptable manufactures are Eaton, Siemens, Schneider Group or approved equivalent.

### 3. Execution

- (a) Factory Testing
  - (i) Standard factory tests shall be performed on the equipment under this section. All tests shall be in accordance with the latest version of EEMAC

**MOULDED CASE CIRCUIT BREAKERS**

**UNION STATION  
INSTALLATION OF DUAL FAUCETS HANDRYERS  
AT YORK CONCOURSE WASHROOMS  
CONTRACT NO.IT-2018-STNS-255**

**SECTION 16477  
PAGE 2 OF 2**

**JUNE 2018**

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and ULC standards.

- (b) Installation
  - (i) Install all equipment per the manufacturer's recommendations and the Contract Drawings.
- (c) Field Settings
  - (i) The Contractor shall perform field adjustments of the circuit breakers as required to place the equipment in final operating condition. The settings shall be in accordance with the approved protective device coordination study or as directed by the Consultant.

**END OF SECTION**



Name of Vendor:		Vendor Project Manager:	
Street:	City:	Province/State:	Postal/ZIP Code:
Original Contract Date 27/06/2018	Contract No. IT-2018-STNS-255	Project No. 154127	
Contract Name:	Union Station - Installation of Dual faucets Handdryers at York Concourse Washroom		
Category of Work:	Construction Services		
Division:	Construction and Commissioning Station Services	Branch:	Station Services
Project Coordinator:	Oscar Tapia		

Scale	0: Unacceptable - Does not meet any requirements of the key performance indicator 1: Poor - Meets few of the requirements of the key performance indicator 2: Fair - Meets some of the requirements of the key performance indicator 3: Satisfactory - Meets most of the requirements of the key performance indicator 4: Good - Meets all of the requirements of the key performance indicator 5: Excellent - Exceeds the requirements of the key performance indicator	Applied Weight	Score
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Safety	20%	0.0
Compliance with OHSA requirements and other laws and policies related to safety. (Including but not limited to safety infractions, on site safety, resolving safety issues and environmental conformance)	20%	

Vendor Performance Rating (90% Contract Performance Rating and 10% Corporate Performance Rating)	10%
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Information regarding the Metrolinx Vendor Performance Management System and how a Vendor Performance Rating is calculated can be found in the Metrolinx "Vendor Relationship Management Procedures and Guidelines v1.1 dated November 7, 2016", or most current version, accessed through the following link:  
[http://www.metrolinx.com/tenders/en/VendorRelationshipManagement\\_Guidelines.pdf](http://www.metrolinx.com/tenders/en/VendorRelationshipManagement_Guidelines.pdf).



**METROLINX**

An agency of the Government of Ontario



# Safety Guidelines for Contractors, Consultants and Project Coordinators

# EMERGENCY CONTACT NUMBERS

## **GO Transit 24 hrs contact list:**

1. Rail Operations Control Centre (ROCC): . . . . . **416.601.2174**
2. Bus Operations – Steeprock Ctrl Room (24/7): . **416.638.6776**
3. Transit Safety Dispatch: . . . . . **905.803.0642**  
**1.877.297.0642**
4. USRC-CMO (Union Station): . . . . . **416.601.3611**
5. City of Toronto (Union Station Security): . . . . . **416.338.8000**

## **Railway 24 hrs contact list:**

6. CN Railway: . . . . . **1.800.465.9239**
7. CP Railway: . . . . . **1.800.716.9132**
8. TTR (07:00 – 16:00): . . . . . **416.864.3440**

## **Others:**

9. Fire / Police / Ambulance: . . . . . **911**
10. Nearest Hospital: . . . . .
11. MOE Spills Action Centre : . . . . . **1.800.268.6060**  
(Toronto Division) . . . . . **416.325.3000**
12. Project Manager / Coordinator: . . . . .

# Table of Contents

Page

<b><u>1 Occupational Health and Safety Policy</u></b>	<b><u>5</u></b>
<b><u>2 Definitions</u></b>	<b><u>6</u></b>
<b><u>3 Intent &amp; Limitations</u></b>	<b><u>10</u></b>
<b><u>4 General Rules</u></b>	<b><u>13</u></b>
4.4 - Consultant / Project Coordinator Responsibilities.....	16
4.1 - Principles .....	13
4.2 - Conditions To Be Respected By The Contractor .....	13
4.3 - Contractor's Responsibility .....	13
<b><u>5 Site Rules</u></b>	<b><u>17</u></b>
5.1 - Compliance With Regulations .....	17
5.2 - Site Set-up .....	17
5.2.1 - Start-up meeting .....	17
5.2.2 - Safety Orientation / Meetings .....	18
5.2.3 - Work Site access / Material Delivery .....	19
5.2.4 - Contractor's file .....	20
5.2.5 - Notices from Governing Authorities .....	20
5.2.6 - Vehicles, Equipment, Tools .....	21
5.2.7 - Site Housekeeping .....	23
5.2.8 - Utility Locates.....	23
5.3 - Personal Protective Equipment .....	24
5.3.1 - Site access on Railway ROW .....	25
5.3.2 - Site access with NON Railway ROW.....	25
5.3.3 - Potential danger zones .....	26

5.4 - Public Safety Protection.....	26
5.5 - Hazardous Materials .....	26
5.6 - Emergency and Accident Response Plans .....	27
5.6.1 - Emergency procedures .....	27
5.6.2 - Rescue Equipment and Training .....	29
5.6.3 - First aid .....	30
5.6.4 - Fire prevention .....	30
5.7 - Working At Heights .....	31
5.7.1 - Ladders.....	31
5.7.2 - Scaffolding .....	31
5.7.3 - Fall Protection .....	32
5.8 - Hazardous Energy Sources.....	33
5.9 - Confined Space Entry.....	34
5.10 - Respiratory Protection .....	35
5.11 - Compressed Gas Cylinders & Flammables .....	35
5.12 - Other Hazardous Processes.....	37
5.13 - Workplace Hazardous Material Information System...	38
<b><u>6 Railway Right-of-way and Train Operation</u></b>	<b><u>39</u></b>
6.1 - General Overview .....	39
6.2 - Restrictions for working on ROW .....	40
<b><u>7 Fit For Duty</u></b>	<b><u>42</u></b>
7.1 - Alcohol & Drug Abuse Prevention .....	42
<b><u>8 Site Safety Measures</u></b>	<b><u>43</u></b>
8.1 - Quick Reference .....	43
8.2 - Stoppage of Work Due To Failure To Comply .....	47
8.3 - Execution of Safety Compliance .....	47



8.4 - Contractor Safety Information Flow .....	48
8.5 - Construction Site Security .....	50
8.6 - Security Levels .....	52
<b>9 Supplementary References</b> .....	<b>53</b>
9.1 - Safety Management System .....	53
9.2 - Metrolinx as a “Constructor” .....	53
9.3 - Willowbrook Maintenance Facility .....	53
9.4 - Environmental Management System .....	53
9.5 - Station Operations .....	53
9.6 - Regulatory Requirements .....	54
9.7 - Transport Canada (www.tc.gc.ca).....	54
9.8 - Ministry of Transportation Ontario (www.mto.gov.on.ca).....	54
9.9 - Canadian National Railway (www.cn.ca) .....	54
9.10 - Canadian Pacific Railway (www.cpr.ca).....	55
9.11 - Infrastructure Health & Safety Association (www.ihsa.ca).....	55
9.12 - Industrial Accident Prevention Association (www.iapa.ca) .....	55
9.13 - Ontario General Contractors Association (www.ogca.ca) .....	55
9.14 - Construction Safety Engineering Principles.....	55
9.15 - The Canadian Standards Association (www.csa.ca).....	55
9.16 - <b>Fire Protection and Prevention Act</b> The Ontario Fire Code (www.ofm.gov.on.ca) .....	55
9.17 - National Fire Protection Association (www.nfpa.org).....	55

<b>10 Sample Forms</b>	<b>56</b>
10.1 – GO Transit Reporting Forms.....	57
10.1.1 - Job Briefing Form .....	57
10.1.2 - Incident Report Form - (Page 1) .....	58
10.1.2 - Incident Report Form - (Page 2) .....	59
10.2 - Hot Work Permit - Guidelines .....	60
10.2 - Hot Work Permit.....	61
10.3 - Confined Space Entry Permit (Page 1).....	62
10.3 - Confined Space Entry Permit (Page 2).....	63
10.4 - Spills Report Form- (Page 1) .....	64
10.4 - Spills Report Form - (Page 2) .....	65
<b>11 GO System Map</b>	<b>66</b>
Excavator Hand Signals.....	67
<b>12 Hand Signals</b>	<b>67</b>
Crane Hand Signals .....	68

# Occupational Health and Safety Policy

1

Metrolinx, as an employer is dedicated to the health, safety and well-being of all its employees and is committed to conducting its operations in a safe manner in order to prevent injuries, illnesses, and damages. We will take whatever steps reasonable to protect our workers from workplace violence and harassment from all sources.

Metrolinx strives to fully comply with all health and safety legislation. Where reasonable, Metrolinx will strive to exceed legislated requirements by adopting the best practices available to protect Metrolinx employees and to promote a positive health and safety culture. Metrolinx will work towards continuous improvement on its health and safety program.

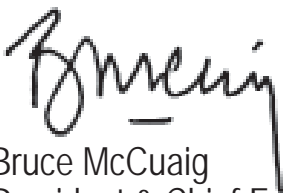
In recognition and support of the corporate goals, management ensures that employees work safely and that safe work conditions are maintained by implementation of personal injury and occupational disease prevention methods; training and competent supervision.

Management will be held accountable for the health and safety of those individuals under their supervision and those workplaces under their charge. Management will ensure that all workers and supervisors have the appropriate information and instruction to protect them from violence and harassment in the workplace.

Every employee must protect his or her own health, safety and well-being, and that of any person in the workplace, by following occupational health and safety legislation, as well as Metrolinx policies and procedures. Employees must receive adequate training in their specific work tasks and must report all unsafe and unhealthy conditions to management.

Contractors and sub-contractors employed by the Corporation have a responsibility for the health, safety and well-being of all workers and, when working for the Corporation, must follow the requirements of the Occupational Health & Safety Act and the Corporation's safety programs, policies, practices, procedures and departmental requirements, where applicable.

It is in the best interest of all parties to consider health and safety in every activity. Commitment to health and safety is integral to Metrolinx, and is reflected at all levels within the organization.



Bruce McCuaig  
President & Chief Executive Officer  
Metrolinx

January 2014

# 2

## Definitions

In this document, unless the context requires otherwise, the following definitions shall apply:

**Accident:** An undesirable and unexpected event resulting in personal injury, property or environmental damage, or losses in the production process.

**Applicable Law:** All applicable laws, statutes, regulations, orders, by-laws, ordinances, codes and standards of any governmental authority, body, agency or association having jurisdiction over the Work of the Contract or the Place of Work.

**Arc Flash Hazard:** A dangerous condition associated with the release of energy caused by an electric arc (CSA Z462-12).

**Blue Tag – Track Protection:** Lock out procedure during train servicing/cleaning (Willowbrook Maintenance Facility) Bombardier OP-W-11-003.

**CCDC:** Canadian Construction Documents Committee.

**CCOHS:** Canadian Centre for Occupational Health and Safety ([www.ccohs.ca](http://www.ccohs.ca)).

**Confined Space:** Fully or partially enclosed space:

- (a) that is not both designed and constructed for continuous human occupancy, and
- (b) in which atmospheric hazards may occur because of its construction, location, or contents or because of work that is done in it.

**Contract:** The duly executed agreement between GO Transit and the Contractor to perform their respective duties, obligations and responsibilities as presented in the Contract Documents.

**Contract Documents:** Those documents listed in the Agreement between Owner and Contractor section of the Contract that make-up the Contract.

**CN:** Canadian National Railway Company or a designated representative thereof (www.cn.ca).

**CP:** Canadian Pacific Railway Company or a designated representative thereof (www.cpr.ca).

**Consultant:** A person, firm or corporation identified as such in the Contract Documents, and is an Architect or Engineer licensed to practice in the province or territory where the Work is being performed.

**Contractor:** The person or entity identified as such in the Contract Documents. The term Contractor means the Contactor or the Contractor's authorized representative as designated to GO Transit in writing.

**CROR:** Canadian Rail Operating Rules, as well as the special instructions in use on the operating railways within GO Transit rail service area.

**Employee:** Any person employed at the Place of Work or Work Site by Contractor or any of its Subcontractors.

**Fall Hazard:** A dangerous condition associated with a person falling from a height.

**Fall Protection System:** A system designed to protect a person from the risk of falling when working at heights.

**Governing Authority:** Any governmental authority, body, agency or association having jurisdiction over the Work of the Contract or the Place of work.

**Hazard:** A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation; a condition that is a prerequisite to an accident.

*Hazards can include latent conditions that may represent future threats and can have different origins. Hazards can be single, sequential or combined in their origin and effects. Each hazard is characterized by its location, intensity, frequency and probability.*

**Hot Work:** A process or activity that produces heat ,sparks or open flame including cutting, welding, grinding, soldering, brazing.

**Incident (near miss):** An undesirable and unexpected event that under slightly different circumstances could have resulted in personal injury, property or environmental damage, or losses in the production process.

**MOE:** Ministry of Environment ([www.ene.gov.on.ca](http://www.ene.gov.on.ca)).

**MOL:** Ministry of Labour ([www.labour.gov.on.ca](http://www.labour.gov.on.ca)).

**MOT:** Ministry of Transportation ([www.mto.gov.on.ca](http://www.mto.gov.on.ca)).

**MSDS:** Material Safety Data Sheet.

**OHSA:** Occupational Health and Safety Act and Regulations.

**Operator:** A person responsible for operating or driving vehicles or equipment.

**Place of Work:** The designated site or location of the work as identified in the Contract Documents.

**PNR:** Pacific Northern Railway Contractors Inc. or a designated representative thereof ([www.railworks.com](http://www.railworks.com)).

**Professional Engineer:** A person who is duly registered and licensed to practice as an engineer in the province or territory where the Work is being performed ([www.peo.on.ca](http://www.peo.on.ca)).

**Project Coordinator:** The designated GO Transit employee or representative who is responsible for the entire project and acts on behalf of GO Transit in this capacity.

**Protecting Person – Flagman:** A Protecting Person is a railway employee qualified in the Canadian Rail Operating Rules (CROR).

*Protecting Persons are charged solely with the safe movement of trains and are NOT responsible for the safety of the Contractor, Contractor's Employees, Consultants, or their equipment.*

**Qualified person:** A person who, by reason of his/her knowledge, training and experience in a specific field, has the skills necessary to perform a task safely and efficiently.

**Risk:** The possibility that a specific undesirable event may occur, within a given time period or under specific circumstances, and that the event may produce negative effects or consequences.

**Risk Evaluation:** A quantitative estimation of the possibility of a given undesirable event occurring and of its consequences.

**Railway Right of Way, (ROW):** The land occupied by a railway for its exclusive use; the right of railway traffic to take precedence.

*Where work is to be performed less than 8 m (25 ft) from the nearest rail or where otherwise deemed necessary by the railroad, host railroad will assign a Protecting Person for protection of the Railway's operation (refer to section 6 for more details).*

**Subcontractor:** A person or entity having a direct contract with the Contractor to perform a part or parts of the Work, or to supply products worked to a special design for the Work.

**TC:** Transport Canada ([www.tc.gc.ca](http://www.tc.gc.ca)).

**TTR:** Toronto Terminals Railway Company Ltd. or a representative thereof ([www.ttrly.com](http://www.ttrly.com)).

**Visitor:** A person authorized to visit the Work Site to examine conditions, or to give or gather information, but who is only at the site for a short time. The Contractor shall accompany visitors.

**WHMIS:** Workplace Hazardous Materials Information System.

**WSIB:** Work Place Safety & Insurance Board ([www.wsib.on.ca](http://www.wsib.on.ca)).

**Work:** The total construction and related services required by the Contract Documents.

**Work Site:** Any place where the Contractor performs tasks as part of the contracted work.

**Worker:** See Employee.



## Intent & Limitations

1. The following health and safety guidelines shall govern the actions of all Contractors including their subcontractors, and all service providers engaged in performing work of any sort for GO Transit, including its employees or the designated GO Transit Consultant(s) who act on behalf of GO Transit.
2. The purpose of this document is to outline **minimum** GO Transit safety standards for Contractors, their employees, Subcontractors and Consultants. The Office of System Safety will be available as an additional resource in developing and maintaining a Safe and Secure work environment for all parties involved.
3. When GO Transit a division of Metrolinx is deemed the “constructor” under the *Occupational Health & Safety Act* additional governance will be implemented by the GO-CMO Construction Safety Management Program and will be referenced in the contract documents.
4. These health and safety guidelines are deemed to be supplementary to and incorporated in the obligations and responsibilities identified in the contract documents or purchase order agreements between GO Transit and the Contractor or service provider. In the event of discrepancy between these guidelines and the Contract, the Contract shall govern.
5. When the work is being performed indirectly for GO Transit within a railway right-of-way, under direct Contract to the railway company having ownership of the right-of-way, the railway shall be fully responsible for the management of the contract work. The Contractor shall deal with the designated railway “Project Manager” or the designated railway Consultant. The railway’s safety procedures and requirements are set out in the appropriate contract documents.



6. When the work is being performed directly for GO Transit, under direct Contract to GO Transit, within the railway right-of-way, or property owned or controlled by GO Transit, GO Transit is fully responsible for the management of the contract work and the Contractor or service provider shall deal with the designated GO Transit Project Coordinator or Consultant.
7. Contractors are responsible for thoroughly familiarizing themselves with all Applicable Law and Regulation governing worker health and safety and providing safe work procedures that determine their applicability in relation to the Work of the Contract prior to the start of work.
8. Contractors are responsible and accountable for ensuring compliance with all Applicable Law and regulation and these Safety Guidelines. Contractors will be monitored from time to time by GO Transit to ensure said compliance as set out in these guidelines.
9. The Contractor shall be responsible for determining the appropriate measures to ensure the health, safety, security and physical wellbeing of Employees, in consultation with the appropriate regulatory authorities, if necessary, to achieve compliance with Applicable Laws prior to the implementation of these Safety Guidelines.
10. A health & safety program and site specific plan developed by the Contractor working on GO Transit property shall be submitted for approval prior to the start of work. Such complementary safety programs shall:
  - a) Be specific to the work site and scope of work being contracted,
  - b) Take into account the existing and potential hazards inherent to the work performed,
  - c) Include copies of the risk assessments, job hazard analysis and / or engineering reports used to develop risk control strategies,

- d) Include copies of all specific work and emergency procedures required for the project, and
  - e) Shall include summaries of all specific safety training given to the Contractor's and Subcontractors employees. Copies of all training certificates shall be included in the package.
11. The Contractor shall be responsible for ensuring that its employees, subcontractors and visitors are familiar with these Safety Guidelines and ensuring day-to-day application.
12. The information set out in this document, including regulations, standards, references and links, are up to date during the time of printing. They are subject to change without further notice. Any discrepancies, omissions should be directed to the Office of System Safety.

## 4.1 - Principles

These guidelines are based on the following principles:

1. All accidents and incidents causing loss or injury can be prevented.
2. It is possible to manage effectively all risks that may lead to injuries, occupational illness, or property damage.

## 4.2 - Conditions To Be Respected By The Contractor

These guidelines require that the following conditions be respected:

1. The respect for safety in the performance of work shall be a condition of the Contract.
2. The Contractor shall be responsible for enforcing and respecting safety rules in the performance of all work covered by the Contract.
3. It is the Contractor's responsibility to quickly resolve any problems related to health and safety at the Place of Work.
4. No task, regardless of its urgency, shall be performed unless it can be done in complete safety.

## 4.3 - Contractor's Responsibility

Contractors engaged for the purpose of providing construction services to GO Transit shall be responsible for:

1. Ensuring that the health and safety of its Employees, GO personnel, patrons and the general public is of paramount

importance with regards to the performance of construction at GO Transit.

2. Ensuring that all construction conforms to all Applicable Laws.
3. Ensuring that the Employees, Consultants and suppliers conform to all its safety requirements as well as GO Transit safety requirements for construction at the Place of Work.
4. Protecting the environment by:
  - Conducting a daily clean up of the work area.
  - Properly disposing of any waste, including hazardous waste and by controlling the release of any hazardous substances as per applicable regulation.
  - Not dumping, burying or burning waste material on GO Transit or railway property.
  - Labeling all containers as to contents and hazards.
  - Providing a means to capture any fluids leaking from equipment.
  - Providing adequate dust control measures.
  - Containing any runoff from washing work equipment.
  - Implement erosion control and mitigation measures.
  - Tree hoarding where required by jurisdictional boundary.
  - Reporting all spills immediately to GO Transit by utilizing the Safety Management Systems Environmental Management Program specifically the GO-ENV-R201 Spill Prevention and Contingency Plan.
5. Conducting regular work site inspections and acting promptly in all situations where there is a risk to Health & Safety or the Environment.
  - The inspections shall be carried out on a weekly basis, or

more frequently as the nature of the Work dictates.

- Copies of all inspection reports shall be kept on file and immediately forwarded to GO Transit for review upon request.
6. Investigating all accidents and incidents having caused or risked causing losses or injury, in order to identify the causal factors, and immediately take the appropriate corrective action to prevent their recurrence.
    - All investigation reports shall be forwarded to GO Transit within twenty four (24) hours of the occurrence.
    - All major injury and property damage accidents must be immediately reported to the GO Transit Control Center: 416.601.2174.
    - All close out reports indicating corrective actions taken to prevent recurrence shall be forwarded to GO Transit Project Coordinator within twenty one (21) days from the date of occurrence and copied to the Office of System Safety.
  7. Taking all necessary steps to ensure that Employees and all persons admitted to the Place of Work and who are under the Contractor's control, or who are present at the latter's request, comply with Contractor safety procedures, these safety guidelines and with all codes, regulations and other instructions in effect.
  8. Providing proper training prior to starting a task so that they can perform their work safely.
  9. Providing and maintaining in good condition all personal protective devices for Employees, and / or any other safety devices required by regulation, standard or code during the performance of the work.
  10. Maintaining contact with the Office of System Safety as an additional resource when required.

#### 4.4 - Consultant / Project Coordinator Responsibilities

Consultants / Project Coordinators, shall be responsible for:

1. Monitoring, recording and notifying the Contractor and GO Transit of any observed safety violations during construction, based on reasonable care, competence, knowledge, skill, judgment and due diligence.
2. Following up with Contractor and verifying completion and sustainability of requested corrective actions.
3. Maintain, record, compile and ensure all required regulatory and contractually referenced documentation as identified in the contract or required by Applicable law is provided or available for review by the Office of System Safety as required.
4. Provide notice and minutes of site meetings to the Office of System Safety on a regular and ongoing basis for the duration of the contract
5. Maintaining contact with the Office of System Safety as an additional resource when required.

## 5.1 - Compliance With Regulations

1. The Contractor is fully responsible for the occupational health and safety of its Employees, Subcontractors and visitors in accordance with Contract provisions and Applicable Law.
2. In the event of conflict between Applicable Laws, the Contractor shall comply with and apply the most restrictive or demanding Applicable Law.
3. As CN, CP and TTR are federally chartered and regulated railway companies, Contractors are advised that work undertaken on any Railway ROW shall be carried out in compliance with federal regulation.
4. The Contractor is responsible for obtaining approval from GO Transit where work is to be performed on or near the Railway ROW. GO Transit Project Coordinators or Consultants may issue new instructions from time to time based on site conditions or contract changes.

## 5.2 - Site Set-up

### 5.2.1 - Start-up meeting

*The Contractor shall:*

1. Attend a construction kick-off meeting with GO Transit representatives prior to mobilizing on site. The agenda of this meeting shall include as a minimum the following topics:
  - Review of GO Transit policies and procedures,
  - Review of Contractors' safety programs and site specific safety plans,

- Review and planning of project activities,
  - Ensuring compliance with all Applicable Law,
  - Initial Safety Orientation session planning, •  
Railway protection planning (ROW access),
  - Initial job briefing session planning.
2. Communicate all applicable safety issues discussed at the meeting to its supervisors and others responsible for contract execution, including Subcontractors and Visitors.

### **5.2.2 - Safety Orientation / Meetings**

The Contractor is responsible to ensure that the following safety orientations and job briefings are carried out prior to and during the performance of the Work.

*The Contractor shall:*

1. Provide site safety orientation to all persons with access to the site and maintain written records of this event. Copies of the written records to be sent to GO Transit upon request.
2. Organize additional safety orientation sessions for new employees, as required.
3. Instruct all visitors and delivery personnel on all safety instructions applicable to the Work Site, including all emergency procedures and GO Transit Contractor Safety Guidelines as required.
4. Ensure that a health and safety representative or JHSC committee has been established for the site and hold regular meetings as required by Applicable Law. The GO Transit Project Coordinator / Consultant shall attend these meetings.
5. Keep minutes of all Joint Health and Safety Committee meetings. The minutes shall be kept on file. Documentation of said meetings shall be retained on file at the Place of



Work by the Contractor and provided to GO Transit upon request.

6. Hold weekly safety meetings with all employees as required to ensure site safety and maintain employee hazard awareness. Documentation of said meetings shall be retained on file at the Place of Work by the Contractor and provided to GO Transit upon request.
7. Ensure that all of the Contractors' Employees and all Subcontractors and their employees working on ROW have taken GO Safe Railway Orientation training, for all work at track level, prior to the start of work.
8. Hold a daily job briefing session with all persons engaged in work to identify hazards and appropriate controls. Work activity that may interfere with rail operations requires the Protecting Person to attend these briefings and identify the required track protection methods to all affected workers. A written record of the briefing sessions shall be kept on file by the Protecting Person and shall be made available to GO Transit upon request for audit purposes.

### **5.2.3 - Work Site access / Material Delivery**

1. The Contractor is ultimately responsible for ALL individuals entering the Place of Work. Accompany / escort all visitors at all time.
2. The Contractor shall submit their method of controlling access to the Place of Work to GO Transit for approval prior to the start of the contract.
3. All persons admitted to the Work Site shall wear personal protective equipment in accordance with section 5.3 herein.
4. The Contractor shall ensure that all persons with access to the Place of Work wear their hard hat stickers for identification purposes (ROW access).

5. The Contractor shall keep an up-to-date register of all personnel who have been issued the identification stickers. This register shall be accessible to GO Transit within twenty four (24) hours of receiving such a request (ROW access).
6. Communicate safety procedures around live railway track to those delivering materials or equipment and have them accompanied at all times. Individuals that deliver materials / supplies frequently (on the regular basis) will be required to complete the GO Safe Railway Orientation training.
7. Deny site access to a person who is not respecting the safety standards or a person who has been ordered off the site by GO Transit.

#### **5.2.4 - Contractor's file**

1. Prepare and maintain a list, by company and Subcontractor, of the people in charge at the Work Site, indicating their function relating to the Work, the name and address of their employer and their appropriate telephone numbers (office, fax, cellular, pager, home).
2. Prepare and maintain a list of emergency response employees, indicating their employers' names and twenty four (24) hour emergency telephone numbers.
3. The most updated list shall be posted at the Place of Work, kept at the GO Transit and Contractor's offices, and shall be readily accessible.

#### **5.2.5 - Notices from Governing Authorities**

1. GO Transit must be promptly notified by the contractor of any and all inspections conducted at the Place of Work by any Governing Authority.
2. The Contractor shall forward a copy of said notices on the same day as the inspection to the Project Coordinator and the Office of System Safety.

### 5.2.6 - Vehicles, Equipment, Tools

1. It is the responsibility of the Contractor to ensure that all vehicles, equipment, tools are in a safe condition to operate and where required have received the necessary regulatory inspection as per Applicable Law. If, in the opinion of the Project Coordinator, any of the Contractor's equipment is unsafe for use, the Contractor shall remove such equipment from the GO Transit / host railway's property.
  - The Contractor must ensure that the Operators of all equipment are properly trained and competent in the safe operation of the equipment.
  - Training records shall be made available to GO Transit upon request and be carried by the equipment operator at all times.
2. Operators on the ROW must (*refer to section 6 for more details*):
  - Be CROR qualified to operate Hi- rail mounted equipment
  - Obey Protecting Person directives all the time.
  - Ensure the operator's manual, which includes instructions for safe operation, is kept with each machine.
  - Shut off any unattended vehicle, equipment, tools, and properly secure the equipment against movement.
  - Verify that the master battery switch is left in the off or disconnect position and padlocked if equipment is to be left for extended period of time.
  - Where equipment has an enclosed cab, padlock the cab access doors and any glass protective coverings.
3. All crane work (hoisting, setting-up, and dismantling) shall be done in accordance with the provisions of the most recent Applicable Law and OHSa regulations.
  - Written safe work procedures, hoisting plans,

yearly crane certifications, including major rigging components, and operator training records for all hoisting activity must be provided to the Project Coordinator and the Office of System Safety for review prior to the work being undertaken.

- All overhead lines will be considered to be 'live' and high voltage, unless otherwise explicitly indicated by local utility provider. Work performed near power lines shall conform to O.Reg 213/91 s.187,188 and O.Reg. 627/05, s.7.
  - All hoisting activity must be well communicated and coordinated with other employees at the job site during daily job briefings.
  - The hoisting area shall be cordoned off and proper signage in place to warn others of the hazard.
  - The Contractor must implement an inclement weather policy in their written program for any hoisting operation.
  - Any serious violations of the crane safety procedures will result in an immediate work stoppage pending appropriate investigation by the Contractor, Project Coordinator with System Safety Review or involvement as required.
4. All vehicles and equipment are to give the right of way to trains. They must be prepared and able to stop at all railway at-grade crossings, and shall stop when necessary (*refer to Section 6 for min clearances*).
- Cranes shall ensure that the crane body, counter weight, boom or load attached to the crane is positioned to maintain adequate minimum clearances for passing trains.
  - Loads must be grounded while trains are passing to avoid wind induced movement.

5. Seat belt use is required when available on operating equipment and when driving or riding in vehicles unless they are on hi-rail gear.

### **5.2.7 - Site Housekeeping**

*The Contractor shall:*

1. Remove all rubbish and debris from the site as work progresses, to GO Transit's satisfaction and in accordance with all Applicable Law and the requirements of the Contract Documents.
2. Keep traffic and employees' access routes clean and clear of any obstructions including application of sand and salt during winter months. Access routes with openings, construction material, excavated material or equipment must be barricaded and / or marked with appropriate and approved signage.
3. Obtain pre-authorization from GO Transit and / or the operating railway to store equipment or materials on the Railway (ROW) . Such storage shall in no way impede railway operations.

### **5.2.8 - Utility Locates**

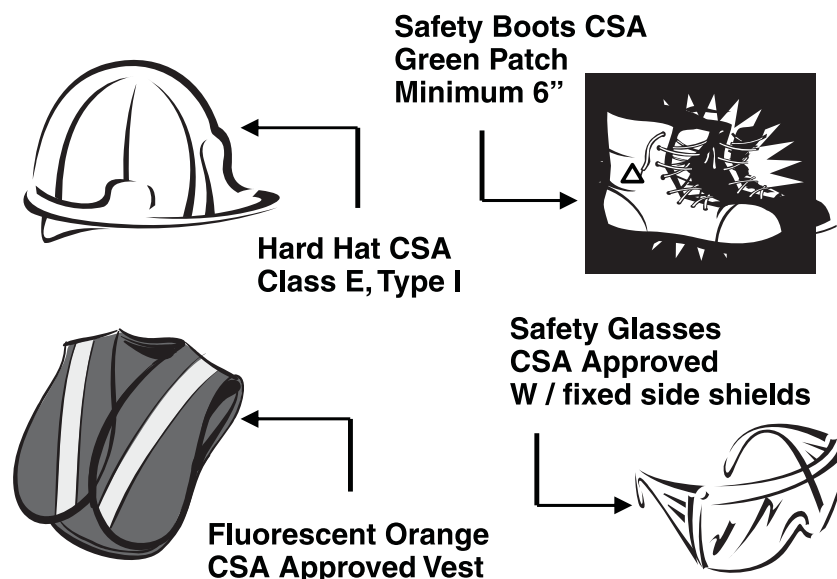
*The Contractor shall:*

1. Be responsible for determining the exact location of all utilities. The Contractor shall serve proper advance notice to GO Transit and the respective railway, as applicable, and the appropriate utility company or agency, for the purpose of utility locates.
2. Be responsible for all costs, including permit fees, daylighting, radar or any other means as may be required to perform the utility locates.
3. Not allow any excavation or other work that could impact

the existing utilities or services to be undertaken before approval is granted by the consultant or GO Transit Project Coordinator. The exact location and size of all embedded services has to be determined. Hand digging within three feet of known services must be done to ensure identification and eliminate potential contact with equipment.

4. Have written notification from the Railway Signal & Communications Department indicating that ALL cables/ services have been located in the Railway ROW prior to allowing any tool to break the ground surface.
5. If in doubt as to the validity or accuracy of any locate mark a remark must be requested of the utility service provider(s).
6. Barricade and prevent access to all excavations, holes, and trenches to protect pedestrians and vehicle traffic.
7. A review of all locates must be performed with the designated equipment operator prior to excavation and a valid copy of the locates maintained in the cab or in possession of the operator at all times

### 5.3 - Personal Protective Equipment



### 5.3.1 - Site access on Railway ROW

1. All Employees having access to the Place of Work on railway property shall wear CSA approved personal protective equipment:

- Approved headwear, approved footwear
- Approved eyewear with fixed side shields
- High visibility apparel

*Note: High visibility apparel must be approved by the Office of System Safety, and must be manufactured to CSA Z96-02 High Visibility Apparel, Class 2 during daylight hours, and Class 3 for employees required to work between dusk and dawn and during other low-light conditions, or at any time on and about roadways where the posted speed exceeds 80 km/h.*

- Any other additional PPE as prescribed for project specific activities or defined in safe work procedures, risk assessments or required by Applicable Law.
2. The individuals that are allowed to the Place of Work visiting, delivering, supplying shall also wear all required personal protective equipment and shall be briefed with all site safety procedures. It is the Contractor's responsibility to ensure that personal protective equipment is used.

### 5.3.2 - Site access with NON Railway ROW

1. All persons having access to the work site shall wear CSA approved personal protective equipment, at all times as required by:
  - The Contractors' own safety program.
  - GO Transit's site-specific safety requirements.
  - As prescribed by Applicable Law.



2. The individuals that are allowed to the Place of Work visiting, delivering, supplying shall also wear all required personal protective equipment and shall be briefed with all site safety procedures. It is the Contractor's responsibility to ensure that personal protective equipment is used.

### **5.3.3 - Potential danger zones**

1. Use appropriate signage, caution/danger tape to identify potential danger zones such as high noise levels, hoisting or reversing equipment to warn others and where special protective equipment must be used to ensure personal safety.
2. Hearing protection, face shields, respiratory protection, fall protection equipment and all other special protective devices shall be used where signs are posted or when a potential hazard exists.

### **5.4 - Public Safety Protection**

1. The Contractor shall erect and maintain all necessary protective devices / measures required to protect the public i.e. traffic signs, barricades, lights, fences etc.
2. Arrangements must be made with the designated GO Transit Project Coordinator / Consultant or appropriate operating railway personnel when these precautions could interfere with rail equipment movement (ROW access).

### **5.5 - Hazardous Materials**

1. GO Transit shall disclose the information on any known substances in the workplace that may be hazardous to the Contractor's employees in the tender documents. (i.e. asbestos, lead, mould, etc.)
2. The Contractor shall provide GO Transit with their written program to address removal, abatement, handling and



disposal of said hazardous substances as required by Applicable Law.

3. The Contractor shall ensure compliance with WHMIS regulations and shall provide GO Transit with the MSDS's for all hazardous substances the Contractor will introduce to the worksite fourteen (14) days prior to starting work.
4. GO Transit reserves the right to request that the Contractor substitute products with less hazardous ones, or may ban the use of certain products all together.

## **5.6 - Emergency and Accident Response Plans**

### **5.6.1 - Emergency procedures**

*The Contractor shall:*

1. Prepare site specific emergency procedures and an evacuation plan for the work site prior to commencing work.
2. Arrange for adequate emergency transportation including remote rail operations to the nearest accessible meeting or muster point with local EMS in coordination with the local Hospital in the event an injury occurs at the Place of Work.
3. Ensure that all persons having access to the Place of Work are instructed on the emergency procedures and evacuation plan before being authorized to enter the Place of Work.
4. Keep the following records and postings at the work site:
  - List of all persons present (sign in log book).
  - Written emergency procedures with the hospital route map posted including WSIB form 82 poster "In Case of Injury at Work".
  - List of emergency contact & phone numbers posted.
  - List of qualified first-aid attendants posted with copy of Record of Training.

- WSIB Regulation 1101po.
  - Employment Standards Act Poster
  - Health & Safety , Workplace Violence & Harassment Policies
  - Post at the Place of Work any plan for the rescue of workers from a confined space , fall arrest situation or work over water.
  - Traffic Control Plans.
  - All material safety data sheets.
  - MOL orders and narratives.
  - JHSC /WTC Committee Members and meeting minutes.
  - Workplace Inspections.
  - Safety Talks.
5. Develop emergency procedures and submit the most updated copy to GO Transit. Keep an up-to-date list of emergency numbers, including GO Transit emergency numbers.
6. Investigate all accidents and incidents having caused or risked causing losses or injury, in order to identify the cause or causes, and immediately take the appropriate corrective action to prevent their recurrence.
- All investigation reports shall be forwarded to GO Transit within twenty four (24) hours of the occurrence.
  - All major injury and property damage accidents must be immediately reported to GO Transit Control Center 416.601.2174.
  - All close out reports indicating corrective actions taken to prevent recurrence shall be forwarded to GO Transit within twenty one (21) days from the date of occurrence.

7. Participate and collaborate with GO Transit and all other Governing Authorities in the planning and in realization of emergency procedure exercises and evacuation exercises implemented by the Contractor, GO Transit or any Governing Authority. These exercises may be conducted at any time and anywhere at the Place of Work.

### **5.6.2 - Rescue Equipment and Training**

1. Before considering the Fire Department (911) as a means for rescuing an employee, the Contractor shall:
  - a) Ensure a complete Risk Evaluation of the fall protection system, or confined space, has been carried out by a competent person; and
  - b) Ensure the Risk Evaluation and Rescue Plan have been reviewed and signed off by the appropriate Governing Authority indicating they have:
    - i) An appropriate response time; and
    - ii) The necessary rescue equipment; and
    - iii) The specialized rescue training required.
  - c) Ensure all documentation has been submitted to GO Transit, System Safety, for final review and approval prior to project start-up.
2. If it has been determined that the Fire Department (911) cannot adequately respond to the emergency and specialty rescue equipment, personal and/or training is required, the Contractor shall ensure that:
  - a) Specific rescue equipment for confined space rescue or fall protection rescue is on site as required, and in readiness at all times; and
  - b) A sufficient number of employees or third party service providers are fully trained and qualified as “rescuers”, and are on site, in order to carry out an efficient and effective rescue.

### 5.6.3 - First aid

1. The Contractor shall ensure that the adequate quantity and type of First Aid supplies is readily available at the Place of Work, are in compliance with the requirements of the Applicable Law and (WSIB Reg. 1101).
2. The number of Employees trained and their qualification level shall meet all requirements of Applicable Law. The names of those identified as being First Responders shall be posted as per (WSIB Reg. 1101).
3. Remote operations without EMS access will require the contractor to provide adequate procedures and methods of communication, transportation and medical equipment to the nearest vehicle accessible location.

### 5.6.4 - Fire prevention

1. Supply, at the Place of Work, a sufficient number of 20 lbs type ABC regulation fire extinguishers, or other type of fire extinguishing medium as required, to provide reasonable protection as dictated by the nature of the Work, the Ontario Fire Code, and O.Reg. 213/91, s.(52 - 57).
2. The Contractor, Project Coordinator, Consultant or GO Transit Supervisor shall utilize the Hot work Permit Guidelines /Checklist form 0566-14 and Hot Work Permit form 0565-14 when performing hot work on a project or while conducting maintenance activities at GO Transit Facilities. The contractor may substitute their program and form if in place and offering similar protection.
3. Inspect the work area for flammables, combustibles and fire extinguishing devices prior to the start of work and utilize adequate spark containment and asset protection measures in the form of fire retardant tarps or blankets where necessary.

4. Provide a dedicated fire watch to observe and perform regular inspections to prevent fires and ensure permit compliance.

## **5.7 - Working At Heights**

### **5.7.1 - Ladders**

The Contractor shall ensure employees are trained on the types of ladder to use, the methods for its use, and requirements for inspection and maintenance.

Typical safety concerns may include:

- Ladders not secured, inadequate footing, improper angle
- Not maintaining three point contact
- Improper use
- Housekeeping
- Defective ladder

O.Reg. 213/91, Construction Projects. s. (72, 78-84)

### **5.7.2 - Scaffolding**

1. Scaffolding must comply with the provisions of the OHSA, O. Reg. 213/91, Construction Projects (s. 125-142), as amended from time to time, as well as any more restrictive directive issued by GO Transit or imposed by any Applicable Law.
2. The Contractor shall adhere to the following restrictions for scaffold installations:
  - a) Obtain authorization from GO Transit before erecting scaffolds on a GO Transit structure or near a railway track.
  - b) The scaffolding shall not interfere with the safe operation of railway traffic unless authorized by the Protecting Person for set periods of time.

- c) Scaffolds must be positioned so that minimum clearance for vehicle or pedestrian traffic is always provided.

### 5.7.3 - Fall Protection

1. Fall Protection systems and equipment must comply with the provisions of the OHSA, O. Reg. 213/91 Construction Projects, s. 26, as amended from time to time, as well as any more restrictive directive issued by GO Transit or imposed by any Applicable Law.
2. All horizontal lifelines used for fall protection shall be designed by a professional engineer and installed in accordance with the following CSA Standards:
  - a) CAN / CSA Z259.13-04 Flexible horizontal lifeline systems
  - b) CAN / CSA Z259.16-04 Design of active fall-protection systems
3. The Contractor shall adhere to the following restrictions for fall protection system installations:
  - a) Obtain authorization from GO Transit before suspending, attaching or erecting fall protection devices on a GO Transit structure or near a railway track.
  - b) Components attached to structures must be placed on pads to prevent damage to the structures.
  - c) Fall protection systems must be positioned so that minimum clearance for railway, road and other traffic is always provided, unless authorized by the Protecting Person for set periods of time.
4. All Employees requiring fall protection shall be adequately trained on the fall protection equipment, systems, specific safe usage procedures, rescue procedures, its maintenance and inspection requirements.

5. Prior to the start of work: GO Transit reserves the right to review all training program material, instructor qualifications, and employee testing criteria prior to accepting the Contractor's training program as adequate and in conformance with the Working at Heights Program Standard released by the Ontario Ministry of Labour in 2014. O.Reg 297/13.
6. If the Contractor's training program and/or procedures are deemed inadequate by GO Transit, the Contractor will not be allowed to begin work until such deficiencies are corrected, at no cost to GO Transit.

## 5.8 - Hazardous Energy Sources

1. The Contractor shall be responsible for ensuring that its Employees are trained to recognize the energy sources and to implement Lock out/ Tag out procedures. (CSA Z460-13) Control of Hazardous Energy – Lockout and other methods.
2. The Contractor shall be responsible for ensuring that its Employees are trained on how to identify, work with and control the types of hazardous energy including use of an adequate personal protection:
  - **Electrical (Arc Flash, Shock and Burn)**  
*Electrical Utility Safety Rules*  
*CSA Z462-12 Workplace Electrical Safety*  
*CSA Z463-13 Maintenance of Electrical Systems*
  - **Mechanical (hydraulic, pneumatic pressure)**  
*Applicable Safety Standards*
  - **Steam, Heat, Natural Gas**  
*Applicable Safety Standards*  
*CSA B149 Natural Gas & Propane Handling Code 2010*
  - **Gravity, Spring, etc**  
*Applicable Safety Standards*



3. The Contractor shall de-energize, disconnect, depressurize, block, drain, any and all energy sources and verify 'zero energy' state before proceeding with any task where a hazardous energy source may be encountered.
4. The Contractor shall utilize a lockout system that conforms to O.Reg 213/91, s. 190 s.(6)(7)(8) that defines the requirements on the use of tags and identification of the owner for all Contractor installed lockout devices.

**NEVER WORK 'LIVE', UNLESS ABSOLUTELY NECESSARY WITH PROPER PROCEDURES and MANDATORY PPE.**

OHSA s.( 25- 28)

O.Reg. 213/91 Construction Projects s... (181-195)

### **5.9 - Confined Space Entry**

1. The Contractor shall ensure that all feasible precautions and required safeguards are met to prevent exposure to toxic gases, oxygen deficiency, flammable atmosphere, and accidents related to entering confined spaces. Follow O.Reg., 632/05 Confined Spaces issued by Ministry of Labour and /or the most current Applicable Law
2. Confined spaces may include:
  - Storage tanks, process vessels, bins, boilers, ventilations or exhaust ducts, sewers, underground utility vaults, enclosed tunnels, pipelines and deep open top spaces such as sump pits
3. No work is to be carried out in a confined space until the Contractor has provided GO Transit with a copy of the written hazard assessments, rescue procedures and training records for review to verify that all risks have been adequately addressed and entrants are adequately trained in the rescue procedures.



4. GO Transit may stipulate that the Contractor use, at no cost to GO Transit, a third party to provide confined space rescue and supervision if the Contractors plan is deemed inadequate.
5. An “Entry Permit” form 0169-14 as found in this document or the contractors form & program documents approved by Office of System Safety, must be used to record all confined space entries and tests made during the course of the entry. see O.Reg 632/05 s.(21) Records for retention on construction projects and GO Transit owned facility.

### **5.10 - Respiratory Protection**

The Contractor shall identify all potential atmospheric hazards by Risk Assessment and ensure occupational exposure levels are not exceeded. Mitigation efforts will utilize the hierarchy of controls to eliminate exposure to workers, GO Transit Staff and members of the public. In the event that PPE is the only available or cost effective method of control the Contractor will supply the adequate PPE to employees. The Employees shall be adequately equipped and trained on proper use and care of the protective equipment when it is required by Applicable Law.

### **5.11 - Compressed Gas Cylinders & Flammables**

1. All workers involved with the storage, handling and use of any compressed gas, flammable or combustible liquid shall be familiar with its M.S.D.S. , characteristics and the necessary safety precautions and Applicable Law.
2. Compressed gas cylinders must be secured in the upright position at all times with the protective cap in place when not in use. Storage areas for gas cylinders and flammable liquids must be kept separated locked and identified with the appropriate signage. see O.Reg., 213/91 s. 42,43
3. Any and all compressed gas cylinders must be transported

utilizing appropriately designed carts or dollies and storage racks.

4. Flammable/ Combustible liquid containers utilized at GO Transit Facilities must be stored in a flammable storage cabinet. Class 1 and Class 2 flammable and combustible liquids must utilize a safety container that meets NFPA requirements including a self -closing lid with flash back arrestor. (See Ontario Fire Code (4.2.6 and 4.2.10).
5. No more than one day's supply may be stored in a building or structure on a project unless in a controlled access area or room that has sufficient window area to provide explosion relief to the outside.
6. Large Flammable/ Combustible storage and dispensing tanks on a Construction site must be placed a minimum 25 feet from any commonly occupied buildings and at least 100 feet from any compressed gas cylinder storage area. Have fire suppression, warning signage, vehicle protection and spill or leak containment equal to the tank size.
7. See Safety Management System Environmental Management System. GO-Env-PS104 Bulk Storage Tanks and Fuel Handling Environmental Performance Standard.

## **Propane**

1. The Contractor shall have adequate number of Workers trained in the proper use, care and storage of propane appliances and containers. This certification must be obtained by training providers certified by the Technical Safety & Standards Association (TSSA) CSA B149 Natural Gas & Propane Handling Code 2010.

Typical safety concerns:

- Propane is heavier than air and will settle in low areas.
- Trenches, manholes, sumps shall be checked for gas build up.

- The containers shall be regularly checked for leaks.
- Cylinders shall be kept upright and secured.
- Cylinders shall be stored in a well ventilated area, away from heat.
- Only approved hoses and fittings will be used. ALL propane fired appliances shall utilize a pressure regulator affixed at the cylinder.
- Adequate warning signage to be posted

**Only one day's supply of propane may be left inside a building and it must be removed overnight.**

## **5.12 - Other Hazardous Processes**

The Contractor and Workers shall be trained on how to identify, work with and control the hazardous material and processes including use of adequate personal protective equipment and containment measures.

Typical hazardous processes may include:

- excessive dust, noise,
- equipment / tool vibration,
- welding fumes and flash,
- sand blasting,
- concrete cutting
- abatement of designated substances, i.e. lead , asbestos.

The Contractor shall submit their hazardous process safety procedures, MOL Notices, to GO Transit for review prior to any site activity involving a designated substance and according to contract documents.

Hazardous Waste will be defined in contract documents and System Safety Environmental Management Program references should be referenced. See Regulated Waste Management Environmental Performance Standard (GO-Env-PS103),

### **5.13 - Workplace Hazardous Material Information System**

All GO Transit, Contractors, are required to have annual WHMIS Training. The contractor will be responsible to maintain an up to date copy of all WHMIS controlled products at the Place of Work for review by workers. R.R.O 1990, Regulation 860.

The contractor will be responsible to train workers on any new products introduced into the Place of Work or unfamiliar to the worker.

# Railway Right-of-way and Train Operation

## 6

### 6.1 - General Overview

1. Before entering and start of Work on the Railway ROW within GO Transit facilities, Consultants, Contractors and Subcontractors shall:

Undergo the GO Safe Railway Orientation training, in addition to the Contractor's own Safety Orientation training:

**<https://gotransitcontractor.com/>**

2. The Contractor shall not mobilize or start any work within the railway ROW, unless proper advance notice has been given and the appropriate written authorization has been granted by the respective railway or GO Transit.
3. When Work is being performed under direct Contract to GO Transit, either within the railway right-of-way or property of GO Transit, the Contractor shall deal with the designated GO Transit Project Coordinator or Project Manager.
4. GO Transit reserves the right to prohibit or halt, without prior notice, any of the Contractor's work that may have repercussions on rail operations and / or for Health & Safety violations.
5. Specific Blue Flag Procedures must be developed, and approved by GO Transit System Safety, prior to any work being undertaken on or about rail equipment on shop tracks or at lay-over points or any railway yard.
6. Contractors employees, visitors shall be properly briefed by a C.R.O.R qualified Protecting person on safety procedures to be followed when working on, or being near a railway track and shall be accompanied at all times or

in communication with that qualified Protecting person. A written record of the job briefing shall be maintained and made available to GO Transit upon request.

7. The Contractor shall not unnecessarily interfere with the movement of trains.
8. The Contractor shall ensure that no railway plant, signal, structure, equipment or property of any kind is tampered with, modified or removed.

## 6.2 - Restrictions for working on ROW

1. Host railway's (CN, CP, TTR etc) safety requirements apply and take precedence.
2. Summary of General Safety Rules:
  - Always be on the alert for moving equipment. All parties involved in the Work must always expect train, engine, car or track unit movement on **any track, at any time, in either direction.**
  - Where work is to be performed less than **10 m (30 ft)** from the nearest rail, or where otherwise deemed necessary by the operating railway, the Contractor must arrange for a qualified C.R.O.R. Protecting Person to be on site.
  - The Protecting Person will provide proper track protection, assist, participate and / or conduct a job briefing and have the Contractor sign the job briefing form before employees or machines are allowed to move and be positioned in the right-of-way. All parties involved in the Work shall always obey Protecting Person directives.

*NOTE: CN / CP / GO Transit require that vehicles come to a stop, the engine to be shut off and be located at least:*

***10 m (30 ft)** away from the nearest rail when trains are passing.*

- Do not step or walk on the top of the rail, frog, switches, guardrails, or other track components. Do not operate a track switch, derail or electric lock.
- Look in both directions before stepping over or crossing tracks and / or passing obstructions limiting clear line of sight.
- Do not sit on, lie under, or cross between cars except as required in the performance of your duties and only when equipment has been protected against movement and authorized by the railway's Protecting Person.
- Do not cross the tracks within 25 feet of standing railway equipment.
- No tools or materials are to be left UNATTENDED close to the track AT ANY TIME. Metal or conductive tools must not be allowed to contact both rails at the same time.
- Vehicles shall not exceed **15 km/h (9 mph)** on ROW. More restrictive speed limits may be imposed.
- Cranes & Hoisting devices are NOT permitted to be operated closer than **10m (30 ft)** from the nearest rail of any track without Protecting Person authorization and with railway traffic protection as specified by host railway.
- No track shall be fouled at any time except for a specific and approved task, for a limited time and under protection of the railway's Protecting Person.

## 7.1 - Alcohol & Drug Abuse Prevention

1. GO Transit is committed to a safe work environment free from the negative effects of substance abuse and has set strictly enforced rules pertaining to drug and alcohol use, consumption and “under the influence of” while on duty.
2. The Contractor is responsible to be astute to the indications of substance abuse as well as employees’ physical and mental capabilities to perform and to undertake corrective actions as necessary.
3. Employees who are taking prescribed medication must ensure any potential adverse affects of such medication do not pose a safety hazard to themselves or others while performing their duties. These employees are encouraged to disclose this potential hazard to their Supervisor to reduce risk potential while under the influence of prescription medications. Contractors’ employees are responsible to report and remain fit for duty while on GO Transit property.
4. Metrolinx CCDC Contract Documents “ Safety Requirements” section 01600 specifically section 6. Alcohol & Drug Abuse Prevention detail the requirements in regard to the process and expectations of contractors if this contravention is identified by either GO Transit staff or the contractor’s employees.

NOTE: Operating railways such as CN in particular, maintain a “Zero Tolerance” approach to violations of their Policy To Prevent Workplace Alcohol and Drug Problems.



## 8.1 - Quick Reference

### 1. **Site Security Measures:**

All Employees to display GO approved positive identification, provided by Contractor, while on GO Transit project / property:

- Restricted Areas – Photo ID badge required (high risk, direct impact on operations)
- Private Areas – Non Photo ID badge required (low risk, indirect impact on operations)
- Other project specific security measures as approved by GO Transit

### 2. **Training:**

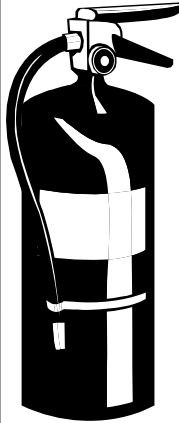
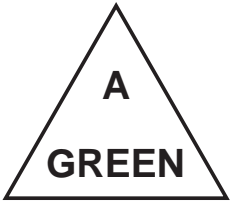
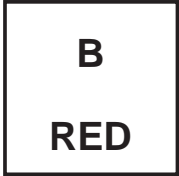
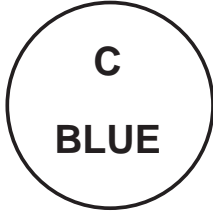
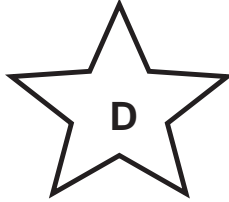
- All Employees to go through site specific orientation
- All Visitors to go through visitor orientation and
- GO Transit GO Safe Railway Orientation

### 3. **Personal Protective Equipment PPE (Sec 5.3)**

- Approved headwear and footwear O.Reg 213/91 s. 22,23,
- A fluorescent outer most garment around moving vehicles and/or equipment and when on any Railway ROW or Construction Project,. O.Reg. 213/91 s.69.1
- Safety glasses as required and when on any Railway ROW or Construction Project. O.Reg 213/91 s. 24

### 4. **Every Project must have:**

- A qualified competent Supervisor present whenever there is any activity or task being performed, O.Reg. 213/91 s. 14 (2)
- Appropriate first aid supplies / equipment and a sufficient number of qualified first aiders. (WSIB Reg. 1101)
- Appropriate number of 20lb fire extinguishers present, with a sufficient number of Workers trained in their use, and compliance with O.Reg 213/91 s. 52-55

	<b>Ordinary Combustible</b> 	<b>GREEN</b>	<b>CLASS “A” Extinguishers</b> For fires with ordinary combustible materials such as wood, paper and textiles, where a quenching cooling effect is required.
	<b>Flammable Liquid</b> 	<b>RED</b>	<b>CLASS “B” Extinguishers</b> For flammable liquid and gas fires such as oil, paint, gasoline and greases where an oxygen exclusion or flame interruption is essential.
	<b>Electrical Equipment</b> 	<b>BLUE</b>	<b>CLASS “C” Extinguishers</b> For fires with electrical wiring and equipment where the non-conductivity of extinguishing agents is crucial. This extinguisher should be present whenever functional testing and system energizing takes place.
	<b>Combustible Metals</b> 		<b>CLASS “D” Extinguishers</b> For fires in combustible metals such a sodium magnesium, and potassium.
<b>How to use the Fire Extinguisher</b> Aim the extinguisher at the base of the fire to extinguish the flame at their source.			

## 5. Postings to be displayed:

- Notice of Project, R.S.O. 1990, c. 0.1, s. 23(2) O.Reg. 213/91, s.6
- Project Emergency Procedures, O.Reg. 213/91 s. 17  
Emergency Contacts – names, company, position and 24 hour contact phone number(s)
- Map to Nearest Hospital,
- Qualified First Aiders names,
- WSIB poster, Form 82 “In Case of Injury at Work”
- Form 1000 posted for all contractors on the project
- Employment Standards Act Poster
- MSDS for all products at the project
- See Emergency Procedures Section 5.6.1 for complete List of required postings

## 6. Signage to be displayed:

- Appropriate ‘DANGER’, PPE, and ‘NO TRESPASSING’ warning signage will be conspicuously posted as required, and
- All signage will remain legible at all times and in conformance with the GO Transit Design Requirements stipulated in the contract documents

## 7. Hoarding, where installation is approved by GO Transit, to have:

- A 1.8 meter (6ft) approved sturdy fence will be erected to protect the public, O. Reg. 213/91 s. 65
- A 1.8 meter (6ft) approved sturdy fence will be erected between any railway track and the project, to protect the Railway ROW
- The Place of Work to be secured against unauthorized access

## 8. Records to be kept onsite:

- All safety related activities (NOP, employer registration forms, project orientation, training, proof of training, weekly/daily site inspections, safety talks, meetings, investigations, First Aids, maintenance, MOL

- notifications, MOL inspections etc.),
- Record(s) will be sent to GO Transit upon request

**9. Same day notification to GO Transit to be submitted for each of the following:**

- Every incident and/or accident, regardless if reportable to the MOL,
- Every MOL site inspection – a copy of the MOL Orders will be forwarded to The Office of System Safety the same day as the inspection.

**NOTE:** *A written report making recommendations and listing the procedure changes instituted for each of the above will be forwarded to The Office of System Safety within 48 hours of occurrence.*

**10. Project specific activities – adherence to all applicable standards and legislations, such as but not limited to:**

- Hot Work (Permits),
- Confined Spaces (Entry Permits) / Rescue Plan,
- Fall Protection / Rescue Plan,
- Ladders, scaffolding, work platforms,
- Public Way Protection,
- Track Safety,
- Traffic Control / Protection,
- WHMIS, MSDS's
- Ventilation, house keeping,
- Additional PPE (i.e. sandblasting, arc flash, respiratory, etc)
- Security.
- Work in proximity to overhead power lines.

**11. Environmental Protection:**

- Spills Controls / Notification / Reporting,
- Sandblasting operations
- Tree hoarding
- Sediment and erosion control
- Hazardous waste disposal procedures.

## 8.2 - Stoppage of Work Due To Failure To Comply

1. Failure by the Contractor, Subcontractors or Employees to respect established Safety Guidelines may, in accordance with provisions of the Contract Documents, lead to temporary stoppage of the work, closure of the site until the situation is corrected or even removal of the Contractor from the work site at the discretion of GO Transit.

## 8.3 - Execution of Safety Compliance

1. The Contractor is responsible for ensuring compliance with all Applicable Laws in effect, and keeping a written record of safety supervision activities carried out by the Contractor, or on the Contractor's behalf.
2. The Contractor is responsible for putting into effect the necessary procedures and mechanisms required to comply with the Applicable Laws including broadcasting the necessary information to all those having access to the Place of Work, controlling and supervising all activities to ensure compliance and executing corrective measures resulting from non-compliant activities.
3. Governing Authorities, such as the WSIB, Ontario Ministry of Labour, Transport Canada, etc., may intervene with the Contractor. A Governing Authority may intervene on its own or in association with other Authorities and / or GO Transit. GO Transit may also ask Governing Authorities to intervene as required to ensure compliance under their respective jurisdiction.

## 8.4 - Contractor Safety Information Flow

<b>Documentation Type</b>	<b>Action</b>	<b>By Who?</b>	<b>TO Who?</b>	<b>Timelines</b>
Safety Policy & Program	Copy to GO	Contractor	PC/SS	With tender/Annually
Site Specific Safety Plan	Copy to GO/file	Contractor	PC/SS	14 days before start of Work
Training Records	Copy to GO/file	Contractor	PC/SS	as requested
Inspection Certificates Lifting/ Handling Eqpt.	Copy to GO/file	Contractor	PC/SS	as requested
Start-Up meeting minutes	Copy to GO/file	Consultant	PC/SS	Within 5 days after meeting
Job Briefing Forms	File	Contractor	PC/SS	as requested
Orientation Register	File	Contractor	PC/SS	as requested
Emergency contact list (with Site Specific Safety Plan)	Copy to GO/file Posted on Site	Contractor	PC/SS	48 hrs before start of Work
Utility Locates	Owner	Contractor	PC/RLWY	7 days prior to start of Work
Hazard Reports	Copy to GO/file	Contractor	PC/SS	as required

<b>Documentation Type</b>	<b>Action</b>	<b>By Who?</b>	<b>TO Who?</b>	<b>Timelines</b>
Inspection Reports	File on Project	Contractor	upon request monthly by PC/SS	monthly
Accident Reports	Copy to GO/file	Contractor	PC/SS	immediately to 24 hrs after event - 21 days for close-out report
JHSC Meeting Minutes	Copy to GO/file	Contractor	PC/SS	monthly or as required by regulation
Compliance Observations	Copy to GO/file	PC/SS/ Contractor	PC/SS	based on project scope(monthly/quarterly)
Corrective Actions Taken	Copy to GO/file	Contractor	PC/SS	as stipulated in request
Sign in log book	Copy to GO/file Posted on Site	Contractor	PC/SS	Weekly review

**PC = GO Project Coordinator / Consultant**

**SS = System Safety**

**RLWY = CN / CP / TTR**

## 8.5 - Construction Site Security

Since GO Transit's construction projects deal with critical, direct or indirect transportation infrastructure, it is a subject to service disruption and / or civil security. This interference can be triggered by an intentional or accidental act. Additionally, and to comply with Transport Canada security guidelines, as well as to reduce construction equipment thefts, GO Transit recommends a number of specific security requirements to be applied to the projects, based on the security hazard:

### 1. **Visible Identification**

The Contract Documents shall set out the required Employees identification measures on each project based on the level of security risk determined by GO Transit.

All Employees on GO Transit projects shall follow the required security measures. This affords the Contractor the ability to easily identify and challenge individuals who do not belong at the Place of Work.

### 2. **Sign in/out logs**

The Contractor to maintain an accurate up to date sign in/out log located at the entrance checkpoint. These logs shall be supplied to GO Transit upon request.

### 3. **Key Controlled lockable gates and construction hoarding**

Wherever possible, construction hoarding shall be erected to limit accessibility to the Place of Work to one (1) designated entrance point. This provides for a single point of entry requiring all who work or visit to report to the entrance checkpoint to sign in.

Entrance to stairwells, tunnels, and other designated areas under construction, shall be secured in a manner acceptable to GO Transit at all times when the Contractor does not have employees at the Place of Work.



#### 4. **Security Personnel**

Where required by the Contract, the contractor shall provide security personnel at the entrance checkpoint.

#### 5. **Security Signage**

All projects shall have GO Transit approved security signage. These signs will be of high visibility type indicating that the site is private property and trespassers will be prosecuted.

#### 6. **Suspicious Activities / Articles**

Any suspicious activities and / or unattended articles, packages of unknown origin should be immediately reported to:

GO Transit Control Center .....1.416.601.2174

Transit Safety Dispatch .....1.877.297.0642  
905.803.0642

CN Railway.....1.800.465.9239

CP Railway .....1.800.716.9132

**Remember:**

***‘If you see something, say something’***

<u>Basic:</u> Routine day to day business.	<div>BLUE</div>
<u>Low:</u> (Increased Vigilance) Authorized by the Manager of the affected department or by any supervisor in the department on duty in place of the Manager, where there is a potential or indirect threat to GO Transit. → Staff should be more aware of their surroundings, including who or what maybe be within that environment.	<div>YELLOW</div>
<u>Medium:</u> (Precautionary Measures) Authorized by the Manager of the affected department or the Director of the affected division, when a threat is perceived to exist against GO Transit. → Staff should maintain vigilance; escort all visitors and contractors from the workplace and screen all deliveries.	<div>ORANGE</div>
<u>High:</u> (Maximum Measures) Authorized by the Managing Director, when GO Transit in whole or in part is subject to a direct threat that is imminent or underway. → All GO Transit operations have ceased. No visitors/ contractors allowed on site and only deliveries essential to our operations will be allowed.	<div>RED</div>

## 9.1 - Safety Management System

The GO Transit Safety Management System (SMS) - August 2014 v. 1.0 can be found in the GO Transit MY Linx Web page at <http://mylinx/sites/Safety/en/System/Pages/Safety-Management-System.asp>

## 9.2 - Metrolinx as a “Constructor”

1. USRC-CMO Construction Safety Management Program

## 9.3 - Willowbrook Maintenance Facility

1. Willowbrook Maintenance Facility, Contractor Safety Requirements
2. Bombardier OP-W-11-003 – Blue Signal Regulation –

## 9.4 - Environmental Management System

The GO Transit Environmental Management System (ENV-MS) The GO-Env-M001 Environmental Management System Manual can be found in the GO Transit MY Linx Web page at <http://mylinx/sites/Safety/en/System/Pages/Environmental-Management-Plan.aspx>

1. ENV-GO-R201 Spill Prevention & Contingency Plan

## 9.5 - Station Operations

1. SO-0205-01 Platform Protection Procedures

## 9.6 - Regulatory Requirements

1. *Occupational Health and Safety Act* R.S.O. 1990, c 0.1.
  - a) Ontario Regulation 851 Industrial Establishments
  - b) Ontario Regulation. 213/91 Construction Projects
2. Canada Labour Code, Part II
  - a) Canada Occupational Health and Safety Regulations
3. *Workplace Safety & Insurance Act*, 1997
4. *Building Code Act*, S.O.. 1992, CHAPTER 23
  - a) And applicable municipal by-laws
5. *Environmental Protection Act* R.S.O. 1990
6. *Railway Safety Act* (1985, c. 32 (4th Supp.))
7. Ontario Fire Code 2007

## 9.7 - Transport Canada ([www.tc.gc.ca](http://www.tc.gc.ca))

## 9.8 - Ministry of Transportation Ontario ([www.mto.gov.on.ca](http://www.mto.gov.on.ca))

## 9.9 - Canadian National Railway ([www.cn.ca](http://www.cn.ca))

- Safety Guidelines for Contractors September 2013
- Operating Manual

### **9.10 - Canadian Pacific Railway ([www.cpr.ca](http://www.cpr.ca))**

- Minimum Safety Requirements for Contractors working on CP Property in Canada 2010

### **9.11 - Infrastructure Health & Safety Association ([www.ihsa.ca](http://www.ihsa.ca))**

- Includes the Transportation Health & Safety Association, Electrical & Utility Safety Association, Construction Health & Safety Association

### **9.12 - Industrial Accident Prevention Association ([www.iapa.ca](http://www.iapa.ca))**

### **9.13 - Ontario General Contractors Association ([www.ogca.ca](http://www.ogca.ca))**

- Safety Policy and Reference Manual

### **9.14 - Construction Safety Engineering Principles**

David V. MacCollum, McGraw Hill, Dec 2006

### **9.15 - The Canadian Standards Association ([www.csa.ca](http://www.csa.ca))**

### **9.16 - *Fire Protection and Prevention Act* The Ontario Fire Code ([www.ofm.gov.on.ca](http://www.ofm.gov.on.ca))**

### **9.17 - National Fire Protection Association ([www.nfpa.org](http://www.nfpa.org))**

- 10.1 GO Transit Reporting Forms
  - 10.1.1 Job Briefing Forms 0593-09
  - 10.1.2 Incident Report Form
- 10.2 Hot Work Permit Form – 0565-14  
Hot Work Permit Guidelines – 0566-14
- 10.3 Confined Space Entry Permit – 0169-12
- 10.4 Spill Report  
Consult Go Transit Spill Prevention & Contingency Plan  
ENV-GO-R201

Attached Forms are recommended templates for effective communication. Contractor specific forms may be substituted provided that they are acceptable by GO Transit and fulfill the required purpose.

Other forms for project specific activities can be developed and / or approved by the Office of System Safety upon request.

Confirm attached form's latest revision level before use

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## 10.1.1 - Job Briefing Form



## Job Briefing Record

Fill out the appropriate areas before starting the job briefing. Note any safety concerns raised and steps taken to address them. All personnel must review and sign the form before starting work.

<b>Station Name:</b>	<b>Sub:</b>	<b>Mile:</b>
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Describe work being done:
Track(s) affected:

☐ Light Equipment
 ☐ Heavy Equipment
 ☐ Other (explain) \_\_\_\_\_

**TRACK PROTECTION to be used:**

☐ Track Occupancy Permit
 ☐ Safety Watch
 ☐ Other (explain) \_\_\_\_\_

**Protecting Person:** \_\_\_\_\_  
 (Print Name) (Signature)

**Safety Watch:** \_\_\_\_\_  
 (Print Name) (Print Names of Relief & Times)

Safety Watch to be located:
Safety Warnings: ("Clear the Track")
Clearing Location:
Other Considerations:

I was present at the Job Briefing and understand the safety requirements for the tasks assigned.
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Date: dd/mm/yy	Conducted by:	Signature
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Retain on file and send completed copy to System Safety as directed.

0593-15 (Feb 2015)



A Division of Metrolinx

## Incident Report

(To be completed by GO Transit employees **ONLY**)

Page 1 of \_\_\_\_\_

**Type of Incident:**
☐ **Bus**    ☐ **Train**    ☐ **Personal/Property**

Reference no.	Incident Time	Incident Date
Incident Location (specify)		
<input type="checkbox"/> Inside Station <input type="checkbox"/> Bus Platform <input type="checkbox"/> Outside Station <input type="checkbox"/> Rail Platform <input type="checkbox"/> Parking Lot		

Bus/Train no.	Trip no.	Coach no./location of coach-rail	Travelling from: _____ To: _____
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**Incident Location** (check one or more of the following):

<b>Bus</b> <input type="checkbox"/> Boarding <input type="checkbox"/> On-Board <input type="checkbox"/> Exiting	<b>Train</b> <input type="checkbox"/> Boarding <input type="checkbox"/> On-Board - <input type="checkbox"/> Locomotive end <input type="checkbox"/> Exiting <input type="checkbox"/> Washroom end <input type="checkbox"/> Lower level <input type="checkbox"/> Mezzanine <input type="checkbox"/> Upper level <input type="checkbox"/> Other - specify: _____	<b>Station / Terminal / Bus Stop</b> <input type="checkbox"/> Concourse/waiting area <input type="checkbox"/> Elevator <input type="checkbox"/> Escalator <input type="checkbox"/> Mezzanine <input type="checkbox"/> Other - specify: _____	<input type="checkbox"/> Parking lot <input type="checkbox"/> Pedestrian bridge <input type="checkbox"/> Platform <input type="checkbox"/> Shelter <input type="checkbox"/> Sidewalk <input type="checkbox"/> Stairway <input type="checkbox"/> Tunnel <input type="checkbox"/> Washroom
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Describe incident/exact location: \_\_\_\_\_

Type of Incident

☐ Additional information on back

Was Bus/Train moving at time of incident? <input type="checkbox"/> No <input type="checkbox"/> Yes	Was the emergency strip used? <input type="checkbox"/> No <input type="checkbox"/> Yes	Was the train between stations?, If so what stations? <input type="checkbox"/> No <input type="checkbox"/> Yes
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What was the condition of the coach where the accident occurred?

How soon after the incident did you inspect the premises?

Specify minutes:

Did you find:

☐ Area clear    ☐ Ice    ☐ Snow    ☐ Slush    ☐ Water    ☐ Litter    ☐ Defect    ☐ Obstacle    ☐ Other:

Describe ground conditions:

**Complete a separate form for each individual**

<b>Passenger / Victim</b>	<input type="checkbox"/> Mr <input type="checkbox"/> Mrs <input type="checkbox"/> Ms	Surname _____	Given name _____	Sex <input type="checkbox"/> M <input type="checkbox"/> F
	Address - include street number and name _____ City/Town _____ Postal Code _____			
	Home telephone number _____		Business telephone number _____	
	Vehicle make / model / colour _____		Insurance company _____ Policy number _____	
	Did person require immediate medical attention? <input type="checkbox"/> No <input type="checkbox"/> Yes			
	Did person report the incident to any on-board personnel? <input type="checkbox"/> No <input type="checkbox"/> Yes    Name/Badge No.: _____			
Other information / injuries - describe specific details on reverse side of form.				

Witness

Were you an eye witness to the incident? <input type="checkbox"/> No <input type="checkbox"/> Yes	GO Employee? <input type="checkbox"/> No <input type="checkbox"/> Yes (specify work location)
Name _____	Name _____
Address - include street number and name _____	Address - include street number and name _____
City/Town _____ Postal Code _____	City/Town _____ Postal Code _____
Home telephone number _____	Business telephone number _____
Home telephone number _____	Business telephone number _____

Action Taken

Emergency assistance called: <input type="checkbox"/> Police <input type="checkbox"/> Fire / Emergency <input type="checkbox"/> Ambulance <input type="checkbox"/> Other (specify): _____			
Police officer #1 _____		Badge number _____ Division _____	
Police officer #2 _____		Badge number _____ Division _____	
Charges laid, against who (specify): _____			
Was medical aid provided? <input type="checkbox"/> No <input type="checkbox"/> Yes (describe): _____			
Ambulance number _____		Hospital _____	

0193-10

Complete all information on back page



## Incident Report

Page 2 of \_\_\_\_\_

Reference no.	Incident Time	Incident Date
Incident Location ( <i>specify</i> )		<input type="checkbox"/> Inside Station <input type="checkbox"/> Bus Platform <input type="checkbox"/> Outside Station <input type="checkbox"/> Rail Platform <input type="checkbox"/> Parking Lot

Description of incident: \_\_\_\_\_

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Additional Pages attached ☐ Yes ☐ No

Please put additional comments on separate page, and number the added pages

Passenger / Victim - Details / injuries - describe: \_\_\_\_\_

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Type of build: ☐ small    ☐ medium    ☐ large    Approximate weight: \_\_\_\_\_ Approximate age: \_\_\_\_\_

Description of clothing / shoes: \_\_\_\_\_

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Glasses? ☐ Yes ☐ No    Was person carrying parcels, bags, etc.? ☐ No ☐ Yes - specify: \_\_\_\_\_

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Did the person make any statements? ☐ No ☐ Yes - specify: \_\_\_\_\_

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## To be completed by GO Employee

 Additional information attached: ☐ CSR    ☐ Comments    ☐ Other (*specify*):  
 Forwarded Original to: ☐ Claims    Copies to: ☐ Supervisor    ☐ Transit Enforcement    ☐ Other (*specify*):

Employee name ( <i>Please Print</i> )	Employee no.	Work location
Employee signature	Date completed	Time completed



### Hot Work Permit Guidelines / Checklist

The "Hot Work Permit" is required for any "Hot Work" performed out of designated areas, indoors or outdoors, involving open flames or producing heat and/or sparks.

**This includes but is not limited to: Brazing, Cutting, Grinding, Soldering, Thawing Pipe, Torch Applied Roofing and Welding**

- Step 1: Complete the "Identification" section (Supervisor, Contractor or Hot Work Operator)  
 Step 2: Complete the "Timeline" section (Contractor/Hot Work Operator and Firewatches)  
 Step 3: Complete "Checklist", Review Permit, Assign Permit Number, Sign (Hot Work Authority/Consultant)  
 Step 4: Post the "Hot Work Permit" on site (Supervisor, Contractor)  
 Step 5: After work is complete remove the 'Hot Work Permit' and return it to Hot Work Authority (Supervisor/Contractor)  
 Step 6: Hot Work Authority to forward to GO Transit Facility Manager and/or Project file. Copy to remain at project location for review

**NOTE:** In the event of fire at project locations initiate the Site Emergency Response Plan.  
 For GO Transit Facilities activate the nearest Fire Alarm Pull Station

Emergency Response	Control Center	Security
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**Checklist:** Mark boxes "Y" if safety measure is required and in place.  
 Mark boxes "N" if safety measure is not required.

#### General Requirements

- ☐ Personnel must have reviewed "Hot Work Procedures".  
☐ Hot work must be performed by qualified persons.  
☐ Hot work equipment must be in good condition.  
☐ In order to eliminate any possible explosive atmosphere, any area or container must have been cleared of all flammable liquids and vapors, dust, lint, and oily deposits.  
☐ Available sprinklers, hose streams, fire extinguishers must be in service/operable.  
☐ This permit must be posted adjacent to the work area.  
☐ Warning signs must be posted in the immediate area.

#### Personal / Public Safety Equipment

- ☐ Portable screens must be used in public areas.  
☐ Aprons, welding helmet with visor, and gloves where applicable must be used.

#### Other Precautions Taken

- ☐ Zone bypass of the fire alarm panel, or Sprinkler System.  
☐ Covering of smoke detector(s) or sprinkler heads.  
☐ Portable smoke extractor used indoors.

#### Fire Watch / Area Monitoring

- ☐ A fire watch has been assigned to watch for dangerous sparks in the area as well as in the floors above and below, and in adjacent areas as required.

- ☐ Fire watch must be provided during and for a minimum of 30 minutes after completion of the work, including any coffee or lunch breaks.  
☐ Fire watch must be provided with suitable portable fire extinguishers/fire hoses and is appropriately trained.  
☐ Hot work area must be monitored periodically for up to 4 hours after the job is completed by a fire watch, co-ordinator (or designate), or Security.

#### Specific requirements within 11 m (35 ft) of work

- ☐ Flammable liquids and vapours, dust, lint, and oily deposits must be removed.  
☐ Explosive atmosphere in the area must be eliminated.  
☐ Atmosphere is properly monitored and ventilation required for Confined Space.  
☐ Combustible floors must be covered with fire resistant tarpaulins.  
☐ Other combustibles must be relocated where possible or otherwise protected with fire-resistant tarpaulins or metal shields.  
☐ Wall and floor openings must be covered; fire resistant tarpaulins must be suspended beneath.

#### Work on walls / ceilings

- ☐ Construction is non-combustible and without combustible covering or insulation.  
☐ Combustibles on the other side of walls must have been adequately protected or removed.

Hot Work Authority: (Print Name)	Permit Number
Signature	Date

0566-14

Original - Work Site

Copy - Plant Maintenance / Project Manager



## Hot Work Permit

<b>Identification</b>	<input type="checkbox"/> Contractor Company Name <input type="checkbox"/> GO Transit Shop / Department		Permit No.
	Date of Issue		
	Applicable to all operations involving heat, such as: Arc/Gas Welding, Cutting, Torches, Brazing, Gas Heating, abrasive grinding and cutting.		
	Hot Work Operator: <i>(Print name)</i>		Fire Watch: <i>(Print name)</i>
	Task Description:		
	Process, Tools or equipment utilized?		
	Where are the exact locations where the tasks will be done?		
This permit is valid: From _____ Time _____ DD / MM / YYYY To _____ Time _____ DD / MM / YYYY			

I have noted all provisions and will adhere to all standards and regulations so imposed.

<b>Time Line</b>	GO Transit Hot Work Authority: <i>(Please print)</i>			Project Number
	Signature			Date
	Contractor / Supervisor: <i>(Please print)</i>			
	Signature			Date
	30 Minute Fire Watch Completed	Time	Date (DD / MM / YYYY)	Signature
	60 Minute Fire Watch Completed	Time	Date (DD / MM / YYYY)	Signature
	4 Hour Fire Watch Completed	Time	Date (DD / MM / YYYY)	Signature

0565-14

Original - Work Site

Copy - Plant Maintenance / Project Manager



## Confined Space Entry Permit

Date	Valid Time	Permit Number																																
Location and Description of Confined Space																																		
Purpose of Entry																																		
Entry Supervisor		Phone #																																
<b>Hazards</b> (Review the confined space, delete any hazard not potentially or actually present for that specific confined space.) <table border="0"> <tr> <td><b>Pre-Entry Readings</b></td> <td>Biological Material</td> <td>Engulfment</td> <td>Falling</td> </tr> <tr> <td>% of Oxygen _____</td> <td>Conflict</td> <td>Flying Particles/Liquid</td> <td>Lack of Oxygen</td> </tr> <tr> <td>% of LEL's 0 _____</td> <td>Electrical Current</td> <td>Light Extremes</td> <td>Moving Equipment/Parts</td> </tr> <tr> <td>Flammable/Combustibles _____</td> <td>Lapse of Consciousness</td> <td>Noise</td> <td>Panic</td> </tr> <tr> <td>Poisons &amp; Toxics _____</td> <td>Muscular/Skeletal Stress</td> <td>Pressure</td> <td>Reactive Material</td> </tr> <tr> <td>Other: (Toxic, Noise, Temp. etc.) _____</td> <td>Structural Failure</td> <td>Temperature Extremes</td> <td>Vehicle Traffic</td> </tr> <tr> <td>_____</td> <td>Blocked Pathways</td> <td>Clutter</td> <td></td> </tr> <tr> <td>_____</td> <td>Corrosives</td> <td>Curiosity</td> <td></td> </tr> </table>			<b>Pre-Entry Readings</b>	Biological Material	Engulfment	Falling	% of Oxygen _____	Conflict	Flying Particles/Liquid	Lack of Oxygen	% of LEL's 0 _____	Electrical Current	Light Extremes	Moving Equipment/Parts	Flammable/Combustibles _____	Lapse of Consciousness	Noise	Panic	Poisons & Toxics _____	Muscular/Skeletal Stress	Pressure	Reactive Material	Other: (Toxic, Noise, Temp. etc.) _____	Structural Failure	Temperature Extremes	Vehicle Traffic	_____	Blocked Pathways	Clutter		_____	Corrosives	Curiosity	
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Gas Detector Operator	Unit ID Info	Time of Test																																
<b>Hazard Management Requirements</b> (Put a ✓ in the box for task completed or N/A in the box if the task is not necessary)																																		
Lockout Switches & Valves		Entrant to Attendant Communications																																
Blanking/Blocking of Pipes		Personal Protective Equipment																																
Depressurization of Pipes		Chemical Protective Clothing																																
Vehicle Barricades		Entrant Respiratory Protection																																
Pedestrian Barricades		Retrieval System w/ Rescuer PPE																																
Ventilation		First Aid & Packaging Equipment																																
Purging		Chocking of Mechanical/Moving Parts																																
Special Work Precautions		Lighting																																
Hot Work / High Temperature / Other:		Refreshing/Clean up/Decontamination System																																
<b>Rescue Assignments</b>																																		
Attendant	Retrieval System Set Up	Air System Monitor																																
Retrieval Personnel	Emergency Assistance	Contact Method																																

### Certification

I certify that I have personally examined the confined space and am satisfied that all the particular requirements listed in the procedures have been met AND THAT THE SPACE IS FREE FROM HAZARDS AND WILL REMAIN FREE FROM HAZARDS, making it safe to enter. (DELETE THE CAPITALIZED STATEMENT BEFORE SIGNING IF STATEMENT IS NOT TRUE.)

\_\_\_\_\_  
(Signature of Evaluator)

\_\_\_\_\_  
(Print Name)

\_\_\_\_\_  
(Date)

### Entrant Permit Review Acknowledgement

The Confined Space Permit for this job has been reviewed with me and I will undertake to follow the stipulated procedures for this job.

Entrant Name	Signature	Entrant Name	Signature

Facility Supervisors / Project Coordinators – File original at site and fax completed copy to Human Resources (416) 369-5742

0169-12 Page 1 of 2 (Nov 13)





## Spills Report

## Part I - Control Centre Communication Record

Reported to (name)		Office	
Reported by (name)		Office	
Location of spill (facility, track mile, street or other as appropriate)		Date & Time of Spill	
Material spilled		Est. quantity of spill or area impacted	
Initial action taken			
Has source of spill been curtailed? <input type="checkbox"/> Yes <input type="checkbox"/> No              Has all material been contained? <input type="checkbox"/> Yes <input type="checkbox"/> No              Has spill occurred in public area? <input type="checkbox"/> Yes <input type="checkbox"/> No              Potential migration off-site or to a watercourse? <input type="checkbox"/> Yes * <input type="checkbox"/> No			
SAC notified? *		MOE Incident No. assigned	
<input type="checkbox"/> Yes <input type="checkbox"/> No              Person's name		Time notified <input type="checkbox"/> AM <input type="checkbox"/> PM HR MIN	
Supervisor notified?		Time notified <input type="checkbox"/> AM <input type="checkbox"/> PM	
<input type="checkbox"/> Yes <input type="checkbox"/> No              Person's name		HR MIN	

\* MOE Spills Action Centre notification required for any spill to the natural environment of abnormal quantity or quality: 1-800-268-6060

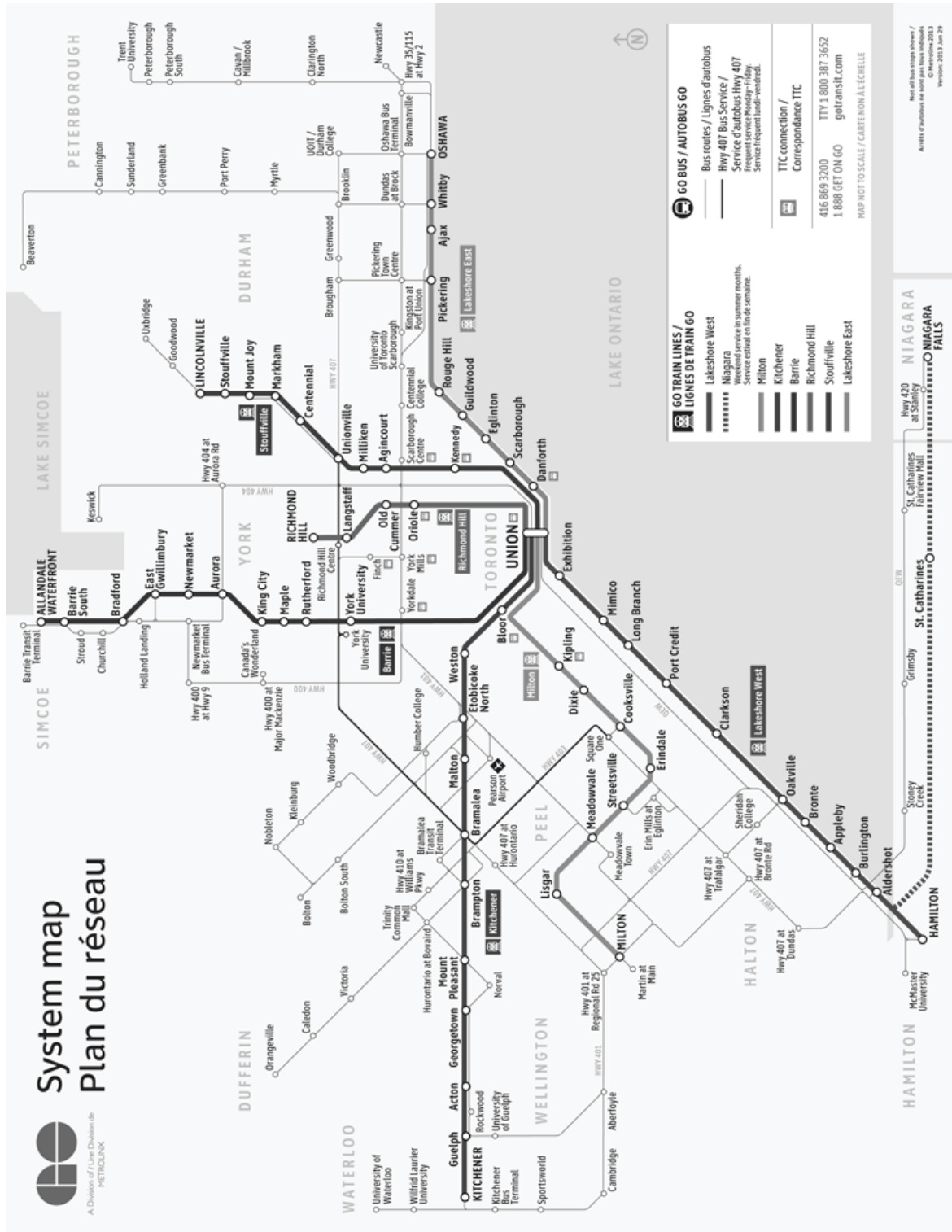
## Part II

Specific area of spill	
Description of incident	
Materials involved	
MSDS available?	Was container labelled?
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Equipment involved	
Actual or potential property damage	
Actual or potential environmental impact	
Actual or potential Health / Safety impact	
Cause of spill (include details of main cause and factors contributing to spill severity, control / clean-up limitations etc.)	
Actions Taken	

Personnel on Site				Time of Arrival				
Supervisor				Time HR	MIN	<input type="checkbox"/> AM <input type="checkbox"/> PM		
Spills Response	Team members			Time HR	MIN	<input type="checkbox"/> AM <input type="checkbox"/> PM		
	Team members			Time HR	MIN	<input type="checkbox"/> AM <input type="checkbox"/> PM		
	Team members			Time HR	MIN	<input type="checkbox"/> AM <input type="checkbox"/> PM		
	Team members			Time HR	MIN	<input type="checkbox"/> AM <input type="checkbox"/> PM		
MOE representative, if present				Title	Phone No.	Time HR	MIN	<input type="checkbox"/> AM <input type="checkbox"/> PM
Others on Site	Name	Representing		Time HR	MIN	<input type="checkbox"/> AM <input type="checkbox"/> PM		
	Name	Representing		Time HR	MIN	<input type="checkbox"/> AM <input type="checkbox"/> PM		
	Name	Representing		Time HR	MIN	<input type="checkbox"/> AM <input type="checkbox"/> PM		
	Name	Representing		Time HR	MIN	<input type="checkbox"/> AM <input type="checkbox"/> PM		
Clean-up Details	Method of material containment and spills supplies used							
	Method of disposal							
Quantity & type of wastes generated		Was waste manifested? <input type="checkbox"/> No <input type="checkbox"/> Yes	Waste Gen. No.	Manifest No.	Date of waste shipment D M Y			
Cost of disposal In-house External		Disposal contractor		Date of completion D M Y				
Comments and recommendations								
Photo's attached: <input type="checkbox"/> Yes <input type="checkbox"/> No Additional information attached: <input type="checkbox"/> Yes <input type="checkbox"/> No								
Supervisor's signature					Date of completion D M Y			
Manager's signature (required for MOE Reportable Spills only)					Date of completion D M Y			

**Important:** Send completed form, associated correspondence & reports to System Safety at: [systemsafety@gotransit.com](mailto:systemsafety@gotransit.com)

0243-14 (Page 2 of 2)

























## Excavator Hand Signals

<b>Load Up</b>  1	<b>Load Down</b>  2	<b>Swing Left</b>  3	<b>Swing Right</b>  4
<b>Turn Left</b>  5	<b>Turn Right</b>  6	<b>Travel</b>  7	<b>This Far To Go</b>  8
<b>Everything Slow</b>  9	<b>Stop Engine</b>  10	<b>Stop</b>  11	<b>Emergency Stop</b>  12
<b>Boom Up</b>  13	<b>Boom Down</b>  14	<b>Telescope in</b>  15	<b>Telescope Out</b>  16
<b>Dipper In</b>  17	<b>Dipper Out</b>  18	<b>Counter Rotate</b>  19	<b>Counter Rotate</b>  20
<b>Open Bucket</b>  21	<b>Close Bucket</b>  22	<b>Dog Everything</b>  23	 <b>Work Safe for Life</b> 5110 Creekbank Road, #400 Mississauga, ON L4W 0A1 1-800-263-5024 905-625-0100 V015

**No response should be made to unclear signals!**

 <p><b>HOIST</b> With upper arm extended to the side, forearm and index finger pointing straight up, hand and finger make small circles.</p>	 <p><b>LOWER</b> With arm and index finger pointing down, hand and finger make small circles.</p>	 <p><b>USE MAIN HOIST</b> A hand taps on top of the head. Then regular signal is given to indicate desired action.</p>	 <p><b>USE WHIPLINE (Auxiliary Hoist)</b> With arm bent at elbow and forearm vertical, elbow is tapped with other hand. Then regular signal is used to indicate desired action.</p>
 <p><b>BOOM UP</b> With arm extended horizontally to the side, thumb points up with other fingers closed.</p>	 <p><b>BOOM DOWN</b> With arm extended horizontally to the side, thumb points down with other fingers closed.</p>	 <p><b>MOVE SLOWLY</b> A hand is placed in front of the hand that is giving the action signal. (Hoist slowly shown in example.)</p>	 <p><b>SWING</b> With arm extended horizontally, index finger points in direction that boom is to swing.</p>
 <p><b>BOOM DOWN AND RAISE THE LOAD</b> With arm extended horizontally to the side and thumb pointing down, fingers open and close while load movement is desired.</p>	 <p><b>BOOM UP AND LOWER THE LOAD</b> With arm extended horizontally to the side and thumb pointing up, fingers open and close while load movement is desired.</p>	 <p><b>STOP</b> With arm extended horizontally to the side, palm down, arm is swung back and forth.</p>	 <p><b>EMERGENCY STOP</b> With both arms extended horizontally to the side, palms down, arms are swung back and forth.</p>

## Crane Hand Signals

 <p><b>TRAVEL</b> With all fingers pointing up, arm is extended horizontally out and back to make a pushing motion in the direction of travel.</p>	 <p><b>DOG EVERYTHING</b> Hands held together at waist level.</p>	 <p><b>TRAVEL (BOTH TRACKS)</b> Rotate fists around each other in front of body; direction of rotation away from body indicates travel forward; rotation towards body indicates travel backward. (For crawler cranes only)</p>	 <p><b>TRAVEL (ONE TRACK)</b> Indicate track to be locked by raising fist on that side. Rotate other fist in front of body in direction that other track is to travel. (For crawler cranes only)</p>
 <p><b>TELESCOPE OUT (TELESCOPING BOOMS)</b> With hands to the front at waist level, thumbs point outward with other fingers closed.</p>	 <p><b>TELESCOPE IN (TELESCOPING BOOMS)</b> With hands to the front at waist level, thumbs point at each other with other fingers closed.</p>	 <p><b>TELESCOPE OUT (TELESCOPING BOOMS)</b> One hand signal. One fist in front of chest with thumb tapping chest.</p>	 <p><b>TELESCOPE IN (TELESCOPING BOOMS)</b> One hand signal. One fist in front of chest, thumb pointing outward and heel of fist tapping chest.</p>

# Notes



## Notes

[illegible]

## Notes

[illegible]