



**RETURN BIDS TO:**

**RETOURNER LES SOUMISSIONS À:**

Travaux publics et Services gouvernementaux  
Canada  
Place Bonaventure, portail Sud-Oue  
800, rue de La Gauchetière Ouest  
7e étage, suite 7300  
Montréal  
Québec  
H5A 1L6

**INVITATION TO TENDER**

**APPEL D'OFFRES**

**Tender To: Public Works and Government Services  
Canada**

We hereby offer to sell to Her Majesty the Queen in right of  
Canada, in accordance with the terms and conditions set  
out herein, referred to herein or attached hereto, the goods,  
services, and construction listed herein and on any attached  
sheets at the price(s) set out therefor.

**Soumission aux: Travaux Publics et Services  
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la  
Reine du chef du Canada, aux conditions énoncées ou  
incluses par référence dans la présente et aux annexes  
ci-jointes, les biens, services et construction énumérés  
ici et sur toute feuille ci-annexée, au(x) prix indiqué(s).

**Comments - Commentaires**

**Vendor/Firm Name and Address**

Raison sociale et adresse du  
fournisseur/de l'entrepreneur

**Issuing Office - Bureau de distribution**

Travaux publics et Services gouvernementaux Canada  
Place Bonaventure, portail Sud-Oue  
800, rue de La Gauchetière Ouest  
7e étage, suite 7300  
Montréal  
Québec  
H5A 1L6

<b>Title - Sujet</b> Réfection enveloppe CCC Laferrière	
<b>Solicitation No. - N° de l'invitation</b> 21301-195878/A	<b>Date</b> 2018-10-19
<b>Client Reference No. - N° de référence du client</b> 21301-19-5878	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$MTC-120-15063
<b>File No. - N° de dossier</b> MTC-8-41159 (120)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2018-12-04</b>	
<b>Time Zone</b> <b>Fuseau horaire</b> Heure Normale du l'Est HNE	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Harvey, Keven	<b>Buyer Id - Id de l'acheteur</b> mtc120
<b>Telephone No. - N° de téléphone</b> (514) 607-2867 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> SERVICE CORRECTIONNEL DU CANADA Centre correctionnel communautaire (CCC) Laferrière 202, rue St-Georges St-Jérôme Québec J7Z 4Z9 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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

## INVITATION TO TENDER

### REBUILDING OF THE ENVELOPE LAFERRIÈRE CORRECTIONAL COMMUNITY CENTER 202 RUE ST-GEORGES, ST-JÉRÔME (QUÉBEC) J7Z 4Z9

#### IMPORTANT NOTICE TO BIDDERS

##### PROMPT PAYMENT IN THE CONSTRUCTION INDUSTRY

###### Prompt Payment Principles

Public Services and Procurement Canada advocates that construction-related payments should follow these three principles:

- **Promptness:** The department will review and process invoices promptly. If disputes arise, Public Services and Procurement Canada will pay for items not in dispute, while working to resolve the disputed amount quickly and fairly
- **Transparency:** The department will make construction payment information such as payment dates, company names, contract and project numbers, publicly available; likewise, contractors are expected to share this information with their lower tiers
- **Shared responsibility:** Payers and payees are responsible for fulfilling their contract terms including their obligations to make and receive payment, and to adhere to industry best practices

For more information: <http://www.tpsgc-pwgsc.gc.ca/biens-property/divulgation-disclosure/psdic-ppci-eng.html>

##### PWGSC UPDATE ON ASBESTOS USE

Effective April 1, 2016, all Public Works and Government Services Canada (PWGSC) contracts for new construction and major rehabilitation will prohibit the use of asbestos-containing materials. Further information can be found at <http://www.tpsgc-pwgsc.gc.ca/comm/vedette-features/2016-04-19-00-eng.html>

##### ADDITION OF TERMINOLOGY

Take note of the additional paragraph included in clause R2810D identified in SC03.

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### **R2710T GENERAL INSTRUCTIONS - CONSTRUCTION SERVICES - BID SECURITY REQUIREMENTS (GI) (2017-09-21)**

The following GI's are included by reference and are available at the following Web Site

<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>

- GI01 Integrity Provisions - Bid
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## **SPECIAL INSTRUCTIONS TO BIDDERS (SI)**

### **SI01 BID DOCUMENTS**

1. The following are the Bid Documents:
  - a. Invitation to Tender - Page 1;
  - b. Special Instructions to Bidders;
  - c. General Instructions - Construction Services - Bid Security Requirements R2710T (2017-09-21)
  - d. Clauses & Conditions identified in "Contract Documents";
  - e. Drawings and Specifications;
  - f. Bid and Acceptance Form and related Appendix(s); and
  - g. Any amendment issued prior to solicitation closing.

Submission of a bid constitutes acknowledgement that the Bidder has read and agrees to be bound by these documents.

2. General Instructions - Construction Services - Bid Security Requirements R2710T is incorporated by reference and is set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>

### **SI02 ENQUIRIES DURING THE SOLICITATION PERIOD**

Enquiries regarding this bid must be submitted in writing to the Contracting Authority named on the Invitation to Tender - Page 1 at e-mail address [keven.harvey@tpsgc-pwgsc.gc.ca](mailto:keven.harvey@tpsgc-pwgsc.gc.ca). Except for the approval of alternative materials as described in GI15 of R2710T, enquiries should be received no later than **10 business days** prior to the date set for solicitation closing to allow sufficient time to provide a response. Enquiries received after that time may result in an answer NOT being provided.

2. To ensure consistency and quality of the information provided to Bidders, PWGSC will examine the content of the enquiry and will decide whether or not to issue an amendment.
3. All enquiries and other communications related to this bid sent throughout the solicitation period must be directed **ONLY** to the Contracting Authority named in paragraph 1. above. Failure to comply with this requirement may result in the bid being declared non-compliant.

### **SI03 MANDATORY SITE VISIT**

1. There will be a **MANDATORY** site visit on November 08, 2018 at 10:00 AM. Interested bidders are to meet at LAFERRIÈRE CORRECTIONAL COMMUNITY CENTER 202 RUE ST-GEORGES, ST-JÉRÔME (QUÉBEC) J7Z 4Z9.
2. **The representative of the Bidder must confirm his attendance 48 hours in advance by e-mail to the Contracting Authority:** [keven.harvey@tpsgc-pwgsc.gc.ca](mailto:keven.harvey@tpsgc-pwgsc.gc.ca) The representative of the bidder who have not confirm his attendance in advance will not be accepted at the gate.
3. **Safety Attire:** In order to be guaranteed access to the site visit all persons should have the proper personal protection equipment (safety glasses, footwear, vests and hard hats etc.). Contractor's personnel/individuals who do not have the proper safety attire may be denied access to the site.

### **SI04 REVISION OF BID**

A bid may be revised by letter or facsimile in accordance with GI10 of R2710T. The facsimile number for receipt of revisions is (514) 496-3822

### **SI05 BID RESULTS**

1. A public bid opening will be held in the office designated on the Front Page "Invitation to Tender" (top left corner) for the receipt of bids shortly after the time set for solicitation closing.
2. The responsive bid carrying the lowest price will be recommended for contract award.
3. Following solicitation closing, bid results may be obtained by calling number (514) 607-2867.

### **SI06 INSUFFICIENT FUNDING**

In the event that the lowest compliant bid exceeds the amount of funding allocated for the Work, Canada in its sole discretion may

- a. cancel the solicitation; or
- b. obtain additional funding and award the Contract to the Bidder submitting the lowest compliant bid.

### **SI07 BID VALIDITY PERIOD**

1. Canada reserves the right to seek an extension to the bid validity period prescribed in BA04 of the Bid and Acceptance Form. Upon notification in writing from Canada, Bidders will have the option to either accept or reject the proposed extension.
2. If the extension referred to in paragraph 1. above is accepted, in writing, by all those who submitted bids, then Canada will continue immediately with the evaluation of the bids and its approvals processes.
3. If the extension referred to in paragraph 1. above is not accepted in writing by all those who submitted bids then Canada will, at its sole discretion, either
  - a. continue to evaluate the bids of those who have accepted the proposed extension and seek the necessary approvals; or
  - b. cancel the invitation to tender.
4. The provisions expressed herein do not in any manner limit Canada's rights in law or under GI11 of R2710T.

## **SI08 CONSTRUCTION DOCUMENTS**

The successful Contractor will be provided **with 1 paper copy** of the sealed and signed drawings, the specifications and the amendments upon acceptance of the offer. Obtaining more copies will be the responsibility of the Contractor including costs.

## **SI09 WEB SITES**

The connection to some of the Web sites in the solicitation documents is established by the use of hyperlinks. The following is a list of the addresses of the Web sites:

Treasury Board Appendix L, Acceptable Bonding Companies

<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494&section=text#appl>

Buy and Sell

<https://www.achatsetventes-buyandsell.gc.ca>

Canadian economic sanctions

<http://www.international.gc.ca/sanctions/index.aspx?lang=eng>

Contractor Performance Evaluation Report (Form PWGSC-TPSGC 2913)

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/2913.pdf>

Bid Bond (form PWGSC-TPSGC 504)

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/504.pdf>

Performance Bond (form PWGSC-TPSGC 505)

[http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/505\\_eng.pdf](http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/505_eng.pdf)

Labour and Material Payment Bond (form PWGWSC-TPSGC 506)

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/506.pdf>

Standard Acquisition Clauses and Conditions (SACC) Manual

<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R>

PWGSC, Industrial Security Services

<http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>

PWGSC, Code of Conduct and Certifications

<http://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/contexte-context-eng.html>

Construction and Consultant Services Contract Administration Forms Real Property Contracting

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>

Declaration Form

<http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html>

Trade agreements

<https://buyandsell.gc.ca/policy-and-guidelines/Policy-and-Legal-Framework/Trade-Agreements>

## **SI10 FINANCIAL BID**

The total amount of the bid excludes taxes.

## CONTRACT DOCUMENTS (CD)

1. The following are the Contract Documents:
  - a. Contract Page when signed by Canada;
  - b. Duly completed Bid and Acceptance Form and any Appendices attached thereto;
  - c. Drawings and Specifications;
  - d. General Conditions and clauses

GC1	General Provisions – Construction Services	R2810D	(2017-08-17);
GC2	Administration of the Contract	R2820D	(2016-01-28);
GC3	Execution and Control of the Work	R2830D	(2018-06-21);
GC4	Protective Measures	R2840D	(2008-05-12);
GC5	Terms of Payment	R2850D	(2016-01-28);
GC6	Delays and Changes in the Work	R2860D	(2016-01-28);
GC7	Default, Suspension or Termination of Contract	R2870D	(2018-06-21);
GC8	Dispute Resolution	R2880D	(2016-01-28);
GC9	Contract Security	R2890D	(2018-06-21);
GC10	Insurance	R2900D	(2008-05-12);
	Allowable Costs for Contract Changes Under GC6.4.1	R2950D	(2015-02-25);
  - e. Supplementary Conditions
  - f. Any amendment issued or any allowable bid revision received before the date and time set for solicitation closing;
  - g. Any amendment incorporated by mutual agreement between Canada and the Contractor before acceptance of the bid; and
  - h. Any amendment or variation of the contract documents that is made in accordance with the General Conditions.
2. The documents identified by title, number and date above are incorporated by reference and are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>
3. The language of the contract documents is the language of the Bid and Acceptance Form submitted.

## **SUPPLEMENTARY CONDITIONS (SC)**

### **SC01 INDUSTRIAL SECURITY RELATED REQUIREMENTS, DOCUMENT SAFEGUARDING**

There is no document security requirement applicable to this Contract.

### **SC02 INSURANCE TERMS**

#### **1) Insurance Contracts**

- (a) The Contractor must, at the Contractor's expense, obtain and maintain insurance contracts in accordance with the requirements of the Certificate of Insurance. Coverage must be placed with an Insurer licensed to carry out business in Canada.
- (b) Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract. The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

#### **2) Period of Insurance**

- (a) The policies required in the Certificate of Insurance must be in force from the date of contract award and be maintained throughout the duration of the Contract.
- (b) The Contractor must be responsible to provide and maintain coverage for Products/Completed Operations hazards on its Commercial General Liability insurance policy, for a period of six (6) years beyond the date of the Certificate of Substantial Performance.

#### **3) Proof of Insurance**

- (a) Before commencement of the Work, and no later than thirty (30) days after contract award, the Contractor must deposit with Canada a Certificate of Insurance on the form attached herein.
- (b) Upon request by Canada, the Contractor must provide originals or certified true copies of all contracts of insurance maintained by the Contractor pursuant to the Certificate of Insurance.

#### **4) Insurance Proceeds**

In the event of a claim, the Contractor must, without delay, do such things and execute such documents as are necessary to effect payment of the proceeds.

#### **5) Deductible**

The payment of monies up to the deductible amount made in satisfaction of a claim must be borne by the Contractor.

### **SC03 INTERPRETATION**

R2810D General Condition GC1.1.2 Terminology is modified to include the following,

#### **“Architectural and Engineering Services”:**

Mean's services to provide a range of investigation and recommendation reports, planning, design, preparation, or supervision of the construction, repair, renovation or restoration of a work and includes contract administration services, for real property projects.

**“Construction Services”:**

Means construction, repair, renovation or restoration of any work except a vessel and includes; the supply and erection of a prefabricated structure; dredging; demolition; environmental services related to a real property; or, the hire of equipment to be used in or incidentally to the execution of any construction services referred to above.

**“Facility Maintenance Services”:**

Means services related to activities normally associated with the maintenance of a facility and keeping spaces, structures and infrastructure in proper operating condition in a routine, scheduled, or anticipated fashion to prevent failure and/or degradation including inspection, testing, servicing, classification as to serviceability, repairs, rebuilding and reclamation, as well as cleaning, waste removal, snow removal, lawn care, replacement of flooring, lighting or plumbing fixtures, painting and other minor works.

## BID AND ACCEPTANCE FORM (BA)

### BA01 IDENTIFICATION

LAFERRIÈRE CORRECTIONAL COMMUNITY CENTER 202 RUE ST-GEORGES, ST-JÉRÔME (QUÉBEC) J7Z 4Z9

### BA02 BUSINESS NAME AND ADDRESS OF BIDDER

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ PBN: \_\_\_\_\_

E-mail address: \_\_\_\_\_

Industrial Security Program Organisation Number (ISP ORG#) \_\_\_\_\_  
(when required)

### BA03 THE OFFER

The Bidder offers to Canada to perform and complete the Work for the above named project in accordance with the Bid Documents for the Total Bid Amount of

\$ \_\_\_\_\_ excluding Applicable Tax(es).  
(amount in numbers)

### BA04 BID VALIDITY PERIOD

The bid must not be withdrawn for a period of 60 days following the date of solicitation closing.

### BA05 ACCEPTANCE AND CONTRACT

Upon acceptance of the Bidder's offer by Canada, a binding Contract will be formed between Canada and the Bidder. The documents forming the Contract will be the Contract Documents identified in "Contract Documents (CD)" section.

### BA06 CONSTRUCTION TIME

Due to the winter conditions, the work is required to start on the 1<sup>st</sup> of April, 2019. The Contractor must perform and complete the work within **eight (8) weeks** from that date.

### BA07 BID SECURITY

The Bidder must enclose bid security with its bid in accordance with GI08 - Bid Security Requirements of R2710T - General Instructions - Construction Services - Bid Security Requirements.

### BA08 SIGNATURE

\_\_\_\_\_  
Name and title of person authorized to sign on behalf of Bidder (Type or print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



## APPENDIX 2 - LISTING OF SUBCONTRACTORS

- 1) In accordance with GI07 - Listing of Subcontractors and Suppliers of R2710T- General Instructions - Construction Services - Bid Security Requirements, the Bidder should provide a list of Subcontractors with his Bid.
- 2) The Bidder should submit the list of Subcontractors and for any portion of the Work valued at 20% or greater of the submitted Bid Price.

	Subcontractor	Division
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

## APPENDIX 3 - VOLUNTARY CERTIFICATION TO SUPPORT THE USE OF APPRENTICES

(page 1 of 2)

### PUBLIC WORKS AND GOVERNMENT SERVICES CANADA APPRENTICE PROCUREMENT INITIATIVE

1. To encourage employers to participate in apprenticeship training, Bidders, bidding on construction and maintenance contracts by Public Works and Government Services Canada (PWGSC) are being asked to sign a voluntary certification, signaling their commitment to hire and train apprentices.
2. Canada is facing skills shortages across various sectors and regions, especially in the skilled trades. Equipping Canadians with skills and training is a shared responsibility. The Government of Canada made a commitment to support the use of apprentices in federal construction and maintenance contracts. Contractors have an important role in supporting apprentices through hiring and training and are encouraged to certify that they are providing opportunities to apprentices as part of doing business with the Government of Canada.
3. The Government of Canada is encouraging apprenticeships and careers in the skilled trades. In addition, the government offers a tax credit to employers to encourage them to hire apprentices. Information on this tax measure administered by the Canada Revenue Agency can be found at: [www.cra-arc.gc.ca](http://www.cra-arc.gc.ca). Employers are also encouraged to find out what additional information and supports are available from their respective provincial or territorial jurisdiction.
4. Signed certifications on page 2 of 2 will be used to better understand contractor use of apprentices on Government of Canada maintenance and construction contracts and may inform future policy and program development.
5. The Contractor hereby certifies the following:

In order to help meet demand for skilled trades people, the Contractor agrees to use, and require its subcontractors to use, reasonable commercial efforts to hire and train registered apprentices, to strive to fully utilize allowable apprenticeship ratios \* and to respect any hiring requirements prescribed by provincial or territorial statutes

The Contractor hereby consents to this information being collected and held by PWGSC, and Employment and Social Development Canada to support work to gather data on the hiring and training of apprentices in federal construction and maintenance contracts.

To support this initiative, a voluntary certification signaling the Contractor's commitment to hire and train apprentices is available at page 2 of 2.

If you accept fill out and sign page 2 of 2.

\* *The journeyman-apprentice ratio is defined as the number of qualified/certified journeymen that an employer must employ in a designated trade or occupation in order to be eligible to register an apprentice as determined by provincial/territorial (P/T) legislation, regulation, policy directive or by law issued by the responsible authority or agency.*

## Voluntary Certification

(To be filled out and returned with bid on a voluntary basis)

(page 2 of 2)

*Note: The contractor will be asked to fill out a report every six months or at project completion as per sample "Voluntary Reports for Apprentices Employed during the Contract" provided at Annex C*

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Company Name: \_\_\_\_\_

Company Legal Name: \_\_\_\_\_

Solicitation Number: \_\_\_\_\_

Number of company employees: \_\_\_\_\_

Number of apprentices planned to be working on this contract: \_\_\_\_\_

Trades of those apprentices:

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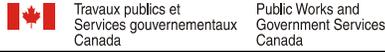
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**ANNEX A - CERTIFICATE OF INSURANCE** (Not required at solicitation closing)

**CERTIFICATE OF INSURANCE**

Page 1 of 2



Description and Location of Work  <b>LAFERRIÈRE CORRECTIONAL COMMUNITY CENTER 202 RUE ST-GEORGES, ST-JÉRÔME (QUÉBEC) J7Z 4Z9</b>	Contract No. EF236-182913
	Project No. R.084320.001

Name of Insurer, Broker or Agent	Address (No., Street)	City	Province	Postal Code
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Name of Insured (Contractor)	Address (No., Street)	City	Province	Postal Code
------------------------------	-----------------------	------	----------	-------------

Additional Insured  
  
*Her Majesty the Queen in Right of Canada as represented by the Minister of Public Works and Government Services*

Type of Insurance	Insurer Name and Policy Number	Inception Date D / M / Y	Expiry Date D / M / Y	Limits of Liability		
				Per Occurrence	Annual General Aggregate	Completed Operations Aggregate
<b>Commercial General Liability</b> <b>Umbrella/Excess Liability</b>				\$	\$	\$
<b>Builder's Risk / Installation Floater</b>				\$		
<b>Insert other type of insurance as required</b>				\$		

I certify that the above policies were issued by insurers in the course of their Insurance business in Canada, are currently in force and include the applicable insurance coverage's stated on page 2 of this Certificate of Insurance, including advance notice of cancellation / reduction in coverage.

<input type="text"/>	<input type="text"/>
Name of person authorized to sign on behalf of Insurer(s) (Officer, Agent, Broker)	Telephone number
<input type="text"/>	<input type="text"/>
Signature	Date D / M / Y

CERTIFICATE OF INSURANCE Page 2 of 2

**General**

The insurance policies required on page 1 of the Certificate of Insurance must be in force and must include the insurance coverage listed under the corresponding type of insurance on this page.

The policies must insure the Contractor and must include Her Majesty the Queen in Right of Canada as represented by the Minister of Public Works and Government Services as an additional Insured.

The Policy shall be endorsed to provide the Owner with not less than 30 days' notice in writing in advance of any cancellation or change or amendment restricting coverage.

Without increasing the limit of liability, the policies must protect all insured parties to the full extent of coverage provided. Further, the policies must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

#### **Commercial General Liability**

The insurance coverage provided must not be substantially less than that provided by the latest edition of IBC Form 2100.

The policy must either include or be endorsed to include coverage for the following exposures or hazards if the Work is subject thereto:

- (a) Blasting.
- (b) Pile driving and caisson work.
- (c) Underpinning.
- (d) Removal or weakening of support of any structure or land whether such support be natural or otherwise if the work is performed by the insured contractor.

The policy must have the following minimum limits:

- (a) **\$5,000,000** Each Occurrence Limit;
- (b) **\$10,000,000** General Aggregate Limit per policy year if the policy contains a General Aggregate; and
- (c) **\$5,000,000** Products/Completed Operations Aggregate Limit.

Umbrella or excess liability insurance may be used to achieve the required limits.

#### **Builder's Risk / Installation Floater**

The insurance coverage provided must not be less than that provided by the latest edition of IBC Forms 4042 and 4047.

The policy must permit use and occupancy of any of the projects, or any part thereof, where such use and occupancy is for the purposes for which a project is intended upon completion.

The policy may exclude or be endorsed to exclude coverage for loss or damage caused by asbestos, fungi or spores, cyber and terrorism.

The policy must have a limit that is **not less than the sum of the contract value** plus the declared value (if any) set forth in the contract documents of all material and equipment supplied by Canada at the site of the project to be incorporated into and form part of the finished Work. If the value of the Work is changed, the policy must be changed to reflect the revised contract value.

The policy must provide that the proceeds thereof are payable to Canada or as Canada may direct in accordance with GC10.2, "Insurance Proceeds" (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/R/R2900D/2>).

#### **Contractors Pollution Liability**

The policy must have a limit usual for a contract of this nature, but not less than **\$1,000,000** per incident or occurrence and in the aggregate.

#### **Aviation Liability**

The insurance coverage shall Include Bodily Injury (including passenger Bodily Injury) and Property Damage, in an amount of not less than **\$5,000,000** per incident or occurrence and in the aggregate.

#### **Marine Liability**

The insurance coverage must be provided by a Protection & Indemnity (P&I) insurance policy and must include excess collision liability and pollution liability.

The insurance must be placed with a member of the International Group of Protection & Indemnity Associations or with a fixed market in an amount of not less than the limits determined by the *Marine Liability Act*, S.C. 2001, c. 6. Coverage must include crew liability, if it is not covered by the statutory requirements of the Territory or Province having jurisdiction over such employees.

The policy must waive all rights of subrogation against Canada as represented by Public Works and Government Services Canada for any and all loss of or damage to the watercraft however caused.

#### **Other types of Insurance**

To be inserted below according to specifics of project.

**Use separate page if needed.**



**1. ARCHITECTURAL SPECIFICATIONS**

**2. STRUCTURE SPECIFICATIONS**

**3. MECHANICAL SPECIFICATIONS**

**4. CIVIL SPECIFICATIONS**

**NOTE: PLANS IN ELECTRONIC ATTACHMENT**

# **1. ARCHITECTURAL SPECIFICATIONS**

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**Partie 1        General**

**1.1            RELATED REQUIREMENTS**

- .1        Not applicable

**1.2            REFERENCES**

- .1        Not applicable

**1.3            ADMINISTRATIVE**

- .1        In the shortest possible time and in a predetermined order to not delay the execution of the work, submit documents and samples required Consultant for review. A delay in this regard can not constitute a sufficient reason for an extension of the time limit for completion and no such request will be accepted.
- .2        Do not undertake work for which requires the filing of documents and samples before reviewing all submitted pieces is completely finished.
- .3        The data shown on the shop drawings, data sheets and samples of products and works must be expressed in metric units (SI).
- .4        When the elements are not produced or manufactured in metric (SI) or that the features are not given in metric units (SI), the converted values can be accepted.
- .5        Review documents and samples before returning them to the Consultant. Through this diligence, the Contractor confirms that the requirements applicable to works have been or will be determined and verified, and that each document and samples submitted was examined and found to comply with the requirements of the work and contract documents. The documents and samples that will not be stamped, signed, dated and identified in connection with the particular project will be returned without being reviewed and will be considered rejected.
- .6        Give written notice to the Consultant, upon filing of documents and samples, differences that they have with the requirements of the contract documents, and state the reasons.
- .7        Ensure the accuracy of the measures taken on site from adjacent structures affected by the work.
- .8        The fact that the documents and samples submitted are reviewed by the Consultant does not release the Contractor from its responsibility to provide full and accurate parts.
- .9        The fact that the documents and samples submitted are reviewed by the Consultant does not release the Contractor from its responsibility to transmit coins meeting the requirements of the contract documents.
- .10      Keep a copy on the site checked each document submitted.

#### **1.4 SHOP DRAWINGS AND PRODUCT DATA**

- .1 The term "shop drawings" means drawings, diagrams, illustrations, tables, graphics performance or performance, brochures and other documentation to be provided by the Contractor to show in detail part of the intended work.
- .2 If required, drawings must bear the seal and signature of a professional engineer or holding a license to practice in Canada, in the province of Quebec.
- .3 Shop drawings must indicate the materials used and the construction methods of fixing or anchor to use, and they must contain the assembly diagrams, details of connections, explanatory notes and other necessary information the execution of works. When structures or elements are connected or connected to other books or other items, indicate on the drawings that had coordination requirements, regardless of the section under which the works or adjacent elements will be provided and installed. Making references to quotations and drawings of draft.
- .4 Allow 10 days Consultant to examine each batch of documents submitted.
- .5 Changes to shop drawings by the Consultant are not intended to change the contract price. If this is the case, however, notify the Consultant in writing before starting work.
- .6 To provide shop drawings the changes that are requested by the Consultant in accordance with the Contract Documents. When submitting drawings again, notify the Consultant in writing of the changes that were made in addition to those required.
- .7 The documents submitted must be accompanied by a cover letter, two (2) copies, containing the following information:
  - .1 the date;
  - .2 the designation and number of the project;
  - .3 the name and address of Contractor;
  - .4 the designation of each drawing, specifications and sample and the number subject;
  - .5 any other relevant data.
- .8 The documents submitted must wear or indicate the following:
  - .1 the date of preparation and review dates;
  - .2 the designation and number of the project;
  - .3 the name and address of:
    - .1 the subcontractor;
    - .2 supplier;
    - .3 the manufacturer;
  - .4 the stamp of the Contractor, signed by the authorized representative of the latter, stating that the documents submitted are approved, the measures taken on site have been checked and that all meets the requirements of the Contract Documents;
  - .5 the relevant details to the relevant portions of the work:
    - .1 materials and manufacturing details;

- .2 layout or configuration, with dimensions, including those taken on site, as well as gaps and clearances;
  - .3 details of mounting or setting;
  - .4 characteristics such as power, flow rate or capacity;
  - .5 performance characteristics;
  - .6 reference standards;
  - .7 operational weight;
  - .8 wiring diagrams;
  - .9 single line diagrams and schematics;
  - .10 linkages to adjacent structures.
- .9 Distribute copies of shop drawings and data sheets once the consultant has completed the audit.
- .10 Submit one (1) electronic copy for verification and 6 copies for distribution audited shop drawings prescribed in the specification sections and according to the reasonable requirements of the Consultant.
- .11 If no shop drawing is required due to the use of a standard production product, submit one (1) electronic copy for verification and 6 copies for distribution of data sheets audited or documentation prescribed manufacturer in the technical sections and as requested by the Consultant.
- .12 Submit one (1) electronic copy for verification and 6 copies for distribution of reports audited tests prescribed in the technical sections and as requested by the Consultant.
- .1 The report signed by the official representative of the testing laboratory must certify that materials, products or systems similar to those proposed in the context of the work have been tested in accordance with the prescribed requirements.
  - .2 The tests must be made within three (3) years preceding the award of the contract.
- .13 Submit one (1) electronic copy for verification and 6 copies for distribution of certificates prescribed in the technical sections and as requested by the Consultant.
- .1 The documents, printed on official correspondence paper manufacturer and signed by a representative of the latter, must certify that the products, materials, equipment and systems supplied comply with the requirements of the tender.
  - .2 Certificates must bear a date after the contract award and indicate the name of the project.
- .14 Submit one (1) electronic copy for verification and 6 copies for distribution manufacturer's instructions specified in the technical sections and as requested by the Consultant.
- .1 pre printed documents describing the product installation method, materials and systems, including special instructions and data sheets showing the impedances, the risks and the safety measures put in place.

- .15 Submit one (1) electronic copy for verification and 6 copies for distribution of reports of spot checks by the manufacturer specified in the technical sections and as requested by the Consultant.
- .16 Reports of tests and checks have been made by the manufacturer's representative in order to confirm the compliance of products, materials, equipment or systems installed to the manufacturer's instructions.
- .17 Submit one (1) electronic copy for verification and 6 copies for distribution of operating and maintenance records specified in the technical sections and as requested by the Consultant.
- .18 Delete information that does not apply to work.
- .19 In addition to the current information, provide any additional details that apply to the work.
- .20 When the shop drawings were checked by the Consultant and any error or omission was detected or that only minor corrections were made, the prints are returned, and the work of shaping and installation can then be undertaken. If shop drawings are rejected, or the annotated copies are returned and corrected the shop drawings must be submitted again according to the above indications before the shaping and installation work can be undertaken.
- .21 The review of shop drawings by the consultant solely to verify compliance with the general concept of the data indicated on them.
  - .1 This examination does not mean that the Consultant approve the final design presented in the shop drawings, responsibility to the contractor that submits and does not relieve it of the obligation to transmit drawings of complete and accurate workshop, and comply with all requirements of the work and contract documents.
  - .2 Without limiting the generality of the foregoing to be restricted, it should be noted that the Contractor is responsible for the accuracy of the dimensions confirmed on site, the provision of information to the methods of shaping or construction techniques and installation and coordination of work performed by all bodies of trades.

## **1.5 SAMPLES**

- .1 Submit three (3) samples of products for review, according to the requirements of specification sections. Label the samples indicating their origin and intended destination.
- .2 Ship Harbor samples paid to the business office or the Consultant's site office.
- .3 Notify Consultant in writing at the time of submission of product samples, differences they have with the requirements of the contract documents.
- .4 When the color, pattern or texture is the subject of a prescription, submit full range of samples required.
- .5 Changes to samples by the Consultant are not intended to change the contract price. If this is the case, however, notify the Consultant in writing before starting work.

- .6 Bring samples to changes that may be requested by the Consultant while respecting the requirements of the contract documents.
- .7 The samples examined and approved become the reference standard from which the quality of materials and workmanship of the finished works and installed will be evaluated.

**1.6 SAMPLES OF WORK**

- .1 Achieve sample required depending on the estimate.

**1.7 PHOTO DOCUMENTATION**

- .1 Submit every month with the progress report, or as directed by the Consultant, one (1) copy of digital photos folder color, standard resolution, in jpg format in an electronic format and on paper .
- .2 Project Identification: Project name and number and date of the photo.
- .3 Number of views: four (4).
  - .1 The views and location will be determined by the Consultant.
- .4 Photo submission Frequency: every month or as directed by the Consultant.
  - .1 Once the demolition work completed but before the works are hidden and as directed by the Consultant.

**1.8 CERTIFICATES AND MINUTES**

- .1 Submit the documents required by the Committee on Health and Safety relevant work immediately after the contract award.
- .2 Submit copies of insurance policies immediately after the contract award.

**Partie 2 Product**

**2.1 NOT APPLICABLE**

- .1 Not applicable.

**Partie 3 Execution**

**3.1 NOT APPLICABLE**

- .1 Not applicable.

**END OF SECTION**

**1. OBJECT**

- .1 See that the construction project and the activities of the institution are conducted without interruption or undue impediments and that the security of the institution is maintained at all times.

**2. DEFINITIONS**

- .1 "Prohibited items" means:
  - .1 Intoxicants, including alcohol, drugs or narcotics;
  - .2 The weapons or parts of weapons, ammunition and any object designed to kill, injure or disable a person or object modified or assembled for these purposes, the possession of which has not been authorized in advance;
  - .3 The explosives or bombs or their components;
  - .4 Any other item not described in paragraphs .1) .4 in) possessed without prior authorization, and may endanger the safety of persons or the penitentiary.
- .2 "Unauthorized smoking items" means products including tobacco, but not limited to, cigarettes, cigars, snuff, chewing tobacco and snuff, cigarette rolling machines, matches and lighters are considered unauthorized objects.
- .3 "Commercial vehicle" means any motor vehicle intended for the transportation equipment, equipment or tools required for the construction project.
- .4 "CSC" Means Correctional Service Canada.
- .5 "Director" means the director or the director of the facility, as applicable, or their authorized representative.
- .6 "Construction employees" means the employees of the main contractor, one of the sub-contractors, equipment operators, equipment suppliers, expertise and inspection laboratories and regulatory agencies .
- .7 "Departmental Representative" means the Project Manager of Public Works Government Services Canada (PWGSC) and the Correctional Service Canada (CSC) in the project.
- .8 "Perimeter" means the area of the establishment of safe belted fences or walls limiting inmate movement.
- .9 "Construction Area" means the area which, as indicated by the contract documents, the contractor will be allowed to work. This may or may not be insulated from the chamber of security of the institution. The "Construction Zone" includes the sidewalk, a lane on the street and some areas inside the building where work is required.

**3. PRELIMINARY MEASURES**

- .1 Before starting work, the contractor must meet with the Director to:
  - .1 To discuss the nature and scope of all project activities
  - .2 Establish acceptable security measures of both sides in accordance with this Directive and the specific needs of the institution.

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- .2 The contractor must:
    - .1 Ensure that all construction employees know the requirements CSC security;
    - .2 Ensure that the security CSC requirements are always prominently displayed on the site;
    - .3 Work with facility staff to see that the construction employees comply with all safety requirements.

#### **4. EMPLOYEES OF CONSTRUCTION**

- .1 The contractor shall submit to the Director the list of names with birth dates for all employees to work on the construction site and a completed security verification form for each employee.
- .2 Provide two (2) weeks for processing requests for security clearance. No employee shall be admitted to the facility without security clearance duly approved nor without an identity card with a recent photo, such as driver's license of a province. Security permissions are unique to each CSC institution and any authorization obtained from another institution is not valid for the institution where this project will take place.
- .3 The ownership of property is prohibited for any person whom there are grounds to believe could present a security risk.
- .4 Any person employed on the construction site will be immediately expelled from the ownership of the property if:
  - .1 It seems to be under the influence of alcohol, drug or narcotics;
  - .2 She abnormal or disorderly conduct;
  - .3 She is in possession of contraband.

#### **5. WORKING HOURS**

- .1 The work week to the property from Monday to Friday, from 07:30 am to 18.00 hrs.
- .2 The work is not allowed on weekends or holidays days without express permission, we should pray for at least seven days in advance. In the event of an emergency, or in any other circumstances, this period may be canceled by the Director.

#### **6. WORK OUTSIDE NORMAL HOURS OF WORK**

- .1 The Director's permission is required for any work performed outside normal working hours. The Contractor shall give notice of at least forty-eight hours when it is necessary to perform work approved outside normal working hours. If working overtime to accomplish an urgent task, for example, pouring concrete or to ensure the safety of the construction, the contractor must notify the manager when he himself is made aware of such a need, then follow the directions given by the Director. Costs incurred by Canada because of this situation could be charged to the contractor.
- .2 Maintain a list of tools and equipment specified above throughout the construction project.

#### **7. TOOLS AND EQUIPMENT**

- .1 When propane or natural gas is used for heating of the project, the facility will require that an employee of the contractor oversees the construction site outside working hours

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**8. RESTRICTION ON SMOKING**

- .1 Contractors and construction workers are not allowed to smoke inside correctional facilities or outdoors within the perimeter of a correctional facility. They should not, inside the perimeter, be in possession of unlicensed tobacco products.
- .2 Contractors and construction workers who violate this policy will be asked to immediately stop smoking or discard any product not authorized tobacco. If they refuse to comply, they will be ordered to leave the property.
- .3 He will be allowed to smoke only outside the perimeter of the correctional institution at a place designated by the Director.

**9. PROHIBITED OBJECTS**

- .1 Weapons, ammunition, explosives, alcohol, drugs and narcotics are prohibited on the premises of the establishment.
- .2 The discovery of object (s) banned (s) on the construction site and identification of the person (s) responsible (s) of the presence of these objects should be reported immediately to the Director.
- .3 Contractors must be alert to their employees and the employees of their subcontractors, since the discovery of contraband may result in cancellation of the security clearance of the employee. A serious violation may lead to expulsion from the site of the establishment of the company in question for the duration of the construction project.

**10. TRAFFIC VEHICLES**

- .1 The Contractor shall notify the Director twenty four (24) hours in advance of the arrival of heavy equipment such as concrete mixers, cranes, etc.

**11. WORK STOPPING**

- .1 At all times, the Director may order the Contractor, its employees, sub-contractors or their employees, not to enter the site or leave immediately due to ongoing security incident in establishment. The foreman of the site manager contractor must note the name of the CSC employee transmitting the order, the time of the investigation and comply with the order received as quickly as possible.

The Contractor must notify the Departmental Representative of the situation within twenty four hours of work stoppage.

**12. CONTACT HELD**

- .1 It is forbidden, without specific permission, to contact with detainees, talk to them, give them items or receive them. Any breach of this directive will result in eviction from the site of the employee responsible and the revocation of his security clearance.
- .2 Note that the cameras are not allowed on the property of CSC.
- .3 Notwithstanding the foregoing, if the director allows the use of cameras, it will be strictly forbidden to photograph detainees or CSC staff or any part of the property using the photo taken is not necessary to execution of this contract.

**13. COMPLETION OF THE BUILDING PROJECT**

- .1 Upon completion of the construction project or, if applicable, to the management of the facilities, the contractor will remove all materials, tools and equipment that are not identified as the construction contract to be left to the establishment.

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Laferrière Community Correctional Center  
Repairs and Rehabilitation of the building envelope  
CSC Project No: 550-2-390-3202

**Section 01 35 13**  
**SPECIAL SECURITY PROCEDURES**  
**Correctional Service Canada**  
Page 4 of 4  
2018-05-28

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END OF SECTION

**Partie 1      General**

**1.1      SCOPE OF WORK**

- .1      Carpentry demolition, membrane roofing and flashing required for the installation of new sections of wooden bridges, bi-layer membrane covering of elastomer bitumen and new metal flashing.
- .2      Removal of existing caulking around windows and other existing openings for the new caulk these elements after the installation of new brick facing.

**1.2      RELATED REQUIREMENTS**

- .1      Selective demolition of the brick veneer to allow the work of strengthening the foundation of the brick veneer and the new brick facing, according to Section 4 April 99 Masonry
- .2      The recovery of decorative stone elements of resettlement for facades in the restored facades of new bricks
- .3      Section June 10, 10      Carpentry
- .4      Section 07 52 00      Coverage modified bitumen membrane
- .5      Section 07 61 00      Flashings foil
- .6      Section 07 92 00      of Sealants

**1.3      REFERENCES**

- .1      Definitions
  - .1      Hazardous materials: Materials, commodities, goods and dangerous products including, without limitation, poisons, corrosives, flammable materials, ammunition, explosives, radioactive substances and other materials, misused, may adversely affect the health or welfare of persons or the environment.
- .2      References
  - .1      CSA International
    - .1      CSA S350, Code of Practice for Safety in Demolition of Structures.
  - .2      Department of Justice Canada (Jus)
    - .1      Canadian Environmental Assessment Act (CEAA), c. 37, 1995.
    - .2      Canada Act, Environmental Protection Act (CEPA), c. 33, 1999.
      - .1      Regulations on emissions of road vehicles and engines, SOR / 2003-2.
      - .2      Regulation amending the Regulation on emissions from road vehicles and engines, SOR / 2006-268.
      - .3      1992 Law on the Transportation of Dangerous Goods (TDG), c. 34.

**1.4      ADMINISTRATIVE**

- .1      meetings prior to installation

- .1 One (1) week before the start of the work being the installation work of this section, hold a meeting with the representative of the Contractor, Consultant and the Ministerial Representative, which will focus on the following.
    - .1 Project requirements.
    - .2 Existing conditions near where will be performed demolition work.
    - .3 The coordination of activities with those performed by other trades.
  - .2 Ensure the presence of all key personnel: site supervisor, project manager and representatives of contractors.
  - .3 In case of change of dates and / or meeting times established at the time of award of the contract, the Consultant will advise interested in writing 24 hours before the time announced for the meeting.
- .2 scheduling
- .1 Take the necessary steps to ensure that the timetable is respected.
    - .1 Inform the Consultant in writing of any delays.

#### **1.5 DOCUMENTS / SAMPLES SUBMITTALS / INFORMATION**

- .1 Shop Drawings
  - .1 Submit for review and approval, drawings, diagrams or details indicating the order of demolition, shoring and underpinning work and items used to do this.
  - .2 Shop drawings demolition work submitted must bear the seal and signature of a professional engineer registered or licensed in Canada, in the province of Quebec.

#### **1.6 MANAGEMENT AND DISPOSAL**

- .1 Carry out site every demolition products.

#### **1.7 QUALITY ASSURANCE**

- .1 Regulatory Requirements: Ensure that work is done in accordance with provincial / territorial and municipal regulations.

#### **1.8 CONDITIONS OF IMPLEMENTATION**

- .1 Environmental Protection
  - .1 Ensure that the work not produce any deleterious effect on wildlife, underground water and the adjacent streams, and they do not generate excessive levels of atmospheric or noise pollution.
  - .2 It is forbidden to burn waste and materials on site.
  - .3 No garbage or waste material should be buried on the site.
  - .4 Do not pour waste or volatile materials, such as mineral spirits, oils, petroleum based lubricants or toxic cleaning solutions into waterways or into storms and sewers.
    - .1 Ensure enforce appropriate methods of disposal of such waste throughout the duration of the work.
  - .5 Do not pour water containing suspended solids in streams, storm or sanitary sewers or on adjacent land or by pumping or otherwise.

- .6 Ensuring the drainage and containment of runoff water containing suspended matter or other harmful substances, in accordance with jurisdictional requirements.
- .7 Protect vegetation (trees, plants, shrubs and foliage) on the field and the adjacent properties, as indicated.
- .8 During the execution of the demolition work, erect temporary protective enclosures to prevent substances or foreign materials contaminate the air outside the site.
- .9 Covering the dry matter and the waste or to be slaughtered wet to prevent the lifting of the dust and debris. Apply a dust on all temporary access roads.

## **1.9 EXISTING CONDITIONS**

- .1 If materials resembling asbestos materials applied with a trowel or by spraying or any other dangerous controlled substance are discovered during the execution of work, they should be halted, appropriate preventive measures should be taken and the Ministerial Representative must be informed on the spot. Do not resume work until you have received written instructions about the Ministerial Representative.
- .2 Existing conditions refer to the state structures to be demolished at the time of the site inspection.
  - .1 Remove, protect and store the recovered items for resettlement, as directed by the Consultant.
  - .2 Collect the items designated by the Ministerial Representative applicable and hand over to the designated place.

## **Partie 2 Product**

### **2.1 MATERIALS AND EQUIPMENT**

- .1 Equipment and heavy machinery
  - .1 Road vehicles must meet the requirements of the Emission Regulations of road vehicles and engines, SOR / 2003-2, made under CEPA and the Regulation amending the Regulation on emissions from road vehicles and engines, SOR / 2006-268, made under CEPA.
- .2 Stop the machine at the end of their use, unless extreme temperature conditions require uninterrupted operation.

## **Partie 3 Execution**

### **3.1 PREPARATORY WORK**

- .1 Protection of works in place
  - .1 Take steps to prevent movement or collapse of structures, utility lines, sidewalks, pavements, trees, landscaping, adjacent soil, adjacent properties, building parts to keep and to avoid damage.
    - .1 Provide and install parts bracing and shoring, end perform recovery work required underpinning.

- .2 If necessary, repair damaged structures during demolition work as Consultant Guidelines
- .2 Although support structures or covered structures. If the demolition work appears to be a danger to the rest of the structure or structure to the structures or adjacent structures, or for piping utilities take appropriate precautionary measures, stop work and notify the Consultant.
- .3 Ensure that the demolitions do not obstruct the drainage system of surface water, elevators and electrical and mechanical systems that must remain in operation.
- .2 Preparatory work surface
  - .1 Unplug and re-route the pipes for electric and telephone connections works or structures to be demolished.
    - .1 Ask warning signs on equipment and electrical conduits that must remain energized during demolition work to feed other works.
  - .2 Disconnect and plug the designated pipes mechanical installations.
    - .1 Remove the water and sewer lines located within the boundaries of the property, according to the competent authority or as directed by the Consultant.
  - .3 Do not interrupt the utility lines that are in service or on and crossing places and that should not be moved.
  - .4 Exterminate rodents and vermin, as required

### **3.2 DEMOLITION**

- .1 Run the demolition work under the rules of art.
- .2 It prohibits the use of blasting for the execution of demolition work.
- .3 Remove contaminated or substances defined as hazardous by the competent authorities for environmental protection and rid the site by taking all necessary security measures to minimize the dangers during their removal and disposal.
- .4 Partially demolished structures as indicated.
- .5 Run the demolition work necessary for the execution of the indicated work.
- .6 Spray all concrete debris generated by the demolition of the foundations until suitably sized material for recycling.
  - .1 Demolish the foundation walls as indicated in the structural drawings.
  - .2 Do not backfill the demolition zones basements before they are inspected by the Consultant.
- .7 Remove the equipment, pipes and other elements that hinder the rehabilitation or repair of existing surfaces, end replace them as and measuring progress.
- .8 At the end of each working day, to ensure that the structure is safe and stable.
  - .1 Protect any time against the elements inside surfaces of the parts that will not be demolished.
- .9 Run the demolition work in order to raise the least possible dust. Keep wet materials as directed by the Consultant .

- .10 Remove structural members as indicated.
- .11 Unless otherwise indicated, remove and dispose of construction demolition materials, respecting the requirements of the competent authorities.
- .12 Remove the hardware and below appliances, store, protect, and then reinstall them in the new building by competent workers.
  - .1 The decorative stone items to keep and resettle in the new masonry.
- .13 Complete work in daylight whenever possible.
  - .1 At the end of each working day, close all light sources except those used for security purposes.

### **3.3 CLEANING**

- .1 Divert excess materials to a site approved by the Consultant.
- .2 Take appropriate safety measures and allocate sufficient resources to prevent theft, vandalism and deterioration of materials.
- .3 Put the deposition materials in a place that will lend itself to reuse in new construction. Eliminate as much as possible handling duplicate.
- .4 To deposit the materials to an environmentally friendly disposal in a place that, firstly, facilitate their removal from the site and review by potential users interested in their re-employment, and, secondly, not hinder not dismantling, processing or trucking.
  - .1 Clearly label all materials deposited, indicating the nature and quantity of materials recovered.
- .5 Evacuate similar nature materials stockpiled and must be disposed of in the same ecological method, once the collection of these materials is complete.
  
- .6 Eliminate products and materials that are not intended for environmentally friendly disposal in accordance with relevant regulations.
  - .1 Use of approved waste, listed in the waste reduction plan.
  - .2 Written permission of the Ministry of Representative must be achieved if we are to move products and materials to landfills other than those specified in the waste reduction plan.

**END OF SECTION**

**Partie 1      General**

**1.1            SCOPE OF WORK**

- .1      The work of this section is primarily (but not limited to):
  - .1          Selective demolition of the brick veneer and existing blocks to allow the work of strengthening the foundation of the brick veneer and the new facing bricks and blocks.
  - .2          The recovery of decorative stone elements of resettlement for facades in the restored facades of new bricks.
  - .3          The supply, installation and all the tools and scaffolding required to complete the masonry bricks and blocks, and installation of precast concrete window sills (described in Section 03 45 00) as described in the drawings.
  - .4          Installation of decorative elements in existing stone salvaged from demolition.

**1.2            RELATED REQUIREMENTS**

- .1      Section 03 45 00: Parapet precast concrete.
- .2      Section 06 10 00: Carpentry.
- .3      Section 07 52 00: Coverage modified bitumen membrane
- .4      Section 07 62 00: Flashing and Sheet Accessories
- .5      Section 07 92 00: for Sealants

**1.3            REFERENCES**

- .1      ASTM International
  - .1          ASTM C216-10, Standard Specification for Facing Brick
- .2      CSA International
  - .1          CAN / CSA-A82 cooked masonry brick clay and shale.
  - .2          CAN / CSA-A165 CSA Standards on concrete masonry units contains: A165.1, A165.2, A165.3.
  - .3          CAN / CSA-A179 mortar and grout for fat masonry.
  - .4          CAN / CSA-A370 Connectors for masonry.
  - .5          CAN / CSA-A371 Masonry buildings.
  - .6          CSA S304.1 Calculation of masonry structures.
- .3      Health Canada - Information system on Hazardous Materials (WHMIS)
  - .1          Safety Data Sheets (MSDS).

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**1.4 DOCUMENTS / SAMPLES SUBMITTALS**

- .1 Submit documents and samples required in accordance with Section 01 33 00 - / Submittal Procedures.
- .2 Data sheets
  - .1 Submit product data and instructions and the manufacturer's documentation for masonry materials. The technical data must include product characteristics, performance criteria, physical size, texture and color.
- .3 Shop Drawings
  - .1 The shop drawings submitted must bear the seal and signature of a professional engineer registered or licensed in Canada, in the province of Quebec.
  - .2 Shop drawings must include a list of rebar required and fold details and installation drawings of the latter.
  - .3 establishment of the drawings shall show the number of reinforcing elements, studs and anchors required as well as the dimensions, spacing and location of these parts.
- .4 samples
  - .1 Submit samples indicated below:
    - .1 Two (2) full-scale samples, the proposed bricks.
    - .2 Two (2) samples of mortar.
    - .3 Two (2) samples of each type required accessories and masonry flashings.
    - .4 Two (2) samples of each type suggested frames, connectors and anchoring to the masonry.

**1.5 DOCUMENTS TO SUBMIT INFORMATION**

- .1 Certificates: documents provided by the manufacturer certifying that the products, materials and equipment comply with the prescribed requirements.
- .2 Test reports:
  - .1 The test reports must certify that masonry units meet the requirements as to the physical characteristics and performance criteria.
  - .2 In addition to the data specified in the ASTM and CSA standards referenced, submit information on the initial water absorption rate (suction) of the masonry, in accordance with ASTM test standard C67.

**1.6 DOCUMENTS TO BE SUBMITTED AT THE END OF WORK**

- .1 Provide manufacturer's instructions, which shall specify requirements regarding the maintenance of the works, and a parts catalog with cuts and identifying numbers.

**1.7 INSURANCE THE QUALITY**

- .1 Qualification
  - .1 Masons: business or people specialized in the realization of masonry, with five (5) years of experience supporting references in similar projects to the subject of this section.

- .1 Masons working within this project must be able to carry out works that meet the quality standards defined by the samples of the work.

## **1.8 SAMPLES OF WORK**

- .1 Build a sample panel to an outside wall of masonry, 1200 mm x 1800 mm, showing the colors and textures of masonry and details frames, fasteners, through flashing, weep, mortar joints, grouting, as well as the type of device and seat and quality of works.
- .2 The sample used for the following purposes:
  - .1 Evaluate the quality of works, substrate preparation, operation of equipment and the implementation of the materials.
- .3 Allow 24 hours Consultant and Departmental Representative to examine the sample before starting work.
- .4 Once accepted by the Consultant, the sample of the book will be the minimum standard in respect to the work covered by this section. It may be part of the finished work.
- .5 Do not start work once the mock-accepted in writing by the Consultant.

## **1.9 TRANSPORT, STORAGE AND HANDLING**

- .1 Transport, store and handle materials and equipment in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials and equipment to site in original factory packaging, bear a label showing the name and address of the manufacturer.
- .3 Protective measures for storage and handling
  - .1 Keep dry materials until their implementation.
  - .2 Store materials under impermeable covers, on pallets or platforms placed on boards or planks, such that they do not rest directly on the floor.

## **1.10 CONDITIONS OF IMPLEMENTATION**

- .1 Environmental conditions: not to make the assembly and implementation of the elements only when the temperature is above 4 degrees Celsius.
- .2 Implementation cold weather
  - .1 According to the requirements of CSA A371 and the requirements listed below.
    - .1 Maintain the mortar at a temperature of between 5 and 25 degrees C, until use or stabilization of the mix.
    - .2 Maintain the masonry and its constituent materials at a temperature between 5 and 25 degrees Celsius and protect premises against wind chill.
    - .3 Maintain the masonry at a temperature above freezing for at least seven (7) days after the implementation of the mortar.
    - .4 Preheat in speaker to a temperature above 10 degrees Celsius, unheated wall sections at least 72 hours before the mortar implementation.
- .3 Implementation hot weather

- .1 Cover with a waterproof cover, which does not stain, freshly made masonry structures so they do not dry out too quickly.
- .2 As long as the masonry is not completed or protected by flashings or other permanent structure, keep them dry with waterproof tarps that do not stain, which extend beyond the top and sides of works on a distance sufficient to protect the latter against the wind driven rain.
- .3 Spray mortar surfaces at regular intervals so as to keep them moist for at least three (3) days after implementation.

### **1.11 GUARANTEE**

- .1 In the case of work covered by this Section, 4 April 99 - Masonry, the 12-month warranty period is extended to 24 months.

### **1.12 MATERIALS OR PRODUCTS ACCEPTABLE**

- .1 When the materials or products are prescribed by their trademark, consult the "Instructions to Bidders" in order to know the procedure concerning the request for approval of materials or substitutes

## **Partie 2 products**

### **2.1 MANUFACTURERS**

- .1 Ensure that the manufacturer has at least five (5) years experience in the manufacture of components with similar or superior characteristics to those required in the case of the present work.

### **2.2 MASONRY ELEMENTS**

- .1 clay bricks baked, in accordance with CAN / CSA-A82 standard.
  - .1 Type: Extruded BFX.
  - .2 Category: SW.
  - .3 Dimensions: 57 x imperial modular 192 x 92 mm (2-1 / 4 "x 7-5 / 8 " X3-5 / 8 ") or modular metric 57 x 190 x 90 mm (2-1 / 4 'x 7-1 / 2' 'X3-1 / 2' ')
  - .4 Colors and textures: extruded bricks pairing existing brick shaded orange and burgundy shaded smooth finish.

### **2.3 FRAMES AND ANCHORS**

- .1 Rebar: shade 400, comply with CAN / CSA-A371 and CSA G30.18.
- .2 reinforcing son: lattice, in accordance with CAN / CSA-A371 and / or ASTM A496 / A496M.
- .3 Anchors and Tethers for brick veneer and support wall wood fiber and wood studs:
  - .1 Anchorages and seismic adjustable fasteners consist of an adjustable anchor plate gauge 14, of triangular fasteners wire 3 / 16"diam. (4.5 mm) (Vee Byna-tie) a seismic clip rigid PVC hold a reinforcing steel wire for continuous brick 3 / 16"diam. (4.5 mm). All hot-dip galvanized steel elements in accordance with ASTM A153 / A153M.

- .1 acceptable product, "Hohman & Barnard DW-10HS seismic anchors and ties with Seismiclip Interlock system" or approved equivalent.
- .4 Screw the anchor plates: 2 wood screws 6 mm hex # 12-14 stainless steel, as distributed by Senneco or approved equivalent .. sufficient length to penetrate at month 38 mm in timber Of wood.
- .5 All anchors must have the appropriate depth to the conditions present at the site, so that they overlap the siding they relate to at least 60mm deep, they are not distorted to meet this requirement. The Contractor will consider the actual dimensions on the site. No supplement will be granted by default to control the appropriate hardware.

## **2.4 MORTAR AND GROUT**

- .1 Mortars: external installation: (Bedding Mortar) to CAN / CSA-A179.
  - .1 Cementitious materials, sand and dyes will be pre-mixed in the factory and then kneaded with water to the site to get the properties described in the data sheets for manufacturing an N-type mortar
  - .2 The mortar color should match that of the existing mortar. Color pigments are to be determined by the manufacturer and submitted samples to the consultant for approval.
  - .3 Prepare the mortar according to the supplier's instructions pre-blended material as the ratio of sand / water / cementing materials, the steps in the successive introduction into the mixture of all materials.
  - .4 Acceptable Products: Brand mortar Betomix PLUS Daubois KING 1-1-6 or King or approved equivalent.
- .2 Mortars: laying concrete elements according to CAN / CSA-A179
- .3 Grout Compliant with CAN / CSA-A179, Table 3.

## **2.5 ACCESSORIES**

- .1 Flashings intramural: pressure-sensitive adhesive membrane of rubberized asphalt laminate to a film of polyethylene-wall flashing as "Blueskin® TWF Henry / Bakor, or equivalent approved" with primer and sealant recommended by the manufacturer.
- .2 Weep: filters propylene fibers, gray, 9 mm x 64 mm x 84 mm for aeration and drainage of water and moisture while blocking access to insects and other debris such as "Quadro-wind (wind cell) distributed by Senneco" or approved equivalent.
- .3 of the air gap drainage system: fiber filter of polypropylene with mosquito repellent membrane for air space of 25.4 mm x 191 mm high (in box 100 linear feet) to prevent mortar clogging the weep holes.

## **Partie 3 Execution**

### **3.1 INSTALLERS**

- .1 The work of implementation and assembly of masonry structures must be performed by qualified and experienced masons.

### **3.2 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, implementation instructions specified in the product catalogs and on packaging cartons, as well as information factsheets

### **3.3 EXAMINATION**

- .1 Checking conditions: prior to the installation of masonry, ensure that the state of surfaces / materials previously implemented under other sections or contracts is acceptable and can perform the work in accordance with written instructions manufacturer.
  - .1 Make a visual inspection of surfaces / materials in the presence of representative of the Ministry and the Consultant.
  - .2 Immediately inform the Consultant of unacceptable conditions detected.
  - .3 Start the installation work only after correcting the unacceptable conditions and written approval of the Consultant.
  - .4 Ensure recessed elements are in the right place and ready to be incorporated into the masonry.
  - .5 The fact starting work means that the state media was satisfactory.

### **3.4 PREPARATORY WORK**

- .1 Identify lines, levels and types of seating, and take the necessary steps to meet them.
- .2 Protect against damage and deterioration structures located near the work performed under this section. Verify the integrity of the sealing and protection of any opening, door, window or adjacent surface to prevent the spread of dust, water or other materials within the building and to prevent the glazing and frames doors and windows are soiled or damaged by the work.
- .3 Protecting existing masonry against damage caused by temporary work or scaffolding. Use protective elements lumber or plywood sheets with soft cushion needed.
- .4 Establish canvases effective protection to prevent the spread of dust during work, especially when hollowing joints.
- .5 Approval installations and protective measures before starting the works.

### **3.5 GENERAL**

- .1 Unless otherwise noted, perform masonry work in accordance with CAN / CSA-A371.
  - .1 Device: seated to set running bond (called "Greek"), each vertical joint being perpendicular to the stretchers above and below and between the centers thereof.
  - .2 Decorative Device: standing and checkered with contrasting colored bricks as indicated in the drawings.
  - .3 Seat Height: 200 mm for one (1) row of concrete elements and one (1) ring] for three (3) rows of bricks and three (3) joints.
  - .4 Seals: pulled throat to places where they will be apparent, or when the application of paint or other type of finish coating is specified.
- .2 Carry out work in masonry plumb, level and alignment, in preparing well-aligned vertical joints.

- .3 Arranging the rows of bricks according to the apparatus required and so as to obtain proper height of seating and to maintain the continuity of the device above and below the windows, by cutting a minimum number of masonry units.

### **3.6 IMPLEMENTATION**

- .1 Articles apparent masonry
  - .1 Remove items chipped, cracked or otherwise damaged apparent books and replace them in good repair.
  - .2 Cut the masonry in places where you need to install switches, sockets or other embedded or recessed elements.
- .2 housing
  - .1 Ask anchors and reinforcement at the locations indicated on drawings.
  - .2 Build in items to be incorporated in masonry structures.
  - .3 Prevent recessed elements move during construction. As to measuring the progress of work, frequently check the plumbing, alignment and position of these elements.
  - .4 Install not joint above the windows where indicated lintels.
- .3 Load Support
  - .1 In places where it is necessary to implement cell elements filled with poured concrete instead of solid elements, use of concrete 15 MPa in accordance with Section 03 30 00 - Poured in place.
  - .2 In places where it is necessary to implement cell elements filled with grout instead of solid elements, use the grout complies with CAN / CSA-A179.
  - .3 Ask construction paper in the empty filling grout; placing the construction paper to 25 mm back from the face of the elements.
- .4 Connecting to other works
  - .1 Cut openings in existing structures as indicated.
  - .2 Any holes in the walls must be approved by the Consultant].
  - .3 Repair damaged existing structures using materials corresponding to those used for the realization of these.
- .5 Embed flashing to the masonry in accordance with CAN / CSA-A371.
  - .1 In the case of exterior masonry, install flashings under the first course based on the foundation wall or slab on ground, on support brackets and steel brackets placed above the bays. also install flashings under seats having discharge nozzles and other locations indicated.
  - .2 In cavity walls and masonry veneer walls, install flashings in the outer wall, from the outside inwards, bend and make up against the lining wall over a height of at least 150 mm; also comply with the following requirements.
    - .1 In the case of a masonry wall lining, walnut flashing at a depth of 25 mm into the joints.
    - .2 In the case of a concrete wall lining, insert flashing into with channels.
    - .3 In the case of a wooden wall-frame lamination, staple flashing to the wall, under the coating of paper and glue flashing to the wall using an adhesive recommended by the manufacturer.
  - .3 Overlap joints with a width of 150 mm, and sealing with an adhesive.

- .6 In the vertical joints of the outer wall of the hollow walls and masonry veneer walls immediately above the flashings, install discharge nozzle 600 mm on center maximum, in the horizontal plane.

### **3.7 INSTALLATION OF FRAMES AND STUDS**

- .1 Unless otherwise specified, install reinforcement, masonry spikes and anchors in accordance with CAN / CSA-A370, CAN / CSA-A371 and CSA S304.1.
- .2 Obtain approval of the Consultant regarding the location of frames, and anchors prior to the implementation of mortar and grout.

### **3.8 ATTACHMENT AND BONDING**

- .1 Liaisonner walls consist of two walls (2) or more walls by means of seismic metal anchors, in accordance with CAN / CSA-A371 and CSA S304.1, and as indicated.
- .2 Attach the masonry veneer to the medium according to the National Building Code (NBC), with CSA S304.1 and CAN / CSA-A371 and as indicated.

### **3.9 EQUIPMENT OF HEADER AND BEAM LINK**

- .1 Arm lintels and bond beams as indicated.
- .2 Set up the frames and the grout in accordance with CAN / CSA-A179, CAN / CSA-A371 and CSA S304.1.

### **3.10 GROUTING**

- .1 Grouting in masonry in accordance with CAN / CSA-A179, CAN / CSA-A371 and CSA S304.1 and as indicated.

### **3.11 INSTALLATION OF ANCHORS**

- .1 Provide metal anchors required and install as indicated.

### **3.12 ANCHORAGE INSTALLATION AND SIDE SUPPORT**

- .1 Provide anchors and required lateral supports and install them in accordance with CSA S304.1 and as indicated.

### **3.13 INSTALLATION alleviated by PRECAST**

- .1 Before assembling, place the prefabricated elements according to level scores and alignments established in compliance with the permissible tolerances.
- .2 Put prefabricated concrete spandrel on an N-type mortar bed
- .3 Grout with the same mortar for bricks with joints

### **3.14 TOLERANCE IMPLEMENTATION**

- .1 The tolerances given in CAN / CSA-A371 apply.

### **3.15 CONTROL OF QUALITY**

- .1 Inspection and testing will be carried out by the testing laboratory designated by [Departmental Representative.

**3.16 PLASTER**

- .1 Redo the plaster where indicated. Pair to the adjacent existing.

**3.17 PROTECTION OF FINISHED WORKS**

- .1 Protection against moisture
  - .1 As long as the masonry is not completed or protected by flashings or other permanent structure, keep them dry with waterproof tarps that do not stain, which extend beyond the top and sides of works on a distance sufficient to protect the latter against the wind driven rain.
  - .2 At the end of each working day, solidly covered with tarpaulins subject works partially or fully completed, which are not protected by an enclosure or shelter.
  - .3 Protect works to maintain the recommended environment in article 1.10 implementing conditions.

**3.18 CLEANING**

- .1 course work Cleaning: daily cleaning jobs
  - .1 Leave the place clean at the end of each working day.
- .2 Clean masonry as brick manufacturer's instructions and using cleaning products specifically recommend it. If no adverse effects appear and the mortar curing is complete, protect windows, sills, doors, trim and other works and to clean the brickwork.
  - .1 Repeat the cleaning as often as necessary to remove traces of mortar and other stains.
  - .2 Do not use acid-based cleaners.
  - .3 For hard works to clean, consult the manufacturer of bricks and submit its recommendations to the Consultant in writing. Follow the instructions of the Consultant.
  - .4 Final cleaning:
    - .1 Once completed, to clean the site to remove dirt and accumulated debris, due to construction work and the environment.
    - .2 Once the work of implementation and control of the complete performance completion remove materials and surplus materials, rubbish, tools and equipment barriers.
- .3 Protect masonry, among others, against brands, mortar burrs and other damage. Use protective tarps that do not stain.
- .4 Repair damage to adjacent materials and equipment for the installation of masonry.

**END OF SECTION**

**Partie 1            General**

**1.1                SCOPE OF WORK**

- .1            Manufacture and delivery to site of stone window sills precut for installation Section 4 April 99 Masonry.

**1.2                RELATED SECTIONS**

- .1            Section 4 April 99: Masonry.
- .2            Section 06 10 11: Carpentry.
- .3            Section 07 92 00: for Sealants

**1.3                STANDARDS REFERENCES**

- .1            ASTM International
  - .1            ASTM C97 / C97M-09 Standard Test Methods for Absorption and Bulk Specific Gravity of Dimension Stone.
  - .2            ASTM C98 / C98M-09 Method of Test for Compressive Strength of Natural Building Stone
  - .3            ASTM C99 / C99M-09 Standard Test Method for Modulus of Rupture of Dimension Stone.
  - .4            ASTM C170 / C170M-09 Standard Test Method for Compressive Strength of Dimension Stone.

**1.4                DOCUMENTS / SAMPLES SUBMITTALS / INFORMATION**

- .1            Submit documents and samples required in accordance with Section 01 33 00 - / Submittal Procedures.
- .2            Data sheets
  - .1            Submit product data and instructions and the manufacturer's documentation regarding pre-cut stones. The technical data must include product characteristics, performance criteria, dimensions, finish and limitations.
  - .2            Submit two copies of the design drawings and detailed calculations of precast concrete and types assemblies for verification by the consultant three weeks prior to manufacture.
- .3            Shop Drawings
  - .1            The shop drawings submitted must bear the seal and signature of a professional engineer registered or licensed in Canada, in the province of Quebec.
  - .2            Submit shop drawings in accordance with CSA A23.4 and CAN / CSA-A23.3.
- .4            samples
  - .1            Submit the consultant a sample of 300mm x 300mm x 25mm stone for approval of the finished and color. Indicate the maximum expected change color.

Start production of precast after receiving the written approval of the consultant.

## **1.5 QUALITY CONTROL**

- .1 Test Reports: submit reports certified to tests indicate compliance with the physical characteristics and performance criteria.
- .2 Mock
  - .1 Build a sample sill precast stone, showing the colors and textures, frames, fasteners, through membrane flashings, the weep holes, joints, ranks, mortar and quality of works.
  - .2 The sample used for the following purposes.
    - .1 Judging the quality of works, preparatory work, equipment operation and application of products.
  - .3 If accepted, the sample may be part of the work.

## **1.6 TRANSPORT, STORAGE AND HANDLING**

- .1 Transport, store and handle materials and equipment in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials and equipment to site in original factory packaging, bear a label showing the name and address of the manufacturer.
- .3 Storage and Handling
  - .1 Store materials and equipment on pallets so they do not rest on the ground, dry, in a clean, dry area, according to the manufacturer's recommendations.
  - .2 Store and protect precast spandrels against damage and contamination.
  - .3 Replacing materials and equipment damaged by materials and new equipment.

## **1.7 GUARANTEE**

- .1 Provide 12 months warranty certificate for lighters in pre-cut stones against bursting and cracks.
- .2 The Contractor hereby certifies that the stone parapets are guaranteed against spalling or against any other obvious signs of cracking, except normal capillary shrinkage cracks.

## **Partie 2 Product**

### **2.1 DESIGN CRITERIA**

- .1 The stone works must be designed and constructed to withstand wind loads, the forces of gravity, seismic forces, movements of the skeleton of the building, movement associated with thermal contraction and expansion phenomena of the elements as well as normal wear and tear, including exposure to weather.
- .2 It is important to hire an engineer to design the support system and restraint of the coating. The engineer will perform the necessary calculations for all major components, including stones, fasteners, staples and anchors in accordance with the performance criteria set out in this section.

- .3 The calculations must consider the design loads, material properties, applicable safety factors, which must comply with applicable building codes and standards, as well as data below.
  - .1 The weight of the stones and the allowable loads.
  - .2 The thickness of the stones.
  - .3 The weight of the supports and anchors, including constraints, safety factors, load ratings and permissible loads.
  - .4 The dimensions of the supports, fasteners and anchors.
- .4 In the case of limestone, types of fasteners and connectors used must comply with the CAN / CSA-A370.
- .5 The manufacturing tolerances, assembly tolerances and bending of the structure must be taken into account in the design and manufacture of connectors. Refer to CAN / CSA-A370, CAN / CSA-A371 and ASTM C1242.
- .6 Prevent galvanic corrosion and other forms of corrosion, avoiding to direct contact of incompatible elements (metal and other), or by applying to the elements suitable protective coating

## **2.2 MATERIALS AND EQUIPMENT**

- .1 Cement Portland complies with CAN / CSA-A3000 type GU color chosen by the Departmental Representative.
- .2 Hydrated lime: conform to ASTM C207, Type S
- .3 Aggregates: comply with CAN / CSA-A179, ASTM C144, type for masonry clean, dry, protected against humidity and frost and against contamination by foreign matter.
- .4 Pigments based on natural oxides.
- .5 Water: potable, clean and free of acids, alkalis and organic harmful substances.

## **2.3 Sills PREFABRICATED STONE**

- .1 Dolomitic limestone sills of windows, the following characteristics.
  - .1 modulus of rupture (flexural) ASTM C99:
    - .1 dry sample 16.3Mpa
    - .2 wet sample 13.6 Mpa
  - .2 Density ASTM C97: 2711 kg / cm<sup>2</sup>.
  - .3 Porosity ASTM C98: 0229%
  - .4 Compressive strength: ASTM 170
    - .1 Dry sample: 153.9 Mpa
    - .2 wet sample: 155.6 Mpa
  - .5 Durability to freeze / thaw cycles:
    - .1 Loss 7 cycles: 0.68 g / m<sup>2</sup>
    - .2 Cumulative loss 28cycles: 0.68 g / m<sup>2</sup>
    - .3 Cumulative loss 49cycles: 0.68 g / m<sup>2</sup>

## **2.4 FRAMES AND ANCHORS**

- .1 Anchors, caught, studs: stainless steel grade 316.
- .2 Fasteners: in accordance with CAN / CSA-A370, made of wire or strip of stainless steel.
- .3 fastening devices: stainless steel.
- .4 Finishing workshop
  - .1 stainless steel: according to ASTM A508 / A508M, grade 316.

## **2.5 FLASHING**

- .1 Membrane flashings: membrane air / vapor barrier.

## **Partie 3 Execution**

### **3.1 INSPECTION**

- .1 Verification of Conditions: Before installing lighters pre-cut stones, ensure that the state of surfaces / materials previously implemented under other sections or contracts is acceptable and can perform the work in accordance with manufacturer's written instructions.
  - .1 Make a visual inspection of surfaces / materials in the presence of Departmental Representative.
  - .2 Immediately notify the Departmental Representative of unacceptable conditions detected.
  - .3 Start the installation work only after correcting the unacceptable conditions and written approval of the Departmental Representative.

### **3.2 PREPARATORY WORK**

- .1 Before putting them in place, apply a waterproofing coating on the back of the stones will be laid out.
- .2 Clean the surface of the stones with water and a stiff bristle brush.

### **3.3 TOLERANCE IMPLEMENTATION**

- .1 verticality difference: more than 6 mm by 3 m long, more or less.
- .2 level difference: more than 13 mm per length of 6 m, more or less.
- .3 Deviation from the building lines: more than 13 mm per length of 6 m, more or less.
- .4 Gap section: 13 mm 6 mm or more and less.

### **3.4 IMPLEMENTATION - GENERAL**

- .1 Do work in accordance with CAN / CSA-A371.
- .2 Ask frames and anchors.
- .3 Ask plumb stones, square and level, as indicated on the drawings and approved shop drawings.

- .4 Align the seal faces and facing stones according to the intended device and the specified tolerances.

### **3.5 IMPLEMENTATION WITH MORTAR**

- .1 Ask lighters mortar hot stone perfectly coating the sides of vertical joint, unless otherwise indicated.
  - .1 Fill the lifting holes and the holes for receiving the anchors, clamps and bolts.
- .2 Lay the stone parapets depending on the device shown in the drawings.
  - .1 Ask anchors, studs and caught.
  - .2 Adjust the media, using shims if necessary, so that the plates are installed exactly where indicated, with uniform joints of the width indicated.
- .3 Realize joints of 10 mm thick.
- .4 Placing separating studs under stones in order to achieve uniform width joints.
  - .1 Placing lighters, once the mortar of the previous row has hardened sufficiently to support the weight thereof.
- .5 Bracing and anchoring lighters raised projecting.
- .6 Use soft wood shims to support water-soaked stone lighters and keep them aligned until the mortar has set.
  - .1 then Reset shims avoiding breaking them and fill the voids with grout.
- .7 Implement through membrane flashings to continuous corner supports, the projections, lintels steel and other similar obstructions to the flow of water to the ground.
- .8 Shaping seams once completed the initial mortar outlet.

### **3.6 CLEANING**

- .1 course work Cleaning: daily cleaning work:
  - .1 Leave the place clean at the end of each working day.
- .2 Clean stone sills as and measuring progress.
  - .1 Let partially dry mortar droppings then removed by means of a stiff bristle brush.

### **3.7 PROTECTION FINISHED SURFACES**

- .1 Protect the masonry work against any damage that may result from subsequent construction.
- .2 Use means and methods of protection that does not damage or stain the stone.
- .3 Remove the protective means at the time of substantial completion or when the work no longer be damaged.

**END OF SECTION**



**Partie 1        General**

**1.1            SCOPE OF WORK**

- .1        Roofing and changes to the structure of the existing ventilated roof to correct the slopes and drains of the installation.
- .2        Structural reinforcements (struts parapets)
- .3        Fillings existing skylights in the roof.
- .4        The new control joints on the roof.
- .5        The addition of vapor barriers and insulation for sealed skylights.
- .6        Replacements and Tyvek wall coverings in wall sections damaged by leaks or other damage.

**1.2            RELATED REQUIREMENTS**

- .1        Section 02 41 61 structure demolition.
- .2        Section 07 52 00 Coverage modified bitumen membrane
- .3        Section 07 61 00 Flashing foil

**1.3            REFERENCES**

- .1        ASTM International
  - .1        ASTM D1761, Standard Test Methods for Mechanical Fasteners in Wood.
- .2        Canadian General Standards Board (CGSB)
  - .1        CAN / CGSB-51.32, coating membrane, permeable to water vapor.
- .3        CSA International
  - .1        CSA B111 Wire Nails, Spikes and Staples (studs, plugs and steel wire jumpers).
  - .2        CSA O121 Plywood Douglas fir.
  - .3        CSA O141- Softwood Lumber.
  - .4        CSA O151-plywood on Canadian softwood.
  - .5        CSA O153 Poplar Plywood.
  - .6        CSA O325- Construction Sheathing.
- .4        National Lumber Classification (NLGA)
  - .1        classification rules for Canadian lumber.

**1.4            DOCUMENTS / SAMPLES SUBMITTALS / INFORMATION**

- .1        Submit documents and samples required in accordance with Section 01 33 00 - / Submittal Procedures.
- .2        Data sheets

- .1 Submit product data and instructions and the manufacturer's documentation for wood products and accessories. The technical data must include product characteristics, performance criteria, dimensions, finish and limitations.

## **1.5 QUALITY ASSURANCE**

- .1 Wood Marking: Classification print of an organization recognized by the Accreditation Board of the Canadian Standards Commission lumber.
- .2 Marking plywood boards: according to the relevant CSA Standards and ANSI.

## **1.6 TRANSPORT, STORAGE AND HANDLING**

- .1 Transport, store and handle materials and equipment in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials and equipment to site in original factory packaging, bear a label showing the name and address of the manufacturer.
- .3 Storage and Handling
  - .1 Store materials and equipment so that they do not rely on it in a clean, dry, well-ventilated, according to the manufacturer's recommendations.
  - .2 Store the timber in order to protect against marks, scratches and scrapes.
  - .3 Replace defective materials and materials or damaged materials and new equipment.

## **Partie 2 products**

### **2.1 STRUCTURAL COMPONENTS, STRUCTURAL ELEMENTS**

- .1 Lumber: softwood finish S4S (milled 4 side), with a moisture content not exceeding 19% (R-SEC).
  - .1 Meets CSA O141.
  - .2 Meets Standard Grading Rules for Canadian lumber, the NLGA.
- .2 Studs, joists, runners, furs, wedges, strapping, nailers, false frames, membrons, nailers for fascia and beams.
  - .1 Boards: "standard" category or higher.
  - .2 Wood dimension classification "light frame (light)", "Standard" category or higher.
  - .3 Poles and pieces of square wood "standard" category or higher.

### **2.2 PANELS**

- .1 Plywood boards ,: conform to CSA O325.
- .2 fir plywood Douglas (Douglas taxifolié) Compliant with CSA O121, classification "building", "standard" category.
- .3 Canadian softwood plywood: conforms to CSA O151, classification "construction", "standard" category.

- .4 Poplar plywood: conforms to CSA O153, classification "construction", "standard" category.
- .5 sheathing: use to replace existing damaged sections in exterior walls; wallboard, made from high quality wood fibers impregnated with wax and asphalt coated on both sides, inserts: in accordance with CAN / CSA-A247 standard and CAN / ULC-S706, Type II, Class 3, Grade 1 , CCMC 12044-L, and ASTM C-208, type IV, Grade 1. As the high performance coating ½ "BP: BH 900" with TYVEK type of air barrier and pressure sensitive adhesive tape to join the existing.

### **2.3 ACCESSORIES**

- .1 Felt to cover: compliance with the CAN / CSA A123.2, Type S.
- .2 Vapor (for sealing skylights) Polyethylene sheet: conforms to the CAN / CGSB-51.34, type 1, of a thickness of 0.15 mm. With vapor barrier aluminum tape 75 mm to seal the joint ave the existing vapor barrier.
- .3 air sealant: polyurethane foam or polyethylene with closed cells.
- .4 seal products in accordance with Section 07 92 00 - Joint Sealants.
- .5 Nails, staples and horsemen: to CSA B111.
- .6 Bolts: with nuts and washers, with a diameter of 6.4 mm unless otherwise specified.
- .7 Patented fastening devices: toggle bolts, expandable pads with coach screws, screw sockets with lead or inorganic fiber recommended by the manufacturer.

### **2.4 FINISHED**

- .1 Galvanized: according to CAN / CSAG164 for outdoor areas standard, woodwork pressure treated .The stainless steel devices are acceptable equivalence.
- .2 wood treatment product
  - .1 Treat dimension lumber with a product whose base is arsenic-free and without chromium, ProNature ACQ (Copper and Alkaline Quaternary), as the vacuum impregnation method, and under pressure in an enclosed cylinder in accordance with the standard CSA 080,1,2-2002, to a retention level of 6.40 kilograms per cubic meter for wood that comes into contact with soil, 3.84 kilograms per cubic meter for wood that does not come into contact with the ground.
  - .2 After the treatment with a water-soluble preservative, dry the material so that its moisture content does not exceed 19%.
  - .3 preservative applied to the surface: colored repellent preservative, suggested by the manufacturer of pressure treated lumber. Use for cuts and nicks treated wood under pressure, and where indicated.
  - .4 Use pressure-treated wood for any work to the roof.

### **2.5 INSULATION MATS**

- .1 fiberglass batt insulation to CAN / ULC S702, latest revision, type 1, to be inserted between the studs, such as rose Owens Corning insulation or approved equivalent.
  - .1 Width: adapted to the spacing of the studs;
  - .2 Thickness: as indicated in the drawings and, in general, the thickness of the timber between which the insulation is installed.

- .3 Use for parapets, statements to the roof and to seal openings in the outer walls.

### **Partie 3 Execution**

#### **3.1 EXAMINATION**

- .1 Checking conditions: prior to product installation, ensure that the state of surfaces / materials previously implemented under other sections or contracts is acceptable and can perform the work in accordance with written instructions maker.
  - .1 Make a visual inspection of surfaces / materials in the presence of representative of the Ministry and the Consultant.
  - .2 Immediately inform the Consultant of unacceptable conditions detected.
  - .3 Start the installation work only after correcting the unacceptable conditions and written approval of the Consultant.

#### **3.2 USE OF MATERIALS**

- .1 roofing panels
  - .1 fir plywood Douglas (Douglas taxi foliate) or Canadian softwood, coating category, or poplar plywood, coating category, standard, with squared edges, 19 mm thick.
- .2 cladding panels for replacing exterior walls damaged sections.
  - .1 Panels of insulating fibers, coating-type high-performance, coated, 13 mm thick.
  - .2 With air barrier of TYVEK type and pressure sensitive adhesive tape to join the existing.

#### **3.3 INSTALLATION**

- .1 Install square and plumb elements, according to the height dimensions, levels, and prescribed alignments.
- .2 Carry out continuous elements from the longest possible pieces.
- .3 Install joist elements so that their camber is up.
- .4 Install wall covering panels in accordance with manufacturer's written instructions.
- .5 Install roof covering panels in accordance with the NBC.
- .6 Install furs and shims to support the finishing elements of walls and ceilings, coatings, edgings, soffits, siding, and other works needed.
- .7 Installing around the false frames berries, strapping and fittings for supporting the frames and other structures provided.
- .8 Install the cleats and cants, nailing funds to fascia, rods nailing the membrons and other required timber supports and secure them by means of fastening devices made of galvanized or stainless steel.
- .9 Install the joists as indicated.
- .10 Assemble, anchor, fix, tie and brace elements to ensure the strength and rigidity required.
- .11 If necessary, countersink the holes so that the bolt heads do not form protrusions.

**3.4 CLEANING**

- .1 Cleaning course work: do the daily cleaning.
  - .1 Leave the place clean at the end of each working day.
- .2 Final Cleaning: upon completion remove materials / surplus materials, rubbish, tools and equipment.
- .3 Waste Management: separate waste materials for reuse / re-use and recycling.
  - .1 Remove the trays and construction of recycling bins and dispose of materials at appropriate facility.

**3.5 PROTECTION**

- .1 Protect installed products and components against damage during construction.
- .2 Repair damage to adjacent materials and equipment for the installation of carpentry elements.

**END OF SECTION**

**Partie 1      General**

**1.1      SCOPE OF WORK**

- .1      This section includes all materials, equipment, fixtures, tooling, and labor required for the supply and installation of the whole roofing system bilayer membrane of bitumen modified non-isolated ponds identified existing drawings and according to the requirements of this specification

**1.2      RELATED REQUIREMENTS**

- .1      Section 02 41 16      Structure demolition
- .2      Section 06 10 10      Carpentry
- .3      Section 07 61 00      Flashings foil
- .1      Section 07 92 00      of Sealants

**1.3      REFERENCES**

- .1      Unless otherwise indicated, achieve coverage in accordance with the applicable standard of covers Quote of the Association of Roofers Quebec masters (AMCQ).
- .2      Put a document issued by an organization officially recognized by the Standards Council of Canada that certifies that the proposed sealing system complies with the requirements of CAN / ULC-S107-03, "fire resistance test of building materials" class C.
- .3      Unless otherwise specified, comply with the following references:
  - .1      ONGC 37.56-M (9th Version) "modified bituminous membrane, Prefabricated, and Reinforced for Roofing."
  - .2      ASTM D2178: Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
  - .3      ASTM D3617: Standard Practice for Sampling and Analysis of New Built-Up Roof Membranes.
  - .4      CAN / CSA-O121: Plywood Douglas fir.
  - .5      CAN / CSA-O151: Plywood in Canadian softwood.
  - .6      CAN / CSA-B111: Wire Nails, Spikes and Staples.
  - .7      CAN / ULC-S107: Methods resistance test Standard fire roofing materials.
  - .8      CAN / ULC-S126: Test Standard Method flame spread under the bypass roofs.
  - .9      CAN / CGSB 37-GP-56: sheet of elastomer membrane for roofing and waterproofing.
  - .10      wind pressure: The assembly of the waterproofing system will be made to withstand the pressure and suction forces due to the winds of this area as defined by the Quebec Construction Code and CAN / CSA A123.21 and Factory Mutual ( FM) (high winds), but not less than the requirements contained herein; the application of glue, notwithstanding the presence of mechanical anchoring, to be applied following the manufacturer's requirements to withstand winds.
  - .11      Applying the modified bitumen membrane and flashings according to manufacturer's manual application and according to the requirements of AMCQ, and not less herein.

**1.4 WASTE MANAGEMENT**

- .1 Recover packaging waste for reuse / recovery and reuse by the manufacturer.
  - .1 Collect and separate plastic waste, packaging paper and corrugated cardboard in accordance with waste management plan.
  - .2 Fold up metal, flatten and place them in a designated area for recycling.
- .2 The contractor must carry to places recovering all recoverable items such as metals (steel, etc.) and wood. The non-recoverable waste will be transported to the appropriate sites, the assembly according to the codes and standards.

**1.5 COMPATIBILITY OF MATERIALS**

- .1 It is essential that the materials used in making the waterproofing system are compatible and accepted by manufacturers of adhesives and membranes. Submit a written and signed statement certifying that all components of roofing systems are compatible.

**1.6 WARRANTIES OF CONTRACTOR-SLATER AND MANUFACTURER**

- .1 The manufacturer of sealants and the roofer will provide a written document issued to the owner and valid for 10 years, indicating that they will repair any leaks in the membrane to restore the system to a roof dry and water-tight, to the extent that manufacturing defects or installation led to water infiltration. The guarantee should cover the total costs of repair during the entire period of the guarantee. The guarantee must be transferable at no additional cost to subsequent purchasers of the building. The guarantee certificate should reflect these requirements.

**1.7 QUALIFICATION CONTRACTOR - ROOFING**

- .1 The roofing contractor or subcontractor must cover, at the time of the bids and during the work be recognized officially and in writing as the manufacturing contractor accredited, recognized or authorized by the manufacturer of waterproofing materials.
- .2 Only a skilled workforce in the roofing, the employment of a company with the right equipment and necessary to such work, be able to perform these

**1.8 DOCUMENTS / SAMPLES SUBMITTALS / INFORMATION**

- .1 Submit documents and samples required in accordance with Article 34 of the additional terms and conditions.
- .2 Data sheets
  - .1 Submit two (2) copies of the latest technical data on materials of the cover and detailing the product specifications, performance criteria, dimensions, finish and limitations.
  - .2 Submit two (2) copies of Material Safety Data Sheets (MSDS) required under WHMIS. The MSDS must indicate the VOC content of the following products:
    - .1 primary;
    - .2 bitumen;
    - .3 sealants;
- .3 samples
  - .1 Present for examination by the Consultant, two (2) samples of membrane type (12 "x 12"), flashing, etc. against flashings

- .4 Submit shop drawings.
  - .1 Shop drawings must indicate or show the details flashing.
- .5 Manufacturer's Certificate: submit a certificate attesting that the products meet the prescribed requirements, or they exceed them.
- .6 Test reports and assessment reports: subjecting test reports have been made in the laboratory, certifying that the membrane complies with the requirements of this section.
- .7 manufacturer's instructions for implementation: indicate, as appropriate, any special precautions relating to the bonding of the membrane sheets.

#### **1.9 QUALITY CONTROL**

- .1 Continuous monitoring of these roofing is ensured by a laboratory chosen by the owner.
- .2 Technical inspections and support required for the issuance of the joint manufacturer warranty are provided by the manufacturer's representative who must be notified in the proper time contractor for compliance work.

#### **1.10 FIRE SAFETY**

- .1 Before beginning work, checking to ensure the safety of the site and submit the procedures and proposed changes to minimize the risks and dangers of fire.
- .2 Follow the safety instructions recommended by the AMCQ, materials manufacturers, the local authorities concerned and any regulations.
- .3 At the end of each working day, use a heat detector gun to find out smoldering fires and fires partitions. The site organization must allow the presence of a responsible and / or a worker at least 4 hours after the welding work. An inspection must be performed at the end of the work by an employee of the roofing contractor who specializes in this kind of work and, if necessary, with the help of a member of the fire protection service of the municipality.
- .4 Never weld directly on combustible materials.
- .5 Be very careful to clean the site at all times. Throughout the implementation, be sure to have a fire hose (when possible) and at least one fire extinguisher ULC Class A, B and C, loaded and in perfect operation, within six meters of each torch. Apply security guidelines accompanying data sheets sealants. Ensure that the torch is not placed near flammable or combustible. Laflamme torch should in no way enter a place where it is not visible or can not be easily controlled.
- .6 The Contractor must include in the realization of its work barriers and / or protection panels, so as not to weld a membrane on flammable surfaces such as old wood, bare wood (not covered) or any other unsuitable surfaces this installation technique. Provide that all the wood " existing " must first be covered with a new primed plywood.
- .7 The modified bitumen membranes must be implemented by trained applicators who have received specific training for the prevention and protection against accidents due to the use of combustible materials, propane gas and flame. Applicators must have a Certificate issued by the AMCQ, confirming that they have passed the examinations connected during training on safe installation of welded membranes and prevention courses (scenarios) developed by the IPIQ .The precautions should be taken:
  - .1 The storage and handling
  - .2 The welding

- .3 The welding equipment
- .4 The use of the torch
- .5 Propane bottles.

**1.11 CONDITIONS OF IMPLEMENTATION**

- .1 environmental conditions
  - .1 Not to proceed to the implementation of the roofing material when the temperature is lower than -10 degrees Celsius in the case of a membrane bonded welding torch.
  - .2 The solvent-based adhesive should be applied at a temperature equal to or greater than -5 degrees Celsius.
- .2 The cover substrate must be dry and free from snow and ice. Use only dry materials and apply only when weather conditions do not encourage moisture infiltration in the cover system.

**1.12 ADMINISTRATIVE**

- .1 One (1) week before beginning work, hold a meeting with the representative of the roofing contractor, the Representative of the Ministry during which will be examined:
  - .1 project requirements;
  - .2 the condition of the structure and the roof deck;
  - .3 coordination of work of this section with those executed by other trades;
  - .4 the installation instructions provided by the manufacturer and the terms of the guarantee offered by the latter.

**1.13 DOCUMENTS / SAMPLES SUBMITTALS / INFORMATION**

- .1 Submit documents and samples required in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Data sheets
  - .1 Submit two (2) copies of the latest technical data on materials of the cover and detailing the product specifications, performance criteria, dimensions, finish and limitations.
  - .2 Submit two (2) copies of Material Safety Data Sheets (MSDS) required under WHMIS. The MSDS must indicate the VOC content of the following products:
    - .1 primary;
    - .2 bitumen;
    - .3 sealants;
    - .4 filter cloth.
- .3 Submit shop drawings.
  - .1 Shop drawings must indicate or show the details flashing, control joints.
- .4 Present for examination by the Consultant, two (2) samples of membrane type (12 "x 12"), flashing, etc. against flashings
- .5 Manufacturer's Certificate: submit a certificate attesting that the products meet the prescribed requirements, or they exceed them.

- .6 Test reports and assessment reports: subjecting test reports have been made in the laboratory, certifying that the membrane complies with the requirements of this section.
- .7 manufacturer's instructions for implementation: indicate, as appropriate, any special precautions relating to the bonding of the membrane sheets.

#### **1.14 QUALITY ASSURANCE**

- .1 Qualification of the Installer: company or person specializing in the production of modified bitumen membrane roofs, approved by the manufacturer, with five (5) supporting references.

#### **1.15 TRANSPORT, STORAGE AND HANDLING**

- .1 Transport, store and handle materials and equipment in accordance with manufacturer's written instructions.
- .2 Storage and Handling
  - .1 Security: Comply with the safety requirements set out in the Information System Hazardous Materials (WHMIS), with respect to the use, handling, storage and disposal of bitumen as well as primary and sealants and caulking.
  - .2 Store materials in a dry, sheltered from the weather, and so they are not in contact with the ground.
  - .3 felt and membrane rolls must be stored upright; in the case of membranes, the covering strip shall be high.
  - .4 Do not remove the local or the storage area that the amount of materials that will be implemented on the same day.
  - .5 Make plywood circulation paths, over the completed facility to allow the passage of people and equipment.
  - .6 Keep sealants at a temperature equal to or greater than 5 degrees Celsius.
  - .7 Protect insulation against the light of day, weather and against harmful substance.
- .3 Management of packaging waste: recover packaging waste for recycling / reuse and recovery, pallets, crates, quilting, other packaging materials by the manufacturer in accordance with Section 01 74 21 - management and disposal of construction / demolition waste.
  - .1 Collect and separate plastic waste, packaging paper and corrugated cardboard in accordance with waste management plan.
  - .2 Fold up metal, flatten and place them in a designated area for recycling.

#### **1.16 QUALITY CONTROL**

- .1 Continuous monitoring of these roofing is ensured by a laboratory chosen by the owner.
- .2 Technical inspections and support required for the issuance of the joint manufacturer warranty are provided by the manufacturer's representative who must be notified in the proper time contractor for compliance work.
- .3 Continuous monitoring of the laboratory aims to ensure the execution accordance with the drawings and specifications and includes among others the following checks which must be reported to the site visit reports:
  - .1 Cleanliness, strength and unevenness (slope) surfaces to be waterproofed.
  - .2 The nature, thickness and number of waterproof membranes.

- .3 The overlapping and sealing joints of the membranes.
- .4 The construction of oil and metal flashing the parapets, walls, walls and / or the accompanying control or expansion.
- .5 The tightness of the bases of mechanical equipment, electricity or others.
- .6 The flow of rainwater to the drainage points.
- .4 In addition to monitoring, the representative of the manufacturer of modified bitumen membrane will conduct the necessary checks for the duration of the work to ensure compliance of the system for issuing guarantees. To this end, the contractor is responsible for notifying the representative work progresses manufacturer so that it can carry out the visits and site inspections for the issuance of their guarantees. Any comments on the quality of the installation will be reported in writing to the Consultant and the Ministerial Representative. The representative of the manufacturer will provide technical assistance to the applicator and, if necessary, will submit his recommendations to the membrane installation conforms to complement the manufacturer's requirements with this section.
- .5 Timely and at least 48 hours notice, the Contractor shall notify the Consultant, the Representative of the Ministry and the representative of the manufacturer so that they can perform a preliminary inspection of the roof of the bridge to receive the cover system and that its slopes, its strength, its cleanliness. This inspection includes the examination of construction and preparation of related structures such as walls, railings, eaves, downspouts, plumbing vents, and other work required.
- .6 After removal of the existing waterproofing, contractor and subcontractor must check surfaces and slopes of the bypass to detect any depression that could result in an accumulation of water on the surface of the new covers. If necessary, they must notify the representative of the Ministry and the manufacturer's representative before continuing the work.
- .7 The contractor shall ensure perfect continuity in the performance of roofing materials so that the insert in such work are not damaged by any cause whatsoever.
- .8 The owner reserves the right to take samples for analysis.
- .9 Run without fees, repairs and tests necessary cuts.
- .10 The roofing contractor is responsible for convening the laboratory and the Departmental Representative; if the roofing contractor mistakenly convenes for periods where their presence is not required, it will bear the cost of such a presence. After the installation of metal, the laboratory will ensure that the performance of works sheet metal complies with the specifications and meets the applicable installation requirements. It is recalled in the roofing contractor the importance of a perfect continuity in the performance of roofing materials that are incorporated in such work are not damaged by any cause whatsoever.

#### **1.17 CONDITIONS OF IMPLEMENTATION**

- .1 Ambient conditions:
  - .1 Not to proceed to the implementation of the roofing material when the temperature is lower than -10 degrees Celsius in the case of a membrane bonded welding torch, or when the temperature is less than -5 degrees Celsius.
  - .2 The solvent-based adhesive should be applied at a temperature equal to or greater than -5 degrees Celsius.

- .2 The cover substrate must be dry and free from snow and ice. Use only dry materials and apply only when weather conditions do not encourage moisture infiltration in the cover system.

**Partie 2      Product**

**2.1      PERFORMANCE CRITERIA**

- .1      It is essential that the different materials as part of the cover system are compatible with each other. Provide Departmental Representative a written declaration that the materials and components of the roofing system, as they have been implemented are compatible.
- .2      Cover system according to A123.21 CSA with respect to the dynamic resistance to uplift wind.

**2.2      MEDIA PANEL WOOD FIBER AND FIREPROOF MEMBRANE UNDERLAYMENT**

- .1      Description: high performance support panel comprised of a bituminous membrane SBS modified with a reinforcement nonwoven polyester, laminated cold bonding factory on a high-density Fiberboard flame retardant in the mass. The panel is 0.914 m x 2.44 m (3.0 ft x 8 ft). The upper side is covered with a plastic film thermo fuse. The membrane has combined longitudinal joints stickers and thermo welded. Width of braid 90mm (3.5 in.)
- .2      Total panel and membrane thickness: 14.9 mm
- .3      Panel density: 256 / kg / m3.
- .4      membrane thickness 2.2 mm
- .5      Panel thickness: 12.7 mm
- .6      Meets: CGSB 37.56-M (9th draft).
- .7      Reference Product: HD Soprabase OF SOPREMA or approved equivalent.

**2.3      MEMBRANE UNDERLAYMENT FOR STATEMENTS AND PARAPETS**

- .1      Description: Membrane composed of bitumen modified with SBS and reinforced with a composite nonwoven polyester and glass veil. The upper face is covered by a plastic film thermo sealable. The lower face is self-adhesive covered by a removable protective sheet the top face will be marked with three (3) lines to facilitate alignment of the rollers.
- .2      Thickness: 3 mm,
- .3      Dimensions 10 x 1 M
- .4      Weight: 3.5 kg / m2
- .5      Stripe width: 75 mm
- .6      Surface: Plastic film heat sealable
- .7      Under face; Adhesive, covered by a detachable protective sheet.
- .8      Application temperature: Grade summer (app  $\geq 10$  ° C  
Winter Grade (applications between -10 10°C
- .9      Meets: ONGC 37.56-M (9th draft).

.10	Minimum requirements:	Longitudinal	Transverse
	Deformation resistance (kN / m)	10	10

Tensile strength (kN / m)	17	16
Elongation at break (%)	60%	65%
Tear resistance (N)	75	
Static puncture resistance (N)	420	
dimensional stability	-0.8	-0.2
temperature flexibility at -30 ° C.	No cracking	

- .11 Reference Product: SOPRALENE FLAM STICK SOPREMA or approved equivalent.

**2.4 COLOR CHOICE FOR FINISHING PELLETS MEMBRANES**

- .1 For common surfaces: gray.  
.2 For traffic sidewalks: the selection of the consultant.

**2.5 Membrane FINISHING THE PARTIES CURRENT, AND STATEMENTS PARAPETS.**

- .1 Description: Membrane composed of SBS modified bitumen with flame retardant and a non-woven polyester reinforcement. The upper side is protected with colored granules, the lower face is covered by a plastic film thermo sealable. Thickness: 4 mm
- .2 Meets: ONGC 37.56-M (9th draft).
- .3 Minimum requirements:
- |  | Longitudinal         | Transverse |
|--|----------------------|------------|
| .1 Deformation resistance (kN / m)     | 10                   | 10         |
| .2 Tensile strength (kN / m)           | 17                   | 16         |
| .3 Elongation at break (%)             | 60                   | 65         |
| .4 Tear resistance (N)                 | 75                   |            |
| .5 Static puncture resistance (N)      | 420                  |            |
| .6 dimensional stability               | -0.8                 | -0.2       |
| .7 Creep Resistance (° C)              | ≥ 110                |            |
| .8 temperature flexibility at -30 ° C. | No cracking          |            |
| .9 Tensile lap joint (kN / m)          | Succeeded > 4 kN / m |            |
- .4 Reference Product: SOPRALENE FLAM 250 GR SOPREMA or approved equivalent.

**2.6 ADHESIVE**

- .1 Adhesive bonding of the support panels of the bridging wood adhesive urethane bi-component low expansion, fast curing and without temperature limit.  
.2 Reference product "DUOTACK SOPREMA" or approved equivalent.

**2.7 SEALING PRODUCTS**

- .1 Sealant: mastic bitumen multipurpose SBS modified fibers, aluminum pigment, mineral substances and solvents.  
.1 Reference product "SOPRAMASTIC ALU SOPREMA" or approved equivalent.  
.2 Sealants: Refer to Section 07 92 00 - Joint Sealants.

**2.8 ROAD TRAFFIC**

- .1 circulation made using paths additional thickness membrane topcoat of a color different from that of the membrane on which it is placed and chosen by the Consultant.

**2.9 CARPENTRY**

- .1 Refer to Section 06 10 00 - Rough Carpentry.

**2.10 DRAINS MECHANICAL ROOF**

- .1 Drains mechanical roof supplied and installed by mechanics see materials engineers.

**Partie 3 Execution**

**3.1 REVIEW AND SURFACE PREPARATION**

- .1 The review and preparation surfaces should be done according to the instructions contained in the technical documentation of the manufacturer of membranes.
- .2 Evaluation
  - .1 Before starting work, make sure:
    - .1 That the cover support is solid, solid, dry and free from snow, ice and frost, and it has been freed of dust and debris using a brush; It is prohibited to use calcium or de-icing salt to remove ice and snow;
    - .2 That the bridge has the minimum required drainage slopes
    - .3 That the walls and equipment mounting frames are in place;
    - .4 That roof drains are installed at appropriate level in relation to that of the finished surface of the cover;
    - .5 That nailing plates plywood or lumber were installed on the walls and parapets, as indicated
  - .3 Before beginning work, the Consultant, the Ministerial Representative and the foreman on the cover will be responsible for inspecting and approving particular the condition of the support, slopes and nailing funds and records the walls parapets, drains roof, plumbing vents, ventilation and other outputs and construction joints. If appropriate, a notice of non-compliance will be awarded to the contractor to make any adjustments. The beginning of the work will be considered as acceptance of the conditions for the realization of this work.
  - .4 Do not start any of the work before the surfaces are clean, smooth, dry and free of ice, snow and scrap materials. The use of salts and calcium is forbidden to remove ice or snow.
  - .5 Make sure the plumbing, carpentry and others have been duly completed.
  - .6 Do not place materials rainy or snowy weather

**3.2 PROTECTION WORKS IN PLACE**

- .1 Protect walls, flow paths and nearby structures of the places where we must raise or implement materials or equipment.
- .2 Provide and implement posters and safety barriers and keep them in good condition until the end of the work.

- .3 Remove promptly drops and bitumen stains.
- .4 To ensure that rainwater is discharged to the periphery of the roof, as far as possible from the building facade, and until drains or hoppers were installed and connected.
- .5 Protect coverage against damage that may be caused by, among other circulations. Take precautions deemed necessary by the Consultant.
- .6 At the end of each working day or when the work is interrupted due to bad weather, protect finished surfaces as well as the materials were removed from the room or storage area.
- .7 When metallic connectors are used, the latter and the metal elements of the substrate must be galvanized or treated against rust

### **3.3 LAYING THE PANELS and UNDERLAYMENT ROLLED FACTORY**

- .1 Join the underlayer with the panels applied in specified spaced cords 150 mm adhesive on the common surface of 150mm on the perimeters and 150 mm in the corners. Areas perimeters and corners should be installed according to FM requirements as stated in the 1-29 PLPDS.

### **3.4 INSTALLATION UNDERLAYMENT SELF ON SURVEY AND PARAPETS**

- .1 The primer layer should be dry at the time of application of the underlayer.
- .2 Before applying membranes, always burning of plastic wrap to cover when there is overlap (inside and outside corners and running surface).
- .3 The cross-struts, the angle cutting corner of the area to be covered by the next membrane roll.
- .4 Each edge will overlap the previous laterally following the lineage provided for this purpose, and 150 mm (6 inches) to abouts.
- .5 Positioning the pre-cut membrane. Detach 150 mm (6 inches) the silicone paper from the top of the parapet to keep the membrane in place.
- .6 progressively remove the remaining release paper while pressing the membrane with an aluminum applicator to promote adhesion. Using the same applicator for a perfect transition between the statement and the current surface. Pass a heavy roller on the whole of the membrane to ensure adhesion.
- .7 Installing a reinforcing gusset on all internal and external corners.
- .8 Always seal overlaps the end of the working day.
- .9 Avoid kinking, swelling or mouths of fish.

### **3.5 INSTALLATION OF BRACE GUSSETS**

- .1 Install vis-à-vis reinforcing gussets all inside and outside corners.
- .2 Install the pockets by thermal welding after the implementation of the underlayer.

### **3.6 INSTALLATION sealable FINISH COAT ON CURRENT PART**

- .1 Use the feed rollers double braid for the first edge. Failure to use a starter roll, the longitudinal overlap coated granules will be granulated by pressing the granules into the bitumen heated torch, over a width of 75 mm (3 inches).
- .2 From the drain, unwind dry waterproofing membrane on the sublayer, taking care to align the edge of the first edge with the roof edge.
- .3 The cross-struts, the angle cutting corner of the area to be covered by the next membrane roll.
- .4 Each edge will overlap the previous laterally following the lineage provided for this purpose and overlap of 150 mm (6 inches) at the ends. Spacing the transverse joints of at least 300 mm (12 in.).
- .5 Welding the topcoat with a welding torch on the undercoat layer so as to create a slight overflow of bitumen (3-6 mm) (0.12 in to 0.25 in).
- .6 Ensure proceed without overheating the membranes and their fittings.
- .7 Avoid kinking, swelling or mouths of fish.
- .8 Avoid use on finished surfaces; use rigid protective necessary.

### **3.7 INSTALLATION sealable FINISH COAT ON SURVEY AND PARAPETS**

- .1 This topcoat is prepared by elements of 1 m (3.25 ft) wide.
- .2 Each edge will overlap the previous laterally following the lineage provided for this purpose and overlap of 150 mm (6 inches) the current surface. The statement finishing membranes must be delayed by at least 100 mm (4 inches) with respect to those of the current area topcoat to avoid excess thickness.
- .3 The cross-struts, the angle cutting corner of the area to be covered by the next membrane roll.
- .4 With a line, draw a straight line on the current surface at 150 mm (6 in) surveys and parapets.
- .5 With a torch and a blunt trowel, press the surface of granules in the layer of hot bitumen from the drawn line by line on the running surface and to the edge of raised or parapet, as well as the vertical portions granulated overlap.
- .6 This topcoat will be welded to the welding torch directly on the underlayer, proceeding from bottom to top.
- .7 Avoid kinking, swelling or mouths of fish.
- .8 Ensure proceed without overheating the membranes and their fittings.

### **3.8 INSTALLATION OF TRAFFIC SIDEWALK**

- .1 Install traffic pavements following the same requirements as for the topcoat. Apply primer to the top coat before laying sidewalks.

### **3.9 EXECUTION OF SEALING THE OTHER DETAILS**

- .1 Install waterproofing membranes to various roof details as specified details of the types illustrated in the manufacturer's technical documentation.

### **3.10 SEALING THE ROOF DRAINS**

- .1 mechanical drains (drains mechanical AMCQ recommended by as Zurn ZA-107-96)
  - .1 Mechanical drains should be installed according to the manufacturer's recommendations and adjusted to a height allowing the formation of a minimum trough 13 mm (1/2 ") relative to the surface of the cover and sealed as follows:
    - .1 The wide flange (deck) of the iron roof drain that allows the membrane of membership must be coated with a primer.
    - .2 Join the underlayer on the deck of the drain with a layer of elastomeric bitumen sealant recommended by the manufacturer.
    - .3 Cover with a reinforcing strip of 1m x 1m centered on the apron.
    - .4 Followed by the topcoat raised torch.
    - .5 Cutting the membrane inside the drain flange and bolt aluminum dome up
    - .6 Aluminum dome is to allow maximum flow of rain water.

### **3.11 INSTALLATION TASSEaux BEVELED**

- .1 Ask the Wood can't strips as indicated in the drawings.
- .2 Cut the cleats in order to change the angle of the back and the base so that they fit snugly to the wall and roof, in the case where the angle between them is greater than or less than 90 degrees.

### **3.12 INSTALLING TRAFFIC ROADS**

- .1 Install extra membrane thickness constituting flow paths according to the manufacturer's instructions in accordance with the indications given.
  - .1 Applying a primer to the membrane topcoat for flow path, and the welding torch. Remove the cover edge.

### **3.13 CONTROL OF QUALITY**

- .1 Inspection
  - .1 The inspection and testing of the coverage will be done by testing laboratory designated by the Departmental Representative.
  - .2 The representative of the Ministry will bear the cost of testing.
  - .3 The tests will be paid by the Employer.

### **3.14 CLEANING**

- .1 Remove bitumen brands finished surfaces.
- .2 When finished surfaces are soiled as a result of work covered in this section, contact the manufacturer of the affected area for cleaning tips and keep his documented instructions.
- .3 Repair or replace the finished surfaces that have been altered or otherwise damaged as a result of the work covered by this section.
- .4 Waste Management: separate waste materials for reuse / re-use and recycling.
  - .1 Place in designated containers substances that meet the definition of toxic and hazardous waste.

- .2 Although identify storage areas of recovered materials and delineate by barriers and other safety devices.
- .3 Ensure emptied containers are sealed and stored properly.
- .4 Route adhesives and sealants unused to an authorized collection site for hazardous materials, authorized by the Departmental Representative.
- .5 It is forbidden to discharge adhesives, sealants and bitumen unused drains in a river, a lake, on the ground or any other location where it will pose a risk to health or for the environment.

**END OF SECTION**

**Partie 1      General**

**1.1      RELATED REQUIREMENTS**

- .1      Section 02 41 16      structure demolition.
- .2      Section 06 10 10      Carpentry
- .3      Section 07 52 00      Coverage modified bitumen membrane
- .4      Section 07 92 00      Sealants

**1.2      REFERENCES**

- .1      American Society for Testing and Materials International (ASTM)
  - .1      ASTM A792 / A792M-, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
  - .2      ASTM D523-, Standard Test Method for Specular Gloss.
- .2      Roofers Association of Masters of Quebec AMCQ
  - .1      Quote covers current edition.
- .3      Canadian Standards Association (CSA) / CSA International
  - .1      CSA B111, Wire Nails, Spikes and Staples.
- .4      Health Canada / Information System Hazardous Materials (WHMIS)
  - .1      Safety Data Sheets (MSDS).

**1.3      DOCUMENTS / SAMPLES SUBMITTALS / INFORMATION**

- .1      Submit documents and samples required in accordance with Section 01 33 00 - Submittal Procedures.
- .2      Data sheets
  - .1      Submit product data for the materials of manufacture flashings, and specifications and the manufacturer's documentation. The technical data must include product characteristics, performance criteria, dimensions, finish and limitations.
- .3      samples
  - .1      Submit two (2) samples of 100 mm x 100 mm for each color, each finite and each type of sheet proposed.
- .4      Quality assurance:
  - .1      Manufacturer's Instructions: provide the installation instructions provided by the manufacturer, including any indication to the special handling, implementation and cleaning

**1.4      QUALITY ASSURANCE**

- .1      meeting prior to the implementation of one (1) week before the start of the work covered by this section and installation work on site, hold a meeting with the representative of the

contractor, the consultant and the representative of the Ministry, during which will be examined:

- .1 The needs of the work;
- .2 The execution conditions and the state of the support;
- .3 The coordination of work with those executed with other trades;
- .4 The manufacturer's installation instructions and the terms of the guarantee offered by the latter.

## **Partie 2 Product**

### **2.1 SHEETS**

- .1 Steel sheet coated with a zinc-aluminum alloy, galvalume: commercial grade according to ASTM A792 / A792M AZ180, surface non-treated chemically, for painted finish, of a thickness of 0.45 mm bare. (26 gauge)

### **2.2 STEEL SHEET prefinished**

- .1 prefinished steel sheets coated in the factory with a layer of polyester modified silicone
  - .1 Color: selected by the Consultant from standard colors offered by the manufacturer.
  - .2 Specular gloss: 30 units, with a maximum deviation of 5 units more or less, according to ASTM D523.
  - .3 coating thickness: at least 0.9 @ 1.1 mil.
  - .4 As the system "Weather XL Vicwest" or approved equivalent with limited 40-year warranty.

### **2.3 ACCESSORIES**

- .1 protective paint coating anti base.
- .2 Plastic putty: in accordance with CAN / CGSB 37.5 standard.
- .3 Layer for metal flashing: self-adhesive bitumen membrane
- .4 sealants: silicone single non-marking component, low modulus, neutral-curing, color chosen by the Architect from the colors offered by the manufacturer in accordance with ASTM C920, Type S, Grade NS, CAN / CGSB-19.13 and 300.01 EIMA, latest editions as Spectrem 3 Tremco or approved equivalent.
- .5 securing tabs: the same material and same mold as the sheet used, of thickness identical to that of the sheet to be fixed. The securing tabs (stapling bands) are continuous.
- .6 fastening devices: the same material as the sheet used, in accordance with the CSA B111, flathead roofing nails and annular ring of appropriate length and thickness to the metal flashing.
- .7 Washers: the same material as the sheet used, 1 mm thick, with rubber gaskets.
- .8 Paint touch-ups: as recommended by the manufacturer of prefinished sheet.

## **2.4 SHAPING**

- .1 The metal flashings and other sheet metal parts must be shaped in accordance with the details and indications AMCQ.
- .2 The parts must be shaped in lengths up to 2400 mm.
  - .1 It is important to foresee the joints, the game needed to expansion items.
- .3 Exposed edges must be folded 12 mm on their underside.
  - .1 The angles must be assembled mitered and sealed with a sealant.
- .4 The elements must be shaped square, level and accurately in the prescribed dimensions, so that they are free of any deformation or other defects that could affect their appearance or effectiveness.
- .5 Metal surfaces embedded in the concrete or mortar must be coated with a protective coating.

## **2.5 METAL FLASHING**

- .1 Flashings, copings and fascia must be shaped in accordance with prescribed profiles, with steel sheet galvalume prefinished 0.45mm (26 gauge) thick.

## **2.6 SLEEVES SEAL**

- .1 The sealing sleeves must be formed with the aluminum sheet. The sleeves should protrude at least 75 mm coated on the roof and be provided with a continuous flange 100 mm free open angles.
  - .1 The joints must be made by soft soldering or riveting.
  - .2 The diameter of the sleeve must be greater than at least 50 mm after the items that pass through the cover membrane.

## **2.7 Engravure BANDS AND COUNTER FLASHING**

- .1 The bands engravure recessed for receiving the flashings must be [formed] formed with the sheet of 0.45 mm thick and be incorporated into the concrete or masonry in accordance with the details AMCQ.
  - .1 The elements must comprise oval fixing holes and be secured by means of fasteners to steel / plastic washer.
  - .2 The faces and ends of the elements must be covered with a plastic tape.

## **Partie 3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with the requirements, manufacturer's written recommendations, including product technical bulletins, handling instructions, storage and implementation of products and indications datasheets.

### **3.2 INSTALLATION**

- .1 Fit the metal works as detailed in the AMCQ and the manufacturer's instructions.

- .2 Fastener concealment, except where the Consultant has accepted that they be left exposed.
- .3 Put an underlayer before installing the sheet members.
  - .1 Although the subject and run 100 mm lap joints.
- .4 Munir against flashings flashings oil produced at the intersection of cover and walls, mounting rack or other vertical surfaces.
  - .1 Realize joints single agrafure well subjecting them to the stringers.
- .5 Closing the end seals and the seal by means of a sealant.
- .6 Install plumb and level bands engravure laid flush. Caulking the upper bands engravure by means of a sealant.
- .7 Insert metal flashing in the bands of engravure under the flashings against to form a seal.
- .8 Fold at least 25 mm the upper end of the flashing in the bands of engravure set back or in the mortar joints. Securely flashing in the joints with lead.
- .9 With a sealant, caulk flashings in the bands of engravure and against flashings.
- .10 Ask sealing sleeves at prescribed locations, around the elements passing through the cover membrane.

### **3.3 FANS ATTIC**

- .1 Install roof between fans as indicated in the drawings.

### **3.4 CONTROL OF QUALITY**

- .1 Spot checks by the manufacturer
  - .1 The manufacturer shall make recommendations for the use of the product and make periodic visits to check whether the implementation was performed according to the recommendations.

### **3.5 CLEANING**

- .1 Perform cleaning.
- .2 After the implementation of works and control of the complete performance completion remove materials and surplus materials, rubbish, tools and equipment.
- .3 Keep the area clean and free of grease works, stains and fingerprints.

**END OF SECTION**

**Partie 1      General**

**1.1            RELATED REQUIREMENTS**

- .1      Section 02 41 16      structure demolition
- .2      Section 04 04 99      Masonry
- .3      Section 06 10 00      Carpentry
- .4      Section 07 62 00      Flashing and sheet accessories

**1.2            REFERENCES**

- .1      ASTM International
  - .1      ASTM C920 Standard Specification for Elastomeric Joint Sealants.
- .2      Canadian General Standards Board (CGSB)
  - .1      CAN / CGSB-19.13 Sealant single component, elastomer, chemical polymerization.
- .3      Health Canada / Information System Hazardous Materials (WHMIS)
  - .1      Safety Data Sheets (MSDS).

**1.3            DOCUMENTS / SAMPLES SUBMITTALS / INFORMATION**

- .1      Submit documents and samples required in accordance with Section 01 33 00 - / Submittal Procedures.
- .2      Data sheets
  - .1      Submit product data and instructions and the manufacturer's documentation for the joint sealants. The technical data must include product characteristics, performance criteria, dimensions, finish and limitations.
  - .2      The manufacturer's data sheets must cover the following.
    - .1      Sealants.
    - .2      The primary.
    - .3      Sealants (all types), including their compatibility with each other.
  - .3      Submit two (2) copies of MSDSs required under WHMIS.
- .3      samples
  - .1      Submit two (2) samples of each color and each type of products.
  - .2      If necessary, for harmonization with adjacent materials, submit samples dried sealants that must be left exposed, and, for each proposed color.
- .4      Manufacturer's Instructions
  - .1      The instructions submitted must cover each of the products offered.

**1.4            DOCUMENTS / ITEMS TO BE GIVEN TO COMPLETION**

- .1      Submit documents / items required to deliver to completion].

- .2 operating and maintenance records: provide instructions for operation and maintenance for incorporation to the I manual and E.

## **1.5 TRANSPORT, STORAGE AND HANDLING**

- .1 Transport, store and handle materials and equipment in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials and equipment to site in original factory packaging, bear a label showing the name and address of the manufacturer.
- .3 Storage and Handling
  - .1 Store materials and equipment in a clean, dry area, according to the manufacturer's recommendations.
  - .2 Replacing materials and equipment damaged by materials and new equipment.
- .4 Management of packaging waste: recover packaging waste for recycling / reuse by the manufacturer.

## **1.6 CONDITIONS OF IMPLEMENTATION**

- .1 Ambient conditions:
  - .1 Proceed with the implementation of sealants only under the following conditions.
    - .1 The ambient temperature and the substrate are situated within the limits set by the manufacturer of the products or are greater than 4.4 degrees Celsius.
    - .2 The substrate is dry.
    - .3 The manufacturer's recommendations regarding temperatures, relative humidity and moisture content of the specific substrate for the implementation and drying sealants and special instructions for the use of these, are met.
- .2 Joint width
  - .1 Proceed with the implementation of sealants only when joint width is greater than that established by the product manufacturer for specified applications.
- .3 substrate
  - .1 Proceed with the implementation of sealants only after the substrate has been cleared of any contaminants that may prevent adhesion of the products.

## **1.7 REQUIREMENTS FOR THE ENVIRONMENT**

- .1 Meet the requirements of Information System Hazardous Materials (WHMIS) regarding the use, handling, storage and disposal of hazardous materials as well as labeling and providing MSDS recognized by Health Canada.

## **Partie 2 Product**

### **2.1 SEALANTS - DESCRIPTION**

- .1 Type 1: Sealant single component, silicone Compliant with CAN / CGSB-19.13 standard and ASTM C920 Type S, Grade NS, Class 50, Use NT, M, G, A and O

- .1 joint movement capability (ASTM C 719) Extension or compression of +/- 50%
  - .2 Sealant validated by the SWRI-Sealant Waterproofing & Restoration Institute.
  - .3 Color choice of the Consultant from the range of the manufacturer's standard colors.
  - .4 minimum size of the seal 6.4 x 6.4 mm
  - .5 As the sealant to low modulus silicone, non-staining and picking up little dirt "Spectrem 2 Tremco" or approved equivalent.
- .2 Gaskets Fund, compressible and non-compressible
- .1 polyethylene foam closed cell elements.
    - .1 filling strips extruded cellular foam.
    - .2 Oversize elements from 30 to 50%.
  - .2 Antisolidarisation tape.
    - .1 polyethylene tape does not adhere to the sealant.

## **2.2 SEALANTS - LOCATIONS**

- .1 Circumference of openings in the outer walls (bricks, blocks or prefabricated concrete elements), and whose frames are contiguous to top coating: Product type 1.
- .2 Joints formed atop walls non-load bearing masonry, to the underside of the elements in situ concrete: Product type 1.
- .3 Seals break in the brick veneer.

## **2.3 CLEANING PRODUCTS FOR JOINTS**

- .1 non-corrosive cleaning products and non-messy, compatible with the materials constituting the gaskets and sealants according to the manufacturer's written recommendations sealants.
- .2 Primary: according to manufacturer's written recommendations sealants.

## **Partie 3 Execution**

### **3.1 EXAMINATION**

- .1 Checking conditions: prior to the installation of joint sealants, ensure that the state of surfaces / materials previously implemented under other sections or contracts is acceptable and allows for work according to the manufacturer's written instructions.
  - .1 Make a visual inspection of surfaces / materials in the presence of representative of the Ministry and the Consultant.
  - .2 Immediately inform the Consultant and Departmental Representative of unacceptable conditions detected.
  - .3 Start the installation work only after correcting the unacceptable conditions and written approval of the Consultant.

### **3.2 SURFACE PREPARATION**

- .1 Check the dimensions of the joints to realize the state of surfaces, in order to obtain an adequate width-depth ratio for the implementation of joint funds and sealants.
- .2 Ridding the joint surfaces from unwanted material, including dust, rust, oil, grease and other foreign matter that could affect the quality of works.
- .3 Do not apply sealant on the joint surfaces have been treated with a wood filler, a curing product, a water repellent or other type of coating, unless prior trials have confirmed the compatibility of these materials. Remove coatings already covering the surfaces as needed.
- .4 Make sure the gasket surfaces are well drained and they are not frozen.
- .5 Prepare surfaces in accordance with manufacturer's instructions.

### **3.3 PRIMING**

- .1 Before applying the primer and caulk, masking necessary adjacent surfaces to prevent dirt.
- .2 Apply the primer on the side surfaces of immediately before joined to implement the sealant in accordance with the instructions of the manufacturer of the latter.

### **3.4 FITTING THE BOTTOM SEAL**

- .1 Ask the bond breaker tape where required, according to the manufacturer's instructions.
- .2 Compressing the about 30%, posing the seal base depending on the depth and the desired joint profile.

### **3.5 DOSAGE**

- .1 Assay components in strict accordance with the instructions of the manufacturer of the sealant.

### **3.6 IMPLEMENTATION**

- .1 Applying the sealant
  - .1 Implement the sealant according to the manufacturer's written instructions.
  - .2 To achieve net joints, ask the need of masking tape on the edge of the surfaces to be joined.
  - .3 Apply the sealant in a continuous cord.
  - .4 Applying the sealant using a gun provided with a nozzle of appropriate size.
  - .5 The supply pressure should be high enough to allow filling of empty and perfect sealing of joints.
  - .6 Realize joints to form a continuous sealing bead free edges, folds, subsidence, air voids and coated dirt.
  - .7 Before it forms a skin on the joints, shaping exposed surfaces to give them a slightly concave profile.
  - .8 Remove excess sealant as and measure the progress of work, and at the end of the latter.
- .2 Drying

- .1 Ensure the drying and curing sealants as directed by the manufacturer of these products.
- .2 Do not cover the joints made with sealing products before they are dry.

**3.7 CLEANING**

- .1 Cleaning course work: do the daily cleaning.
  - .1 Leave the place clean at the end of each working day.
  - .2 Clean adjacent surfaces immediately.
  - .3 As to measuring the progress of work, remove excess sealant and burrs with the recommended cleaners.
  - .4 Remove the masking tape at the end of the initial period of engagement of the sealant.
- .2 Final Cleaning: upon completion remove materials / surplus materials, rubbish, tools and equipment.
- .3 Waste Management: separate waste materials for recycling.
  - .1 Remove the trays and construction of recycling bins and dispose of materials at appropriate facility.

**3.8 PROTECTION**

- .1 Protect hardware and installed items against damage during construction.
- .2 Repair damage to adjacent materials and equipment for the installation of joint sealants.

**END OF SECTION**

**Partie 1 Overview**

**1.1 RELATED SECTIONS**

- .1 Section 02 41 16 Structure Demolition
- .2 Section 06 10 00 Carpentry.
- .3 Section 09 91 23 Painting - Interior Work

**1.2 REFERENCES**

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM C36 / C36M01, Specification for Gypsum Wallboard.
  - .2 ASTM C47501, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - .3 ASTM C84001, Specification for Application and Finishing of Gypsum Board.
  - .4 ASTM C100201, Specification for Steel Tapping Screws Self Piercing for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
  - .5 ASTM C104799, Specification for Gypsum Wallboard and Accessories for Gypsum Veneer Base.
- .2 Association of the Wall and Ceilings International Industries (AWCI)
- .3 Underwriters Laboratories (ULC)
  - .1 CAN / ULCS1021988 Test Method for Surface Burning Characteristics of Building Materials and assemblies.

**1.3 DOCUMENTS / SAMPLES SUBMITTALS / INFORMATION**

- .1 Data sheets
  - .1 Submit product data and instructions and the manufacturer's documentation for the drywall coatings. The technical data must include product characteristics, performance criteria, dimensions, finish and limitations.
- .2 samples
  - .1 A post (1) sample of 300 mm x 300 mm of plasterboard.

**1.4 TRANSPORT, STORAGE AND HANDLING**

- .1 Transport materials without altering the packaging, container or the original batch or hide the trademark and the name used by the manufacturer.
- .2 Store materials inside, dry and well level in a tank. protect them from weather, other materials and damages that may be inflicted during the construction work and other activities.
- .3 Handle the gypsum board so as not to damage their surfaces or ends. also protect parts and metal fittings for damage or twisting that can damage them.

**1.5 CONDITIONS OF IMPLEMENTATION**

- .1 Maintain the room temperature at least 10 Celsius degrees and not more than 21 degrees Celsius for 48 hours before and during the setting and grouting of plasterboard, and for at least 48 hours after completion of the joints.

- .2 Ask the plasterboard and grouting tiles on dry surfaces and not frosted.
- .3 Ensure good ventilation in areas of the building covered with drywall to remove excessive moisture that could prevent drying of grouting material immediately after application.

## **1.6 MATERIALS OR PRODUCTS ACCEPTABLE**

- .1 When the materials or products are prescribed by their trademark, consult the "Instructions to Bidders" in order to know the procedure concerning the request for approval of materials or substitutes.

## **Partie 2 products**

### **2.1 MATERIALS / MATERIALS**

- .1 Common rings: in accordance with ASTM C36 / C36M, flame retardant X-type, 13 mm thick, 1200 mm wide and the maximum usable length, with squared edges at the ends and beveled edges on the sides. To be used for ceilings.
- .2 Screw steel drills: to ASTM C1002.
- .3 Joint compound: in accordance with ASTM C475, asbestos.
- .4 Thermal insulator:
  - .1 For ceilings: mats, in accordance with the CAN4-S114 standard, non-combustible, fiberglass or rock fiber, to recycled content of 50% or more, thicknesses shown in the drawings, a density of 15kg / m<sup>3</sup> minimum such LBS insulating Roxul or approved equivalent.

## **Partie 3 Execution**

### **3.1 MOUNTING**

- .1 Unless otherwise noted, perform the installation and finishing of plasterboard in accordance with ASTM C840.
- .2 Ask the coating gypsum board in accordance with ASTM standard c1280.
- .3 Install level elements, the allowable deviation is 1: 1200.
- .4 Framing of furring openings housing the access panels, light fixtures, diffusers, grilles.

### **3.2 INSTALLATION**

- .1 Do not place the drywall before waiting frames, anchors, blocks, acoustic insulation materials and electrical and mechanical installations are approved.
- .2 Attach the drywall to the fur or wood frame with screw anchors. Fit the screws at 300 mm centers maximum.
  - .1 Coating a single layer
    - .1 Ask the drywall ceiling in accordance with ASTM C840.
    - .2 Ask the plates vertically or horizontally, in the direction which will reduce
- .3 Ask the drywall ceiling in the direction that will minimize the number of butt joints. Stagger the joints of the ends of at least 250 mm.
- .4 Lay the sheets with the side of outside siding.
- .5 Do not place a damaged or wet drywall.

### 3.3 INSTALLATION

- .1 Mounting the bracket accessories, plumb or level, and firmly secure the expected plan. Use full length pieces where possible. Make tight fitting joints, aligned and securely attached. Trim tab angles and adjust perfectly, leaving no rough or uneven edges. Fix the elements with the pressure sensitive adhesive applied along their whole length.
- .2 Ask the flush moldings around the perimeter of suspended ceilings.
- .3 Installing moldings outcrop at the junction of plasterboard and surfaces without covermount, as well as various locations shown. Seal the joints with a sealant.
- .4 Finishing joints between the plates and in the nips by means of the following products: dope, and coated tape for tape. Apply these products according to the manufacturer's recommendations and smooth thinning the right way to catch the finish of the plate surface.
- .5 Finishing drywall: giving plasterboard ceilings coatings conform finished the requirements set out in the document is Recommended Specification of Gypsum Board Finish Levels of the Association of the Wall and Ceiling Industries (AWCI) International. The finish must comply with degree 4.
  - .1 Degrees finishing
    - .1 Level 0: No jointing product, accessory or required finishing element.
    - .2 Degree 1: installation with joints and interior angles covered with a tape embedded in the joint compound. The jointed surfaces must be free of pipe dope surplus, but the tool marks and dents are acceptable.
    - .3 Grade 2: Coyer the tape placed on the seals and the interior angles in a pipe dope and applying a separate layer of paste on the joints, corners and the head of the fastening devices and other accessories used. The jointed surfaces must be free of pipe dope surplus, but the tool marks and dents are acceptable.
    - .4 Grade 3: Coyer the tape placed on the seals and the interior angles in a pipe dope and applying two different layers of dough on the joints, angles and the head of the fastening devices and other accessories used. The jointed surfaces must be smooth and free of tool marks and dents.
    - .5 Level 4: Walnut tape placed on the seals and the interior angles in a pipe dope and applying three distinct layers of paste on the joints, corners and the head of the fixing devices and other accessories used. The surfaces must be smooth and free of tool marks and dents.
    - .6 Level 5: Walnut tape placed on the seals and the interior angles in a pipe dope and applying three distinct layers of paste on the joints, corners and the head of the fixing devices and other accessories used. then apply a thin layer of facing coated on the entire surface of the coating in place. The jointed surfaces must be smooth and free of tool marks and dents.
- .6 Fill the depressions left by the screw head with the sealing compound and the coating tape until a smooth surface flush with the adjacent surfaces of the drywall, so that these depressions are invisible once the finish.
- .7 Lightly sand irregular ends and other imperfections. Avoid sanding adjacent surfaces.
- .8 Once installation is complete, the work must be smooth, level or plumb, free from ripples and other defects, and ready to be coated with a finish coat.
- .9 Ensure the protection of plasterboard coatings to ensure they are not damaged or deteriorated to the substantial completion date.

**END OF THE SECTION**

**Partie 1      General**

**1.1            SUMMARY**

- .1 Section contents
  - .1 Materials, products and methods associated with the application, on site, paint coatings on substrates new interior, including painting new drywall ceilings under the skylight roof removed.
- .2 Related requirements
  - .1 Section. September 21 16 plasterboard covering

**1.2            REFERENCES**

- .1 Master Painters Institute (MPI)
  - .1 MPI Architectural Painting Specifications Manual particularly covering component identification, evaluation substrates, paint systems, preparatory work and the list approved products.
- .2 Department of Justice Canada (Jus)
  - .1 Canada Act, Environmental Protection Act (CEPA), (1999), c. 33.
- .3 Environmental Protection Agency (EPA)
  - .1 EPA Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings).
- .4 Health Canada / Information System Hazardous Materials (WHMIS)
  - .1 Safety Data Sheets (MSDS).
- .5 National Code of fire prevention in Canada

**1.3            QUALITY ASSURANCE**

- .1 Qualifications
  - .1 The Contractor must be able to demonstrate that it has at least [five (5) years of experience in performing similar work. List the three (3)] last comparable projects, specifying there the name and location of the project, the contractual authority of the estimate and the name of the project manager.
  - .2 The paint work must be performed by skilled workers who hold a "man of competence Certificate of trade."
  - .3 Apprentices can also be engaged on the condition that they work under the direct supervision of a skilled worker in accordance with the regulations governing this trade.
- .2 Comply with the latest requirements of the MPI with respect to interior work of paint coatings, including those for cleaning and surface preparation and application of primary or print painting.
- .3 Products used, either primary or printing products, paints, coatings, varnishes, stains, varnishes, fillers, diluents, solvents and the like, must be included in the latest version of

the list MPI approved products, and all products forming the chosen paint system must be from the same manufacturer.

- .4 Keep purchase receipts, invoices and other documentation to establish, at the request of the Consultant, the work conforms to specified requirements MPI.
- .5 Quality standard: the examined surfaces must, under the planned final lighting, meet the following requirements.
  - .1 Ceilings: no defects visible to an observer on the ground at an angle of 45 degrees relative to the surface being examined.
  - .2 The color and the gloss of the topcoat must be uniform over the entire tested surface.

#### **1.4 PERFORMANCE REQUIREMENTS**

- .1 Environmental Performance Requirements
  - .1 paint products used must comply with the requirements for obtaining the mention \* environmental choice + E2 MPI, granted based on the content of volatile organic compounds (VOC) as determined by number 24 method of the Environmental Protection Agency (EPA).

#### **1.5 TIMETABLE**

- .1 Establish work schedules with the Representative of the Ministry so as to avoid disturbing building occupants.
- .2 Submit calendar of the various stages of painting Departmental Representative and the Consultant for review, and at least 48 hours before the start of the work.
- .3 Get written permission from the representative of the Ministry for any change in the schedule.

#### **1.6 DOCUMENTS / SUBMITTALS**

- .1 Submit product data and manufacturer's instructions regarding the implementation or application of each product and each paint coating in accordance with Section 01 33 00 documents and to submit samples.
- .2 Submit samples required in accordance with Section 01 33 00 documents and to submit samples.
  - .1 Submit samples of all colors available for review and selection and specify when the color range is limited.
  - .2 Submit for painting products and coatings used, MSDSs required Information System on Hazardous Materials (WHMIS).
- .3 Documents / Elements to submit to completion
  - .1 Provide maintenance data for incorporation into maintenance manual à completion.
    - .1 Submit a record of all the products used. Indicate all products comprising each system, stating the following information for each of them.
      - .1 The name, type and use of the product (ie the materials and where they are applied).
      - .2 The manufacturer's product number.

- .3 The colors of the code numbers.
- .4 The reference given to the product as classified by the Environmental Choice Program MPI.
- .5 Material Safety Data Sheets (MSDS) from the manufacturer of each product.

## **1.7 MAINTENANCE**

- .1 Materials / replacement materials
- .2 Providing materials / equipment replacement / replacement required.
- .3 A post (1) containing four (4) liters of each type and each color finish product. Identify the color and type of product following the list of colors and the specified paint system.

## **1.8 TRANSPORT, STORAGE AND HANDLING**

- .1 Packing, shipping, handling and unloading
  - .1 Packaging, shipping, handling and unloading of materials and products according to the manufacturer's written instructions.
- .2 Acceptance of materials and products
  - .1 Identify the products and paint coating and the materials and products used by labels indicating the following:
    - .1 the name and address of the manufacturer;
    - .2 the type of paint or coating;
    - .3 compliance with standards or the relevant requirements;
    - .4 the color number, according to the list of specified colors.
- .3 Remove from construction materials and products damaged, open or refused.
- .4 Storage and Protection
  - .1 Provide a secure storage area, although dry and maintained at a controlled temperature and maintain it properly.
  - .2 Store materials and products away from heat sources.
  - .3 Store materials and products in a well-ventilated place, the temperature is between 7 degrees Celsius to 30 degrees Celsius.
- .5 The storage temperature of temperature-sensitive products should never be less than the minimum recommended temperature by the manufacturer.
- .6 Keep clean and orderly areas used for storage, cleaning and surface preparation. Once the work is completed, restore these areas to their original state of cleanliness.
- .7 Remove from storage area only the quantities of products which will be implemented on the same day.
- .8 Fire Safety Requirements
  - .1 Providing one (1) 9 kg extinguisher for ABC lights and place it close to the storage area.

- .2 Place in sealed containers, ULC, oily rags, waste, empty containers and materials liable to spontaneous combustion and remove the containers from the site daily.
- .3 Handle, store, use and dispose of products and flammable and combustible materials in accordance with the requirements of Canada's National Fire Prevention Code.
- .9 Management and Disposal
  - .1 Separate waste materials for reuse / re-use and recycling.
  - .2 Remove from site all packaging materials and transport them to the appropriate recycling facilities.
  - .3 Collect and sort packaging for recycling in accordance with Waste Management Plan.
  - .4 Separate waste metal for recycling and re-use / re-use and place in designated containers in accordance with Waste Management Plan.
  - .5 Place in designated containers substances that meet the definition of toxic and hazardous waste.
  - .6 Handle and dispose of hazardous materials in accordance with [regional and municipal regulations on CEPA and to the Act.
  - .7 Ensure emptied containers are sealed and stored safely for disposal.
  - .8 Divert unused coatings and paint products to an authorized collection site for hazardous materials accepted by the Departmental Representative and the Consultant.
  - .9 Paints, stains, wood preservatives as well as related products such as thinners and solvents are treated as hazardous materials and, therefore, are subject to regulations regarding disposal. Information regarding the relevant legislation can be obtained from the provincial ministers responsible for the environment and the competent regional administrations.
  - .10 Products that can not be reused must be treated as hazardous waste and disposed of properly.
  - .11 Position materials and hazardous or toxic designated products, including tubes and used containers adhesive and sealant in designated areas or receptacles for receiving hazardous waste.
  - .12 To reduce the contamination of soil or waterways and sanitary sewers and storm, strictly observe the following guidelines.
    - .1 Preserve the water used for cleaning in the case of paints and other products based on water so as to allow the collection by filtration of the various deposited materials.
    - .2 Keep cleaning products, thinners, solvents and excess paint in containers designated for this purpose and dispose of properly.
    - .3 Keep oily rags and solvent used during the painting work for recovering the contaminants contained therein and to remove or to clean adequately rags, as appropriate.
    - .4 Take the necessary steps for the removal of contaminants in accordance with the regulations for hazardous waste.
    - .5 Dry the empty paint cans prior to disposal or recycling (in areas with appropriate facilities).

- .13 Where there is a paint recycling service, collect excess paint, classified by type of products and provide their transport to an installation for collection or recycling.

## **1.9 CONDITIONS OF IMPLEMENTATION**

- .1 Heating, ventilation and lighting
  - .1 Before starting the repainting work, check whether a continued adequate ventilation can be ensured on the one hand and on the other hand, if proper heating help bring the temperatures of the air and substrate more than 10 degrees Celsius 24 hours before the start of work and maintain this temperature for the duration of the implementation and after completion, until the paint is sufficiently hardened.
  - .2 Ventilate enclosed spaces. If required, ensure continuous ventilation during the seven (7) days of completion.
  - .3 Coordinate the use of existing ventilation system with the Representative of the Ministry and, if necessary, make appropriate arrangements for its operation during and after the execution of works.
  - .4 Provide and install temporary heating and ventilation devices necessary if permanent systems can not be used; if building permanent systems fail to meet the minimum requirements, supply and install the additional equipment required to meet them.
  - .5 Provide the required lighting equipment and maintain a level of illuminance of 323 lux at least on the surfaces to be painted.
- .2 ambient temperature, relative humidity and moisture content of the substrate
  - .1 Unless the prior written permission of the responsible for the preparation of specifications body, the competent body providing inspection paintings and manufacturer of coating material used, do not make the painting in conditions listed below:
    - .1 The temperatures of the ambient air and the substrate are less than 10 degrees Celsius.
    - .2 The substrate temperature is greater than 32 degrees Celsius, unless the formula of the paint to be used is designed for application at elevated temperatures.
    - .3 The temperature of the ambient air and substrate are not located within the range recommended by the MPI or the manufacturer of the paint.
    - .4 The relative humidity is greater than 85% or the dew point corresponds to a difference of more than 3 ° C between the temperature of the air and that of the substrate. The coating material should not be applied if the difference between the dew point and the ambient or the temperature of the substrate is greater than 3 degrees Celsius. Relative humidity should be determined by a whirling hygrometer prior to implementation.
    - .5 It's raining, it's snowing, there's fog or drizzle, or precipitation as snow or rain are expected before the complete drying of the paint.
    - .6 Environmental conditions during the drying or curing of the product or the applied coating conform to specified ranges and that, until the new coating used can withstand the current climate.
  - .2 Run the paint coating to ensure compliance with the conditions and the maximum moisture content of the substrate listed below:

- .1 maximum moisture content of 12% for plates and plasters.
- .3 Perform tests to determine the moisture content of the substrates using a properly calibrated electronic moisture meter. In case of concrete floors, assess the moisture content with a simple "control coverage on reference surface."
- .4 Conduct tests on plaster surfaces, concrete and masonry to determine their alkalinity.
- .3 State of surfaces and conditions of implementation
  - .1 Apply the paint product only in areas where the quality of finished surfaces will not be impaired by dust suspended in the air during construction or dust blown by the wind or by the ventilation system.
  - .2 Proceed with the application of paints and coatings on surfaces properly prepared and whose moisture content is within the specified range.
  - .3 Applying paint when the preceding layer has dried or cured sufficiently.
- .4 Additional requirements for the application of paint or coating on the interior surfaces
  - .1 Apply paint products when the temperature on the work site can be maintained within the limits recommended by the manufacturer of the products used.
  - .2 In the occupied buildings, all paint work must be coordinated with the Departmental Representative. The work schedule must be approved by the Representative of the Ministry and it should provide a drying time and sufficient curing before the return of the occupants.

## **Partie 2 Product**

### **2.1 MATERIALS / MATERIALS**

- .1 paint products and coatings listed in the List of Approved Products MPI can be used in the framework of the present work.
- .2 All products forming the chosen paint system must be from the same manufacturer.
- .3 Only registered products have obtained the mention E2 or E3 Environmental Choice can be used in the present work.
- .4 Comply with the latest requirements of the MPI with respect to interior paint coatings, including those for surface preparation and application of primary or print painting.
- .5 The products used, either primary or printing products, paints, coatings, varnishes, stains, lacquers, fillers, diluents, solvents and others, must be on the list of approved products presented in the MPI Architectural Painting Specification Manual.
- .6 Paints, coatings, adhesives, solvents, cleaners, lubricants and other products used must have the following characteristics:
  - .1 Products manufactured without any compounds that contribute to ozone depletion in the upper atmosphere;
  - .2 Products manufactured without promoting compound smog formation in the lower atmosphere;
  - .3 Products not containing methylene chloride (dichloromethane)

- .7 Establishing a form and preparing water-based coatings containing no aromatic solvent, halogenated solvent, formaldehyde, mercury, lead, cadmium, hexavalent chromium or any of their derivatives.
- .8 Flash point: 61.0 degrees Celsius or more in the case of water-based coatings and recycled water-based coatings.
- .9 The preparation and application of water-based coatings and coatings based on water recycling should in any case clear:
  - .1 of materials that can generate a biochemical oxygen demand (BOD) greater than 15 mg / L in the undiluted a production plant effluent that flows into a natural waterway or in a sewage treatment facility providing no secondary treatment;
  - .2 materials bringing the total suspended solids (TSS) to more than 15 mg / L in the case of an undiluted effluent discharged into a natural stream or a waste water treatment facility not involving treatment secondary.
- .10 Paints, stains and varnishes to water as well as coatings based on water recycled must at least meet the requirements of the Environmental Choice Program for the indication E2.

## 2.2 **COLORS**

- .1 The Consultant will provide the color list after contract award.
- .2 The colors will be chosen from the full range of colors and shades offered by manufacturers.
- .3 If particular products are available in a limited range of colors, the colors of the products actually used will be selected in this narrow range.
- .4 In paint systems with three (3) layers, the second layer should be of a color slightly paler than the topcoat to facilitate visual identification of each layer.

## 2.3 **MIXING AND START COLOR**

- .1 Perform setting color coating materials prior to transport to the site. This color setting must be previously approved by the Consultant.
- .2 A certain amount of diluent may, if necessary, be added to the paint according to the manufacturer's recommendations. Kerosene or similar organic solvent should not be used to dilute the paint with water.
- .3 Thin the paint to be applied to the gun according to the manufacturer's instructions.
- .4 Before and during application, mix thoroughly the paint in the container to break the agglutinated material, to ensure complete dispersion of the deposited pigments, and to preserve the uniformity of the color and gloss of the paint applied.

## 2.4 **DEGREE OF GLOSS (GLOSS)**

- .1 For gloss paint means the degree of gloss paint implementation, according to the values presented in the following table:

	60 degree gloss	Chandelier 85 degrees
Gloss 1 - matte finish	more than 5	to 10
Gloss 2 - velvet finish	to 10	10 to 35
Gloss 3 - finished eggshell	10 to 25	10 to 35

Gloss 4 - satin finish	20 to 35	at least 35
Gloss 5 - finished traditional semi-gloss	35 to 70	
Gloss 6 - Traditional gloss finish	70 to 85	
7 gloss - high gloss finish	over 85	

- .2 The degrees of gloss paint coated surfaces must comply with the nomenclature of finished surfaces and indications.

## 2.5 PAINT INTERIOR SYSTEMS

- .1 Plasters and gypsum wallboard including wallcoverings plasterboard panels "Sheetrock" drywall and textured finishes
  - .1 INT 9.2B - high performance architectural latex product, mat or velvet finish is pairing with adjacent ceiling surfaces

## Partie 3 Execution

### 3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: Comply with the recommendations or manufacturer's written instructions, including newsletters and fact sheets dealing with products and instructions for handling, storage and implementation of products.

### 3.2 GENERAL

- .1 Unless otherwise indicated, prepare the interior surfaces and perform the work of painting as required by the MPI Architectural Painting Specifications Manual.
- .2 Apply paint products according to the manufacturer's written instructions.

### 3.3 INSPECTION

- .1 Inspect existing substrates to ensure that their condition can compromise the adequate preparation of surfaces to be painted or coated. Before starting work, report to the Ministerial Representative, if any, damage, unsatisfactory or unfavorable terms or defects detected.

### 3.4 PREPARATORY WORK

- .1 Protection
  - .1 Protect building surfaces and adjacent structures that should not be coated with paint or plaster against the specks, marks and other damage using blankets or non-dirty cache elements. If the surfaces in question are damaged, clean them and restore them according to the instructions of the Consultant.
- .2 Surface Preparation
  - .1 If necessary, cover or move items of furniture and transportable equipment to facilitate painting. Put these elements and materials in place as and when the work progresses.
  - .2 Ask signs "FRESH PAINT" in occupied areas during execution of works. Signs must be accepted by the Departmental Representative.

- .3 Clean and prepare the inner surfaces in accordance with the requirements of the MPI Architectural Painting Specification Manual. Refer to this document regarding specific requirements in addition to the instructions below.
  - .1 Remove dust, dirt and other foreign matter by wiping surfaces with clean, dry cloths or by scanning them with a compressed air jet and by vacuuming.
  - .2 Washing the surfaces with a biodegradable detergent admixed with a bleaching agent, if necessary, and clean hot water by means of a stiff bristle brush to clear the surfaces of dirt, oil and other contaminants.
  - .3 After having brushed surfaces, rinse with clean water until no more foreign materials.
  - .4 Allow surfaces to drain completely and dry thoroughly.
  - .5 To prepare the surfaces to receive a water-based paint, it is recommended to use water cleaning products instead of organic solvents.
  - .6 Once dry, many water-based paints can not be removed with water. We must minimize the use of mineral oils or organic solvents to clean the paintings.
- .4 Sand and dust between each layer, as required, to ensure proper adhesion of the next layer and to eliminate defects visible at a distance of 1000 mm or less.

### **3.5 APPLICATION**

- .1 The application method used must be approved by the Consultant. Apply paint roller, brush or brush. Unless otherwise stated, apply the product according to the manufacturer's instructions.
- .2 Brushing, brush and roller
  - .1 Applying a uniform layer of paint with a brush, a brush and / or a suitable type of roller.
  - .2 To penetrate the paint in the cracks, slots and the corners of the elements.
  - .3 Apply paint with a pad or a sheepskin on surfaces and in inaccessible corners with a brush or brush. Use a brush or a brush, pad or sheepskin where it is impossible to paint some areas or some corners with a roller.
  - .4 Remove the scallops and drips with a brush, a brush or a roller, and board on the left and brands. The painted surfaces must be free roller marks and roll excess paint.
  - .5 Remove the scallops, drips and brush marks or brush on finish, and take these surfaces.
- .3 Apply each layer of paint so as to obtain a continuous film of uniform thickness. Resume bare surfaces or coated with a too thin film before applying the next layer.
- .4 Allow surfaces to dry and harden properly after cleaning and between each successive layer, until the minimum time recommended by the manufacturer.
- .5 Sand and dust between each layer to remove defects.

### **3.6 ELECTRICAL EQUIPMENT AND MECHANICAL**

- .1 Unless other indications, apply the paint product of piping, electrical conduits, ventilation ducts, media / suspensions and other apparent domestic electrical and mechanical components so that the color and finish of painted surfaces are aligned to those of the contiguous surfaces.

- .2 Touch up scratches and marks on the coatings applied in the factory using the product provided by the hardware manufacturer.
- .3 Do not paint the nameplates.
- .4 Do not paint the sprinkler heads.

**3.7 TOLERANCE IMPLEMENTATION**

- .1 Ceiling: no defects visible to an observer on the ground at an angle of 45 degrees relative to the surface being examined, in the intended final lighting.
- .2 The color and the gloss of the topcoat must be uniform over the entire tested surface.

**3.8 CONTROL OF QUALITY**

- .1 Inspection
- .2 Inform Departmental Representative when a surface coating and are ready to be inspected. Do not apply the next coat before the previous layer has been approved.

**3.9 REHABILITATION OF PLAY**

- .1 Clean and reinstall all hardware removed for easy painting.
- .2 Remove the protections and warning signs as soon as possible after completion.
- .3 Remove splashes on exposed surfaces that have not been painted. Remove burrs and speckles gradually as the work progresses, using a compatible solvent.
- .4 Protect freshly painted surfaces against drips and dust to the satisfaction of the Departmental Representative and the Consultant and avoid scratching the new coatings.
- .5 Put local used for storage, mixing and handling of paint and the cleaning of tools and equipment used in their original state of cleanliness, to the satisfaction of the Departmental Representative.

**END OF SECTION**

## **2. STRUCTURE SPECIFICATIONS**

<b>Section No.</b>	<b>Section</b>
02222	Demoliton of Structures
03 30 00	Cast-in place concrete
05 12 23	Structural Steel for Buildings

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**Centre Communautaire Correctionnel  
Laferrière  
Repairs and Rehabilitation of the  
building envelope**

**Demolition of structures**

**Section 02222**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

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## **PART 1 – GENERAL**

### **1.1 General Conditions and Requirements**

- .1 The General conditions C, the Complementary General Conditions, Section 00800 and the General Requirements, Division 01, apply to all the works and form integral part of this Section.

### **1.2 References**

- .1 Canadian standard association (CSA).
  1. CSA S350-M1980, Code of Practice of Safety in Demolition of Structures.
  2. Conform to National Building Code of Canada, Part 8, Security Measures on Building Sites, and to provincial and municipal requirements.

### **1.3 Permits and Authorization**

- .1 Obtain from authorities all permits and authorizations required for the performance of the works.

### **1.4 Protection**

- .1 Shore adequately the related works and if the demolition works may endanger the rest of the structures or utility networks, stop the works and advise the Ministry representative.
- .2 Ensure that the demolition works do not impair the surface drainage.

## **PART 2 PRODUCTS**

Not applicable

## **PART 3 EXECUTION**

### **3.1 Preliminary Works**

- .1 Inspect the site and check with the Ministry representative the structures to be demolished, those remaining and the actual condition of the site.

### **3.2 Safety**

- .1 Execute demolition works as per safety code for demolition works (section 01 70 12).

### **3.3 Demolition**

- .1 Temporarily support all structures to be removed and adjacent structures conforming to latest safety standards.
- .2 Remove all indicated structures.
- .3 It is forbidden to damage adjacent structures which are to be left in place, The Contractor shall pay for all costs for repairing damaged parts.
- .4 All demolished parts shall be evacuated from the site as soon as demolished, to an authorized location. Do not pile materials on the building site.
- .5 At the end of each working day, ensure that the work is safe and stable. Ensure, at all times, the protection of non demolished parts against the elements.

- .6 Do demolition works in such a way as to reduce the production of dust and keep materials wet as per the Ministry representative instructions.

**3.4 Cleaning**

- .1 At the end of each working day clean site with all debris removed.

**END OF SECTION**

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**Centre Communautaire Correctionnel  
Laferrière  
Repairs and Rehabilitation of the  
building envelope**

**Cast-in place Concrete**

**Section 03 33 00**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

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## PART 1 – GENERAL

### 1.1 General Conditions and Requirements

- .1 The General conditions C, the Complementary General Conditions, Section 00800 and the General Requirements, Division 01, apply to all the works and form integral part of this Section.

### 1.2 Reference Standards

- .1 Perform cast-in-place concrete work in accordance with CSA A23.1-09 and testing in accordance with CSA A23.2-04, unless specified otherwise.
- .2 Other reference standards :
  - CAN/CSA-A5-93
  - CAN3-A266.1-M78
  - CAN3-A266.2-M78
  - ASTM C309-91
  - ASTM D412-06
  - ASTM D624-07
  - ASTM D1751-04
  - ONGC 51-GP-51M-81
  - CSA A23.5-98
  - CSA A352-98
  - CSA A456.2
  - CSA A3000-03

### 1.3 Samples

- .1 Submit samples to Section 01300 - Submittals.
- .2 At least 4 weeks prior to commencing work, inform the Ministry representative as to the source of aggregates and allow free access for sampling purposes.
- .3 At least four weeks prior to commencing work, submit to Ministry representative the following materials.
  - .1 10 Kg of each type of Portland cement.
  - .2 5 l of each admixture.
  - .3 5 l of curing product.
  - .4 2 m of joint backing.
  - .5 Waterstops.

### 1.4 Certifications

- .1 At least 2 weeks prior to commencing the concrete works, submit to the Ministry representative copies of testing reports from manufacturer and a test, inspection and quality report from an independent laboratory stating that the following materials meet the requirements of this specification.
  - .1 Portland cement.
  - .2 Grout.
  - .3 Admixtures.
  - .4 Aggregates.
  - .5 Water.
  - .6 Waterstops.
  - .7 Waterstop gaskets.
  - .8 Joint fillers

- .2 Submit a certificate attesting that the mixing plant, the materials and the equipment to be used in concrete fabrication will meet the requirements of CSA A23.1 Standard and that the mix proportion have been modified to prevent any problem arising from the aggregate-alkali reaction.
- .3 Submit mixing formulas to the Ministry representative's approval and a document attesting that these formulas will result in the specified quality, strength and efficiency, in accordance with CSA-A23.1 Standard.
- .4 Approval by the Ministry representative of concrete formulas does not free the Contractor of his full responsibility to supply a concrete with the plastic and hardened properties as specified in this Specification.

### 1.5 Quality Control

- .1 Submit to Ministry representative proposed means of quality control

### 1.6 Measurement for Payment

- .1 Heating of water and aggregates and special means for protecting concrete against cold weather will not be measured for they are part of the works.
- .2 Supply and installation of anchor bolts, nuts and washers, including grouting of bolts, will not be measured for they are part of the works.
- .3 Supply and installation of waterstops will not be measured for they are part of the works.

## PART 2 - EXECUTION

### 2.1 Materials

- .1 Portland cement to A5 Standard.
- .2 Water : to CSA A23.1 Standard.
- .3 Aggregates : to CSA A23.1 Standard. Coarse aggregates : normal density.
- .4 Air entraining admixture : to A266.2 Standard.
- .5 Chemical admixtures : to A266.2 Standard. Obtain Ministry representative's approval before using curing accelerator or retardant during hot or cold weather pouring.
- .6 Non-shrink grout : premixed compound consisting of metallic aggregates, cement, water reducing and plasticizing agents.
  - .1 Compressive strength 50 MPa at 28 days.
  - .2 Grout consistency :
    - .1 Dry : according to manufacturer's requirements.
- .7 Dry pack : non premixed composition of non metallic aggregate, cement and sufficient water for the mixture to retain its shape made into a ball by hand and capable of developing compressive strength of 50 MPa at 28 days.
- .8 Curing compound : according to ASTM C309.

- .9 Waterstop strips : extruded PVC strips of the indicated dimensions.
  - .1 Tensile strength : to ASTM D412, C die method, minimum 11.4 MPa.
  - .2 Elongation : to ASTM D412, C die method, minimum 275%.
  - .3 Tearing strength : to ASTM D624, B die method, minimum 48 kN/m.
- .10 Joint filler
  - .1 Asphalt board : to ASTM D1751.
- .11 Bonding agent : This adhesive shall be used on existing concrete surfaces before installation of light concrete toppings : Mix of latex, cement and water mixed to the following proportions :
  - .1 3 kg type 10 cement.
  - .2 7.5 liters latex with styrene-butadiene.
  - .3 Approximately 2.5 liters of water to obtain a creamy mix.

## 2.2 Concrete Mix Proportions

- .1 Unless otherwise indicated on drawings, concrete mix proportions shall meet the following minimum requirements.
  - .1 For structural slabs, use a concrete with minimum tested compressive strength of 25 MPa at 28 days, class F2, containing maximum 20 mm coarse aggregates, a water/cement ratio in accordance with A23.1 Standard, latest issue, and 100 mm slump at time and location of discharge.
  - .2 For light concrete topping, use type Isoleger S6 concrete by Lafarge Canada or equal approved by the Ministry representative, with a tested compressive strength of 6 MPa at 28 days and a maximum density of 1100 Kg/m<sup>3</sup>.
- .2 Do not change the concrete mix proportions without the approval of the Ministry representative. For any change in the supply source of materials, submit the new mix proportion to the Ministry representative's approval.

## PART 3- EXECUTION

### 3.1 Workmanship

- .1 Obtain Ministry representative's approval before pouring concrete. Provide 24 hour notice prior to pouring concrete.
- .2 Pumping concrete equipment must be approved by Ministry representative prior to pouring.
- .3 Ensure reinforcement and inserts are not disturbed during concrete placement.
- .4 Prior to pouring concrete, obtain Ministry representative's approval of proposed method for protection of concrete during pouring and curing in bad weather.
- .5 Maintain accurate records of poured concrete items to indicate date, location of pour, quality, air temperature and test samples taken.
- .6 Do not load fresh concrete elements before Ministry representative's approval.

### 3.2 Inserts

- .1 Make openings, set sleeves, ties, pipe hangers and other inserts as indicated. Sleeves and openings of more than 100 x 100 mm and not indicated on structural or civil drawings must be approved by Ministry representative.
- .2 Do not eliminate or displace reinforcement to accommodate hardware. If inserts cannot be located as specified, obtain approval of all modification from Ministry representative before pouring.
- .3 Check locations and sizes of sleeves and openings shown on structural and civil drawings with architectural, mechanical and electrical drawings.
- .4 Install special insert for testing purpose, as per indications and requirements of non-destructive concrete testing methods.
- .5 Anchor bolts
  - .1 Use a template to place anchor bolts prior to pouring and under the supervision of the trade using the anchors.

### 3.3 Finishing

- .1 Finish concrete surfaces to A23.1 Standard.
- .2 Rub exposed sharp edges of concrete with carborundum in order to obtain 3 mm radius rounded edges, unless otherwise indicated.
- .3 Slab finishing : cement or other product dusting to dry the surface and the mix is not permitted at any time.
- .4 Concrete must be poured and vibrated as specified and brought to correct levels with straightedge. Use bullfloat or pointing tool to embed coarse aggregates and leave a smooth surface without bumps and hollows.
- .5 Float slabs with power steel trowel machine. Start polishing when surface is hard enough to support workers with only light traces and there is no bright trace of stagnant water. If two passes are required to obtain the desired effect, let the concrete harden before proceeding to the second pass.
- .6 Top of exterior stair treads and slabs shall be floated with wood float

### 3.4 Waterstops

- .1 Install waterstops to ensure positive waterproofing. Do not distort or punch waterstops to impair their performance. Do not displace reinforcement in installing waterstops. Do field cuts with tools approved by waterstop manufacturer. Fasten in place solidly.

### 3.5 Batching

- .1 Any water addition shall be controlled by Ministry representative's representative. This addition shall never be more than one gallon per cubic yard of concrete and the water/cement ratio must be respected. After water addition, the drum shall do thirty (30) supplementary rotations at the mixing speed. No concrete or mortar shall be re-mixed after hardening has started.

### 3.6 Mixing Time

- .1 Delivery and discharge must be done inside one and a half hour after loading of components

### 3.7 Vibration

- .1 Take great care to ensure that too much vibration does not provoke segregation of aggregates and excess surface water.

### 3.8 Cold Weather Concreting

- .1 Use of calcium chloride in concrete is prohibited.
- .2 At any time during pouring, concrete temperature must be between 15oC and 26oC.
- .3 If exterior temperature may go below 4oC, aggregates and water shall be heated and Contractor shall provide a special protection to ensure the following :
  - .1 At least 24 hours before pouring, heat formwork to the same temperature as the concrete.
  - .2 After pouring, protect the concrete to maintain a temperature of 20° during seven (7) days or until the concrete has reached 70% of the strength required after 28 days.
- .4 No pouring is authorized when the temperature is below minus 17oC.
- .5 Furthermore, the Ministry representative reserves the right to stop concreting in case of inclement weather (wind, rain, snow).

### 3.9 Repair Works

- .1 Any defect in concrete shall be repaired in the 24 hours after stripping in the following manner :
- .2 Concrete not exposed to Weather :
  - .1 Remove defective concrete and leave sharp perpendicular edges to the Ministry representative's approval.
  - .2 Damp concrete and apply with brush a 1:1 cement/sand grouting.
  - .3 Cover with 1:2 cement/sand mortar containing 10% hydrated lime.
- .3 Concrete exposed to weather :
  - .1 Remove defective concrete and leave sharp perpendicular edges to the Ministry representative's approval.
  - .2 Cover surface with epoxy adhesive to the manufacturer's recommendations.
  - .3 Cover with 1:2 cement/sand mortar.

Note : When repairs are made on exposed concrete, repaired concrete shall be of same shade as the rest.

### 3.10 Curing

- .1 After concrete is sufficiently hardened, keep concrete wet during seven (7) days after pouring.
- .2 Products used for concrete cure and protection shall conform to ASTM C309. When temperature is below or equal to 5oC follow items 21.1.7.2 and 21.2.3 of the A23.1 Standard.

### 3.11 Field Quality Control

- .1 Inspection and testing of concrete and its constituents shall be performed by the laboratory designated by the Owner as per A23.1 Standard.
- .2 The Ministry representative shall take extra cylinders when concreting in cold weather. These cylinders shall be cured on site in the same conditions as the elements they represent.

- .3 Inspection and testing made by the Consultant do not increase nor diminish the quality control to be done by the Contractor and shall not relieve the Contractor of his responsibility in this matter.

**END OF SECTION**

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**Centre Communautaire Correctionnel  
Laferrière  
Repairs and Rehabilitation of the  
building envelope**

**Structural Steel for Buildings**

**Section 05 12 23**

**Project no. CSC : 21301-16-2449**

**Issued for tender**

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## **PART 1 - GENERAL**

### **1.1. General Conditions and Requirements**

- .1 The General conditions C, the Complementary General Conditions, Section 00800 and the General Requirements, Division 01, apply to all the works and form integral part of this Section.

### **1.2. Reference Standards**

- .1 Unless specified otherwise, do structural steel work in accordance with CAN/CSA-S16.09 and CSA-S136-07.
- .2 Unless specified otherwise, welding work to be done in accordance with CSA W59-M03 (R2008) by certified agencies and competent labor as per CSA W47.1-09. Fabricator to be division 1 or 2.1 certified.
- .3 Other reference standards :  
CAN/CSA-G40.20/G40.21-04  
ASTM A307-00  
ASTM A325-02  
CSA W48-06  
CISC/CPMA 1-73a 1975  
CISC/CPMA 2.75 1975  
CSA G164-M92 (R2003)  
ASTM-A570/A570M-98  
ASTM-A514/A514M-05

### **1.3. Source Quality Control**

- .1 Before proceeding with the work and at Engineer's request, submit two certified copies of mill reports covering chemical and physical properties of steel used in this work.

### **1.4. Design of Connections and Related Work**

- .1 Design connection and related work details in accordance with the requirements of S.16.09 Standard, to resist loads, moments and shears.
- .2 For all connections, submit shop drawings bearing the signature and stamp of a qualified professional engineer registered in the Province of Québec.
- .3 For standard connections, select the relevant details in the Handbook of Steel Construction of the CISC to ensure the strength of the work. For beam connections, details shall be equal to those indicated in the 2007 issue of the ICCA Handbook, tables 3-37 to 3-38.
- .4 Unless otherwise specified, all field connections to be bolted (minimum of 2 bolts per connection). Welding to be done only at the shop.
- .5 All exposed connections to be of architectural type and approved by Architect and Ministry representative.

### **1.5. Shop Drawings**

- .1 Submit one (1) copy of shop drawings for approval. They shall be signed and stamped by an engineer member of the O.I.Q., as per requirements of Section 01330.
- .2 Indicate shop and erection including cuts, grooves, connections, holes, threaded fasteners and welds.

Indicate welds using W59 Standard welding symbols.

- .3 Submit description of methods, sequence of erection and type of equipment proposed for use in erecting structural steel. This submission or its approval shall not relieve the Contractor of his responsibility for providing proper methods, equipment, workmanship and safety precautions.
- .4 The Contractor is fully responsible for the preparation of all the shop drawings. Contractor shall not start with fabrication and erection of the structural steel before he has received the shop drawings fully examined by the Ministry representative.

## PART 2- PRODUCTS

### 2.1 Materials

- .1 Steel for wide flange sections to conform G40.20/G40.21 350W, latest issue.
- .2 HSS tubular sections to conform G40.20/G40.21 350W - class C, latest issue.
- .3 Bolts, nuts, washers to latest issue of ASTM A307 for secondary connections and ASTM A325 for main connections.
- .4 Channels, angles, plates and accessories to G40.20/G40.21 300W, latest issue.
- .5 Unless indicated otherwise on drawings, anchor bolts to be threaded and bent from round smooth bars conform to G40.20/G40.21 300W, latest issue.
- .6 All welding materials to conform W48 Standard. Welds to conform W59 and welders to be accredited by the Canadian Welding Bureau.
- .7 All structural steel to be fully cleaned and to receive a shop prime coating. Touch up to be done on site. Shop prime to conform CISC/CPMA 1-73a, latest issue, and shall be gray in colour. Where a finish coating is specified, prime coating to conform CISC/CPMA 2.75. See architectural documents for finishes. Ensure that prime coating is compatible with finishing coating. For fire-proofing paint, see Architectural Specifications, Section 07812.
- .8 Hot dip galvanizing : conform to CSA G164, minimum zinc coating of 600 g/m<sup>2</sup>.

## PART 3- EXECUTION

### 1.1 Fabrication

- .1 Fabricate structural steel as indicated in accordance with S16 and S136 standards and shop drawings.

### 1.2 Connection to Existing Work

- .1 Verify dimensions of existing work before commencing fabrication of new sections. Inform the Engineer of any discrepancy and wait for his instructions.

### 1.3 Shop Painting

- .1 Clean, prepare and shop prime structural steel in accordance with S16. All exposed steel is of architectural type (See architecture).

- .2 Prepare surfaces to be painted according to CISC/CPMA 1-73A or CISC/CPMA 2.75 Standards according to conditions.
- .3 Apply on structural steel, at the plant, one coat of fast drying paint for structural steel conform to CISC/CPMA 1-73A or CISC/CPMA 2.75 Standards according to conditions. Follow Standard requirements for application methods, environmental and temperature conditions during the painting work.

#### 1.4 Marking

- .1 Mark material in accordance with G40.20/G40.21. Do not use die stamping. If steel is to be left in unpainted condition, place marking at locations not visible from exterior after erection.
- .2 Match marking : shop mark bearing assemblies and splices for fit and match.

#### 1.5 Erection

- .1 Erect structural steel as indicated in accordance with S16.1 and S136 and in accordance with shop drawings.
- .2 Obtain written permission of Engineer and Ministry representative prior to field cutting or modifying structural members which are not shown on the shop drawings.
- .3 After erection, clean with a metallic brush and touch-up bolts, rivets, welds and surfaces where shop primer has been burnt or scratched.
- .4 Use only new material for steel members.
- .5 All connection pieces shall be centered on columns and beams unless otherwise indicated on the structural drawings.
- .6 Execution of connections and direction of base plates to be fabricated and installed in accordance with the architectural finishes of the building.
- .7 Members which are not well fitted or which are not inside the specified tolerances must be reported to the Engineer.
- .8 No member may be adjusted by heating in the field, unless otherwise indicated on the structural drawings.

#### 1.6 Field Quality Control

- .1 A test laboratory, chosen by Ministry representative shall make all tests and supervision of materials and workmanship such as :  
Field welding.
- .2 All the laboratory fees will be paid by the owner.

END OF SECTION

### **3. MECHANICAL SPECIFICATIONS**

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**Centre Communautaire Correctionnel  
Laferrière  
Repairs and Rehabilitation of the  
building envelope  
Project no. CSC : 550-2-390-3202**

**Contents - Mechanical**

**Section 00 01 10**

**Issued for tender**

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<b>Section no.</b>	<b>Section</b>
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23 05 93	Testing, Adjusting and balancing for HVAC
23 09 33	Electric and electronic control system for HVAC
23 74 00	Packaged and electronic control system for HVAC
23 83 14	Radiant heating electric Cables – Snow melting

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**Centre Communautaire  
Correctionnel Laferrière  
Repairs and Rehabilitation of the  
building envelope**

**Vibration and seismic controls  
for HVAC**

**Section 23 05 48**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

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## 1 GENERAL

### 1.01 SUMMARY

- .1 Section Includes:
  - .1 Vibration isolation materials and components, seismic control measures and their installation.
- .2 Related Requirements

### 1.02 REFERENCE STANDARDS

- .1 National Research Council Canada (NRC)
  - .1 National Building Code of Canada [2015] (NBC).

### 1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedure.
- .2 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Shop drawings: Submit drawings stamped and signed by professional engineer registered or licensed in Province of Quebec, Canada.
  - .2 Provide detailed drawings of seismic control measures for equipment and piping.
- .3 Quality assurance submittals: submit following in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .2 Instructions: submit manufacturer's installation instructions.
  - .3 Contractor will make available [1] copy of systems supplier's installation instructions .

### 1.04 QUALITY ASSURANCE

- .1 Health and Safety:
  - .1 Do construction occupational health and safety in accordance with Section 01 35 30 - Health and Safety Requirements.

### 1.05 DELIVERY, STORAGE, AND HANDLING

- .1 Packing, shipping, handling and unloading:
  - .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Waste Management and Disposal:

## 2 PRODUCTS

### 2.01 GENERAL

- .1 Size and shape of bases type and performance of vibration isolation as indicated.

### 2.2 ROOF CURB ISOLATION RAILS

- .1 General: complete factory assembled without need for sub-base and not fixed to the roof.

- .2 Lower member: continuous extruded aluminum channel.
- .3 Upper member: continuous extruded aluminum channel to provide continuous support for equipment, complete with all-directional neoprene snubber bushings 6 mm thick to resist wind and seismic forces.
- .4 Weatherproofing: continuous flexible counterflashing to curb and providing access to springs. Material: neoprene.
- .5 Hardware: cadmium plated or galvanized.

### 2.3 SEISMIC CONTROL MEASURES

- .1 General:
  - .1 The systems and/or equipment to remain operational during and after earthquakes:
  - .2 Seismic control systems to work in every direction.
  - .3 Fasteners and attachment points to resist same maximum load as seismic restraint.
  - .4 Drilled or power driven anchors and fasteners not permitted.
  - .5 No equipment, equipment supports or mounts to fail before failure of structure.
  - .6 Supports of cast iron or threaded pipe not permitted.
  - .7 Seismic control measures not to interfere with integrity of fire-stopping.
- .2 Static equipment:
  - .1 Anchor equipment to equipment supports.
  - .2 Seismic restraints:
    - .1 Cushioning action gentle and steady.
    - .2 Never reach metal-like stiffness.
- .3 Vibration isolated equipment:
  - .1 Seismic control measures not to jeopardize noise and vibration isolation systems. Provide 6 to 9 mm clearance during normal operation of equipment and systems between seismic restraint

## 3 EXECUTION

### 3.01 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

### 3.02 INSTALLATION

- .1 Seismic control measures to meet requirements of NBC.
- .2 Install vibration isolation equipment in accordance with manufacturer's instructions and adjust mountings to level equipment.
- .3 Ensure piping, ducting and electrical connections to isolated equipment do not reduce system flexibility and that piping, conduit and ducting passage through walls and floors do not transmit vibrations.
- .4 Unless indicated otherwise, support piping connected to isolated equipment with spring mounts or spring hangers with 25 mm minimum static deflection as follows:
  - .1 Up to NPS4: first 3 points of support. NPS5 to NPS8: first 4 points of support. NPS10 and Over: first 6 points of support.
  - .2 First point of support: static deflection of twice deflection of isolated equipment, but not more than 50 mm.

- 
- .5 Block and shim level bases so that ductwork and piping connections can be made to rigid system at operating level, before isolator adjustment is made. Ensure that there is no physical contact between isolated equipment and building structure.

### 3.03 CLEANING

- .1 Proceed cleaning.  
.2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

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**Centre Communautaire Correctionnel  
Laferrière  
Repairs and Rehabilitation of the  
building envelope**

**Testing, Adjusting and balancing  
for HVAC**

**Section 23 05 93**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

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## 1 GENERAL

### 1.01 SUMMARY

- .1 TAB is used throughout this Section to describe the process, methods and requirements of testing, adjusting and balancing for HVAC.
- .2 TAB means to test, adjust and balance to perform in accordance with requirements of Contract Documents and to do other work as specified in this section.

### 1.02 QUALIFICATIONS OF TAB PERSONNEL

- .1 Submit names of personnel to perform TAB to Consultant] within 14 days of award of contract.
- .2 Provide documentation confirming qualifications, successful experience.
- .3 TAB: performed in accordance with the requirements of standard under which TAB Firm's qualifications are approved:
  - .1 Associated Air Balance Council, (AABC) National Standards for Total System Balance, last edition.
  - .2 National Environmental Balancing Bureau (NEBB) TABES, Procedural Standards for Testing, Adjusting, Balancing of Environmental Systems- last edition.
  - .3 Sheet Metal and Air Conditioning Contractors' National Association (SMACNA), HVAC TAB HVAC Systems - Testing, Adjusting and Balancing- last edition.
- .4 Recommendations and suggested practices contained in the TAB Standard: mandatory.
- .5 Use TAB Standard provisions, including checklists, and report forms to satisfy Contract requirements.
- .6 Use TAB Standard for TAB, including qualifications for TAB Firm and Specialist and calibration of TAB instruments.
- .7 Where instrument manufacturer calibration recommendations are more stringent than those listed in TAB Standard, use manufacturer's recommendations.
- .8 TAB Standard quality assurance provisions such as performance guarantees form part of this contract.
- .9 Where new procedures, and requirements, are applicable to Contract requirements have been published or adopted by body responsible for TAB Standard used (AABC, NEBB, or TABB), requirements and recommendations contained in these procedures and requirements are mandatory.

### 1.03 PURPOSE OF TAB

- .1 Test to verify proper and safe operation, determine actual point of performance, evaluate qualitative and quantitative performance of equipment, systems and controls at design, average and low loads using actual or simulated loads
- .2 Adjust and regulate equipment and systems to meet specified performance requirements and to achieve specified interaction with other related systems under normal and emergency loads and operating conditions.
- .3 Balance systems and equipment to regulate flow rates to match load requirements over full operating ranges.

#### 1.04 EXCEPTIONS

- .1 TAB of systems and equipment regulated by codes, standards to satisfaction of authority having jurisdiction.

#### 1.05 CO-ORDINATION

- .1 Schedule time required for TAB (including repairs, re-testing) into project construction and completion schedule to ensure completion before acceptance of project.

#### 1.06 PRE-TAB REVIEW

- .1 Review Contract Documents before project construction is started and confirm in writing to Consultant adequacy of provisions for TAB and other aspects of design and installation pertinent to success of TAB.
- .2 Review specified standards and report to Consultant in writing proposed procedures which vary from standard.
- .3 During construction, co-ordinate location and installation of TAB devices, equipment, accessories, measurement ports and fittings.

#### 1.07 START-UP

- .1 Follow start-up procedures as recommended by equipment manufacturer unless specified otherwise.
- .2 Follow special start-up procedures specified elsewhere in Division 23.

#### 1.08 OPERATION OF SYSTEMS DURING TAB

- .1 Operate systems for length of time required for TAB and as required by Consultant for verification of TAB reports.

#### 1.09 START OF TAB

- .1 Notify Consultant 7 days prior to start of TAB.
- .2 Start TAB when work on building is essentially completed, including:
- .3 Installation of roofing, exterior, windows, other construction affecting TAB.
- .4 Application of weather-stripping, sealing, and caulking.
- .5 Pressure, leakage, other tests specified elsewhere Division 23.
- .6 Provisions for TAB installed and operational.
- .7 Start-up, verification for proper, normal and safe operation of mechanical and associated electrical and control systems affecting TAB including but not limited to:
  - .1 Proper thermal overload protection in place for electrical equipment.
  - .2 Air systems:
    - .1 Filters in place, clean.
    - .2 Duct systems clean.
    - .3 Ducts, air shafts, ceiling plenums are airtight to within specified tolerances.
    - .4 Correct fan rotation.

- .5 Fire, smoke, volume control dampers installed and open.
- .6 Coil fins combed, clean.
- .7 Access doors, installed, closed.
- .8 Outlets installed, volume control dampers open.
- .3 Liquid systems:
  - .1 Flushed, filled, vented.
  - .2 Correct pump rotation.
  - .3 Strainers in place, baskets clean.
  - .4 Isolating and balancing valves installed, open.
  - .5 Calibrated balancing valves installed, at factory settings.
  - .6 Chemical treatment systems complete, operational.

#### 1.10 APPLICATION TOLERANCES

- .1 Do TAB to following tolerances of design values:
  - .1 HVAC systems: plus 10 %, minus 10 %.

#### 1.11 ACCURACY TOLERANCES

- .1 Measured values accurate to within plus or minus 2 % of actual values.

#### 1.12 INSTRUMENTS

- .1 Prior to TAB, submit to Consultant list of instruments used together with serial numbers.

#### 1.13 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit, prior to commencement of TAB:
  - .2 Proposed methodology and procedures for performing TAB if different from referenced standard.
  - .3 Operation and maintenance manuals.

#### 1.14 PRELIMINARY TAB REPORT

- .1 Submit for checking and approval of Consultant, prior to submission of formal TAB report, sample of rough TAB sheets. Include:
  - .1 Details of instruments used.
  - .2 Details of TAB procedures employed.
  - .3 Calculations procedures.

#### 1.15 TAB REPORT

- .1 Format in accordance with referenced standard.
- .2 TAB report to show results in SI units and to include:
  - .1 Project record drawings.
  - .2 System schematics.
- .3 Submit [6] copies of TAB Report to Consultant for verification and approval, in both official languages in D-ring binders, complete with index tabs.

**1.16 VERIFICATION**

- .1 Reported results subject to verification by Consultant.
- .2 Provide personnel and instrumentation to verify up to 30 % of reported results.
- .3 Number and location of verified results as directed by Consultant.
- .4 Pay costs to repeat TAB as required to satisfaction of Consultant.

**1.17 SETTINGS**

- .1 After TAB is completed to satisfaction of Consultant, replace drive guards, close access doors, lock devices in set positions, ensure sensors are at required settings.
- .2 Permanently mark settings to allow restoration at any time during life of facility. Do not eradicate or cover markings.

**1.18 COMPLETION OF TAB**

- .1 TAB considered complete when final TAB Report received and approved by Consultant.

**1.19 POST-OCCUPANCY TAB**

- .1 Measure DBT and WBT (or %RH) in occupied zones.
- .2 Participate in systems checks twice during Warranty Period - #1 approximately [3] months after acceptance and #2 within [1] month of termination of Warranty Period.

**END OF SECTION**

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**Centre Communautaire  
Correctionnel Laferrière  
Repairs and Rehabilitation of the  
building envelope**

**Electric and electronic  
control system for HVAC**

**Section 23 09 33**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

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## 1 GENERAL

### 1.01 SUMMARY

- .1 Section Content:
  - .1 Electric and electronic control systems and related equipment for HVAC construction and installation.

### 1.02 REFERENCE STANDARDS

- .1 Canada Health/ SIMDUT files:
  - .1 Product Files and information

### 1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for electric and electronic control system for HVAC and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .4 Sustainable Design Submittals:
  - .1 Construction Waste Management:
    - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.
  - .2 Health and Safety:
    - .1 Insure that Health and safety measures are conforming to Section 01 35 30 – Health and Safety.

### 1.04 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Packaging Waste Management: remove for recycle pallets, crates, padding and packaging materials.

## 3 EXECUTION

### 3.01 INSTRUCTIONS

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for electric and electronic control systems installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Consultant.
- .2 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

**3.02 INSTALLATION**

- .1 Install control devices.
- .2 On outside wall, mount thermostats on bracket or insulated pad [25] mm from exterior wall.
- .3 Install remote sensing device and capillary tube in metallic conduit. Conduit enclosing capillary tube must not touch heater or heating cable.

**3.03 CLEANING**

- .1 Progress cleaning.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

**END OF SECTION**

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**Centre Communautaire Correctionnel  
Laferrière  
Repairs and Rehabilitation of the  
building envelope**

**Packaged outdoor HVAC  
Equipment**

**Section 23 74 00**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

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## 1 GENERAL

### 1.01 CONTENT and RELATED REQUIREMENTS

#### .1 Content:

- .1 Packaged outdoor HVAC equipment, autonomous, multi-zone and installed on roof tops.

#### .2 Related Sections:

- .1 Section 01 33 00 - Submittal Procedures
- .2 Section 01 35 30 – Health and Safety

### 1.02 REFERENCE STANDARDS

#### .1 American Gas Association (AGA)

#### .2 American National Standards Institute/Air-Conditioning, Heating and Refrigeration Institute (ANSI/AHRI)

- .1 ANSI/AHRI 210/240-[08], Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment.
- .2 ANSI/AHRI 270-[08], Sound Rating of Outdoor Unitary Equipment.

#### .3 CSA Group (CSA)

- .1 CSA B52-[05], Mechanical Refrigeration Code.
- .2 CSA C22.1-[12], Canadian Electrical Code, Part 1 (22nd Edition), Safety Standard for Electrical Installations.

#### .4 National Fire Protection Association (NFPA)

- .1 NFPA 90A-[12], Standard for the Installation of Air Conditioning and Ventilating Systems.

#### .5 Underwriters Laboratories (UL)

- .1 UL 1995-[11], Standard for Heating and Cooling Equipment.

### 1.03 ACTION AND INFORMATIONAL SUBMITTALS

#### .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

#### .2 Product Data:

- .1 Submit manufacturer's instructions, printed product literature and data sheets for outdoor HVAC equipment and include product characteristics, performance criteria, physical size, finish and limitations.

#### .3 Shop Drawings:

- .1 Submit drawings stamped and signed by professional engineer registered or licensed in [Province] [Territory], Canada.
- .2 Drawings to indicate project layout and dimensions; indicate:
  - .1 Equipment, piping, and connections, together with valves, strainers, control assemblies, thermostatic controls, auxiliaries and hardware, and recommended ancillaries which are mounted, wired and piped ready for final connection to building system, its size and recommended bypass connections.
  - .2 Piping, valves, fitting shipped loose showing final location in assembly.
  - .3 Control equipment shipped loose, showing final location in assembly.
  - .4 [Complete internal panel pneumatic tube piping and wiring and external panel pneumatic tube piping and wiring, both as schematics and as actually assembled].

- .5 Dimensions, internal and external construction details, recommended method of installation with proposed structural steel support, mounting curb details, sizes and location of mounting bolt holes; include mass distribution drawings showing point loads.
  - .6 Detailed composite wiring diagrams for control systems showing factory installed wiring and equipment on packaged equipment or required for controlling devices of ancillaries, accessories, and controllers.
  - .7 Pump and fan performance curves.
  - .8 Details of vibration isolation.
  - .9 Estimate of sound levels to be expected across individual octave bands in dB referred to A rating.
  - .10 Type of refrigerant used.
- .4 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .5 Test Reports: submit certified test reports from approved independent testing laboratories indicating compliance with specifications for specified performance characteristics and physical properties.
  - .6 Manufacturer's Field Reports:
    - .1 Submit manufacturer's field reports specified.

#### 1.04 CLOSEOUT SUBMITTALS

- .1 Operation and Maintenance Data: submit operation and maintenance data for [outdoor HVAC equipment] for incorporation into manual.
  - .1 Indicate: brief description of unit, indexed, with details of function, operation, control, and service for components.
  - .2 Provide for units, manufacturer's name, type, year, number of units, and capacity.

#### 1.05 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle material and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Packaging Waste Management: remove for recycle pallets, crates, padding and packaging materials.

#### 1.06 WARRANTY

- .1 Contractor hereby warrants that packaged rooftop HAVC units and refrigeration compressors will function and operate in accordance with CCDC 2 GC 24, but for 60 months.

### 2 PRODUCTS

#### 2.01 GENERAL

- .1 Roof mounted, self-contained multi-zone unit with electric heating elements and DX refrigeration and bear label of CSA, [CGA], UL and ULC.
- .2 Units to consist of cabinet and frame, supply fan, heat exchanger, heater control, air filter, refrigerant cooling coil, compressor, condenser coil and fans, motorized outside air damper, return damper, gravity exhaust damper.

- .3 Prefabricated roof curb to conform to requirements of National Roofing Contractors Association (NRCA), minimum height 250 mm.
- .4 Conform to ANSI/AHRI 210/240, rating for unit larger than 40 kW nominal.

## 2.02 CABINET

- .1 Cabinets: weatherproofing tested and certified to AGA rain test standards and soundproofing tested to AHRI 270, dbA at 5 m free field.
- .2 Framing and supports: 2 mm thick welded steel, galvanized after manufacture, with lifting lugs [at top of unit].
- .3 Outer casing: weathertight 1.0 mm thick galvanized steel with baked enamel finish, complete with flashing.
- .4 Access: removable gasketed panels with quick screwdriver operated flush cam type fasteners.
- .5 Insulation: neoprene coated glass fibre on surfaces where conditioned air is handled, 50] mm thick, 32 kg/m<sup>3</sup> density.

## 2.03 FANS

- .1 Centrifugal, forward curved impellers, statically and dynamically balanced. V-belt drive with adjustable variable pitch motor pulley, fan and motor integrally mounted on isolation base, separated from unit casing with flexible connections and spring isolators. Vibration isolators: 95% efficiency.

## 2.04 AIR FILTERS

- .1 50 mm thick, metal framed, standard to unit manufacturer].
- .2 To meet NFPA 90A, air filter requirements.

## 2.05 REFRIGERATION

- .1 Conform to CSA B52 and UL 1995 requirements.
- .2 Compressor/Condenser Section:
  - .1 Hermetic compressor, vibration isolated with flexible suction and discharge connections, oil sight glass, oil pressure switch, crankcase heater, and [automatic pump down system] with control to liquid line solenoid valve.
  - .2 Fan: propeller type with single piece spun venturi outlets and zinc plated guards. Motor[s]: sequenced for head pressure control.
  - .3 Electrical system: complete with operating controls, oil and refrigerant pressure protection, motor overload protection, weatherproof electrical wiring with [weatherproof, rain tight] disconnect.
  - .4 Include refrigerant piping with automatic hot gas bypass, sight glass, filter and valves.
  - .5 Condenser: staggered copper tube aluminum fin coil assembly with sub-cooling rows to provide 5 degrees C sub-cooling.
  - .6 Capacity reduction: hot gas bypass and/or cylinder unloading. Hot gas side port distribution.

- .3 Evaporator:
  - .1 Rated to ANSI/AHRI 210/240.
  - .2 Thermostatic expansion valve, with adjustable super heat and external equalizer.
  - .3 Cooling coil condensate drain pans: designed to avoid standing water, easily cleaned or removable for cleaning. Drain connection: deep seal trap complete with trap seal primer.

## 2.06 CONTROLS

- .1 In addition to combustion safety controls, provide [smoke sensors in return to NFPA standards,] low limit on supply and freeze protection on steam and water coils.
- .2 Multi-Zone Heat-Cool Unit:
  - .1 Remote solid state electronic control panel containing "on-off" "summer-winter" selector switches and "heat" "cool" "fan" indicating lights.
  - .2 Hot deck temperature: maintained by modulating, outdoor reset controller such that deck temperature increases 1 degrees C for each 1 degrees C increment of outside temperature below 21 degrees C set point (adjustable).
  - .3 Cold deck temperature: at "summer" position, maintained by deck thermostat operating liquid line solenoid valve as required, with compressor lockout at 14 degrees C, restart 17 degrees C.
  - .4 Freeze protection control: wired in cold deck control circuit to guard against coil frosting and low air flow, with shut off by differential pressure switch or low temperature.
  - .5 Cooling capacity control: provided by hot gas bypass valve modulating to maintain constant suction temperature.
  - .6 Modulating zone thermostats controlling modulating zone damper operators shall maintain zone temperatures.

## 2.07 REMOTE PANEL

- .1 Provide remote readout panel [for each unit] containing:
  - .1 Signal lights indicating system status, cooling system failure and dirty filters.
  - .2 Check switches proving signal light operation.
  - .3 System on-off switch.
  - .4 Fan on-off switch.
  - .5 Manual 6 hours timer (adjustable) to override night-set back control, remote damper control on outside air damper.
- .2 Provide gauges in remote panel indicating outside air, mixed air, return air and discharge air temperatures for each deck before heat exchangers.

## 2.08 CAPACITY

- .1 As indicated: Same as unit it will replace.

## 3 EXECUTION

### 3.01 RECEPTION AND MANUFACTURER INSTRUCTIONS

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for outdoor HVAC equipment installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Consultant.
  - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

**3.02 INSTALLATION**

- .1 Install as per manufacturers' instructions on roof curbs provided by manufacturer as indicated.
- .2 Manufacturer to certify installation, supervise start-up and commission unit.
- .3 Run drain line from cooling coil condensate drain pan to discharge over roof drain.

**3.03 DEMONSTRATION**

- .1 Training: in accordance as specified.

**3.04 CLEANING**

- .1 Final cleaning: upon completion remove surplus materials, rubbish, tools and equipment.
- .2 Perform cleaning operations in accordance with manufacturer's recommendations.

**END OF SECTION**

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**Centre Communautaire Correctionnel  
Laferrière  
Repairs and Rehabilitation of the  
building envelope**

**Radiant heating electric  
Cables - Snow melting**

**Section 23 83 14**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

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## 1 GENERAL

### 1.01 CONTENT AND RELATED REQUIREMENTS

.1 Content: Heat tracing cables for snow melting and accessories.

.2 Related Sections:

.1 Section 01 33 00 - Submittal Procedures

.2 Section 01 35 30 – Health and Safety

### 1.02 REFERENCE STANDARDS

.1 CSA Group (CSA)

CAN/CSA-C22.2 No.130-[03(R2013)], Requirements for Electrical Resistance Heating Cables and Heating Device Sets.

.2 Canada Health/ SIMDUT files:

.1 Product Files and information

### 1.03 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.1 Submit manufacturer's instructions, printed product literature and data sheets for [radiant heating electrical cables] and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit in accordance with Section 01 33 00 - Submittal Procedures:

.1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.2 Operation and Maintenance Data: submit operation and maintenance data for radiant heating electrical cables for incorporation into manual.

.3 Closeout Submittal:

.1 Record on drawings, layout of snow melting cables in free air. Indicate depth of cable where applicable.

### 1.04 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials and with manufacturer's written instructions.

.2 Packaging Waste Management: remove for recycle pallets, crates, padding, packaging materials.

### 1.05 WARRANTY

.1 Contractor hereby warrants that packaged rooftop HVAC units and refrigeration compressors will function and operate in accordance with CCDC 2 GC 24, but for 60 months.

## 2 PRODUCTS

### 2.01 GENERAL

- .1 Heating cables: to CAN/CSA-C22.2 No.130.

### 2.02 SNOW MELTING CABLES

- .1 Copper alloy conductor with X-linked/PVC nylon insulation, copper ground braid, PVC protective jacket factory spliced and sealed cold leads, and as indicated.
- .2 Self-limiting type cable.

### 2.03 HEATING CABLES WITH ATTACHMENT PLUG CAP

- .1 Heating cable sets with U-ground attachment plug cap for indoor and outdoor use with X-link /PVC nylon insulation, copper ground braid, PVC protective jacket. Cable length and voltage as indicated.

### 2.04 ACCESSORIES

- .1 Roof clips to hold cables in place when installed on roof.

### 2.05 CONTROLS

- .1 Thermostat: type low voltage electronic, Energy Star certified, remote bulb type.

### 2.06 SNOW SENSING CONTROLS

- .1 Snow sensing controls consisting of control unit and sensor module.
- .2 System features as follows:
  - .1 Lowering of outside air temperature to selected dial setting to close contacts of variable thermal control in control unit and activate solid state module.
  - .2 Thermal control in sensor module, responsive to outer surface temperature, to control heater to maintain temperature above freezing point.
  - .3 Snow falling on heated sensor module to melt, allowing sufficient current to close magnetic relay and complete circuit to control unit output lines, energizing cable installation.
  - .4 Control unit complete with manual-off-auto control switch, pilot light, and manual temperature setting switching device.
  - .5 Control module rating: 120 V A.C., 5 A.

## 3 EXECUTION

### 3.01 RECEPTION AND MANUFACTURER INSTRUCTIONS

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for outdoor HVAC equipment installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Consultant.
  - .2 Inform Consultant of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

### 3.02 INSTALLATION

- .1 Install cables in accordance with manufacturer's instructions.
- .2 Do not cross expansion joints with cable. Where structural design changes location of expansion joints, affecting snow melting cables, report to Consultant.
- .3 Do not alter heating cable length.
- .4 Ensure cables do not bunch or cross.
- .5 Make power and control connections.

### 3.03 FIELD QUALITY CONTROL

- .1 Use 500 V Megger to test cables for continuity and insulation value and record readings as follows:
  - .1 On cable reel.
  - .2 After installation.
- .2 Where resistance of 50 megohms or less is measured, stop work and advise Consultant.

### 3.04 CLEANING

- .1 Progress cleaning.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

**END OF SECTION**

## **4. CIVIL SPECIFICATIONS**

**Centre Communautaire Correctionnel  
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Repairs and Rehabilitation of the  
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**Centre Communautaire Correctionnel  
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Repairs and Rehabilitation of the  
building envelope**

**Earthwork for minor works**

**Section 31 00 99**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

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## 1 GENERAL

### 1.01 REFERENCE STANDARDS

- .1 ASTM International
  - .1 ASTM D 698-[07e1], Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup>) (600kN-m/m<sup>3</sup>).
- .2 CSA International
  - .1 CSA A23.1/A23.2-[09], Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.
- .3 Ministère des Transports du Québec
  - .1 Cahier des charges et devis généraux (CCDG) : infrastructures routières, Édition 2017.
- .4 Bureau de normalisation du Québec (BNQ)

### 1.02 REGULATIONS

- .1 Shore and brace excavations, protect slopes and banks and perform work in accordance with Provincial and Municipal regulations.
- .2 Do blasting in accordance with Provincial and Municipal regulations. Repair damage to approval of [Departmental Representative] [DCC Representative] [Consultant]. No blasting will be permitted within 3 m of any building and where damage would result.

### 1.03 EVALUATION AND ASSESMENTS

- .1 Testing of materials and compaction of backfill will be carried out by testing laboratory designated by Departmental Representative.
- .2 Not later than 2 weeks before backfilling or filling, provide to designated testing agency, 20 kg sample of backfill material[s proposed for use.
- .3 Not later than [48] hours before backfilling or filling with approved material, notify Consultant so that compaction tests can be carried out by designated testing agency.
- .4 Before commencing work, conduct, with [Departmental Representative] [DCC Representative][Consultant], condition survey of existing structures, trees and plants, lawns, fencing, service poles, wires, rail tracks and paving, survey bench marks and monuments which may be affected by work.
- .5 Start backfilling only after inspection and receipt of written approval of fill material and spaces to be filled from Consultant and by designated testing agency.

### 1.04 UNDERGROUND PUBLIC UTILITY SERVICES

- .1 Before commencing work verify and establish locations of buried public utility services on and adjacent to site.

### 1.05 PROTECTION OF EXCAVATION

- .1 Protect excavations from freezing.

- .2 Keep excavations clean, free of standing water, and loose soil.
- .3 Where soil is subject to significant volume change due to change in moisture content, cover and protect to [Departmental Representative's] [DCC Representative's] [Consultant's] approval.
- .4 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.
- .5 Protect buried services that are to remain undisturbed.

## 2 PRODUCTS

### 2.01 MATERIALS

- .1 Crushed Granular MG-20, MG-56, MG-112, Stone dust and Sand must conform to CCDG (2017).
- .2 Unshrinkable fill: concrete to CSA A23.1/A23.2.

## 3 EXECUTION

### 3.01 PREPARATION

- .1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.
- .2 Cut pavement or sidewalk neatly along limits of proposed excavation in order that surface may break evenly and cleanly.

### 3.02 CLEARING

- .1 Remove trees, stumps, logs, brush, shrubs, bushes, vines, undergrowth, rotten wood, dead plant material, exposed boulders and debris within areas designated on drawings.
- .2 Remove stumps and tree roots below footings, slabs, and paving, and to [600] mm below finished grade elsewhere.

### 3.03 EXCAVATION

- .1 Excavate as required to carry out work, in all materials met. Do not disturb soil or rock below bearing surfaces. Notify Consultant when excavations are complete. If bearings are unsatisfactory, additional excavation will be authorized in writing and paid for as additional work. Fill excavation taken below depths shown without Consultant's written authorization with MG-20.
- .2 Excavate for slabs and paving to subgrade levels. Remove topsoil, organic matter, debris and other loose and harmful matter encountered at subgrade level.

### 3.04 BACKFILLING

- .1 Start backfilling only after inspection and receipt of written approval of fill material and spaces to be filled from Consultant and by designated testing agency.
- .2 Remove snow, ice, construction debris, organic soil and standing water from spaces to be filled.
- .3 Lateral support: maintain even levels of backfill around structures as work progresses, to equalize earth pressures.
- .4 Compaction of subgrade: compact existing subgrade under walks, paving, and slabs on grade, to same compaction as specified for fill. Fill excavated areas with gravel and sand (MG-112) compacted as specified for fill.
- .5 Placing:
  - .1 Place backfill, fill and basecourse material in 150 mm lifts. Add water as required to achieve specified density.
  - .2 Place unshrinkable fill in areas as indicated. Consolidate and level unshrinkable fill with internal vibrators.
- .6 Compaction: compact each layer of material to following densities for material to [ASTM D 698]:
  - .1 To underside of basecourse: 95%.
  - .2 Basecourse: 100%.
  - .3 Elsewhere: 90%.
- .7 Under slabs and paving:
  - .1 Use MG-112 up to bottom of granular base courses.
  - .2 Use 150 mm of MG-20 for base courses.  
[Consultant]].
- .8 Blown rock material, not capable of fine grading, is not acceptable, imported material must be placed on this type of material.
- .9 Against foundations (except as applicable to trenches and under slabs and paving): excavated material or imported material with no stones larger than 200 mm diameter within 600 mm of structures.

### 3.06 GRADING

- .1 Grade to ensure that water will drain away from buildings, walls and paved areas, to catch basins and other disposal areas approved by [Departmental Representative] [DCC Representative] [Consultant]. Grade to be gradual between finished spot elevations as indicated.

### 3.07 REQUIRED OR SURPLUS MATERIALS

- .1 Supply all the required materials to execute the backfill and grading up to the required level and in consideration of the accepted tolerances.
- .2 Transport and dispose offsite the surplus materials.

END OF SECTION

**Centre Communautaire Correctionnel  
Laferrière**

**Roadway Embankments**

**Section 31 24 13**

**Repairs and Rehabilitation of the  
building envelope**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

**1 GENERAL**

**1.1 RELATED REQUIREMENTS**

.1 Section 32 11 16 - 01.

**1.02 MEASUREMENT PROCEDURES**

- .1 Common Excavation: measure in cubic meters calculated from cross sections established in areas of excavation.
- .1 Contractor will take initial cross sections after clearing, grubbing and stripping completed and immediately prior to excavation of material to be incorporated into work and will submit them to Consultant for approval.
- .2 Borrow: measure in cubic meters calculated from cross sections established in areas of excavation.
- .1 Contractor will take initial cross sections after clearing, grubbing and stripping completed and immediately prior to excavation of material to be incorporated into work and will submit them to Consultant for approval.
- .3 Rock Excavation:
- .1 Calculate volume excavated from solid rock masses in cubic meters from cross sections of original rock surface and design grade line for excavation.
  - .2 Measure rock excavated beyond design grade as Common Excavation when placed in embankment within established lines and grades.
  - .3 Measure excavated boulders and rock fragments measured individually. Determine volume of excavated boulders and rock fragments by measuring three maximum mutually perpendicular dimensions.
- .4 Unclassified excavation:
- .1 Common Excavation: measure in cubic meters calculated from cross sections established in areas of excavation
  - .2 Contractor will take initial cross sections after clearing, grubbing and stripping completed and immediately prior to excavation of material to be incorporated into work and will submit them to Consultant for approval.
- .5 Measure overhaul in cubic metre-kilometres and computed by "Mass Diagram Method". Overhaul as designated by Consultant.
- .6 No separate payment for:
- .1 Excavating unnecessarily beyond lines established by Consultant, with exception of unavoidable slide material. Do not measure slide material, when such slides are attributable to negligence.
  - .2 Ripping and/or drilling and blasting of material.
  - .3 Scarifying or benching existing slopes or existing road surfaces.
  - .4 Removing and disposing of roots, stumps and other materials excavated during waste operation.
  - .5 Burying existing culverts from old road.
  - .6 Removing unsuitable material from embankment attributable to negligence.
  - .7 Shattering rock to 300 mm below subgrade elevation.
  - .8 Scaling and removing loose rock from rock face.
  - .9 Watering, drying and compacting.
  - .10 Finishing.

### 1.03 REFERENCE STANDARDS

- .1 ASTM International
  - .1 ASTM D 698-[07ea1], Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,000 ft-lbf/ft<sup>3</sup>) (600 kN-m/m<sup>3</sup>).
  - .2 CCDG 2017, Ministry of transport of Quebec (MEMDET)

### 1.04 DEFINITIONS

- .1 Rock Excavation: excavation of:
  - .1 Material from solid masses of igneous, sedimentary or metamorphic rock which, prior to removal, was integral with parent mass. Material that cannot be ripped with reasonable effort with a Caterpillar D9 crawler bulldozer or equivalent to be considered integral with parent mass.
  - .2 Boulder or rock fragments measuring in volume [1] cubic metre or more.
- .2 Common Excavation: excavation of materials that are not Rock Excavation or Stripping.
- .3 Unclassified Excavation: excavation of whatever character other than stripping encountered in the Work.
- .4 Free Haul: distance that excavated material is hauled without compensation. Free haul distance to be [0.5] km or less.
- .5 Stripping: excavation of organic material covering original ground.
- .6 Over Haul: authorized hauling in excess of free haul distance that excavated material is moved.
- .7 Embankment: material derived from usable excavation and placed above original ground or stripped surface up to top of subgrade.
- .8 Waste Material: material unsuitable for embankment, embankment foundation or material surplus to requirements.
- .9 Borrow Material: material obtained from areas outside right-of-way and required for construction of embankments or for other portions of work.
- .10 Topsoil: material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.

### 1.05 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section [01 33 00 - Submittal Procedures].
- .2 Submit for approval and review blasting program including preshear details, powder factors fly-rock control, and vibration monitoring methods.

## 1.06 QUALITY ASSURANCE

- .1 Regulatory Requirements:
  - .1 Adhere to regulations of authority having jurisdiction when blasting is required.
  - .2 Adhere to Provincial and National Environmental requirements when [potentially] toxic materials are involved.

## 2 PRODUCTS

### 2.01 MATERIALS

- .1 Material used for embankment not to contain more than 3% organic matter by mass, frozen lumps, weeds, sod, roots, logs, stumps or other unsuitable material.
- .2 Borrow material:
  - .1 Obtain from sources such as quarry, or borrow pit as approved by Consultant.

## 3 EXECUTION

### 3.01 COMPACTION EQUIPMENT

- .1 Compaction equipment: vibratory rollers or vibrating plate compactors capable of obtaining required density in materials on project.
  - .1 Demonstrate compaction equipment effectiveness on specified material and lift thickness by documented performance of test-strip before start of Work.
  - .2 Replace or supplement equipment that does not achieve specified densities.

### 3.02 WATER DISTRIBUTORS

- .1 Apply water with equipment capable of uniform distribution.

### 3.03 STRIPPING (OF TOPSOIL)

- .1 Place top soil and finish grading.

### 3.04 EXCAVATING

- .1 General:
  - .1 Notify [Departmental Representative] [DCC Representative] [Consultant] when waste materials are encountered and remove to depth and extent directed.
  - .2 Sub-excavate [300] mm below subgrade in cut sections unless otherwise directed by Consultant.
    - .1 Compact top [150] mm below sub-excavate to minimum [95%] maximum dry density, to ASTM D 698 (AASHTO T99).
    - .2 Replace with approved embankment material and compact to specified embankment density.
  - .3 Treat ground slopes, where subgrade is on transition from excavation to embankment, at grade points as directed by Consultant.
  - .4 Treat ground slopes, where subgrade is on transition from excavation to embankment, at grade points in accordance with standard plans for "Cut and Fill Construction Methods at Grade Points".

- .2 Drainage:
  - .1 Maintain profiles, crowns and cross slopes to provide good surface drainage.
- .3 Rock excavation:
  - .1 Notify Consultant, when material appearing to conform to classification for rock is encountered, to enable measurements to be made to determine volume of rock. Provide 24 hour notification.
  - .2 Shatter rock to 700 mm [below] subgrade elevation as indicated.

### 3.05 EMBANKMENTS

- .1 Scarify or bench existing slopes in side hill or sloping sections to ensure proper bond between new materials and existing surfaces.
  - .1 Method used to be to be pre-approved in writing by Consultant.
- .2 Break up or scarify existing road surface prior to placing embankment material.
- .3 Do not place material which is frozen nor place material on frozen surfaces except in areas authorized by Consultant.
- .4 Maintain crowned surface during construction to ensure ready run-off of surface water.
- .5 Drain low areas before placing materials.
  - .1 Place and compact to full width in layers not exceeding [200] mm loose thickness. Consultant may authorize thicker lifts if specified compaction can be achieved and if material contains more than 25% by volume stone and rock fragments larger than 100 mm.
- .6 Where material consists of rock:
  - .1 Place to full width in layers of sufficient depth to contain maximum sized rocks, but in no case is layer thickness to exceed 1 m.
  - .2 Distribute rock material to fill voids with smaller fragments to form compact mass.
  - .3 Fill surface voids at subgrade level with rock spalls or selected material to form earth-tight surface.
  - .4 Do not place boulders and rock fragments with dimensions exceeding 150 mm within 700 mm of pavement subgrade elevation.
- .7 Deductions from excavation will be made for overbuild of embankments.

### 3.06 COMPACTION

- .1 Break material down to sizes suitable for compaction and mix for uniform moisture to full depth of layer.
- .2 Compact each layer to minimum [95%] maximum dry density: [ASTM D 698] [AASHTO T99] except top 150 mm of subgrade.
  - .1 Compact top [150 mm] to [100%] maximum dry density.
- .3 Add water or dry as required to bring moisture content of materials to level required to achieve specified compaction.

### 3.07 FINISHING

- .1 Shape entire roadbed to within 25 mm of design elevations.
- .2 Finish slopes, ditch bottoms and borrow pits true to lines, grades and drawings where applicable. Scale slope by removing loose fragments, for cut slopes in bedrock steeper than [1:1].
- .3 Remove rocks over 150 mm in dimension from slopes and ditch bottoms.
- .4 Hand finish slopes that cannot be finished satisfactorily by machine.
- .5 Round top of backslope 1.5 m both sides of top of slope.
- .6 Run tractor tracks over slopes exceeding 3 m in height to leave tracks parallel to centreline of highway.
- .7 Trim between constructed slopes and edge of clearing to provide drainage and free of humps, sags and ruts.

### 3.08 PROTECTION

- .1 Maintain finished surfaces in condition conforming to this section until acceptance by [Departmental Representative] [DCC Representative] [Consultant].

**END OF SECTION**

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**Centre Communautaire Correctionnel  
Laferrière  
Repairs and Rehabilitation of the  
building envelope**

**Granular sub-base**

**Section 32 11 16.01**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

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- 1 GENERAL**
- 1.01 PRODUCTS INSTALLED BUT NOT SUPPLIED UNDER THIS SECTION**
- .1 Granular based material: supplied by approved quarry.
- 1.02 MEASUREMENT AND PAYMENT**
- .1 Payment of granular base material is included in the unit price of Sidewalk reconstruction.
- 1.03 REFERENCE STANDARDS**
- .1 ASTM International
- .1 ASTM C 117-[04], Standard Test Methods for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.
- .2 ASTM C 131-[06], Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
- .3 ASTM C 136-[06], Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
- .4 ASTM D 422-[63(2007)], Standard Test Method for Particle-Size Analysis of Soils.
- .5 ASTM D 698-[07e1], Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft<sup>3</sup>) (600kN-m/m<sup>3</sup>).
- .6 ASTM D 1557-[09], Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000ft-lbf/ft<sup>3</sup>) (2,700kN-m/m<sup>3</sup>).
- .7 ASTM D 1883-[07e2], Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.
- .8 ASTM D 4318-[10], Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
- .2 CCDG of Ministry of transport of Quebec (MEMDET).
- 1.04 WASTE MANAGEMENT**
- .1 Submit and disposal.
- 2 PRODUCTS**
- 2.01 MATERIALS**
- .1 Granular sub-base material: in accordance with Section 31 05 16 - Aggregate Materials and following requirements:
- .1 Crushed, pit run or screened stone, gravel or sand.
- .2 CCDG (2017) of Ministry of Transport of Quebec (MEMDET).
- 3 EXECUTION**
- 3.01 PLACING**
- .1 Place granular sub-base after subgrade is inspected and approved by Consultant.
- .2 Construct granular sub-base to depth and grade in areas indicated.
- .3 Ensure no frozen material is placed.

- .4 Place material only on clean unfrozen surface, free from snow or ice.
- .5 Place material to full width in uniform layers not exceeding 300 mm compacted thickness.
  - .1 Consultant may authorize thicker lifts if specified compaction can be achieved.
- .6 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
- .7 Remove and replace portion of layer in which material has become segregated during spreading.

### 3.02 COMPACTION

- .1 Compaction equipment to be capable of obtaining required material densities.
- .2 Efficiency of equipment not specified to be proved at least as efficient as specified equipment at no extra cost and written approval must be received from Consultant before use.
- .3 Compact to density of not less than 95% corrected maximum dry density.
- .4 Shape and roll alternately to obtain smooth, even and uniformly compacted sub-base.
- .5 Apply water as necessary during compaction to obtain specified density.
- .6 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by Consultant.
- .7 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

### 3.03 SITE TOLERANCES

- .1 Finished sub-base surface to be within +/- 10 mm of elevation as indicated but not uniformly high or low.

### 3.04 PROTECTION

- .1 Maintain finished sub-base in condition conforming to this section until succeeding base is constructed, or until granular sub-base is accepted by Consultant.

**END OF SECTION**

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**Centre Communautaire Correctionnel  
Laferrière**

**Asphalt paving – short form**

**Section 32 12 16.01**

**Repairs and Rehabilitation of the  
building envelope**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

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## 1 GENERAL

### 1.01 RELATED REQUIREMENTS

- .1 Section 01 33 00 – Submittal Procedures.

### 1.02 MEASUREMENT AND PAYMENT

- .1 Payment of asphalt paving material is included in the unit price of Sidewalk reconstruction.

### 1.03 REFERENCE STANDARDS

- .1 ASTM International
  - .1 ASTM D 698-[12], Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).
  - .2 CCDG Ministry of Transport of Quebec (MEMDET)
    - .1 Cahier des charges et devis généraux (CCDG) - Infrastructure routières - Construction et réparation, édition 2017.
  - .3 The Master Painters Institute (MPI)
    - .1 Architectural Painting Specification Manual - [current edition].
      - .1 MPI #32, Traffic Marking Paint, Alkyd.

### 1.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Samples: Inform Consultant of proposed source of aggregates and provide access for sampling 2 weeks prior to beginning Work.

### 1.05 CONSTRUCTION WASTE MANAGEMENT

- .1 Submit and disposal.
- .2 Waste Management: separate waste materials for recycling in accordance with Section 01 74 19 - Waste Management and Disposal.
- .3 Remove recycling containers and bins from site and dispose of bituminous materials at appropriate facility.

## 2 PRODUCTS

### 2.01 MATERIALS

- .1 Aggregates: to CCDG.
  - .1 Crushed Granular MG 20, MG 56.
  - .2 Gravel and sand.
- .2 Prime coat: RC-30 to CCDG.

.3 Tack coat: SS-1 to CCDG.

.4 Asphalt concrete: to CCDG.

### 3 EXECUTION

#### 3.01 FOUNDATIONS

.1 Foundations for roadways comprise:

.1 300 mm compacted thickness of granular subbase MG-56.

.2 150 mm compacted thickness of granular base MG-20

.2 Foundation layers compaction to have a maximum thickness of 300 mm when compacted.

#### 3.02 PAVEMENT THICKNESS

.1 Pavements for roadways:

.1 Base course: 60 mm ESG-14.

.2 Wear course: 50 mm ESG-10S.

#### 3.03 PAVEMENT CONSTRUCTION

.1 Surface preparation: CCDG (2017).

.2 Application of prime coat and tack coat: CCDG (2017).

.3 Construction of asphalt concrete: CCDG (2017).

#### 3.04 TRAFFIC MARKINGS

.1 Paint parking space divisions and other pavement markings in accordance with manufacturer's recommendations and as indicated.

.2 Use paint thinner in accordance with manufacturer's requirements.

**END OF SECTION**

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**Centre Communautaire Correctionnel  
Laferrière  
Repairs and Rehabilitation of the  
building envelope**

**Concrete walks, curbs and  
gutters**

**Section 32 16 00**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

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## 1 GENERAL

### 1.01 RELATED REQUIREMENTS

- .1 Section 03 30 00 – Cast in place concrete.

### 1.02 REFERENCE STANDARDS

- .1 CSA Group
  - .1 CSA-A23.1-[14]/A23.2-[14], Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete, Including Update No. 1 [2015].
  - .2 CCDG – Ministry of transport of Quebec (MEMDET) norm #3101

### 1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit WHMIS MSDS
  - .2 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, and limitations.
- .3 Inform Consultant of proposed source of materials and provide access for sampling minimum 2 weeks prior to commencing work.
- .4 If materials have been tested by accredited testing laboratory testing laboratory approved by Departmental Representative within previous [2] months and have passed tests equal to requirements of this specification, submit test certificates from testing laboratory showing suitability of materials for this project.

### 1.04 DELIVERY, STORAGE AND HANDLING

- .1 Waste Management and Disposal:
  - .1 Separate waste materials for recycling.

## 2 PRODUCTS

### 2.01 MATERIALS

- .1 Concrete mixes and materials: in accordance with Section 03 30 00 - Cast-in-Place Concrete.
- .2 Reinforcing steel.
- .3 Curing Compound: in accordance with Section 03 30 00 – Cast in Place Concrete.
- .4 Granular base: Aggregate Materials and requirements of CCDG (2017):
- .5 Non-staining mineral type form release agent: chemically active release agents containing compounds reacting with free lime to provide water-soluble soap.

- .6 Fill material : Aggregate Materials and requirements of CCDG (2017).
- .7 Curing Agent: to ASTM C 309, Type 1.
- .8 Kerosene: conforming to norms of CAN/CGSB-3.3

### **3 EXECUTION**

#### **3.01 GRADE PREPARATION**

- .1 Do grade preparation work.
- .2 Construct embankments using excavated material free from organic matter or other objectionable materials.
  - .1 Dispose of surplus and unsuitable excavated material off site.
- .3 Place fill in maximum 300 mm layers and compact to minimum 95% of maximum dry density to ASTM D 698.

#### **3.02 GRANULAR BASE**

- .1 Obtain Consultant's approval of subgrade before placing granular base.
- .2 Place granular base material to lines, widths, and depths as indicated.
- .3 Compact granular base in maximum 150 mm layers to minimum 95% of maximum density to ASTM D 698.

#### **3.03 CONCRETE**

- .1 Obtain Consultant's approval of granular base [and reinforcing steel] prior to placing concrete.
- .2 Do concrete work in accordance with Section 03 30 00 - Cast-in-Place Concrete.
- .3 Immediately after floating, give sidewalk surface uniform broom finish to produce regular corrugations not exceeding 2 mm deep, by drawing broom side to side across sidewalk.
- .4 Provide edging as indicated with 20 mm radius edging tool.
- .5 Slip-form pavers equipped with string line system for line and grade control may be used if quality of work acceptable to Consultant can be demonstrated. Hand finish surfaces when directed by Consultant.

#### **3.04 TOLERANCES**

- .1 Finish surfaces to within 3 mm in 3 m as measured with 3 m straightedge placed on surface.

### 3.05 EXPANSION AND CONTRACTION JOINTS

- .1 Install tooled transverse contraction joints after floating, when concrete stiff, but still plastic, at intervals of 1,5 m.
- .2 Install expansion joints at intervals of 6 m or as indicated by Consultant.
- .3 When sidewalk adjacent to curb, make joints of curb, gutters and sidewalk coincide.

### 3.06 ISOLATION JOINTS

- .1 Install isolation joints around manholes and catch basins and along length adjacent to concrete curbs, catch basins, buildings, or permanent structure.
- .2 Install joint filler in isolation joints as indicated on the plans.
- .3 Seal isolation joints with sealant approved by Consultant.

### 3.07 CURING

- .1 Cure concrete by adding moisture continuously in accordance with CSA-A23.1/A23.2 to exposed finished surfaces for minimum 3 days after placing, or sealing moisture in by curing compound as directed Consultant.
- .2 Where burlap used for moist curing, place two pre-wetted layers on concrete surface and keep continuously wet during curing period.
- .3 Apply curing compound evenly to form continuous film, in accordance with manufacturer's curing agent requirements.

### 3.08 BACKFILL

- .1 Allow concrete to cure for 3 days prior to backfilling.
- .2 Backfill to designated elevations with material as directed by Consultant.
  - .1 Compact and shape to required contours as indicated by Consultant.

### 3.9 CLEANING

- .1 Proceed cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

**END OF SECTION**

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**Centre Communautaire Correctionnel  
Laferrière**

**Pavement Markings**

**Section 32 17 23**

**Repairs and Rehabilitation of the  
building envelope**

**Project no. CSC : 550-2-390-3202**

**Issued for tender**

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## 1 GENERAL

### 1.01 REFERENCE STANDARDS

- .1 Environment Canada (EC)
  - .1 Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations, SOR/2009-264.
- .2 Green Seal (GS)
  - .1 GS-11-[Edition 3.2 (2015)], Standard for Paints and Coatings.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .4 Master Painters Institute (MPI)
  - .1 Architectural Painting Specification Manual - [current edition].
    - .1 MPI #32, Traffic Markings Paint, Alkyd.
    - .2 MPI #97, Latex Traffic Marking Paint.
- .5 CCDG (2017) Ministry of transport of Quebec.

### 1.02 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature and data sheets for pavement markings and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
  - .1 Submit to Consultant following material sample quantities at least 4 weeks prior to commencing work.
    - .1 Two 1 L samples of each type of paint.
    - .2 One 1 kg sample of glass beads.
    - .3 Sampling to MPI Painting Manual.
  - .2 Mark samples with name of project and its location, paint manufacturer's name and address, name of paint, MPI specification number and formulation number and batch number.

### 1.03 MEASUREMENT AND PAYMENT

- .1 Temporary Pavement marking (orange): measured and paid by lump sum.
- .2 Permanent Pavement marking including reflective glass beads: paid by lump sum.

## 2 PRODUCTS

### 2.01 MATERIALS

- .1 Alkyd Traffic Paint and Markings:
  - .1 To MPI #32, Alkyd traffic marking meeting requirements of ASTM D 4797.
  - .2 Traffic Marking Coatings: maximum VOC limit [450] g/L to SOR/2009-264 Schedule 1[and][to GS-11 Standard] [to SCAQMD Rule 1113]
  - .3 Colour: to ASTM E 1360, [yellow] [white] [orange] in accordance with MPI Architectural Painting Specification Manual.
  - .4 Upon request, Consultant will supply qualified product list of paints applicable to work. Qualified paints may be used but Consultant reserves right to perform further tests.
- .2 Thinner: to MPI listed manufacturer.
- .3 Glass reflective beads: type suitable for application to wet paint surface for light reflectance.

## 3 EXECUTION

### 3.01 EQUIPMENT

- .1 Paint applicator: approved pressure type mobile with positive shut-off distributor capable of applying paint in single, double and dashed lines and capable of applying marking components uniformly, at rates specified, and to dimensions as indicated.
- .2 Distributor: capable of applying reflective glass beads as overlay on freshly applied paint.

### 3.02 SURFACE CONDITIONS

- .1 Pavement surface: dry, free from water, frost, ice, dust, oil, grease and other deleterious materials.

### 3.03 APPLICATION

- .1 Pavement markings: lay out pavement markings as indicated by plans and by Consultant.
- .2 Unless otherwise approved by Consultant, apply paint when air temperature minimum 10 degrees C, wind speed maximum 60 km/h and no rain forecast within next 4 hours.
- .3 Apply traffic paint evenly at rate of [3] m<sup>2</sup> /L to form minimum 8 mil dry film thickness.
- .4 Do not thin paint unless approved by Consultant.
- .5 Symbols and letters to dimensions indicated in CCDG (2017).
- .6 Paint lines of uniform colour and density with sharp edges.
- .7 Thoroughly clean distributor tank before refilling with paint of different colour.
- .8 Apply glass beads at rate of 0.2 kg/m<sup>2</sup> of painted area immediately after application of paint.

**3.04 TOLERANCE**

- .1 Paint markings: within plus or minus 12 mm of dimensions indicated.
- .2 Remove incorrect markings.

**3.05 PROTECTION**

- .1 Protect pavement markings until dry.

**END OF SECTION**

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**Centre Communautaire Correctionnel  
Laferrière  
Repairs and Rehabilitation of the  
building envelope**

**Site furnishings**

**Section 32 33 00**

**Project no. CSC : 21301-16-2449**

**Issued for tender**

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**1 GENERAL**

**1.01 SECTION CONTENT**

- .1 The present section to include material and standard catalogue articles as lighting posts, traffic light posts and parking-meters supports as well as their removal, cleaning, temporary installation and permanent reinstallation.

**1.02 RELATED REQUIREMENTS**

- .1 Section 01 33 00 Submittal procedures.

**1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide in accordance with Section [01 33 00 - Submittal Procedures].
- .2 Shop Drawings:
  - .1 Submit shop drawings indicating dimensions, sizes, assembly, anchorage and installation details for each furnishing specified.

**1.04 DELIVERY, STORAGE AND HANDLING**

- .1 Remove for reuse or recycle of existing articles.
- .2 Remove, disassemble as required and clean the site furnishing as indicated on plans and specifications before the temporary and final installations.

**2 PRODUCTS**

**2.01 LIGHTING POSTS**

- .1 Existing furnishing to be removed, disassemble, clean, install in temporary position and reinstall in final position at the end of the project.

**2.02 TRAFFIC LIGHT POSTS**

- .1 Existing furnishing to be removed, disassemble, clean, install in temporary position and reinstall in final position at the end of the project.

**2.03 PARKING-METER SUPPORTS**

- .1 Existing furnishing to be removed, disassemble, clean, install in temporary position and reinstall in final position at the end of the project.

**3 EXECUTION**

**3.01 INSTALLATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for exterior site furnishing installation in accordance with manufacturer's written instructions.

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- .2 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval from Consultant.
  - .3 Locate and protect municipal and utility installation.
  - .4 Notify and acquire written acknowledgement from utility and municipal authorities before beginning installation Work
  - .5 Reassemble and reinstall furnishing true, plumb, anchored and firmly supported, as indicated on plans and as directed by Consultant and City representative.
  - .6 Touch-up damaged finishes to approval of City Representative and Consultant.

**END OF SECTION**