

<b>NCC Tender File #</b>	AL1735
<b>Project Description</b>	Rideau Canal Promenade Interpretive Installations
<b>Site Visit</b>	None scheduled.
<b>Closing date and time</b>	Tuesday, March 6, 2018 at 3:00 pm Ottawa time

<b>RETURN TENDERS TO:</b> National Capital Commission 40 Elgin Street, Security Office on the 2 <sup>nd</sup> floor Ottawa, ON K1P 1C7	<b>NCC Tender Number</b>  <b>AL1735</b>
	<b>NCC Contract Number</b>
<b>TENDER CLOSING DATE AND TIME:</b>	Tuesday, March 6, 2018 at 3:00 p.m., Ottawa time

**DESCRIPTION OF WORK:** Rideau Canal Promenade Interpretive Installations

**1. BUSINESS NAME AND ADDRESS OF BIDDER**

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

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

\_\_\_\_\_

**Telephone number:** \_\_\_\_\_ **Fax number:** \_\_\_\_\_

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

**2. THE OFFER**

The Bidder offers to the National Capital Commission (NCC) to perform and complete the work for the above mentioned project in accordance with the tender documents for the total tender amount (to be expressed in numbers only) of:

Sub Total        \$ \_\_\_\_\_

OHST – 13%    \$ \_\_\_\_\_

**TOTAL**         \$ \_\_\_\_\_

**3. TENDER VALIDITY PERIOD**

The tender shall not be withdrawn for a period of 60 days following the date and time of tender closing.

**4. CONTRACT DOCUMENTS**

1. The following are the contract documents:
  - (a) Invitation to Tender & Acceptance Form when signed by the NCC;
  - (b) Duly completed Invitation to Tender & Acceptance Form and any Appendices attached thereto;
  - (c) Drawings and Specifications;
  - (d) General Conditions (GC1 to GC10);
  - (e) Supplementary Conditions, if any;
  - (f) Insurance Terms;
  - (g) Occupational Health and Safety Requirements;
  - (h) Addenda
  - (i) Any amendments issued or any allowable tender revision received before the date and time set for tender closing;
  - (j) Any amendment incorporated by mutual agreement between the NCC and the Contractor before acceptance of the tender; and
  - (k) Any amendment or variation of the contract documents that is made in accordance with the General Conditions;
  - (l) Security Requirements.
  
2. The language of the contract documents shall be the language of the Invitation to Tender & Acceptance Form submitted.

NCC Tender Number    AL1735

NCC Contract Number

**5. APPENDICES**

The tender includes Appendix(ces) Nos I and II to the Invitation to Tender & Acceptance Form.

**6. ACCEPTANCE AND CONTRACT**

Upon acceptance of the Contractor’s offer by the NCC, a binding Contract shall be formed between the NCC and the Contractor. The documents forming the Contract shall be the contract documents referred to in 4 – CONTRACT DOCUMENTS.

**7. CONSTRUCTION TIME**

The Contractor shall perform and complete the Work within 12 weeks from the date of notification of acceptance of the offer.

**8. UNIT PRICE TABLE**

The Bidder agrees that

- (a) the Unit Price Table designates that part of the Work to which a Unit Price Arrangement applies.
- (b) the Price per Unit (excluding taxes) and the Estimated Total Price (excluding taxes) must be entered for each item listed;
- (c) the Price per Unit (excluding taxes) as tender governs in calculating the Total Estimated Amount, and any errors in the extension of the Price per Unit (excluding taxes) and in the addition of the Estimated Total Prices shall be corrected by the NCC in order to obtain the Total Estimated Amount; and
- (d) the following table is the Unit Price Table for the purposes of the tender and the Contract:

**UNIT PRICE TABLE**

**Note:** Transfer the Total Estimated Amount from the Unit Price Table to item 2 – THE OFFER of this Invitation to Tender & Acceptance Form

Item / Article	Description / Description	Est. Qty / Qté est.	Units / Unités	Unit price / Prix unitaire	Lump sum price or Extended Total / Prix forfaitaire ou Total calculé
<b>1.0 SITE PREPARATION / PRÉPARATION DU SITE</b>					
1.1	Mobilization and General Requirements / Mobilisation et exigences générales	1	lump sum / base forfaitaire	N/A - S/O	\$

	<i>Moduloc-style fencing quantity / Clôtures en acier de style Moduloc</i>	377	lm / ml	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>
	<i>Tree protection fencing quantity / Clôtures de protection autour des arbres</i>	93	lm / ml	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>
1.2	<b>Demolition, Removals and Salvage / Démolition, enlèvement et récupération</b>	1	<b>lump sum / base forfaitaire</b>	<b>N/A - S/O</b>	<b>\$</b>
	<i>Area of hardscape demolition / Aire de surfaces dures à démolir</i>	36.5	m <sup>2</sup>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>
	<i>Quantity of existing interpretive panels and footings to remove / Quantité de panneaux d'interprétation et de bases de béton à enlever</i>	16	each / chaque	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>
	<i>Area of existing cobblestones to salvage and transport to new locations / Aire de pavés arrondis à récupérer et à transporter aux nouveaux sites</i>	15.5	m <sup>2</sup>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>
1.3	<b>Excavation, Backfilling and Grading / Excavation, remplissage et nivellement</b>	1	<b>lump sum / base forfaitaire</b>	<b>N/A - S/O</b>	<b>\$</b>
	<i>Excavation / Excavation</i>	196	m <sup>3</sup>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>
	<i>Backfilling / Remplissage</i>	31.9	m <sup>3</sup>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>

	<i>Grading / Nivellement</i>	465	m <sup>2</sup>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>	<i>Text in italics for information only / Le texte en italique est pour information seulement.</i>
1.4	Soil Leachate Test for Contaminated Soils / Test de lixiviation du sol pour les sols contaminés	2	each / chaque	\$	\$
1.5	Contaminated Soil Disposal / Disposition des sols contaminés	9	m <sup>3</sup>	\$	\$
<b>2.0 HARDSCAPE / SURFACES DURES</b>					
2.1	Supply and Install Concrete Slabs / Fournir et installer des dalles de béton	30.9	m <sup>2</sup>	\$	\$
2.2	Supply and Install Concrete Vertical Marker Footings / Fournir et installer des bases en béton pour les éléments verticaux	7	each / chaque	\$	\$
2.3	Limestone Seat Wall / Installation du muret en pierre calcaire	1	lump sum / base forfaitaire	\$	\$
2.4	Supply and Install Concrete Heal Post Base Slab and Supports / Fournir et installer la dalle de béton pour la peinture de la porte d'écluse et les supports de béton	1	lump sum / base forfaitaire	\$	\$
2.5	Supply and Install Exposed Aggregate Concrete Walkway / Fournir et installer un trottoir en béton en agrégats exposés	39	m <sup>2</sup>	\$	\$
2.6	Reinstate Concrete Curb / Réinstallation de la bordure de béton	2.5	1.m./ m. 1.	\$	\$
2.7	Supply and Install Coloured Concrete Walkway / Fournir et installer un trottoir en béton coloré	12	m <sup>2</sup>	\$	\$
2.8	Supply and Install Asphalt Paving / Fournir et installer le pavage d'asphalte	13	m <sup>2</sup>	\$	\$

2.9	Supply and Install Prefabricated Concrete Paving / Fournir et installer des pavés en béton préfabriqué	222	m <sup>2</sup>	\$	\$
2.10	Reinstall Existing Prefabricated Concrete Pavers / Réinstallation des pavés de béton préfabriqué existants	2.5	m <sup>2</sup>	\$	\$
2.11	Supply and Install Riverstone Beach / Fournir et installer la plage de pierres de rivière	6.4	m <sup>2</sup>	\$	\$
2.12	Install Cobblestone Edging / Installation de la lisière de pavés arrondis	13	m <sup>2</sup>	\$	\$
2.13	Transportation and Installation of Limestone Blocks / Transporter et installer les blocs de pierre calcaire	14	each / chaque	\$	\$
2.14	Transport and Install Limestone and Granite Boulders / Transporter et installer les roches en pierre calcaire et en granite	6	each / chaque	\$	\$
2.15	Limestone Block Cleaning and Dressing / Nettoyage et habillage des blocs en pierre calcaire	1	lump sum / base forfaitaire	N/A - S/O	\$
2.16	Rigid XPS Insulation / isolant rigide XPS	111	m <sup>2</sup>	\$	\$
<b>3.0 SOFTSCAPE / AMÉNAGEMENT PAYSAGER</b>					
3.1	Supply and Install Plant Material / Fournir et planter des plantes				
a	Thuja occidentalis	3	each / chaque	\$	\$
b	Cornus sericea 'Kesley' (Cs)	30	each / chaque	\$	\$
c	Hydrangea paniculata 'Bulk' PW (Hp)	15	each / chaque	\$	\$
d	Rosa carolina (Rc)	4	each / chaque	\$	\$
e	Anemone pulsatilla vulgaris (Ap)	20	each / chaque	\$	\$
f	Baptisia australis (Ba)	5	each / chaque	\$	\$

g	Bouteloua gracilis (Bg)	13	each / chaque	\$	\$
h	Carex elata aurea (Ce)	33	each / chaque	\$	\$
i	Calamagrostis canadensis (Cc)	13	each / chaque	\$	\$
j	Carex glauca (Cg)	152	each / chaque	\$	\$
k	Carex pensylvanica (Cp)	13	each / chaque	\$	\$
l	Deschampsia cespitosa (Dc)	13	each / chaque	\$	\$
m	Geranium macrorrhizum (Gm)	30	each / chaque	\$	\$
n	Geum triflorum (Gt)	15	each / chaque	\$	\$
o	Iris versicolor (Iv)	11	each / chaque	\$	\$
p	Liatris spicata 'Floristan White' (Ls)	22	each / chaque	\$	\$
q	Sporobolus heterolepsis (Sh)	148	each / chaque	\$	\$
r	Sorghastrum nutans (Sn)	11	each / chaque	\$	\$
s	Sedum telephium 'Matrona' (St)	16	each / chaque	\$	\$
t	Supply and Install Topsoil and Sport Turf / Fournir et installer de la terre végétale et du gazon sportif	164	m <sup>2</sup>	\$	\$
u	Supply and Install Topsoil and No. 1 Turf Grass Nursery Sod / Fournir et installer de la terre végétale et du gazon	316	m <sup>2</sup>	\$	\$
v	Supply and Install Topsoil / Fournir et installer le terreau de plantation	119	m <sup>2</sup>	\$	\$
w	Supply and Install Mulch / Fournir et installer le paillis	119	m <sup>2</sup>	\$	\$
3.2	Year 1 Plant Maintenance and Warranty / An 1 - Entretien des plantes et garantie	1	lump sum / base forfaitaire	N/A - S/O	\$
3.3	Year 2 Plant Maintenance and Warranty / An 2 - Entretien des plantes et garantie	1	lump sum / base forfaitaire	N/A - S/O	\$

<b>4.0 INTERPRETIVE ITEMS / ÉLÉMENTS D'INTERPRÉTATION</b>					
4.1	Transportation and installation of the Cannonballs / Transport et installation de l'assemblage de boulets de canon	1	lump sum / base forfaitaire	N/A - S/O	\$
4.2	Installation of Corten Steel Canoe Sculpture / Installation de la sculpture de canot en acier corten	1	lump sum / base forfaitaire	N/A - S/O	\$
4.3	Assemblage and Installation of Interpretive Panels and Supports / Assemblage et installation des panneaux d'interprétation et leurs supports	1	lump sum / base forfaitaire	N/A - S/O	\$
4.4	Assemblage and Installation of Interpretive Panels at Ottawa Convention Centre / Assemblage et installation des panneaux d'interprétation au Centre des congrès d'Ottawa	1	lump sum / base forfaitaire	N/A - S/O	\$
4.6	Transportation and Installation of Cedar Posts / Transport et installation des poteaux de cèdres	1	lump sum / base forfaitaire	N/A - S/O	\$
4.7	Transportation, Assemblage and Installation of Heel Post / Transport, assemblage et installation de la peinture de porte d'écluse	1	lump sum / base forfaitaire	N/A - S/O	\$
				Subtotal of all items/ Sous-total de tous les articles	\$

**INVOICING**

Send the original invoice and 1 copy to:

**Accounts Payable  
National Capital Commission  
202-40 Elgin Street  
Ottawa, ON K1P 1C7**

Or by email at the following address: [payables@ncc-ccn.ca](mailto:payables@ncc-ccn.ca)

To ensure prompt payment, please prepare your invoice in accordance with the prices quoted. Errors in invoicing can cause delay of payment. Submit your invoice to the address shown above and clearly indicate the Purchase Order number.



9. The basis of award is low total cost to the NCC including all taxes.

10. I/We acknowledge receipt of the following addenda: \_\_\_\_\_  
 (Bidder to enter number of addenda issued, if any) and have included for the requirement of it/them in my/our tendered price.

**11. TENDER SECURITY**

1. The Bidders shall enclose tender security with its tender in accordance with GI08 TENDER SECURITY REQUIREMENTS.
2. If the security furnished does not comply fully with the requirements referred to in paragraph 1) herein, the tender shall be disqualified.
3. If a security deposit is furnished as tender security, it shall be forfeited in the event that the tender is accepted by the NCC and the Contractor fails to provide Contract Security in accordance with GC9 CONTRACT SECURITY, provided that the NCC may, if it is in the public interest, waive the forfeiture of the security deposit.

We hereby offer to supply to the NCC in accordance with the terms and conditions set out herein, the construction work listed above and on any attached sheets at the submitted price(s).

Name and title of person authorized to sign on behalf of Bidder (please print or type)	Signature	Date
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Your tender is accepted to supply to the NCC, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the construction services listed herein and on any attached sheets at the price(s) set out therefore.

Name and title of the person authorized to sign on behalf of the NCC (please print or type)	Signature	Date
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**INVITATION TO TENDER & ACCEPTANCE FORM**

**APPENDIX 1**

1) The Bidder will subcontract the parts of the work listed below to the subcontractor named for each part. The Bidder agrees not to make changes in the list of subcontractors without the written consent of the NCC Representative. The Bidder understands that for each part of the work identified as Mandatory, if more than one subcontractor is named or no subcontractor is named, or, the Bidder fails to state that the work will be done by its own forces where applicable, the tender will be disqualified.

2) The Bidder certifies that tenders for the part(s) of the Work listed below were received from the following subcontractors:

**MANDATORY REQUIREMENT:** The subcontractors performing the work listed below must be identified. Failure to disclose the name of the sub-contractor for any work identified will result in the disqualification of your tender.

(a) **XXXX**

Sub-contractor: \_\_\_\_\_

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

(b) **XXXX**

Sub-contractor: \_\_\_\_\_

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

(c) **XXXX**

Sub-contractor: \_\_\_\_\_

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

(d) **XXXX**

Sub-contractor: \_\_\_\_\_

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

**NON-MANDATORY REQUIREMENT:**

(a) Any other work not listed above

Type of work: \_\_\_\_\_ Sub-contractor: \_\_\_\_\_

Type of work: \_\_\_\_\_ Sub-contractor: \_\_\_\_\_

Type of work: \_\_\_\_\_ Sub-contractor: \_\_\_\_\_

Type of work: \_\_\_\_\_ Sub-contractor: \_\_\_\_\_

Type of work: \_\_\_\_\_ Sub-contractor: \_\_\_\_\_

Type of work: \_\_\_\_\_ Sub-contractor: \_\_\_\_\_

New supplier / Nouveau fournisseur       Update / Mise à jour

Supplier No. / N° du fournisseur

**APPENDIX II SUPPLIER-DIRECT DEPOSIT PAYMENT AND TAX INFORMATION FORM  
APPENDICE II FOURNISSEUR-FORMULAIRE DE PAIEMENT PAR DÉPÔT DIRECT ET RENSEIGNEMENTS AUX FINS DE L'IMPÔT**

For NCC use only / À l'usage de la CCN seulement

**PART 'A' - IDENTIFICATION / PARTIE 'A' - IDENTIFICATION**

Legal name of entity or individual / Nom légal de l'entité ou du particulier		Operating name of entity or individual (if different from Legal Name) / Nom commercial de l'entité ou du particulier (s'il diffère du nom légal)	
Former Public Servant in receipt of a PSSA Pension / Ancien fonctionnaire qui reçoit une pension en vertu de la LPFP		<input type="checkbox"/> Yes / Oui	<input type="checkbox"/> No / Non
An entity, incorporated or sole proprietorship, which was created by a Former Public Servant in receipt of a PSSA pension or a partnership made of former public servants in receipt of PSSA pension or where the affected individual has a controlling or major interest in the entity. / Une entité, constituée en société ou à propriétaire unique, créée par un ancien fonctionnaire touchant une pension en vertu de la LPFP, ou un partenariat formé d'anciens fonctionnaires touchant une pension en vertu de la LPFP, où les entités dans lesquelles ils détiennent le contrôle ou un intérêt majoritaire.		<input type="checkbox"/> Yes / Oui	<input type="checkbox"/> No / Non
Address / Adresse		Telephone No. / N° de téléphone :	Fax No. / N° de télécopieur :
Postal code / Code postal		( )	( )

**PART 'B' - STATUS OF SUPPLIER / PARTIE 'B' - STATUT DU FOURNISSEUR**

(1) Sole proprietor / Propriétaire unique <input type="checkbox"/>	If sole proprietor, provide: / Si propriétaire unique, indiquez :	Last Name / Nom de famille	First name / Prénom	Initial / Initiale
(2) Partnership / Société de personnes <input type="checkbox"/>	SIN - mandatory for (1) & (2) / NAS - obligatoire pour (1) & (2)	Corporation / Société <input type="checkbox"/>	Business No. (BN) / N° de l'entreprise (NE)	
GST/HST / TPS et TVH		QST / TVQ (Québec)		
Number / Numéro : _____		Number / Numéro : _____		
Not registered / non inscrit <input type="checkbox"/>		Not registered / non inscrit <input type="checkbox"/>		
Type of contract / Genre de contrat				
Contract for services only / Contrat de services seulement <input type="checkbox"/>		Contract for mixed goods & services / Contrat de biens et services <input type="checkbox"/>		Contract for goods only / Contrat de biens seulement <input type="checkbox"/>
Type of goods and/or services offered / Genre de biens et/ou services rendus :				

**PART 'C' - FINANCIAL INSTITUTION / PARTIE 'C' - RENSEIGNEMENTS SUR L'INSTITUTION FINANCIÈRE**

**Please send a void cheque with this form / Veuillez, s.v.p., envoyer un spécimen de chèque avec ce formulaire**

Branch Number / N° de la succursale	Institution No. / N° de l'institution :	Account No. / N° de compte :
Institution name / Nom de l'institution :		Address / Adresse :
Postal Code / Code postal :		

**PART 'D' - DIRECT DEPOSIT PAYMENT NOTIFICATION / PARTIE 'D' - AVIS DE PAIEMENT PAR DÉPÔT DIRECT**

E-mail address / Adresse courriel :

**PART 'E' - CERTIFICATION / PARTIE 'E' - CERTIFICATION**

I certify that I have examined the information provided above and it is correct and complete, and fully discloses the identification of this supplier.		Je déclare avoir examiné les renseignements susmentionnés et j'atteste qu'ils sont exacts et constituent une description complète, claire et véridique de l'identité de ce fournisseur.	
Where the supplier identified on this form completes part C, he hereby requests and authorizes the National Capital Commission to directly deposit into the bank account identified in part C, all amounts payable to the supplier.		Lorsque le fournisseur indiqué sur ce formulaire remplit la partie C, par la présente, il demande et autorise la Commission de la capitale nationale à déposer directement dans le compte bancaire indiqué à la partie C, tous les montants qui lui sont dus.	
_____	_____	_____	_____
Name of authorized person / Nom de la personne autorisée	Title / Titre	Signature	Date
Telephone number of contact person / Numéro de téléphone de la personne ressource : ( )			

**IMPORTANT**

Please fill in and return to the National Capital Commission with one of your business cheque unsigned and marked « VOID » or a letter from your bank (for verification purposes).		Veuillez remplir ce formulaire et le retourner à la Commission de la capitale nationale avec un spécimen de chèque de votre entreprise non signé et portant la mention « ANNULÉ » ou une lettre de votre banque (à des fins de vérification).	
Mail or fax to:	Procurement Assistant, Procurement Services National Capital Commission 202-40 Elgin Street Ottawa, ON K1P 1C7 Fax: (613) 239-5007	Poster ou télécopier à :	Assistant à l'approvisionnement Services de l'approvisionnement Commission de la capitale nationale 40, rue Elgin, pièce 202 Ottawa (Ontario) K1P 1C7 Télécopieur : (613) 239-5007

**SUPPLIER – DIRECT DEPOSIT PAYMENT AND TAX INFORMATION FORM**

**FOURNISSEUR – FORMULAIRE DE PAIEMENT PAR DÉPÔT DIRECT ET RENSEIGNEMENTS AUX FINS DE L'IMPÔT**

**Supplier Tax Information**

Pursuant to paragraph 221(1) (d) of the *Income Tax Act*, NCC must declare form T-1204, contractual payments of government for services, all payments made to suppliers during the calendar year in accordance to related service contracts (including contracts for mixed goods and services).

The paragraph 237(1) of the *Income Tax Act* and the article 235 of the Income Tax Regulations require the supplier to provide all necessary information below to the organization who prepares the fiscal information forms.

Questions: Sylvie Monette, Accounts Payable and Receivable Officer – (613) 239-5678, ext. 5156 or [sylvie.monette@ncc-ccn.ca](mailto:sylvie.monette@ncc-ccn.ca)

**Direct deposit payment information**

All amounts payable by NCC to the supplier will be deposited directly into the account you identified in part C. A NCC payment advice notice will also be sent to you by e-mail detailing the particularities of the payment to the address identified in part D.

You must notify the NCC of any changes to your financial institution, branch or account number. You will then have to complete a new form.

The account you identified has to hold Canadian funds at a financial institution in Canada.

**The advantages of direct deposit payment**

Direct deposit payment is a convenient, dependable, safe and timesaving way to receive your invoice payment. Direct deposit payment is completely confidential.

Funds made by direct deposit payment will be available in your bank account within two (2) days after receiving the NCC payment advice notice.

**Renseignements sur les fournisseurs aux fins de l'impôt**

En vertu de l'alinéa 221(1) (d) de la *Loi de l'impôt sur le revenu*, la CCN est tenu de déclarer, à l'aide du formulaire T-1204, Paiements contractuels de services du gouvernement, tous paiements versés aux fournisseurs pendant une année civile en vertu de marchés de services pertinents (y compris les marchés composés à la fois de biens et de services).

Le paragraphe 237 (1) de la *Loi de l'impôt sur le revenu* et l'article 235 du Règlement de l'impôt sur le revenu obligent les fournisseurs à fournir toutes les informations demandées ci-dessous à l'organisme qui prépare les formulaires de renseignements fiscaux.

Questions : Sylvie Monette, Agent aux comptes fournisseurs et comptes clients – (613) 239-5678, poste 5156 ou [sylvie.monette@ncc-ccn.ca](mailto:sylvie.monette@ncc-ccn.ca)

**Renseignements sur le paiement par dépôt direct**

Tous les montants versés par la CCN au fournisseur seront déposés directement dans le compte identifié à la partie C. Un avis de paiement de la CCN détaillant les particularités du paiement par dépôt direct vous sera envoyé par courriel à l'adresse courriel identifiée à la partie D.

Vous devez aviser la CCN de tout changement d'institution financière, de succursale ou de numéro de compte. Vous devrez donc remplir un nouveau formulaire.

Le compte que vous désignez doit être un compte en monnaie canadienne, détenu dans une institution financière au Canada.

**Avantages du paiement par dépôt direct**

Le paiement par dépôt direct est une méthode pratique, fiable et sécuritaire, qui permet de gagner du temps dans la réception de vos paiements de factures. Le paiement par dépôt direct est entièrement confidentiel.

Les paiements effectués par dépôt direct seront disponible dans votre compte bancaire dans un délai de deux (2) jours après que la CCN envoie l'avis paiement.

- SI01 Tender Documents
- SI02 Enquiries during the Solicitation Period
- SI03 [Non Mandatory] Site Visit
- SI04 Revision of Tender
- SI05 Tender Results
- SI06 Negotiations
- SI07 Tender Validity Period
- SI08 Construction Documents
- SI09 Public Tender Opening

**SI01 TENDER DOCUMENTS**

- 1) The following are the tender documents:

- (a) Invitation to Tender & Acceptance Form and any Appendices attached thereto;
- (b) Special Instructions to Bidders; and
- (c) General Instructions to Bidders.

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

**SI02 ENQUIRIES DURING THE SOLICITATION PERIOD**

- 1) Enquiries regarding this tender must be submitted in writing to the following: Sr. Contract Officer, Allan Lapensée, e-mail address - [allan.lapensee@ncc-ccn.ca](mailto:allan.lapensee@ncc-ccn.ca) as early as possible within the solicitation period. Except for the approval of alternative materials as described in GI15 of the General Instructions to Bidders, enquiries should be received no later than five (5) calendar 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, the Sr. Contract Officer shall examine the content of the enquiry and shall decide whether or not to issue an amendment.
- 3) All enquiries and other communications related to this tender sent throughout the solicitation period are to be directed ONLY to the Sr. Contract Officer named above. Non-compliance with this requirement during the solicitation period can, for that reason alone, result in disqualification of a tender.

**SI03 [NON MANDATORY] SITE VISIT**

- 1) None scheduled.

**SI04 REVISION OF TENDER**

- 1) A tender may be revised by letter or facsimile in accordance with GI10 of the General Instructions to Bidders. The facsimile number for receipt of revisions is 613-239-5012.

**SI05 TENDER RESULTS**

- 1) Following solicitation closing, tender results may be obtained by calling the Sr. Contract Officer, Allan Lapensée, telephone number 613-239-5678 ext. 5051, facsimile number 613-239-5007 or e-mail address [allan.lapensee@ncc-ccn.ca](mailto:allan.lapensee@ncc-ccn.ca).

**SI06 NEGOTIATIONS**

- 1) In the event that the lowest compliant tender exceeds the amount of funding the NCC has allocated for the construction phase of the work:
  - (a) by 15% or less, the NCC, at its sole discretion, shall either:
    - (i) cancel the invitation to tender; or
    - (ii) obtain additional funding and, subject to the provisions of GI11 and GI09 of the General Instructions to Bidders, award the Contract to the Bidder submitting the lowest compliant tender; or
    - (iii) revise the scope of the work accordingly and negotiate, with the Bidder submitting the lowest compliant tender, a corresponding reduction in its tender price.
  - (b) by more than 15%, the NCC, at its sole discretion, shall either:
    - (i) cancel the invitation to tender; or
    - (ii) obtain additional funding and, subject to the provisions of GI11 and GI09 of the General Instructions to Bidders, award the Contract to the Bidder submitting the lowest compliant tender; or
    - (iii) revise the scope of the work accordingly and invite those who submitted compliant tenders at the original invitation to tender to re-tender the work.
- 2) If negotiations or a re-tender are undertaken as is contemplated in subparagraphs 1)(a)(iii) or 1)(b)(iii) above, Bidders shall retain the same subcontractors and suppliers as they carried in their original tenders.
- 3) If the NCC elects to negotiate a reduction in the tender price as is contemplated in subparagraph 1)(a)(iii) herein and the negotiations fail to reach an agreement, the NCC shall then exercise either of the options referred to subparagraphs 1)(a)(i) or 1)(a)(ii).

**SI07 TENDER VALIDITY PERIOD**

- 1) The NCC reserves the right to seek an extension to the tender validity period prescribed in 3 of the Invitation to Tender & Acceptance Form. Upon notification in writing from the NCC, Bidders shall have the option to either accept or reject the proposed extension.
- 2) If the extension referred to in paragraph 1) of SI07 is accepted, in writing, by all those who submitted tenders, then the NCC shall continue immediately with the evaluation of the tenders and its approvals processes.
- 3) If the extension referred to in paragraph 1) of SI07 is not accepted in writing by all those who submitted tenders then the NCC shall, at its sole discretion, either:
  - (a) continue to evaluate the tenders 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 the NCC's rights in law or under GI11 of the General Instructions to Bidders.

**SI08 CONSTRUCTION DOCUMENTS**

- 1) The successful contractor will be provided with one paper copy of the sealed and signed plans, the specifications and the amendments upon acceptance of the offer. Additional copies, may be available free of charge upon request by the contractor. If not, obtaining more copies shall be the responsibility of the contractor including costs.

**SI09 PUBLIC TENDER OPENING**

- 1) A public tender opening will be held shortly after the bid closing date and time at 40 Elgin Street, Ottawa, ON beside the security office on the 2<sup>nd</sup> floor.

- GI01 Completion of Tender
- GI02 Identity or Legal Capacity of the Bidder
- GI03 Goods and Services Tax / Harmonized Sales Tax
- GI04 Québec Sales Tax
- GI05 Capital Development and Redevelopment Charges
- GI06 Registry and Pre-qualification of Floating Plant
- GI07 Listing of Subcontractors and Suppliers
- GI08 Tender Security Requirements
- GI09 Submission of Tender
- GI10 Revision of Tender
- GI11 Acceptance of Tender
- GI12 Procurement Business Number
- GI13 Bid Depository
- GI14 Compliance with Applicable Laws
- GI15 Approval of Alternative Materials
- GI16 Performance Evaluation

**GI01 Completion of Tender**

- 1) The tender shall be:
  - (a) submitted on the Invitation to Tender and Acceptance Form provided through the Government Electronic Tendering Service (GETS) or on a clear and legible reproduced copy of such Invitation to Tender and Acceptance Form that must be identical in content and format to the Invitation to Tender and Acceptance Form provided through GETS;
  - (b) based on the Tender Documents listed in the Special Instructions to Bidders;
  - (c) correctly completed in all respects;
  - (d) signed by a duly authorized representative of the Bidder; and
  - (e) accompanied by
    - (i) tender security as specified in GI08; and
    - (ii) any other document or documents specified elsewhere in the solicitation where it is stipulated that said documents are to accompany the tender.
- 2) Subject to paragraph 6) of GI11, any alteration to the pre-printed or pre-typed sections of the Invitation to Tender and Acceptance Form, or any condition or qualification placed upon the tender shall be cause for disqualification. Alterations, corrections, changes or erasures made to statements or figures entered on the Invitation to Tender and Acceptance Form by the Bidder shall be initialled by the person or persons signing the tender. Initials shall be original(s). Alterations, corrections, changes or erasures that are not initialled shall be deemed void and without effect.
- 3) Unless otherwise noted elsewhere in the Tender Documents, facsimile copies of tenders are not acceptable.

**GI02 Identity or Legal Capacity of the Bidder**

- 1) In order to confirm the authority of the person or persons signing the tender or to establish the legal capacity under which the Bidder proposes to enter into Contract, any Bidder who carries on business in other than its own personal name shall, if requested by the NCC prior to award of contract, provide satisfactory proof of:



- (a) such signing authority; and
- (b) the legal capacity under which it carries on business.

Proof of signing authority may be in the form of a certified copy of a resolution naming the signatory(ies) that is (are) authorized to sign this tender on behalf of the corporation or partnership. Proof of legal capacity may be in the form of a copy of the articles of incorporation or the registration of the business name of a sole proprietor or partnership.

**GI03 Goods and Services Tax / Harmonized Sales Tax**

- 1) The National Capital Commission (NCC) is a Crown Corporation subject to the Goods and Services Tax (GST), the Ontario Provincial Sales Tax (OST) and the Quebec Sales Tax (QST). The rates quoted are exclusive of the GST and the OST/QST. The successful firm will be required to indicate separately, on all invoices or requests for payments, the amount of Goods and Services Sales Tax (GST), the amount of Ontario Sales Tax (OST) and the amount of Quebec Sales Tax (QST), to the extent applicable, that the Commission must pay. These amounts will be paid to the successful Bidder who is required to make the appropriate remittances to Revenue Canada and the respective provincial governments.

Pursuant to paragraph 221 (1)(d) of the Income Tax Act, payments made by Crown Corporations under applicable service contracts (including contracts involving a mix of goods and services) must be reported on a "T1204" slip. To comply with this requirement, the Bidder is required to provide the following information on the "Supplier – Direct Payment and Tax Information Form" (see Appendix 11).

By signing this form, the Bidder/Proponent certifies that he/she has examined the information provided on the form and that it is correct, complete, and fully discloses the identification of the Contractor.

This "Supplier – Direct Payment and Tax Information Form" must be completed and returned to the Commission prior to any contract being awarded to your firm (see Appendix 11).

**GI04 Quebec Sales Tax**

- 1) See GI03.

**GI05 Capital Development and Redevelopment Charges**

- 1) For the purposes of GC1.8 LAWS, PERMITS AND TAXES in the General Conditions of the Contract, only fees or charges directly related to the processing and issuing of building permits shall be included. The Bidder shall not include any monies in the tender amount for special municipal development, redevelopment or other fees or charges which a municipal authority may seek as a prerequisite to the issuance of building permits.

**GI06 Registry and Pre-qualification of Floating Plant**

- 1) Dredges or other floating plant to be used in the performance of the Work must be on Canadian registry. For dredges or other floating plant that are not of Canadian make or manufacture, the Bidder must obtain a certificate of qualification from Industry Canada, if applicable, and this certificate must accompany the tender. Plant so qualified by Industry Canada may be accepted on this project.

**GI07 Listing of Subcontractors and Suppliers**

- 1) Notwithstanding any list of Subcontractors that the Bidder shall be required to submit as part of the tender, the Bidder submitting the lowest acceptable tender shall, within 24 hours of receipt of a notice to do so, submit all information requested in the said notice including the names of Subcontractors and Suppliers for the part or parts of the Work listed. Failure to do so may result in the disqualification of its tender.

**GI08 Tender Security Requirements**

- 1) The Bidder shall submit tender security with the tender in the form of a bid bond or a security deposit in an amount that is equal to not less than 10% of the tender amount including all applicable taxes.

The maximum amount of tender security required with any tender is \$2,000,000.00.

- 2) A bid bond shall be in an approved form, properly completed, with original signature(s) and issued by an approved company whose bonds are acceptable to the NCC either at the time of solicitation closing or as identified on the list displayed at the following Website:

<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12027>

The approved form for the bid bond is enclosed at the end of this section.

- 3) A security deposit shall be an original, properly completed, signed where required and be either:
  - (a) a bill of exchange, bank draft or money order payable to the NCC;
  - (b) bonds of, or unconditionally guaranteed as to principal and interest by, the Government of Canada; or
- 4) A bill of exchange, bank draft or money order referred to in subparagraph 3)(a) of GI08 shall be certified by or drawn on:
  - (a) a corporation or institution that is a member of the Canadian Payments Association;
  - (b) a corporation that accepts public deposits and repayment of the deposits is unconditionally guaranteed by Her Majesty in right of a province;
  - (c) a corporation that accepts deposits that are insured by the Canada Deposit Insurance Corporation or the "Régie de l'assurance-dépôts du Québec" to the maximum permitted by law;
  - (d) a corporation, association or federation incorporated or organized as a credit union or cooperative credit society that conforms to the requirements of a credit union which are more particularly described in paragraph 137 (6)(b) of the *Income Tax Act*; or
  - (e) Canada Post Corporation.
- 5) If a bill of exchange, bank draft or money order is drawn on an institution or corporation other than a chartered bank, it must be accompanied by proof that the said institution or corporation meets at least one of the criteria described in paragraph 4) of GI08, either by letter or by a stamped certification on the bill of exchange, bank draft, or money order.
- 6) For the purposes of this section, a bill of exchange is an unconditional order in writing signed by the Bidder and addressed to an approved financial institution, requiring the said institution to pay, on demand, at a fixed or determinable time, a certain sum of money to, or to the order of, the NCC.

- 7) Bonds referred to in subparagraph 3)(b) of GI08 shall be provided on the basis of their market value current at the date of solicitation closing, and shall be:
  - (a) payable to bearer;
  - (b) accompanied by a duly executed instrument of transfer of the bonds to the NCC in the form prescribed by the Domestic Bonds of Canada Regulations; or
  - (c) registered as to principal or as to principal and interest in the name of the NCC pursuant to the Domestic Bonds of Canada Regulations.
- 8) As an alternative to a security deposit an irrevocable standby letter of credit is acceptable to the NCC and the amount shall be determined in the same manner as a security deposit referred to above.
- 9) An irrevocable standby letter of credit referred to in paragraph 8) of GI08 shall:
  - (a) be an arrangement, however named or described, whereby a financial institution (the “Issuer”) acting at the request and on the instructions of a customer (the “Applicant) or on its own behalf:
    - (i) is to make a payment to, or to the order of, the NCC as the beneficiary;
    - (ii) is to accept and pay bills of exchange drawn by the NCC;
    - (iii) authorizes another financial institution to effect such payment or accept and pay such bills of exchange; or
    - (iv) authorizes another financial institution to negotiate against written demand(s) for payment provided that the terms and conditions of the letter of credit are complied with.
  - (b) state the face amount which may be drawn against it;
  - (c) state its expiry date;
  - (d) provide for sight payment to the NCC by way of the financial institution’s draft against presentation of a written demand for payment signed by the NCC Contract Administrator identified in the letter of credit by his/her office;
  - (e) provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face value of the letter of credit;
  - (f) provide that it is subject to the International Chamber of Commerce (ICC) Uniform Customs and Practice for Documentary Credits, 2007 Revision, ICC Publication No. 600;
  - (g) clearly specify that it is irrevocable or deemed to be irrevocable pursuant to article 6 c) of the International Chamber of Commerce (ICC) Uniform Customs and Practice for Documentary Credits, 2007 Revision, ICC Publication No. 600; and
  - (h) be issued or confirmed, in either official language, by a financial institution which is a member of the Canadian Payments Association and is on the letterhead of the Issuer or Confirmer. The format is left to the discretion of the Issuer or Confirmer.
- 10) Tender security shall lapse or be returned as soon as practical following:
  - (a) the solicitation closing date, for those Bidders submitting non-compliant tenders; and

- (b) the administrative tender review, for those Bidders submitting compliant tenders ranked fourth to last on the schedule of tenders; and
  - (c) the award of contract, for those Bidders submitting the second and third ranked tenders; and
  - (d) the receipt of contract security for the successful Bidder; or
  - (e) the cancellation of the solicitation, for all Bidders.
- 11) Notwithstanding the provisions of paragraph 10) of GI08 and provided more than three (3) compliant tenders have been received, if one or more of the tenders ranked third to first is withdrawn or rejected for whatever reason, then the NCC reserves the right to hold the security of the next highest ranked compliant tender in order to retain the tender security of at least three (3) valid and compliant tenders.

**GI09 Submission of Tender**

- 1) The Invitation to Tender and Acceptance Form, duly completed with the bid security, shall be enclosed and sealed in an envelope provided by the Bidder, and shall be addressed and submitted to the office designated on the front page of the Invitation to Tender and Acceptance Form for the receipt of tenders.
- 2) Unless otherwise specified in the Special Instructions to Bidders:
  - (a) the tender shall be in Canadian currency;
  - (b) exchange rate fluctuation protection is not offered; and
  - (c) any request for exchange rate fluctuation protection shall not be considered.
- 3) Prior to submitting the tender, the Bidder shall ensure that the following information is clearly printed or typed on the face of the tender envelope:
  - (a) Solicitation Number;
  - (b) Name of Bidder.
- 5) Timely and correct delivery of the tender is the sole responsibility of the Bidder. The tender must be received on or before the date and time set for solicitation closing. Late tenders shall be disqualified.

**GI10 Revision of Tender**

- 1) A tender submitted in accordance with these instructions may be revised by letter or facsimile (fax number only 613-239-5012 provided the revision is received at the office designated for the receipt of tenders, on or before the date and time set for the closing of the solicitation. The letter or facsimile shall:
  - (a) be on the Bidder's letterhead or bear a signature that identifies the Bidder;
  - (b) for the Total Bid Amount, clearly identify the amount of the current revision. The total aggregate sum of all revisions submitted, including the current revision, shall be shown separately; and
  - (c) for the Price per unit portion of a tender, clearly identify the current revision(s) to the Price(s) per unit and the specific item(s) to which each revision applies. If a revision is to be applied to a specific Item that was previously amended then, in addition to the amount of the current

revision, the total aggregate sum of all revisions submitted, including the current revision, for that Item shall be shown separately.

- 2) A letter or facsimile submitted to confirm an earlier revision shall be clearly identified as "CONFIRMATION ONLY", for each contemplated change.
- 3) Failure to comply with any of the above provisions shall result in the rejection of the non-compliant revision(s) only. The tender shall be evaluated based on the original tender submitted and all other compliant revision(s).

#### **GI11 Acceptance of Tender**

- 1) The NCC may accept any tender, whether it is the lowest or not, or may reject any or all tenders.
- 2) Without limiting the generality of paragraph 1) of GI11, the NCC may reject a tender if any of the following circumstances are present:
  - (a) the Bidder, or any employee or subcontractor included as part of the tender, have been convicted under section 121 ("Frauds on the government" & "Contractor subscribing to election fund"), 124 ("Selling or purchasing office"), 380 (Fraud committed against Her Majesty) or 418 ("Selling defective stores to Her Majesty") of the Criminal Code of Canada, or under paragraph 80(1)(d) (False entry, certificate or return), subsection 80(2) (Fraud against her Majesty) or Section 154.01 (Fraud against her Majesty) of the Financial Administration Act;
  - (b) the Bidder's bidding privileges are suspended or are in the process of being suspended;
  - (c) the bidding privileges of any employee or subcontractor included as part of the tender are suspended or are in the process of being suspended, which suspension or pending suspension would render that employee or subcontractor ineligible to tender on the Work, or the portion of the Work the employee or subcontractor is to perform;
  - (d) with respect to current or prior transactions with the NCC
    - (i) the Bidder is bankrupt or if, for whatever reason, its activities are rendered inoperable for an extended period;
    - (ii) evidence, satisfactory to the NCC, of fraud, bribery, fraudulent misrepresentation or failure to comply with any law protecting individuals against any manner of discrimination, has been received with respect to the Bidder, any of its employees or any subcontractor included as part of its tender;
    - (iii) the NCC has exercised, or intends to exercise, the contractual remedy of taking the work out of the contractor's hands with respect to a contract with the Bidder, any of its employees or any subcontractor included as part of its tender; or
    - (iv) the NCC determines that the Bidder's performance on other contracts is sufficiently poor to jeopardize the successful completion of the requirement being tendered on.
- 3). In assessing the Bidder's performance on other contracts pursuant to subparagraph 2)(d)(iv) of GI11, the NCC may consider, but not be limited to, such matters as:
  - (a) the quality of workmanship in performing the Work;
  - (b) the timeliness of completion of the Work;

- (c) the overall management of the Work and its effect on the level of effort demanded of the NCC and its representative; and
  - (d) the completeness and effectiveness of the Contractor's safety program during the performance of the Work.
- 4) Without limiting the generality of paragraphs 1), 2) and 3) of GI11, the NCC may reject any based on an unfavourable assessment of the:
- (a) adequacy of the tender price to permit the work to be carried out and, in the case of a tender providing prices per unit, whether each such price reasonably reflects the cost of performing the part of the work to which that price applies;
  - (b) Bidder's ability to provide the necessary management structure, skilled personnel, experience and equipment to perform competently the work under the Contract; and
  - (c) Bidder's performance on other contracts.
- 5) If the NCC intends to reject a tender pursuant to a provision of paragraphs 1), 2), 3) or 4) of GI11, other than subparagraph 2)(b) of GI11, the NCC shall so inform the Bidder and provide the Bidder ten (10) days within which to make representation, prior to making a final decision on the tender rejection.
- 6) The NCC may waive informalities and minor irregularities in tenders received, if the NCC determines that the variation of the tender from the exact requirements set out in the Tender Documents can be corrected or waived without being prejudicial to other Bidders.

**GI12 Procurement Business Number**

- 1) Not applicable.

**GI13 Bid Depository**

- 1) If the solicitation advertisement states that a Bid Depository shall be used, the Bidder shall obtain bids in accordance with local Bid Depository rules and procedures.

**GI14 Compliance with Applicable Laws**

- 1) By submission of a tender, the Bidder certifies that the Bidder has the legal capacity to enter into a contract and is in possession of all valid licences, permits, registrations, certificates, declarations, filings, or other authorizations necessary to comply with all federal, provincial and municipal laws and regulations applicable to the submission of the tender and entry into any ensuing contract for the performance of the work.
- 2) For the purpose of validating the certification in paragraph 1) of GI14, a Bidder shall, if requested, provide a copy of every valid licence, permit, registration, certificate, declaration, filing or other authorization listed in the request, and shall provide such documentation within the time limit(s) set out in the said request.
- 3) Failure to comply with the requirements of paragraph 2) of GI14 shall result in the disqualification of the tender.

**GI15 Approval of Alternative Materials**

- 1) When materials are specified by trade names or trademarks, or by manufacturers' or suppliers' names, the tender shall be based on use of the named materials. During the solicitation period,

alternative materials may be considered provided full technical data is received in writing by the Contracting Officer at least seven (7) calendar days, unless otherwise noted in the Tender documents, prior to the solicitation closing date. If the alternative materials are approved for the purposes of the tender, an addendum to the tender documents shall be issued.

**GI16 Performance Evaluation**

- 1) Bidders shall take note that the performance of the Contractor during and upon completion of the work shall be evaluated by the NCC. The evaluation shall be based on the quality of workmanship, timeliness of completion of the work, project management, contract management and management of health and safety. Should the Contractor's performance be considered unsatisfactory, the Contractor's bidding privileges on future work may be suspended indefinitely. Contractor Evaluation Report Form is enclosed at the end of this section.

# BID BOND

Bond Number \_\_\_\_\_

Amount \$ \_\_\_\_\_

**KNOW ALL MEN BY THESE PRESENTS**, that \_\_\_\_\_ as Principal, hereinafter called the Principal, and \_\_\_\_\_ as Surety, hereinafter called the Surety, are, subject to the conditions hereinafter contained, held and firmly bound unto the National Capital Commission as Obligee, hereinafter called the NCC, In the amount of \_\_\_\_\_ dollars (\$ \_\_\_\_\_), lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**SIGNED AND SEALED** this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_. WHEREAS, the Principal has submitted a written tender to the NCC, dated the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, for: \_\_\_\_\_.

**NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION** are such that if:

- (a) The Principal, should his tender be accepted within the period be specified by the NCC, or, if no period be specified, within sixty (60) days after closing date of the tender:
  - 1. does execute within a period specified by the NCC, or, if no period be specified therein, within fourteen (14) days after the prescribed forms are presented to him for signature, execute such further contractual documents, if any, as may be required by the terms of the tender as accepted; and does
  - 2. furnish a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the Contract price and satisfactory to the NCC, or other security acceptable to the NCC; or
- (b) the Principal does pay to the NCC the difference between the amount of the Principal's tender and the amount of the Contract entered into by the NCC for the work, supplies and services which were specified in the said tender, if the latter amount be in excess of the former,

then, this obligation shall be void; otherwise it shall remain in full force and effect.

**PROVIDED, HOWEVER**, that the Surety and the Principal shall not be liable to the NCC for an amount greater than the amount specified in the bond.

**PROVIDED FURTHER** that the Surety shall not be subject to any suit or action unless such suit or action is instituted and process therefore served upon the Surety at its Head Office in Canada, within twelve (12) months from the date of this bond.

**IN TESTIMONY WHEREOF**, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its authorized signing authority, the day and first above written.

**SIGNED, SEALED AND DELIVERED in the presence of:**

Principal \_\_\_\_\_

Witness \_\_\_\_\_

Surety \_\_\_\_\_

Note: Affix Corporate seal if applicable.



Date	Contract no. / No du contrat		
Description of work / Description des travaux			
Contractor's business name / Nom de l'entreprise de l'entrepreneur		Contractor's site superintendent / Contremaître de l'entrepreneur	
Contractor's business address / Adresse de l'entreprise de l'entrepreneur			
<b>NCC representative / Représentant de la CCN</b>			
Name / Nom	Telephone no. / N <sup>o</sup> . de téléphone	E-mail address / Adresse électronique	
<b>Contract information / Information sur le contrat</b>			
Contract award amount / Montant du marché adjugé		Contract award date / Date de l'adjudication du marché	
Final amount / Montant final		Actual contract completion date / Date réelle d'achèvement du contrat	
Number of change orders / Nombre d'ordres de changement		Final certificate date / Date du certificat final	
<b>Quality of workmanship / Qualité des travaux exécutés</b>			
<p>This is the rating of the quality of the workmanship. At final completion the quality of the materials and equipment incorporated in the work must meet the requirements set out in the plans and specifications.</p> <p>Il s'agit de l'évaluation de la qualité des travaux exécutés. À l'achèvement des travaux, la qualité des matériaux et de l'équipement doit satisfaire les exigences établies dans les plans et devis.</p>	Unacceptable / Inacceptable	0 – 5	<div style="border: 1px solid black; width: 80px; height: 40px; margin: auto;"></div>
	Not satisfactory / Non-satisfaisant	6 – 10	
	Satisfactory / Satisfaisant	11 – 16	
	Superior / Supérieur	17 – 20	
<b>Time / Délai d'exécution</b>			
<p>This is the rating of the timeliness of completion considering the actual completion date compared with the original (or amended) contract completion date and allowing for conditions beyond the control of the contractor.</p> <p>Il s'agit de l'évaluation du délai d'exécution des travaux en prenant en considération la date actuelle d'achèvement des travaux par rapport à la date originale (ou modifiée) et en tenant compte des conditions indépendantes de la volonté de l'entrepreneur.</p>	Unacceptable / Inacceptable	0 – 5	<div style="border: 1px solid black; width: 80px; height: 40px; margin: auto;"></div>
	Late / En retard	6 – 10	
	On time / À temps	11 – 16	
	Ahead of schedule / En avance sur le calendrier	17 – 20	
<b>Project management / Gestion de projet</b>			
<p>This is the rating of how the project, as described in the drawings and specifications, was managed including co-ordination, quality control, effective schedule development and implementation.</p> <p>Voici l'évaluation de la façon dont le projet décrit dans les documents contractuels a été géré, y compris la coordination, le contrôle de la qualité, l'élaboration d'un calendrier efficace et la mise en œuvre.</p>	Unacceptable / Inacceptable	0 – 5	<div style="border: 1px solid black; width: 80px; height: 40px; margin: auto;"></div>
	Not satisfactory / Non-satisfaisant	6 – 10	
	Satisfactory / Satisfaisant	11 – 16	
	Superior / Supérieur	17 – 20	
Criteria not applicable / Critère non-applicable			<input type="checkbox"/> N/A / S/O
<b>Contract management / Gestion de contrat</b>			
<p>This is the rating of how the contract was administered in accordance with the provisions expressed in the "front end" portion of the documents.</p> <p>Voici l'évaluation de la façon dont le contrat a été administré conformément aux dispositions comprises dans la partie « prioritaire » des documents.</p>	Unacceptable / Inacceptable	0 – 5	<div style="border: 1px solid black; width: 80px; height: 40px; margin: auto;"></div>
	Not satisfactory / Non-satisfaisant	6 – 10	
	Satisfactory / Satisfaisant	11 – 16	
	Superior / Satisfaisant	17 – 20	
Criteria not applicable / Critère non-applicable			<input type="checkbox"/> N/A / S/O
<b>Health and safety / Santé et sécurité</b>			
<p>This is the rating of the effectiveness of how the occupational health and safety provisions (whether identified in the contract or those of provincial legislation or those otherwise applicable) were managed and administered.</p> <p>Voici l'évaluation de l'efficacité avec laquelle les dispositions relatives à la santé et à la sécurité au travail (dans le contrat, dans les règlements provinciaux ou dans tout autre document) ont été gérées et administrées.</p>	Unacceptable / Inacceptable	0 – 5	<div style="border: 1px solid black; width: 80px; height: 40px; margin: auto;"></div>
	Not satisfactory / Non-satisfaisant	6 – 10	
	Satisfactory / Satisfaisant	11 – 16	
	Superior / Satisfaisant	17 – 20	
<b>Total points / Pointage total</b>			<b>/100</b>
<b>Comments / Commentaires</b>			
Name / Nom	Title / Titre	Signature	Date

**INSTRUCTIONS AND ADDITIONAL INFORMATION (Contractor Performance Evaluation Report)**  
**INSTRUCTIONS ET RENSEIGNEMENTS SUPPLÉMENTAIRES (Rapport d'évaluation du rendement de l'entrepreneur)**

**QUALITY OF WORKMANSHIP – QUALITÉ DES TRAVAUX EXÉCUTÉS**

The NCC representative is to consider how the workmanship compares with:

- the norms in the area in which the work was carried out
- the contractor's compliance with any quality provisions outlined in the drawings and specification
- the quality of workmanship provided by other contractors on similar projects in the same facility/facilities

Le représentant de la CCN doit évaluer la qualité de l'exécution en fonction de ce qui suit :

- le respect des normes s'appliquant aux travaux réalisés
- la conformité de l'entrepreneur aux exigences de qualité comprises dans les dessins et dans les devis
- la qualité de l'exécution des travaux accomplis par d'autres entrepreneurs dans le cadre de projets similaires réalisés dans la même installation ou dans des installations semblables.

**TIME / DÉLAIS D'EXÉCUTION**

For the purpose of evaluation the contractor's time performance, consideration must be given to conditions beyond the contractor's control including NCC / Consultant / Client performance.

Afin d'évaluer le rendement de l'entrepreneur en matière de délai d'exécution, on doit prendre en considération les conditions indépendantes de la volonté de l'entrepreneur, y compris le rendement de la CCN, de l'expert-conseil et du client.

Consider conditions beyond the contractor's control, e.g.,

Prendre en considération les conditions indépendantes de la volonté de l'entrepreneur, par exemple :

- availability of, and access to the site
- changes in soil or site conditions
- weather extremes
- strikes
- material / equipment supply problems originating from manufacturers/suppliers
- quality of plans and specifications
- major change(s) in scope
- cumulative effect of changes
- was the NCC able to meet its obligations?
- timely decisions, clarifications, approvals, payments in due time
- delays caused by other contractors in the same facility

- disponibilité du chantier et accès au chantier
- modifications des conditions du sol ou du chantier
- température
- grèves
- problèmes d'approvisionnement en matériel et en équipement provenant des manufacturiers/fournisseurs
- qualité des plan et devis
- modifications importantes à l'étendue des travaux
- effets cumulatifs des modifications
- la CCN a-t-elle été capable de remplir ses obligations?
- décisions, clarifications, approbations, paiements en temps opportun
- les retards occasionnés par d'autres entrepreneurs travaillant dans la même installation.

The NCC representative's estimate of a reasonable maximum time allowance resulting from conditions beyond the contractor's control is

L'estimation, par le représentant de la CCN, du temps maximum alloué pour les conditions indépendantes de la volonté de l'entrepreneur est



The period of delay attributable to the contractor is

La période de retard attribuable à l'entrepreneur est



Did the contractor make an effective effort / Est-ce que l'entrepreneur s'est efforcé :

- to meet the schedule / de respecter l'échéancier des travaux



Yes  
Oui

No  
Non

- to clean up deficiencies in a reasonable time / de corriger les vices dans un délai raisonnable



Yes  
Oui

No  
Non

Have you recommended assessments and damages for late completion under the contract?  
Avez-vous recommandé des dédommagements pour retard d'exécution aux termes du marché?



Yes  
Oui

No  
Non

**PROJECT MANAGEMENT / GESTION DU PROJET**

The extent to which the contractor takes charge of and effectively manages the work has a direct effect on the inputs required of the NCC.

La mesure dans laquelle l'entrepreneur assume efficacement la gestion des travaux a une incidence directe sur les services qu'on attend de la CCN.

Consideration should be given to: Did the contractor

Il faut examiner si l'entrepreneur a :

- employ a knowledgeable site superintendent
- required additional input from the NCC staff above that which is normal for a project of similar size and nature
- promptly commence the work
- provide realistic schedules and updates in accordance with the terms of the contract
- provide a comprehensive work plan and adhere to its milestones
- order material promptly and in such a way as to expedite the progress of the work
- provide shop drawings promptly and were they of sufficient detail

- fait appel aux services d'un surintendant de chantier expérimenté
- demandé au personnel de la CCN une plus grande contribution que ce qui est normal pour un projet de cette importance et de cette nature
- commencé les travaux dans les plus brefs délais
- fourni un calendrier réaliste et des mises à jour conformément aux modalités du contrat
- présenté un plan de travail complet et a respecté les échéances
- commandé le matériel rapidement et de façon à accélérer l'avancement des travaux.
- fourni rapidement des dessins d'atelier comprenant suffisamment de détails

## PROJECT MANAGEMENT (cont'd) / GESTION DU PROJET (suite)

- effectively manage and complete all Division 1 work site activities
  - promptly provide reasonable quotations for changes to the original scope of work
  - cooperate when issued directions by the NCC representative
  - interpret the contract documents accurately
  - establish effective quality control procedures
  - effectively coordinate and manage the work of its subcontractors
  - promptly correct defective work as the project progressed
  - promptly clean-up all deficiencies and incomplete work after issuance of the Interim Certificate of Completion
  - satisfactorily clean the work site periodically and at the completion of the project
- g r  et achev  efficacement toutes les activit s sur le chantier de la Division 1
  - propos  rapidement des prix raisonnables pour les modifications   l' nonc  des travaux initial
  - accept  les directives du repr sentant de la CCN
  - interpr t  les documents contractuels avec exactitude
  - mis en place des proc dures de contr le de la qualit  efficaces
  - coordonn  et g r  efficacement les travaux confi s   des sous-traitants
  - corrig  promptement le travail d fectueux en cours de projet
  - corrig  rapidement les travaux non acceptables et termin  les travaux incomplets apr s r ception du certificat provisoire d'ach vement
  - nettoy  de fa on satisfaisante le chantier p riodiquement ainsi qu'  la fin du projet.

## CONTRACT MANAGEMENT / GESTION DU CONTRAT

The effectiveness of the contractor to administer the contract in accordance with the provisions expressed in the "front end" portion of the contract documents.

Consideration should be given to: Did the contractor

- in the time frame specified, provide its contract security, Insurance Certificate fully executed and WSIB form where applicable
- submit progress claims in the correct format, accurately representing the work successfully completed and material delivered to the site but not yet installed for each payment period
- submit a Statutory Declaration correctly completed with each progress claim
- submit an updated Schedule if so specified
- pay subcontractors and suppliers in a timely fashion in accordance with the terms and conditions of its subcontracts
- promptly appoint a competent site superintendent
- notify the NCC representative of all its subcontracting activities
- apply for, obtain and pay for all necessary permits, licenses and certificates
- cooperate with other contractors sent onto the site of the work
- remove a superintendent or unsuitable worker when requested by the NCC representative to do so
- effectively protect the work and the contract documents provided by the NCC
- comply with all warranty provisions up to the date of the Contractor Performance Evaluation Report Form (CPERF)
- effectively manage the site during a suspension or termination of the work to mitigate any additional costs to the NCC
- deal promptly with any claims from creditors
- maintain complete records of the project
- provide information promptly when requested to do so
- expedite and co-operate in the settlement of all disputes

Efficacit  avec laquelle l'entrepreneur a administr  le contrat conform ment aux dispositions continues dans la partie « prioritaire » des documents contractuels.

Il faut examiner si l'entrepreneur a :

- fourni, dans le d lai prescrit, une garantie contractuelle, un certificat d'assurance d ment sign s et le formulaire de la CSST, le cas  ch ant
- pr sent  des r clamations p riodiques dans le bon format, en d crivant avec pr cision les travaux ex cut s et le mat riel livr  sur le chantier mais non encore install , pour chaque p riode de paiement
- pr sent  une d claration solennelle correctement remplie avec chaque r clamation p riodique
- fourni un calendrier   jour, sur demande
- pay  rapidement les sous-traitants et les fournisseurs conform ment aux conditions des contrats de sous-traitance
- d sign  dans les plus brefs d lais un surintendant de chantier qualifi 
- tenu au courant le repr sentant de la CCN de toutes les activit s de sous-traitance
- demand , obtenu et pay  tous les permis, licences et certificats n cessaires
- collabor  avec les autres entrepreneurs envoy s sur le lieu des travaux
- remplac  un surintendant ou un travailleur inapte   la demande du repr sentant de la CCN
- prot g  efficacement les travaux et les documents relativement aux travaux et au contrat fournis par la CCN
- respect  toutes les dispositions de garantie jusqu'  la date du Formulaire Rapport d' valuation du rendement de l'entrepreneur (FRERE)
- g r  efficacement le chantier pendant une suspension des travaux ou lors de leur ach vement, afin de limiter tout c t  suppl mentaire pour la CCN
- trait  dans les plus brefs d lais les demandes de paiement des cr anciers
- tenu des dossiers complets sur le projet
- fourni promptement les renseignements demand s
- acc l re et coop re dans le r glement des diff rends

## HEALTH AND SAFETY / SANTÉ ET SÉCURITÉ

The effectiveness to which the contractor managed and administered the occupational health and safety provisions as stipulated in the contract documents and those required by provincial legislation or those that would otherwise be applicable to the site of the work.

Consideration should be given to: Did the contractor

- provide the NCC with a copy of its health and safety program prior to award of contract
- provide the NCC with a copy of its site specific hazardous assessment prior to award of contract
- apply for and obtain the provincial Notice of Project prior to commencement of the work
- apply for and obtain the Building Permit prior to commencement of the work
- provide a competent superintendent who
  - is qualified in health and safety matters because of her/his knowledge, training and experience
  - is familiar with the OH&S Act and its Regulations that apply to the site of the work
  - remedies any potential or actual danger of health and safety to those employed at the work site
- respond in a timely manner to any non-compliance safety issues noted by the NCC or a representative of the authority having jurisdiction
- implement its safety program in a proactive manner

Efficacité avec laquelle l'entrepreneur a géré et administré les dispositions relatives à la santé et à la sécurité au travail telles que stipulées dans les documents contractuels et dans les règlements provinciaux ou ceux s'appliquant normalement au lieu des travaux.

Il faut examiner si l'entrepreneur a :

- fourni à la CCN une copie de son programme en matière de santé et de sécurité avant l'octroi du contrat
- fourni à la CCN une copie de son évaluation des dangers pouvant survenir sur les lieux avant l'octroi du contrat
- demandé et obtenu l'avis de projet provincial avant le début des travaux
- demandé et obtenu le permis de construction avant le début des travaux
- engagé un surintendant qui :
  - est qualifié en matière de santé et de sécurité de par ses connaissances, sa formation et son expérience
  - connaît bien les dispositions de la Loi sur la santé et la sécurité au travail et de son règlement qui s'applique sur le lieu des travaux
  - remédie à tout danger possible ou réel en matière de santé et de sécurité pouvant toucher toutes les personnes travaillant sur le lieu des travaux
- traité rapidement tous les problèmes de non-conformité à la sécurité relevés par la CCN ou par un représentant de l'autorité qui a juridiction
- mis en œuvre son programme de sécurité de façon proactive

- GC1.1 INTERPRETATION
  - GC1.1.1 Headings and References
  - GC1.1.2 Terminology
  - GC1.1.3 Application of Certain Provisions
  - GC1.1.4 Substantial Performance
  - GC1.1.5 Completion
- GC1.2 CONTRACT DOCUMENTS
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- GC1.3 STATUS OF THE CONTRACTOR
- GC1.4 RIGHTS AND REMEDIES
- GC1.5 TIME OF THE ESSENCE
- GC1.6 INDEMNIFICATION BY CONTRACTOR
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- GC1.8 LAWS, PERMITS AND TAXES
- GC1.9 WORKERS' COMPENSATION
- GC1.10 NATIONAL SECURITY
- GC1.11 UNSUITABLE WORKERS
- GC1.12 PUBLIC CEREMONIES AND SIGNS
- GC1.13 CONFLICT OF INTEREST
- GC1.14 AGREEMENTS AND AMENDMENTS
- GC1.15 SUCCESSION
- GC1.16 ASSIGNMENT
- GC1.17 NO BRIBE
- GC1.18 CERTIFICATION - CONTINGENCY FEES
- GC1.19 INTERNATIONAL SANCTIONS

**GC1.1 INTERPRETATION**

**GC1.1.1 Headings and References**

- 1) The headings in the contract documents, other than those in the drawings and specifications, form no part of the Contract but are inserted for convenience of reference only.
- 2) A reference made to a part of the Contract by means of numbers preceded by letters is a reference to the particular part of the Contract that is identified by that combination of letters and numbers and to any other part of the Contract referred to therein.
- 3) A reference to a paragraph or subparagraph followed by an identifying number, letter or combination thereof is, unless specifically stated otherwise, a reference to the paragraph or subparagraph that forms part of the clause within which the reference is made.

**GC1.1.2 Terminology**

- 1) In the Contract

"Contract" means the contract documents referred to as such therein and every other document specified or referred to in any of them as forming part of the Contract, all as amended by agreement of the parties;

"Contract Amount" means the amount set out in the Contract to be payable to the Contractor for the Work, subject to the terms and conditions of the Contract;

"Contract Security" means any security given by the Contractor to the NCC in accordance with the Contract;

"Contractor" means the person contracting with the NCC to provide or furnish all labour, Material and Plant for the execution of the Work under the Contract, and includes the Contractor's superintendent as designated in writing to the NCC;

"Certificate of Completion" means a certificate issued by the NCC when the Work reaches Completion;

"Certificate of Measurement" means a certificate issued by the NCC certifying the correctness of the final quantities, prices per unit and values of labour, Plant and Material performed, used and supplied by the Contractor for the construction of the part of the Work to which a Unit Price Arrangement applies;

"Certificate of Substantial Performance" means a certificate issued by the NCC when the Work reaches Substantial Performance;

"NCC Representative" means the person designated in the Contract, or by written notice to the Contractor, to act as the NCC Representative for the purposes of the Contract, and includes a person, designated and authorized in writing by the NCC Representative to the Contractor;

"herein", "hereby", "hereof", "hereunder" and similar expressions refer to the Contract as a whole and not to any particular section or part thereof;

"Lump Sum Arrangement" means that part of the Contract that prescribes a lump sum as payment for performance of the Work to which it relates;

"Material" includes all commodities, articles, machinery, equipment, fixtures and things required to be furnished in accordance with the Contract for incorporation into the Work;

"NCC" means the National Capital Commission;

"Person" also includes, unless there is an express stipulation in the Contract to the contrary, any partnership, proprietorship, firm, joint venture, consortium or corporation;

"Plant" includes all tools, implements, machinery, vehicles, structures, equipment, articles and things that are necessary for the performance of the Contract, other than Material and those tools customarily provided by a tradesperson in practicing a trade;

"Security screening" is a generic term that applies to all types and levels of personnel security screening including Reliability Status, Site Access, and CONFIDENTIAL, SECRET and TOP SECRET security clearances conducted by the NCC;

"Sensitive Information and Assets" means information or assets that have been identified by the NCC as TOP SECRET, SECRET, CONFIDENTIAL or protected;

"Subcontractor" means a person having a direct contract with the Contractor, subject to GC3.6 SUBCONTRACTING, to perform a part or parts of the Work, or to supply Material customized for the Work;

"Superintendent" means the employee or representative of the Contractor designated by the Contractor to act pursuant to GC2.6 SUPERINTENDENT;

"Supplementary Conditions" means the part of the Contract that amends or supplements the General Conditions;

"Supplier" means a person having a direct contract with the Contractor to supply Plant or Material not customized for the Work;

"Unit Price Arrangement" means that part of the Contract that prescribes the product of a price per unit of measurement multiplied by a number of units of measurement for performance of the Work to which it relates;

"Unit Price Table" means the table of prices per unit set out in the Contract;

"Work" means, subject only to any express stipulation in the Contract to the contrary, everything that is necessary to be done, furnished or delivered by the Contractor to perform the Contract in accordance with the contract documents; and

"Working Day" means a day other than a Saturday, Sunday, or a statutory holiday that is observed by the construction industry in the area of the place of the Work.

### **GC1.1.3 Application of Certain Provisions**

- 1) Any provisions of the Contract that are expressly stipulated to be applicable only to a Unit Price Arrangement are not applicable to any part of the Work to which a Lump Sum Arrangement applies.
- 2) Any provisions of the Contract that are expressly stipulated to be applicable only to a Lump Sum Arrangement are not applicable to any part of the Work to which a Unit Price Arrangement applies.

### **GC1.1.4 Substantial Performance**

- 1) The Work shall be considered to have reached Substantial Performance when:
  - (a) the Work or a substantial part thereof has passed inspection and testing and is, in the opinion of the NCC, ready for use by the NCC or is being used for the intended purposes; and
  - (b) the Work is, in the opinion of the NCC, capable of completion or correction at a cost of not more than
    - (i) 3% of the first \$500,000;
    - (ii) 2% of the next \$500,000; and
    - (iii) 1% of the balanceof the Contract Amount at the time this cost is calculated.
- 2) Where the Work or a substantial part thereof is ready for use or is being used for the purposes intended and:
  - (a) the remainder of the Work or a part thereof cannot be completed by the time specified in the Contract, or as amended in accordance with GC6.5 DELAYS AND EXTENSION OF TIME, for reasons beyond the control of the Contractor; or
  - (b) the NCC and the Contractor agree not to complete a part of the Work within the specified time;

the cost of that part of the Work that was either beyond the control of the Contractor to complete or the NCC and the Contractor have agreed not to complete by the time specified, shall be deducted from the value of the Contract referred to in subparagraph 1)(b) of GC1.1.4, and the said cost shall not form part of the cost of the Work remaining to be done in determining Substantial Performance.

**GC1.1.5 Completion**

- 1) The Work shall be deemed to have reached Completion when all labour, Plant and Material required have been performed, used or supplied, and the Contractor has complied with the Contract and all orders and directions made pursuant thereto, all to the satisfaction of the NCC.

**GC1.2 CONTRACT DOCUMENTS****GC1.2.1 General**

- 1) The contract documents are complementary, and what is required by any one shall be as binding as if required by all.
- 2) References in the contract documents to the singular shall be considered to include the plural as the context requires.
- 3) Nothing contained in the contract documents shall create a contractual relationship between the NCC and any Subcontractor or Supplier, their subcontractors or suppliers, or their agents or employees.

**GC1.2.2 Order of Precedence**

- 1) In the event of any discrepancy or conflict in the contents of the following documents, such documents shall take precedence and govern in the following order:
  - (a) any amendment or variation of the contract documents that is made in accordance with the General Conditions;
  - (b) any amendment issued prior to tender closing;
  - (c) Supplementary Conditions;
  - (d) General Conditions;
  - (e) the duly completed Invitation to Tender and Acceptance Form when accepted;
  - (f) drawings and specifications.

later dates shall govern within each of the above categories of documents.

- 2) In the event of any discrepancy or conflict in the information contained in the drawings and specifications, the following rules shall apply:
  - (a) specifications shall govern over drawings;
  - (b) dimensions shown in figures on a drawings shall govern where they differ from dimensions scaled from the same drawing; and
  - (c) drawings of larger scale govern over those of smaller scale.



**GC1.2.3 Security and Protection of Documents and Work**

- 1) The Contractor shall guard and protect all sensitive contract information (TOP SECRET, SECRET, CONFIDENTIAL and PROTECTED) including printed and digital documents, drawings, information, models, copies thereof and processing systems, whether supplied by the NCC or the Contractor, against loss or compromise and damage from any cause.
- 2) The Contractor shall limit access to sensitive NCC information only to those with a “need-to-know” and who have been successfully security screened to at least the level of sensitivity of the information.
- 3) The Contractor shall ensure all contract information indicated in paragraph 1) is guarded and protected by any subcontractors, agents or suppliers and access limited only to those with a “need-to-know” and who have been successfully security screened to at least the level of sensitivity of the information.
- 4) The Contractor shall keep confidential all information provided to the Contractor by or on behalf of the NCC in connection with the Work, and all information developed by the Contractor as part of the Work, and shall not disclose any such information to any person without the written permission of the NCC, except that the Contractor may disclose to a subcontractor, authorized in accordance with the Contract, information necessary to the performance of a subcontract. This section does not apply to any information that:
  - (a) is publicly available from a source other than the Contractor; or
  - (b) is or becomes known to the Contractor from a source other than the NCC, except any source that is known to the Contractor to be under an obligation to the NCC not to disclose the information.
- 5) When the Contract, the Work, or any information referred to in paragraph 4) is identified as TOP SECRET, SECRET, CONFIDENTIAL or PROTECTED by the NCC, the Contractor shall, at all times, take all measures reasonably necessary for the safeguarding of the material so identified, including such measures as may be further specified elsewhere in the Contract or provided, in writing, from time to time by the NCC.
- 6) Without limiting the generality of paragraphs 4) and 5) of GC1.2.3, when the Contract, the Work, or any information referred to in paragraph 4) is identified as TOP SECRET, SECRET, CONFIDENTIAL or PROTECTED by the NCC, the NCC shall be entitled to inspect the Contractor's premises and the premises of its subcontractors or suppliers and any other person at any tier, for security purposes at any time during the term of the Contract, and the Contractor shall comply with, and ensure that any such subcontractors or suppliers comply with all written instructions issued by the NCC dealing with the material so identified, including any requirement that employees of the Contractor and its subcontractors and suppliers and any other person at any tier execute and deliver declarations relating to reliability status, site access security clearances and other procedures.
- 7) The Contractor shall report any suspected or actual security incidents immediately to the NCC involving loss, compromise or damage of NCC information or assets.
- 8) The Contractor shall safeguard the Work and the Contract, the specifications, drawings and any other information provided by the NCC to the Contractor, and shall be liable to the NCC for any loss or damage from any causes.

**GC1.3 STATUS OF THE CONTRACTOR**

- 1) The Contractor is engaged under the Contract as an independent contractor.
- 2) The Contractor, its subcontractors and suppliers and any other person at any tier and their employees are not engaged by the Contract as employees, servants or agents of the NCC.
- 3) For the purposes of the contract the Contractor shall be solely responsible for any and all payments and deductions required to be made by law including those required for Canada or Quebec Pension Plans, Employment Insurance, Worker's Compensation, provincial health or insurance plans, and Income Tax.

**GC1.4 RIGHTS AND REMEDIES**

- 1) Except as expressly provided in the Contract, the duties and obligations imposed by the Contract and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.

**GC1.5 TIME OF THE ESSENCE**

- 1) Time is of the essence of the Contract.

**GC1.6 INDEMNIFICATION BY CONTRACTOR**

- 1) The Contractor shall pay all royalties and patent fees required for the performance of the Contract and, at the Contractor's expense, shall defend all claims, actions or proceedings against the NCC charging or claiming that the Work or any part thereof provided or furnished by the Contractor to the NCC infringes any patent, industrial design, copyright trademark, trade secret or other proprietary right enforceable in Canada.
- 2) The Contractor shall indemnify and save the NCC harmless from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings by any third party, brought or prosecuted and in any manner based upon, arising out of, related to, occasioned by, or attributable to the activities of the Contractor, its subcontractors and suppliers and any other person at any tier, in performing the Work.
- 3) For the purposes of paragraph 2) of GC1.6, "activities" means any act improperly carried out, any omission to carry out an act and any delay in carrying out an act.

**GC1.7 INDEMNIFICATION BY THE NCC**

- 1) Subject to the Crown Liability and Proceedings Act, the Patent Act, and any other law that affects the NCC's rights, powers, privileges or obligations, the NCC shall indemnify and save the Contractor harmless from and against all claims, demands, losses, costs, damage, actions, suits or proceedings arising out of the Contractor's activities under the Contract that are directly attributable to:
  - (a) a lack of or a defect in the NCC's title to the Work site if owned by the NCC, whether real or alleged; or
  - (b) an infringement or an alleged infringement by the Contractor of any patent of invention or any other kind of intellectual property occurring while the Contractor was performing any act for the purposes of the Contract employing a model, plan or design or any other thing related to the Work that was supplied by the NCC to the Contractor.

**GC1.8 LAWS, PERMITS AND TAXES**

- 1) The Contractor shall comply with all federal, provincial and municipal laws and regulations applicable to the performance of the Work or any part thereof including, without limitation, all laws concerning health and labour conditions and the protection of the environment, and shall require compliance therewith by all of its subcontractors and suppliers at any tier as if the Work were being performed for an owner other than the NCC. The Contractor shall furnish evidence of compliance with such laws and regulations to the NCC at such times as the NCC may reasonably request.
- 2) Unless stipulated otherwise in the Contract, the Contractor shall obtain and maintain all permits, certificates, licences, registrations and authorizations required for the lawful performance of the Work.
- 3) Prior to the commencement of the Work at the site, the Contractor shall tender to a municipal authority an amount equal to all fees and charges that would be lawfully payable to that municipal authority in respect of building permits as if the Work were being performed for an owner other than the NCC.
- 4) Within 10 days of making a tender pursuant to paragraph 3) of GC1.8, the Contractor shall notify the NCC of the amount properly tendered and whether or not the municipal authority has accepted that amount.
- 5) If the municipal authority has not accepted the amount tendered, the Contractor shall pay that amount to the NCC within 6 days after the time stipulated in paragraph 4) of GC1.8.
- 6) For the purposes of this clause, "municipal authority" means any authority that would have jurisdiction respecting permission to perform the Work if the owner were not the NCC.
- 7) Notwithstanding the residency of the Contractor, the Contractor shall pay any applicable tax arising from or related to the performance of the Work under the Contract.
- 8) In accordance with the Statutory Declaration referred to in paragraph 4) of GC5.5 SUBSTANTIAL PERFORMANCE OF THE WORK, a Contractor who has neither residence nor place of business in the province or territory in which work under the Contract is being performed shall provide the NCC with proof of registration with the provincial sales tax authorities in the said province.
- 9) For the purpose of the payment of any applicable tax or the furnishing of security for the payment of any applicable tax arising from or related to the performance of the Work, and notwithstanding the provision that all Material, Plant and interest of the Contractor in all real property, licences, powers and privileges, become the property of the NCC after the time of purchase in accordance with GC3.10 MATERIAL PLANT AND REAL PROPERTY BECOME PROPERTY OF THE NCC, the Contractor shall be liable, as a user or consumer, for the payment or for the furnishing of security for the payment of any applicable tax payable, at the time of the use or consumption of that Material, Plant or interest of the Contractor in accordance with the relevant legislation.

**GC1.9 WORKERS' COMPENSATION**

- 1) Prior to award of contract, at the time of submitting its first progress claim, at the time of Substantial Performance of the Work, and prior to issuance of the Certificate of Completion, the Contractor shall provide evidence of compliance with workers' compensation legislation applicable to the place of the Work, including payments due thereunder.

- 2) At any time during the term of the Contract, when requested by the NCC, the Contractor shall provide such evidence of compliance by the Contractor, its subcontractors and any other person at any tier and any other person performing part of the Work who is required to comply with such legislation.

**GC1.10 NATIONAL SECURITY**

- 1) If the NCC determines that the Work is of a class or kind that involves national security, the NCC may order the Contractor to:
  - (a) provide the NCC with any information concerning persons employed or to be employed by the Contractor for purposes of the Contract; and
  - (b) remove any person from the site of the Work if, in the opinion of the NCC, that person may be a risk to the national security;and the Contractor shall comply with the order.
- 2) In all contracts with persons who are to be employed in the performance of the Contract, the Contractor shall make provision for the performance of any obligation that may be imposed upon the Contractor under paragraph 1) of GC1.10.

**GC1.11 UNSUITABLE WORKERS**

- 1) The NCC shall instruct the Contractor to remove from the site of the Work any person employed by the Contractor for purposes of the Contract who, in the opinion of the NCC, is incompetent or is guilty of improper conduct, and the Contractor shall not permit a person who has been removed to return to the site of the Work.

**GC1.12 PUBLIC CEREMONIES AND SIGNS**

- 1) The Contractor shall not permit any public ceremony in connection with the Work without the prior consent of the NCC.
- 2) The Contractor shall not erect nor permit the erection of any sign or advertising on the Work or its site without the prior consent of the NCC.

**GC1.13 CONFLICT OF INTEREST**

- 1) It is a term of the Contract that no individual, for whom the post-employment provisions of the Conflict of Interest and Post-Employment Code for Public Office Holders or the Values and Ethics Code for the Public Service apply, shall derive a direct benefit from the Contract unless that individual is in compliance with the applicable post-employment provisions.

**GC1.14 AGREEMENTS AND AMENDMENTS**

- 1) The Contract constitutes the entire and sole agreement between the parties with respect to the subject matter of the Contract and supersedes all previous negotiations, communications and other agreements, whether written or oral, relating to it, unless they are incorporated by reference in the Contract. There are no terms, covenants, representations, statements or conditions binding on the parties other than those contained in the Contract.
- 2) The failure of either party at any time to require performance by the other party of any provision hereof shall not affect the right thereafter to enforce such provision. Nor shall the waiver by either

party of any breach of any covenant, term or condition hereof be taken to be held to be a waiver of any further breach of the same covenant, term or condition.

- 3) The Contract may be amended only as provided for in the Contract.

#### **GC1.15 SUCCESSION**

- 1) The Contract shall inure to the benefit of and be binding upon the parties hereto and their lawful heirs, executors, administrators, successors and, subject to GC1.16 ASSIGNMENT, permitted assigns.

#### **GC1.16 ASSIGNMENT**

- 1) The Contractor shall not make any assignment of the Contract, either in whole or in part, without the written consent of the NCC.

#### **GC1.17 NO BRIBE**

- 1) The Contractor represents and covenants that no bribe, gift, benefit, nor other inducement has been nor shall be paid, given, promised or offered directly or indirectly to any official or employee of the NCC or to a member of the family of such a person, with a view to influencing the entry into the Contract or the administration of the Contract.

#### **GC1.18 CERTIFICATION - CONTINGENCY FEES**

- 1) In this clause:
  - (a) "contingency fee" means any payment or other compensation that is contingent upon or is calculated upon the basis of a degree of success in soliciting or obtaining a Government contract or negotiating the whole or any part of its terms;
  - (b) "employee" means a person with whom the Contractor has an employer/employee relationship; and
  - (c) "person" includes an individual or a group of individuals, a corporation, a partnership, an organization and an association and, without restricting the generality of the foregoing, includes any individual who is required to file a return with the registrar pursuant to section 5 of the Lobbyists Registration Act R.S.C. 1985 c.44 (4th Supplement) as the same may be amended from time to time.
- 2) The Contractor certifies that it has not directly or indirectly paid nor agreed to pay and covenants that it shall not directly or indirectly pay nor agree to pay a contingency fee for the solicitation, negotiation or obtaining of the Contract to any person other than an employee acting in the normal course of the employee's duties.
- 3) All accounts and records pertaining to payments of fees or other compensation for the solicitation, obtaining or negotiation of the Contract shall be subject to the accounts and audit provisions of the Contract.
- 4) If the Contractor certifies falsely under this section or is in default of the obligations contained therein, the NCC may either take the Work out of the Contractor's hands in accordance with the provisions of the Contract or recover from the Contractor by way of reduction to the Contract Amount or otherwise, the full amount of the contingency fee.

**GC1.19 INTERNATIONAL SANCTIONS**

- 1) Persons and companies in Canada, and Canadians outside of Canada are bound by economic sanctions imposed by the Government of Canada. As a result, the the NCC cannot accept delivery of goods or services that originate, either directly or indirectly, from the countries or persons subject to economic sanctions.

Details on existing sanctions can be found at:

<http://www.dfait-maeci.gc.ca/trade/sanctions-en.asp>.

- 2) It is a condition of the Contract that the Contractor not supply to the NCC any goods or services which are subject to economic sanctions.
- 3) By law, the Contractor must comply with changes to the regulations imposed during the life of the Contract. During the performance of the Contract should the imposition of sanctions against a country or person or the addition of a good or service to the list of sanctioned goods or services cause an impossibility of performance for the Contractor, the Contractor may request that the Contract be terminated in accordance with GC7.3 TERMINATION OF CONTRACT.

- GC2.1 NCC REPRESENTATIVE'S AUTHORITY
- GC2.2 INTERPRETATION OF CONTRACT
- GC2.3 NOTICES
- GC2.4 SITE MEETINGS
- GC2.5 REVIEW AND INSPECTION OF WORK
- GC2.6 SUPERINTENDENT
- GC2.7 NON-DISCRIMINATION IN HIRING AND EMPLOYMENT OF LABOUR
- GC2.8 ACCOUNTS AND AUDITS

**GC2.1 NCC REPRESENTATIVE'S AUTHORITY**

- 1) The NCC shall designate an NCC Representative and shall notify the Contractor of the name, address and telephone number of the NCC Representative.
- 2) The NCC Representative shall perform the NCC's duties and functions under the contract.
- 3) The NCC Representative shall be authorized to issue notices, instructions and directions to the Contractor and to accept on behalf of the NCC any notice, order or other communication from the contractor relating to the Work.
- 4) The NCC Representative shall, within a reasonable time, review and respond to submissions made by the Contractor in accordance with the requirements of the Contract.

**GC2.2 INTERPRETATION OF CONTRACT**

- 1) If, at any time before the NCC has issued a Certificate of Completion, any question arises between the parties about whether anything has been done as required by the Contract or about what the Contractor is required by the Contract to do, and in particular but without limiting the generality of the foregoing, about:
  - (a) the meaning of anything in the drawings and specifications;
  - (b) the meaning to be given to the drawings and specifications in case of any error therein, omission therefrom, or obscurity or discrepancy in their wording or intention;
  - (c) whether or not the quality or quantity of any Material or workmanship supplied or proposed to be supplied by the Contractor meets the requirements of the Contract;
  - (d) whether or not the labour, Plant or Material performed, used and supplied by the Contractor for performing the Work and carrying out the Contract are adequate to ensure that the Work shall be performed in accordance with the Contract and that the Contract shall be carried out in accordance with its terms;
  - (e) what quantity of any of the Work has been completed by the Contractor; or
  - (f) the timing and scheduling of the various phases of the performance of the Work as specified in the Contract;

the question shall be decided, subject to the provisions of GC8 DISPUTE RESOLUTION, by the NCC.

- 2) The Contractor shall perform the Work in accordance with any decisions of the NCC that are made under paragraph 1) of GC2.2 and in accordance with any consequential directions given by the NCC.

- 3) If the Contractor fails to comply with any instruction or direction issued by the NCC pursuant to the Contract, the NCC may employ such methods as the NCC deems advisable to do what the Contractor failed to do, and the Contractor shall, on demand, pay the NCC an amount that is equal to the aggregate of all costs, expenses and damages incurred or sustained by the NCC by reason of the Contractor's failure to comply with such instruction or direction, including the cost of any methods employed by the NCC in doing what the Contractor failed to do.

**GC2.3 NOTICES**

- 1) Subject to paragraph 3) of GC2.3, any notice, order or other communication may be given in any manner, and if required to be in writing, shall be addressed to the party to whom it is intended at the address in the Contract or at the last address of which the sender has received written notice in accordance with this section.
- 2) Any notice, order or other communication given in writing in accordance with paragraph 1) of GC2.3 shall be deemed to have been received by either party:
  - (a) if delivered personally, on the day that it was delivered;
  - (b) if forwarded by mail, on the earlier of the day it was received or the sixth day after it was mailed; and
  - (c) if forwarded by facsimile or electronic mail, 24 hours after it was transmitted.
- 3) A notice given under GC7.1 TAKING THE WORK OUT OF THE CONTRACTOR'S HANDS, GC7.2 SUSPENSION OF WORK, and GC7.3 TERMINATION OF CONTRACT shall be given in writing and, if delivered personally, shall be delivered, if the Contractor is a sole proprietor, to the Contractor or, if the Contractor is a partnership or corporation, to an officer thereof.

**GC2.4 SITE MEETINGS**

- 1) In consultation with the NCC, the Contractor shall arrange site meetings at regular intervals, with all involved parties who are to attend, in order to ensure, among other things, the proper co-ordination of the Work.

**GC2.5 REVIEW AND INSPECTION OF WORK**

- 1) The NCC shall review the Work to determine if it is proceeding in conformity with the Contract and to record the necessary data to make an assessment of the value of Work completed. The NCC shall measure and record the quantities of labour, Plant and Material performed, used or supplied by the Contractor in performing the Work or any part thereof that is subject to a Unit Price Arrangement and, on request, shall inform the Contractor of those measurements, and permit the Contractor to inspect any records pertaining thereto.
- 2) The NCC shall reject Work or Material which in the NCC's opinion does not conform to the requirements of the Contract, and shall require inspection or testing of Work, whether or not such Work is fabricated, installed, or completed. If such Work is not in accordance with the requirements of the Contract, the Contractor shall correct the Work and shall pay the NCC, on demand, all reasonable costs and expenses that were incurred by the NCC in having the examination performed.
- 3) The Contractor shall provide the NCC with access to the Work and its site at all times, and at all times shall provide sufficient, safe, and proper facilities for the review and inspection of the Work by persons authorized by the NCC and any representatives of those authorities having jurisdiction. If parts of the Work are in preparation at locations other than the site of the Work, the NCC shall be given access to such Work whenever it is in progress.



- 4) The Contractor shall furnish the NCC with such information respecting the performance of the Contract as the NCC may require, and render every possible assistance to enable the NCC to verify that the Work is performed in accordance with the Contract, carry out any other duties and exercise any powers in accordance with the Contract.
- 5) If Work is designated for tests, inspections, or approvals in the Contract or by the NCC's instructions, or by laws or ordinances of the place of the Work, the Contractor shall give the NCC reasonable notice of when such Work shall be ready for review and inspection. The Contractor shall arrange for and shall give the NCC reasonable notice of the date and time of inspections, tests or approvals.
- 6) If the Contractor covers, or permits to be covered, Work that has been designated for tests, inspections or approvals before such tests, inspections or approvals are made, completed or given, the Contractor shall, if so directed by the NCC, uncover such Work, have the inspections, tests or approvals satisfactorily made, completed or given and make good the covering of the Work at the Contractor's expense.

#### **GC2.6 SUPERINTENDENT**

- 1) Prior to commencing the Work, the Contractor shall designate a Superintendent and shall notify the NCC of the name, address and telephone number of the Superintendent. The Contractor shall keep the Superintendent at the Work site during working hours until the Work has reached completion.
- 2) The Superintendent shall be in full charge of the operations of the Contractor during the performance of the Work and shall be authorized to accept on behalf of the Contractor any notice, order or other communication given to the Superintendent or the Contractor relating to the Work.
- 3) Upon request of the NCC, the Contractor shall remove any Superintendent who, in the opinion of the NCC, is incompetent or has been guilty of improper conduct, and shall forthwith designate another Superintendent who is acceptable to the NCC.
- 4) The Contractor shall not substitute a Superintendent without the written consent of the NCC. If a Superintendent is substituted without such consent, the NCC shall be entitled to refuse to issue any documentation or certification relating to progress payments, Substantial Performance or Completion of the Work until the Superintendent has returned to the Work site or another Superintendent who is acceptable to the NCC has been substituted.

#### **GC2.7 NON-DISCRIMINATION IN HIRING AND EMPLOYMENT OF LABOUR**

- 1) For the purposes of this clause, "persons" include the Contractor, its subcontractors and suppliers at any tier and their respective employees, agents, licensees or invitees and any other individual involved in the performance of the Work or granted access to the Work site. A "person" includes any partnership, proprietorship, firm, joint venture, consortium and corporation.
- 2) Without restricting the provisions of paragraph 3) of GC2.6, SUPERINTENDENT, the Contractor shall not refuse to employ and shall not discriminate in any manner against any person because:
  - (a) of that person's race, national origin, colour, religion, age, sex or marital status;
  - (b) of the race, national origin, colour, religion, age, sex, or marital status of any person having any relationship or association with that person; or
  - (c) a complaint has been made or information has been given by or in respect of that person relating to an alleged failure by the Contractor to comply with subparagraphs 2)(a) and 2)(b) of GC2.7.

- 3) Within two Working Days immediately following receipt of a written complaint pursuant to paragraph 2) of GC2.7, the Contractor shall:
  - (a) cause to have issued a written direction to the person or persons named by the complainant to cease all actions that form the basis of the complaint;
  - (b) forward a copy of the complaint to the NCC by registered mail or courier service; and
  - (c) when the Labour Conditions are applicable under the circumstances of the complaint, forward a copy of the complaint to HRSDC - Labour to the attention of the appropriate Director as described in the Labour Conditions ("HRSDC - Labour" means the labour component of the federal Department of Human Resources and Skills Development).
- 4) Within twenty four (24) hours immediately following receipt of a direction from the NCC to do so, the Contractor shall cause to have removed from the site of the Work and from the performance of Work under the Contract, any person or persons whom the NCC believes to be in breach of the provisions of paragraph 2) of GC2.7.
- 5) No later than thirty (30) days after receipt of the direction referred to in paragraph 4) of GC2.7, the Contractor shall cause the necessary action to be commenced to remedy the breach described in the direction.
- 6) If a direction is issued pursuant to paragraph 4) of GC2.7, the NCC may withhold from monies that are due and payable to the Contractor or setoff pursuant to GC5.9 RIGHT OF SETOFF, whichever is applicable, an amount representing the sum of the costs and payment referred to in paragraph 8) of GC2.7.
- 7) If the Contractor fails to proceed in accordance with paragraph 5) of GC2.7, the NCC shall take the necessary action to have the breach remedied, and shall determine all supplementary costs incurred by the NCC as a result.
- 8) The NCC may make a payment directly to the complainant from monies that are due and payable to the Contractor upon receipt from the complainant of:
  - (a) a written award issued pursuant to the federal Commercial Arbitration Act, R.S.C. 1985, c. 17 (2nd Supp.);
  - (b) a written award issued pursuant to the Canadian Human Rights Act, R.S.C. 1985, c. H-6;
  - (c) a written award issued pursuant to provincial or territorial human rights legislation; or
  - (d) a judgement issued by a court of competent jurisdiction.
- 9) If the NCC is of the opinion that the Contractor has breached any of the provisions of this clause, the NCC may take the Work out of the Contractor's hands pursuant to GC7.1 TAKING THE WORK OUT OF THE CONTRACTOR'S HANDS.
- 10) Subject to paragraph 7) of GC3.6 SUBCONTRACTING, the Contractor shall ensure that the provisions of this clause are included in all agreements and contracts entered into as a consequence of the Work.

**GC2.8 ACCOUNTS AND AUDITS**

- 1) The Contractor shall, in addition to the requirements expressed in paragraph 6) of GC3.4 EXECUTION OF THE WORK, maintain full records of the Contractor's estimated and actual cost of the Work together with all tender calls, quotations, contracts, correspondence, invoices, receipts and vouchers relating thereto, and shall make them available on request to audit and inspection by the NCC or by persons designated to act on behalf of the NCC.
- 2) The Contractor shall allow any of the persons referred to in paragraph 1) of GC2.8 to make copies of and take extracts from any of the records and material, and shall furnish such persons or entities with any information those persons or entities may require from time to time in connection with such records and material.
- 3) The Contractor shall maintain and keep the records intact until the expiration of two years after the date that a Certificate of Completion has been issued or until the expiration of such other period of time as the NCC may direct.
- 4) The Contractor shall cause all subcontractors at any tier and all other persons directly or indirectly controlled by or affiliated with the Contractor and all persons directly or indirectly having control of the Contractor to comply with the requirements of this clause as if they were the Contractor.

- GC3.1 PROGRESS SCHEDULE
- GC3.2 ERRORS AND OMISSIONS
- GC3.3 CONSTRUCTION SAFETY
- GC3.4 EXECUTION OF THE WORK
- GC3.5 MATERIAL
- GC3.6 SUBCONTRACTING
- GC3.7 CONSTRUCTION BY OTHER CONTRACTORS OR WORKERS
- GC3.8 LABOUR
- GC3.9 TRUCK HAULAGE RATES **(CANCELLED)**
- GC3.10 MATERIAL, PLANT AND REAL PROPERTY BECOME PROPERTY OF THE NCC
- GC3.11 DEFECTIVE WORK
- GC3.12 CLEANUP OF SITE
- GC3.13 WARRANTY AND RECTIFICATION OF DEFECTS IN WORK

**GC3.1 PROGRESS SCHEDULE**

- 1) The Contractor shall:
  - (a) prepare and submit to the NCC, prior to the submission of the Contractor's first progress claim, a progress schedule in accordance with the requirements set out in the Contract;
  - (b) monitor the progress of the Work relative to the schedule and update the schedule as stipulated by the contract documents;
  - (c) advise the NCC of any revisions to the schedule required as the result of any extension of time for completion of the Contract that was approved by the NCC; and
  - (d) prepare and submit to the NCC, at the time of issuance of an Certificate of Substantial Performance, an update of any schedule clearly showing a detailed timetable that is acceptable to the NCC for the completion of any unfinished Work and the correction of all listed defects.

**GC3.2 ERRORS AND OMISSIONS**

- 1) The Contractor shall report promptly to the NCC any errors, discrepancies, or omissions the Contractor may discover when reviewing the contract documents. In making a review, the Contractor does not assume any responsibility to the NCC for the accuracy of the review. The Contractor shall not be liable for damage or costs resulting from such errors, discrepancies, or omissions in the contract documents prepared by or on behalf of the NCC that the Contractor did not discover.

**GC3.3 CONSTRUCTION SAFETY**

- 1) Subject to GC3.7 CONSTRUCTION BY OTHER CONTRACTORS OR WORKERS, the Contractor shall be solely responsible for construction safety at the place of the Work and for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Work. In any emergency, the Contractor shall either, stop the Work, make changes or order extra work to ensure the safety of life and the protection of the Work and neighbouring property.
- 2) Prior to commencing the Work, the Contractor shall notify the authorities having jurisdiction for construction safety at the site of the Work with respect to the intended commencement of the Work, and shall provide such authority with whatever additional information may be required by that authority.

**GC3.4 EXECUTION OF THE WORK**

- 1) The Contractor shall perform, use or supply and pay for, all labour, Plant, Material, tools, construction machinery and equipment, water, heat, light, power, transportation and other facilities and services necessary for the performance of the Work in accordance with the Contract.
- 2) The Contractor shall, at all times, perform the Work in a proper, diligent and expeditious manner as is consistent with construction industry standards and in accordance with the progress schedule prepared pursuant to GC3.1 PROGRESS SCHEDULE and shall provide sufficient personnel to fulfil the Contractor's obligations in accordance with that schedule.
- 3) Subject to paragraph 4) of GC3.4, the Contractor shall have complete care, custody and control of the Work and shall direct and supervise the Work so as to ensure compliance with the Contract. The Contractor shall be responsible for construction means, methods, techniques, sequences and procedures and for co-ordinating the various parts of the Work.
- 4) When requested in writing by the NCC, the Contractor shall make appropriate alterations in the method, Plant or workforce at any time the NCC considers the Contractor's actions to be unsafe or damaging to either the Work, existing facilities, persons at the site of the Work or the environment.
- 5) The Contractor shall have sole responsibility for the design, erection, operation, maintenance and removal of temporary structures and other temporary facilities and for the construction methods used in their erection, operation, maintenance and removal. The Contractor shall engage and pay for registered professional engineering personnel, skilled in the appropriate discipline to perform these functions if required by law or by the Contract, and in all cases when such temporary facilities and their methods of construction are of such a nature that professional engineering skill is required to produce safe and satisfactory results.
- 6) The Contractor shall keep at least one copy of current contract documents, submittals, reports, and records of meetings at the site of the Work, in good order and available to the NCC.
- 7) Except for any part of the Work that is necessarily performed away from or off the site of the Work, the Contractor shall confine Plant, storage of Material, and operations of employees to limits indicated by laws, ordinances, permits or the contract documents.

**GC3.5 MATERIAL**

- 1) Unless otherwise specified in the Contract, all Material incorporated in the Work shall be new.
- 2) Subject to paragraph 3) of GC3.5, if a specified reused, refurbished, or recycled item of Material is not available, the Contractor shall apply to the NCC to substitute a similar item for the one specified.
- 3) If the NCC agrees that the Contractor's application for substitution of a reused, refurbished or recycled item is warranted, and that the substitute item is of acceptable quality and value to that specified and is suitable for the intended purpose, the NCC may approve the substitution, subject to the following:
  - (a) the request for substitution shall be made in writing to the NCC and shall be substantiated by information in the form of the manufacturer's literature, samples and other data that may be required by the NCC;
  - (b) the Contractor shall make the request for substitution in a manner that shall not negatively affect the progress schedule of the Contract and well in advance of the time the item of Material must be ordered;

- (c) substitution of Material shall be permitted only with the prior written approval of the NCC, and any substituted items that are supplied or installed without such approval shall be removed from the site of the Work at the expense of the Contractor, and specified items installed at no additional cost to the NCC; and
- (d) the Contractor shall be responsible for all additional expenses incurred by the NCC, the Contractor, its subcontractors and suppliers at any tier due to the Contractor's use of the substitute.

**GC3.6 SUBCONTRACTING**

- 1) Subject to the provisions of this clause, the Contractor may subcontract any part of the Work but not the whole of the Work.
- 2) The Contractor shall notify the NCC in writing of the Contractor's intention to subcontract.
- 3) A notification referred to in paragraph 2) of GC3.6 shall identify the part of the Work and the Subcontractor with whom the Contractor intends to subcontract.
- 4) The NCC may for reasonable cause, object to the intended subcontracting by notifying the Contractor in writing within six (6) days of receipt by the NCC of a notification referred to in paragraph 2) of GC3.6.
- 5) If the NCC objects to a subcontracting, the Contractor shall not enter into the intended subcontract.
- 6) The Contractor shall not change, nor permit to be changed, a Subcontractor engaged by the Contractor, in accordance with this clause, without the written consent of the NCC.
- 7) The Contractor shall ensure that all the terms and conditions of the Contract that are of general application shall be incorporated in every other contract issued as a consequence of the Contract, at whatever tier, except those contracts issued solely to suppliers at any tier for the supply of Plant or Material.
- 8) Neither a subcontracting nor the NCC's consent to a subcontracting shall be construed to relieve the Contractor from any obligation under the Contract or to impose any liability upon the NCC.

**GC3.7 CONSTRUCTION BY OTHER CONTRACTORS OR WORKERS**

- 1) The NCC reserves the right to send other contractors or workers, with or without Plant and Material, onto the site of the Work.
- 2) When other contractors or workers are sent on to the site of the Work, the NCC shall:
  - (a) enter into separate contracts, to the extent it is possible, with the other contractors under conditions of contract that are compatible with the conditions of the Contract;
  - (b) ensure that the insurance coverage provided by the other contractors is co-ordinated with the insurance coverage of the Contractor as it affects the Work; and
  - (c) take all reasonable precautions to avoid labour disputes or other disputes arising from the work of the other contractors or workers.
- 3) When other contractors or workers are sent on to the site of the Work, the Contractor shall:
  - (a) co-operate with them in the carrying out of their duties and obligations;

- (b) co-ordinate and schedule the Work with the work of the other contractors and workers;
  - (c) participate with other contractors and workers in reviewing their construction schedules when directed to do so;
  - (d) where part of the Work is affected by or depends upon the work of other contractors or workers for its proper execution, promptly report to the NCC in writing and prior to proceeding with that part of the Work, any apparent deficiencies in such work. Failure by the Contractor to so report shall invalidate any claims against the NCC by reason of the deficiencies in the work of other contractors or workers except those deficiencies that are not then reasonably discoverable; and
  - (e) when designated as being responsible for construction safety at the place for work, in accordance with the applicable provincial or territorial laws, carry out its duties in that role and in accordance with those laws.
- 4) If, when entering into the Contract, the Contractor could not have reasonably foreseen nor anticipated the sending of other contractors or workers on to the site of the Work and provided the Contractor:
- (a) incurs extra expense in complying with the requirements of paragraph 3) of GC3.7; and
  - (b) gives the NCC written notice of a claim for that extra expense within thirty (30) days of the date that the other contractors or workers were sent onto the Work or its site,

the NCC shall pay the Contractor the cost of the extra labour, Plant and Material that was necessarily incurred, calculated in accordance with GC6.4 DETERMINATION OF PRICE.

### **GC3.8 LABOUR**

- 1) The Contractor shall maintain good order and discipline among the Contractor's employees and workers engaged in the Work shall not employ, on the site of the Work, anyone not skilled in the tasks assigned.

### **GC3.9 TRUCK HAULAGE RATES**

**CANCELLED**

### **GC3.10 MATERIAL, PLANT AND REAL PROPERTY BECOME PROPERTY OF THE NCC**

- 1) Subject to paragraph 9) of GC1.8 LAWS PERMITS AND TAXES, all Material and Plant and the interest of the Contractor in all real property, licences, powers and privileges purchased, used or consumed by the Contractor for the Work shall, immediately after the time of their purchase, use or consumption be the property of the NCC for the purposes of the Work and they shall continue to be the property of the NCC:
- (a) in the case of Material, until the NCC indicates that the Materials shall not be required for the Work; and
  - (b) in the case of Plant, real property, licences, powers and privileges, until the NCC indicates that the interest vested in the NCC therein is no longer required for the purposes of the Work.
- 2) Material or Plant, that is the property of the NCC by virtue of paragraph 1) of GC3.10, shall not be taken away from the site of the Work nor used nor disposed of except for the purposes of the Work without the written consent of the NCC.

- 3) The NCC is not liable for loss of nor damage from any cause to the Material or Plant referred to in paragraph 1) of GC3.10, and the Contractor is liable for such loss or damage notwithstanding that the Material or Plant is the property of the NCC.

**GC3.11 DEFECTIVE WORK**

- 1) The Contractor shall promptly remove from the site of the Work and replace or re-execute defective Work whether or not the defective Work has been incorporated in the Work and whether or not the defect is the result of poor workmanship, use of defective Material, or damage through carelessness or other act or omission of the Contractor.
- 2) The Contractor, at the Contractor's expense, shall promptly make good other work destroyed or damaged by such removals or replacements.
- 3) If, in the opinion of the NCC, it is not expedient to correct defective Work or Work not performed as provided for in the Contract documents, the NCC may deduct from the amount otherwise due to the Contractor the difference in value between the Work as performed and that called for by the Contract documents.
- 4) The failure of the NCC to reject any defective Work or Material shall not constitute acceptance of the defective Work or Material.

**GC3.12 CLEANUP OF SITE**

- 1) The Contractor shall maintain the Work and its site in a tidy condition and free from an accumulation of waste material and debris.
- 2) Before the issue of a Certificate of Substantial Performance, the Contractor shall remove waste material and debris, and all Plant and Material not required for the performance of the remaining Work and, unless otherwise stipulated in the Contract Documents, shall cause the Work and its site to be clean and suitable for occupancy by the NCC.
- 3) Before the issue of a Certificate of Completion, the Contractor shall remove all surplus Plant and Materials and any waste products and debris from the site of the Work.
- 4) The Contractor's obligations described in paragraphs 1) to 3) of GC3.12 do not extend to waste products and other debris caused by the NCC's servants, or by other contractors and workers referred to in GC3.7 CONSTRUCTION BY OTHER CONTRACTORS OR WORKERS.

**GC3.13 WARRANTY AND RECTIFICATION OF DEFECTS IN WORK**

- 1) Without restricting any warranty or guarantee implied or imposed by law or contained in the Contract, the Contractor shall, at the Contractor's expense:
  - (a) rectify and make good any defect or fault that appears in the Work or comes to the attention of the NCC with respect to those parts of the Work accepted in connection with the Certificate of Substantial Performance within 12 months from the date of Substantial Performance; and
  - (b) rectify and make good any defect or fault that appears in or comes to the attention of the NCC in connection with those parts of the Work described in the Certificate of Substantial Performance within 12 months from the date of the Certificate of Completion;
  - (c) transfer and assign, to the NCC, any subcontractor, manufacturer or supplier extended warranties or guarantees implied or imposed by law or contained in the Contract covering periods beyond the 12 months stipulated above. Extended warranties or guarantees referred to



herein shall not extend the 12-month period whereby the Contractor, except as may be provided elsewhere in the Contract, must rectify and make good any defect or fault that appears in the Work or comes to the attention of the NCC;

- (d) provide, to the NCC prior to the issuance of the Certificate of Completion, a list of all extended warranties and guarantees referred to in paragraph (c) above.
- 2) The NCC may direct the Contractor to rectify and make good any defect or fault referred to in paragraph 1) of GC3.13 or covered by any other expressed or implied warranty or guarantee and the Contractor shall rectify and make good such defect within the time stipulated in the direction.
- 3) A direction referred to in paragraph 2) GC3.13 shall be in writing and shall be given to the Contractor in accordance with GC2.3 NOTICES.

- GC4.1 PROTECTION OF WORK AND PROPERTY
- GC4.2 PRECAUTIONS AGAINST DAMAGE, INFRINGEMENT OF RIGHTS, FIRE AND OTHER HAZARDS
- GC4.3 MATERIAL, PLANT AND REAL PROPERTY SUPPLIED BY THE NCC
- GC4.4 CONTAMINATED SITE CONDITIONS

**GC4.1 PROTECTION OF WORK AND PROPERTY**

- 1) The Contractor shall protect the Work and its site against loss or damage from any cause and shall similarly protect all Material, Plant and real property under the Contractor's care, custody and control whether or not such Material, Plant and real property are supplied by the NCC to the Contractor.
- 2) The Contractor shall provide all facilities necessary for the purpose of maintaining security, and shall assist any person authorized by the NCC to inspect or to take security measures in respect of the Work and its site.
- 3) The NCC may direct the Contractor to do such things and to perform such work as the NCC considers reasonable and necessary to ensure compliance with or to remedy a breach of paragraphs 1) or 2) of GC4.1, and the Contractor, shall comply with such direction.

**GC4.2 PRECAUTIONS AGAINST DAMAGE, INFRINGEMENT OF RIGHTS, FIRE AND OTHER HAZARDS**

- 1) The Contractor shall do whatever is necessary to ensure that:
  - (a) no person, property, right, easement nor privilege is injured, damaged or infringed upon by reasons of the Contractor's activities in performing the Work;
  - (b) pedestrian and other traffic on any public or private road or waterway is not unduly impeded, interrupted nor endangered by the performance or existence of the Work, Material or Plant;
  - (c) fire hazards in or about the site of the Work are eliminated and any fire is promptly extinguished;
  - (d) the health and safety of all persons employed in the performance of the Work is not endangered by the methods nor means of their performance;
  - (e) adequate medical services are available to all persons employed on the Work or its site at all times during the performance of the Work;
  - (f) adequate sanitation measures are taken in respect of the Work and its site; and
  - (g) all stakes, buoys and marks placed on the Work or its site by the NCC are protected and are not removed, defaced, altered nor destroyed.
- 2) The NCC may direct the Contractor to do such things and to perform such work as the NCC considers reasonable and necessary to ensure compliance with or to remedy a breach of paragraph 1) of GC4.2, and the Contractor shall comply with the direction of the NCC.

**GC4.3 MATERIAL, PLANT AND REAL PROPERTY SUPPLIED BY THE NCC**

- 1) Subject to paragraph 2) of GC4.3, the Contractor is liable to the NCC for any loss of or damage to Material, Plant or real property that is supplied or placed in the care, custody and control of the Contractor by the NCC for use in connection with the Contract, whether or not that loss or damage is attributable to causes beyond the Contractor's control.

- 2) The Contractor is not liable to the NCC for any loss or damage to Material, Plant or real property referred to in paragraph 1) of GC4.3 if that loss or damage results from and is directly attributable to reasonable wear and tear.
- 3) The Contractor shall not use any Material, Plant or real property supplied by the NCC except for the purpose of performing the Contract.
- 4) When the Contractor fails to make good any loss or damage for which the Contractor is liable under paragraph 1) within a reasonable time, the NCC may cause the loss or damage to be made good at the Contractor's expense, and the Contractor shall thereupon be liable to the NCC for the cost thereof and shall, on demand, pay to the NCC an amount equal to that cost.
- 5) The Contractor shall keep records of all Material, Plant and real property supplied by the NCC as the NCC requires and shall satisfy the NCC, when requested, that such Material, Plant and real property are at the place and in the condition in which they ought to be.

**GC4.4 CONTAMINATED SITE CONDITIONS**

- 1) For the purposes of GC4.4, a contaminated site condition exists when a solid, liquid, gaseous, thermal or radioactive irritant or contaminant, or other hazardous or toxic substance or material, including moulds and other forms of fungi, is present at the site of the Work to an extent that constitutes a hazard, or potential hazard, to the environment, property, or the health or safety of any person.
- 2) If the Contractor encounters a contaminated site condition of which the Contractor is not aware or about which the Contractor has not been advised, or if the Contractor has reasonable grounds to believe that such a site condition exists at the site of the Work, the Contractor shall:
  - (a) take all reasonable steps, including stopping the Work, to ensure that no person suffers injury, sickness or death, and that neither property nor the environment is injured or destroyed as a result of the contaminated site condition;
  - (b) immediately notify the NCC of the circumstances in writing; and
  - (c) take all reasonable steps to minimize additional costs that may accrue as a result of any work stoppage.
- 3) Upon receipt of a notification from the Contractor, the NCC shall promptly determine whether a contaminated site condition exists, and shall notify the Contractor in writing of any action to be taken, or work to be performed, by the Contractor as a result of the NCC's determination.
- 4) If the Contractor's services are required by the NCC, the Contractor shall follow the direction of the NCC with regard to any excavation, treatment, removal and disposal of any polluting substance or material.
- 5) The NCC, at the NCC's sole discretion, may enlist the services of experts and specialty contractors to assist in determining the existence of, and the extent and treatment of contaminated site conditions, and the Contractor shall allow them access and co-operate with them in the carrying out of their duties and obligations.
- 6) Except as may be otherwise provided for in the Contract, the provisions of GC6.4 DETERMINATION OF PRICE shall apply to any additional work made necessary because of a contaminated site condition.

- GC5.1 INTERPRETATION
- GC5.2 AMOUNT PAYABLE
- GC5.3 INCREASED OR DECREASED COSTS
- GC5.4 PROGRESS PAYMENT
- GC5.5 SUBSTANTIAL PERFORMANCE OF THE WORK
- GC5.6 FINAL COMPLETION
- GC5.7 PAYMENT NOT BINDING ON THE NCC
- GC5.8 CLAIMS AND OBLIGATIONS
- GC5.9 RIGHT OF SETOFF
- GC5.10 ASSESSMENTS AND DAMAGES FOR LATE COMPLETION
- GC5.11 DELAY IN MAKING PAYMENT
- GC5.12 INTEREST ON SETTLED CLAIMS
- GC5.13 RETURN OF SECURITY DEPOSIT

**GC5.1 INTERPRETATION**

In these Terms of Payment

- 1) The "payment period" means a period of 30 consecutive days or such other longer period as may be agreed between the Contractor and the NCC.
- 2) An amount is "due and payable" when it is due and payable by the NCC to the Contractor according to GC5.4 PROGRESS PAYMENT, GC5.5 SUBSTANTIAL PERFORMANCE OF THE WORK or GC5.6 FINAL COMPLETION.
- 3) An amount is overdue when it remains unpaid on the first day following the day upon which it is due and payable.
- 4) The "date of payment" means the date of the negotiable instrument of an amount due and payable by the NCC.
- 5) The "Bank Rate" means the rate of interest established by the Bank of Canada as the minimum rate at which it makes short term advances to members of the Canadian Payments Association.
- 6) The "Average Bank Rate" means the simple arithmetic mean of the Bank Rate in effect at 4:00 p.m. Ottawa Time each day during the calendar month which immediately precedes the calendar month in which payment is made.

**GC5.2 AMOUNT PAYABLE**

- 1) Subject to any other provisions of the Contract, the NCC shall pay the Contractor, at the times and in the manner hereinafter set out, the amount by which the amounts payable by the NCC to the Contractor in accordance with the Contract exceed the amounts payable by the Contractor to the NCC, and the Contractor shall accept that amount as payment in full satisfaction for everything furnished and done by the Contractor in respect of the Work to which the payment relates.
- 2) When making any payment to the Contractor, the failure of the NCC to deduct an amount payable to the NCC by the Contractor shall not constitute a waiver of the right to do so, or an admission of lack of entitlement to do so in any subsequent payment to the Contractor.
- 3) No payment other than a payment that is expressly stipulated in the Contract, shall be made by the NCC to the Contractor for any extra expense or any loss or damage incurred or sustained by the Contractor.

**GC5.3 INCREASED OR DECREASED COSTS**

- 1) The Contract Amount shall not be increased nor decreased by reason of any increase or decrease in the cost of the Work that is brought about by an increase or decrease in the cost of labour, Plant, Material or any wage adjustment arising pursuant to the Labour Conditions.
- 2) Notwithstanding paragraph 1) of GC5.3, if any change, including a new imposition or repeal, of any tax, customs or other duty, charge, or any similar imposition that is imposed under sales, customs or excise tax legislation of the Government of Canada or any Provincial or Territorial legislation, affects the cost of the Work to the Contractor, and occurs:
  - (a) after the date of submission by the Contractor of its tender; or
  - (b) after the date of submission of the last revision, if the Contractor's tender was revised,the Contract Amount shall be adjusted in the manner provided in paragraph 3) of GC5.3.
- 3) If a change referred to in paragraph 2) of GC5.3 occurs, the Contract Amount shall be increased or decreased by an amount established by an examination by the NCC of the relevant records of the Contractor referred to in GC2.8 ACCOUNTS AND AUDITS to be the increase or decrease in the cost incurred by the Contractor that is directly attributable to that change.
- 4) For the purpose of paragraph 2) of GC5.3, if a tax is changed after the tender closing, but public notice of the change has been given by the Minister of Finance or the corresponding Provincial or Territorial authority before that closing, the change shall be deemed to have occurred before the solicitation closing.
- 5) Notwithstanding paragraphs 2) to 4) of GC5.3, no adjustment to the Contract Amount in respect of the Work or a part thereof shall be made for a change in any imposition referred to in this section that occurs after the date required by the Contract for completion of the Work or that part of the Work.

**GC5.4 PROGRESS PAYMENT**

- 1) On the expiration of a payment period, the Contractor shall deliver to the NCC:
  - (a) a written progress claim in a form acceptable to the NCC that fully describes any part of the Work that has been completed, and any Material that was delivered to the Work site but not incorporated into the Work, during that payment period: and
  - (b) a completed and signed statutory declaration containing a declaration that, up to the date of the progress claim, the Contractor has complied with all lawful obligations with respect to the Labour Conditions and that, in respect of the Work, all lawful obligations of the Contractor to its Subcontractors and Suppliers, referred to collectively in the declaration as "subcontractors and suppliers", have been fully discharged.
- 2) Within 10 days of receipt of a progress claim and statutory declaration from the Contractor, the NCC shall inspect, or cause to have inspected, the part of the Work and the Material described in the progress claim, and shall issue a progress report to the Contractor, that indicates the value of the part of the Work and the Material described in the progress claim that, in the opinion of the NCC:
  - (a) is in accordance with the Contract; and
  - (b) was not included in any other progress report relating to the Contract.

- 3) Subject to GC5.2 AMOUNT PAYABLE, and paragraph 5) of GC5.4, the NCC shall pay the Contractor an amount that is equal to:
  - (a) 95% of the value that is indicated in the NCC's progress report if a labour and material payment bond has been furnished by the Contractor; or
  - (b) 90% of the value that is indicated in the NCC's progress report if a labour and material payment bond has not been furnished by the Contractor.
- 4) Subject to GC5.2, "Amount Payable", and paragraph 5) of GC5.4, the NCC shall pay the Contractor an amount that is equal to 90% of the value that is indicated in the NCC's progress report
- 5) In the case of the Contractor's first progress claim, it is a condition precedent to the NCC's obligation under paragraph 3) of GC5.4 that the Contractor has provided all necessary documentation required by the Contract for the first progress claim and has provided evidence of compliance with workers' compensation legislation applicable to the place of the Work in accordance with GC1.9 WORKERS' COMPENSATION.

**GC5.5 SUBSTANTIAL PERFORMANCE OF THE WORK**

- 1) If, at any time before the issuance of a Certificate of Completion, the NCC determines that the Work has reached Substantial Performance as described in subparagraph 1) (b) of GC1.1.4 SUBSTANTIAL PERFORMANCE, the NCC shall issue a Certificate of Substantial Performance to the Contractor. The Certificate of Substantial Performance shall state or describe:
  - (a) the date of Substantial Performance;
  - (b) the parts of the Work not completed to the satisfaction of the NCC; and
  - (c) all things that must be done by the Contractor before a Certificate of Completion is issued and before the 12-month warranty period referred to in GC3.13 WARRANTY AND RECTIFICATION OF DEFECTS IN WORK commences for the said parts and all the said things.
- 2) The issuance of a Certificate of Substantial Performance does not relieve the Contractor from the Contractor's obligations under GC3.11 DEFECTIVE WORK.
- 3) Subject to GC5.2 AMOUNT PAYABLE and paragraph 4) of GC5.5, the NCC shall pay the Contractor the amount referred to in paragraph 1) of GC5.2 AMOUNT PAYABLE, less the aggregate of:
  - (a) the sum of all payments that were made pursuant to GC5.4 PROGRESS PAYMENT;
  - (b) an amount that is equal to the NCC's estimate of the cost to the NCC of rectifying defects described in the Certificate of Substantial Performance; and
  - (c) an amount that is equal to the NCC's estimate of the cost to the NCC of completing the parts of the Work described in the Certificate of Substantial Performance other than defects listed therein.
- 4) The NCC shall pay the amount referred to in paragraph 3) of GC5.5 not later than:
  - (a) 30 days after the date of issue of a Certificate of Substantial Performance, or
  - (b) 15 days after the Contractor has delivered to the NCC:

- (i) a statutory declaration containing a declaration by the Contractor that up to the date of the Certificate of Substantial Performance, the Contractor has complied with all lawful obligations with respect to the Labour Conditions, discharged all its lawful obligations to its Subcontractors and Suppliers in respect of the work under the Contract, and discharged its lawful obligations referred to in GC1.8 LAWS, PERMITS AND TAXES;
- (ii) evidence of compliance with workers' compensation legislation in accordance with GC1.9 WORKERS' COMPENSATION; and
- (iii) an update of the progress schedule in accordance with the requirements of GC3.1 PROGRESS SCHEDULE;

whichever is later.

#### **GC5.6 FINAL COMPLETION**

- 1) When the NCC is of the opinion that the Contractor has complied with the Contract and all orders and directions made pursuant thereto, and that the Work has been completed as described in GC1.1.5 COMPLETION, the NCC shall issue a Certificate of Completion to the Contractor and, if the Work or a portion of the Work is subject to a Unit Price Arrangement, the NCC shall issue a Certificate of Measurement that shall, subject to GC8, be binding upon and conclusive between the NCC and the Contractor as to the quantities referred to therein.
- 2) Subject to GC5.2 AMOUNT PAYABLE and paragraph 3) of GC5.6, the NCC shall pay the Contractor the amount referred to in GC5.2 AMOUNT PAYABLE, less the aggregate of the sum of all payments that were made pursuant to GC5.4 PROGRESS PAYMENT and GC5.5 SUBSTANTIAL PERFORMANCE OF WORK.
- 3) The NCC shall pay the amount referred to in paragraph 2) of GC5.6 not later than:
  - (a) 60 days after the date of issue of a Certificate of Completion; or
  - (b) 15 days after the Contractor has delivered to the NCC:
    - (i) a statutory declaration which contains a declaration by the Contractor that all of the Contractor's lawful obligations and any lawful claims against the Contractor that arose out of the performance of the Contract have been discharged and satisfied; and
    - (ii) evidence of compliance with workers' compensation legislation in accordance with GC1.9 WORKERS' COMPENSATION;

whichever is later.

#### **GC5.7 PAYMENT NOT BINDING ON NCC**

- 1) Neither acceptance of a progress claim or progress report, nor any payment made by the NCC under the Contract, nor partial or entire use or occupancy of the Work by the NCC shall constitute an acceptance by the NCC of any portion of the Work or Material that is not in accordance with the requirements of the Contract.

#### **GC5.8 CLAIMS AND OBLIGATIONS**

- 1) The Contractor shall discharge all the Contractor's lawful obligations and shall satisfy all lawful claims against the Contractor arising out of the performance of the Work at least as often as the Contract requires the NCC to pay the Contractor.

- 2) Whenever requested to do so by the NCC, the Contractor shall make a statutory declaration declaring to the existence and condition of any obligations and claims against the Contractor arising out of the performance of the Work.
- 3) In order to discharge lawful obligations of and satisfy lawful claims against the Contractor or its Subcontractors arising out of the performance of the Contract, the NCC may pay an amount that is due and payable to the Contractor directly to the claimant. Such payment is, to the extent of the payment, a discharge of the NCC's liability to the Contractor under the Contract and may be deducted from any amount payable to the Contractor under the Contract.
- 4) For the purposes of paragraph 3) of GC5.8, and subject to paragraph 6) of GC5.8, a claim or obligation shall be considered lawful when it is so determined by:
  - (a) a court of legal jurisdiction;
  - (b) an arbitrator duly appointed to arbitrate the claim; or
  - (c) the written consent of the Contractor authorizing payment of the claim or obligation.
- 5) If a claim or obligation would have been subject to the provisions of Provincial or Territorial lien legislation or, in the Province of Quebec, the law relating to legal hypothecs had the Contractor been performing the Work for an entity other than the NCC:
  - (a) such amount as may be paid by the NCC pursuant to paragraphs 3) and 4) of GC5.8 shall not exceed the amount that the Contractor would have been obliged to pay had the provisions of such legislation or law been applicable to the Work;
  - (b) a claimant need not comply with the provisions of such legislation, setting out the steps by way of notice, registration or otherwise as might have been necessary to preserve or perfect any claim for lien or privilege which the claimant might have had; and
  - (c) for the purposes of determining the entitlement of a claimant, the notice required by paragraph 8) of GC5.8 shall be deemed to replace the registration or provision of notice after the performance of work as required by any applicable legislation and no claim shall be deemed to have expired, become void or unenforceable by reason of the claimant not commencing any action within the time prescribed by such legislation.
- 6) The Contractor shall, at the request of any claimant, submit to binding arbitration those questions that need to be answered to establish the entitlement of the claimant to payment. The arbitration shall have as parties to it any Subcontractor or Supplier to whom the claimant supplied Material, performed work or rented equipment should such Subcontractor or Supplier wish to be adjoined, and the NCC shall not be a party to such arbitration. Subject to any agreement between the Contractor and the claimant, the arbitration shall be conducted in accordance with the governing Provincial or Territorial legislation applicable to the site of the Work.
- 7) Paragraph 3) of GC5.8 shall apply only to claims and obligations:
  - (a) the notification of which has set forth the amount claimed to be owing and the person who by contract is primarily liable and has been received by the NCC in writing before final payment is made to the Contractor pursuant to GC5.6 FINAL COMPLETION, and within 120 days of the date on which the claimant:



- (i) should have been paid in full under the claimant's contract with the Contractor, its Subcontractor or Supplier if the claim is for money that was lawfully required to be held back from the claimant; or
  - (ii) performed the last of the services, work or labour, or furnished the last of the Material pursuant to the claimant's contract with the Contractor or its Subcontractor or Supplier where the claim is for money not lawfully required to be held back from the claimant; and
- (b) the proceedings to determine the right to payment of which, pursuant to paragraph 5) of GC5.8, shall have commenced within one year from the date that the notification required by subparagraph 7)(a) of GC5.8 was received by the NCC.
- 8) Upon receipt of a notice of claim, the NCC may withhold, from any amount that is due and payable to the Contractor pursuant to the Contract, the full amount of the claim or any portion thereof.
- 9) The NCC shall notify the Contractor in writing in a timely manner of receipt of any claim and of the intention of the NCC to withhold funds. At any time thereafter and until payment is made to the claimant, the Contractor may be entitled to post, with the NCC, security in a form acceptable to the NCC in an amount equal to the value of the claim, and upon receipt of such security the NCC shall release to the Contractor any funds that would be otherwise payable to the Contractor, that were withheld pursuant to the provisions of this clause in respect of the claim of any claimant for whom the security stands.

**GC5.9 RIGHT OF SETOFF**

- 1) Without limiting any right of setoff or deduction given or implied by law or elsewhere in the Contract, the NCC may set off any amount payable to the NCC by the Contractor under the Contract, or under any current contract, against any amount payable to the Contractor under the Contract.
- 2) For the purposes of paragraph 1) of GC5.9, "current contract" means a contract between the NCC and the Contractor:
- (a) under which the Contractor has an undischarged obligation to perform or supply work, labour or material; or
  - (b) in respect of which the NCC has, since the date of the Contract, exercised any right to take the work that is the subject of that contract out of the Contractor's hands.

**GC5.10 ASSESSMENTS AND DAMAGES FOR LATE COMPLETION**

- 1) For the purposes of this clause:
- (a) the Work shall be deemed to be completed on the date of the Certificate of Completion; and
  - (b) the "period of delay" means the number of days commencing on the day fixed for completion of the Work and ending on the day immediately preceding the day on which the Work is completed but does not include any day within a period of extension granted pursuant to GC6.5 DELAYS AND EXTENSION OF TIME and any other day on which, in the opinion of the NCC, completion of the Work was delayed for reasons beyond the control of the Contractor.
- 2) If the Contractor does not complete the Work by the day fixed for its completion but completes it thereafter, the Contractor shall pay the NCC an amount equal to the aggregate of:
- (a) all salaries, wages and travelling expenses incurred by the NCC in respect of persons overseeing the performance of the Work during the period of delay;

- (b) the cost incurred by the NCC as a result of the inability to use the completed Work for the period of delay; and
  - (c) all other expenses and damages incurred or sustained by the NCC during the period of delay as a result of the Work not being completed by the day fixed for its completion.
- 3) The NCC may waive the right of the NCC to the whole or any part of the amount payable by the Contractor pursuant to paragraph 2) of GC5.10 if, in the opinion of the NCC, it is in the public interest to do so.

**GC5.11 DELAY IN MAKING PAYMENT**

- 1) Notwithstanding GC1.5 TIME OF THE ESSENCE, any delay by the NCC in making any payment when it is due pursuant to GC5 TERMS OF PAYMENT, shall not be a breach of the Contract by the NCC.
- 2) Subject to paragraph 3) of GC5.11, the NCC shall pay to the Contractor simple interest at the Average Bank Rate plus 3 percent per annum on any amount that is overdue pursuant to paragraph 3) of GC5.1 INTERPRETATION, and the interest shall apply from and include the day such amount became overdue until the day prior to the date of payment.
- 3) Interest shall be paid, on demand by the Contractor, except that:
  - (a) in respect of amounts that are less than 15 days overdue, no interest shall be paid in respect of payment made within such 15 days; and
  - (b) interest shall not be payable or paid on overdue advance payments, if any.

**GC5.12 INTEREST ON SETTLED CLAIMS**

- 1) For the purposes of this clause, a claim means a disputed amount subject to negotiation between the NCC and the Contractor under the Contract.
- 2) A claim is deemed to have been settled when an agreement in writing is signed by the NCC and the Contractor setting out the amount of the claim to be paid by the NCC and the items of work for which the said amount is to be paid.
- 3) A settled claim is deemed to be outstanding from the day immediately following the date the said claim would have been due and payable under the Contract had it not been disputed.
- 4) The NCC shall pay to the Contractor simple interest on the amount of a settled claim at the Average Bank Rate plus 3 per cent per annum from the date the settled claim was deemed to be outstanding until the day prior to the date of payment.

**GC5.13 RETURN OF SECURITY DEPOSIT**

- 1) After a Certificate of Substantial Performance has been issued, and if the Contractor is not in breach of nor in default under the Contract, the NCC shall return to the Contractor all or any part of a Security Deposit that, in the opinion of the NCC, is not required for the purposes of the Contract.
- 2) After a Certificate of Completion has been issued, the NCC shall return to the Contractor the remainder of any security deposit unless the Contract stipulates otherwise.
- 3) If the security deposit was paid to the NCC, the NCC shall pay interest thereon to the Contractor at a rate established pursuant to section 21(2) of the Financial Administration Act.

- GC6.1 CHANGES IN THE WORK
- GC6.2 CHANGES IN SUBSURFACE CONDITIONS
- GC6.3 HUMAN REMAINS, ARCHAEOLOGICAL REMAINS AND ITEMS OF HISTORICAL OR SCIENTIFIC INTEREST
- GC6.4 DETERMINATION OF PRICE
  - GC6.4.1 Price Determination Prior to Undertaking Changes
  - GC6.4.2 Price Determination Following Completion of Changes
  - GC6.4.3 Price Determination - Variations in Tendered Quantities
- GC6.5 DELAYS AND EXTENSION OF TIME
- GC6.6 ALLOWABLE COSTS FOR CONTRACT CHANGES UNDER GC6.4.1
  - GC6.6.1 General
  - GC6.6.2 Hourly Labour Rates
  - GC6.6.3 Material, Plant and Equipment Costs
  - GC6.6.4 Allowance to the Contractor or Subcontractor

**GC6.1 CHANGES IN THE WORK**

- 1) At any time before issuance of a Certificate of Completion, Canada may issue orders for additions, deletions or other changes to the Work, or changes in the location or position of the whole or any part of the Work, if the addition, deletion, change or other revision is deemed by Canada to be consistent with the general intent of the Contract.
- 2) An order referred to in paragraph 1) of GC6.1 shall be in writing and given to the Contractor in accordance with GC2.3 NOTICES.
- 3) Upon receipt of an order, the Contractor shall promptly perform the work in accordance with the order as if the order had appeared in and been part of the original Contract.
- 4) If anything done or omitted by the Contractor pursuant to an order increases or decreases the cost of the Work to the Contractor, payment for the work shall be made in accordance with GC6.4 DETERMINATION OF PRICE.

**GC6.2 CHANGES IN SUBSURFACE CONDITIONS**

- 1) If, during the performance of the Work, the Contractor encounters subsurface conditions that are substantially different from the subsurface conditions described in the tender documents supplied to the Contractor, or a reasonable assumption of fact based thereon, the Contractor shall give notice to Canada immediately upon becoming aware of the situation.
- 2) If the Contractor is of the opinion that the Contractor may incur or sustain any extra expense or any loss or damage that is directly attributable to the changed subsurface conditions, the Contractor shall within 10 days of the date the changed subsurface conditions were encountered, give Canada written notice of intention to claim for that extra expense, loss or damage.
- 3) If the Contractor has given a notice referred to in paragraph 2) of GC6.2, the Contractor shall give Canada a written claim for extra expense, loss or damage no later than 30 days after the date that a Certificate of Substantial Performance is issued.
- 4) A written claim referred to in paragraph 3) of GC6.2 shall contain a sufficient description of the facts and circumstances of the occurrence that is the subject of the claim to enable Canada to determine whether or not the claim is justified, and the Contractor shall supply such further and other information for that purpose as Canada requires.

- 5) If Canada determines that a claim referred to in paragraph 3) of GC6.2 is justified, Canada shall make an extra payment to the Contractor in an amount that is calculated in accordance with GC6.4 DETERMINATION OF PRICE.
- 6) If, in the opinion of Canada, the Contractor effects a saving of expenditure that is directly attributable to a substantial difference between the information relating to subsurface conditions at the site of the Work that is contained in the tender documents, or a reasonable assumption of fact based thereon, and the actual subsurface conditions encountered by the Contractor, the Contract Amount shall be reduced by the amount of the saving of expenditure determined in accordance with GC6.4 DETERMINATION OF PRICE.
- 7) If the Contractor fails to give a notice referred to in paragraph 2) of GC6.2 and a claim referred to in paragraph 3) of GC6.2 within the times stipulated, an extra payment shall not be made to the Contractor in respect of the occurrence.
- 8) Canada does not warrant the content expressed in any subsurface report available for the perusal of the Contractor that does not form part of the tender and contract documents.

**GC6.3 HUMAN REMAINS, ARCHAEOLOGICAL REMAINS AND ITEMS OF HISTORICAL OR SCIENTIFIC INTEREST**

- 1) For the purposes of this clause
  - (a) "human remains" means the whole or any part of a deceased human being, irrespective of the time of death;
  - (b) "archaeological remains" are items, artefacts or things made, modified or used by human beings in antiquity and may include, but not be limited to, stone, wood or iron structures or monuments, dump deposits, bone artefacts, weapons, tools, coins, and pottery; and
  - (c) "items of historical or scientific interest" are naturally occurring or manufactured objects or things of any age that are not archaeological remains but may be of interest to society because of their historical or scientific significance, value, rarity, natural beauty, or other quality.
- 2) If, during the course of the Work, the Contractor encounters any object, item or thing which is described in paragraph 1) of GC6.3 or which resembles any object, item or thing described in paragraph 1) of GC6.3, the Contractor shall
  - (a) take all reasonable steps, including stopping work in the affected area, to protect and preserve the object, item or thing;
  - (b) immediately notify Canada of the circumstances in writing; and
  - (c) take all reasonable steps to minimize additional costs that may accrue as a result of any work stoppage.
- 3) Upon receipt of a notification in accordance with subparagraph 2)(b) of GC6.3, Canada shall promptly determine whether the object, item or thing is one described in, or contemplated by paragraph 1) of GC6.3, and shall notify the Contractor in writing of any action to be performed, or work to be carried out, by the Contractor as a result of Canada's determination.
- 4) Canada may, at any time, enlist the services of experts to assist in the investigation, examination, taking of measurements or other such recordings, placing of permanent protection around or removing of the object, item or thing encountered by the Contractor, and the Contractor shall, to the satisfaction

of Canada, allow them access and co-operate with them in the carrying out of their duties and obligations.

- 5) Human remains, archaeological remains and items of historical or scientific interest encountered at the site of the Work shall be deemed to be the property of Canada.
- 6) Except as may be otherwise provided for in the Contract, the provisions of GC6.4 DETERMINATION OF PRICE and GC6.5 DELAYS AND EXTENSION OF TIME shall apply.

**GC6.4 DETERMINATION OF PRICE****GC6.4.1 Price Determination Prior to Undertaking Changes**

- 1) If a Lump Sum Arrangement applies to the Contract or a part thereof, the price of any change shall be the aggregate estimated cost of labour, Plant and Material that is required for the change as agreed upon in writing by the Contractor and Canada plus an allowance for supervision, co-ordination, administration, overhead, margin and the risk of undertaking the work within the stipulated amount, which allowance shall be equal to
  - (a) 20% of the aggregate costs referred to herein for that portion of the Work done by the Contractor's own forces, if the aggregate cost of the Work does not exceed \$50,000;
  - (b) 15% of the aggregate costs referred to herein for that portion of the Work that is done by subcontract, if the aggregate cost of the Work does not exceed \$50,000; or
  - (c) a negotiated percentage of the aggregate costs referred to herein or a negotiated amount
    - (i) if the aggregate cost of the Work exceeds \$50,000; or
    - (ii) if the Contractor and Canada agree in writing.
- 2) If a Unit Price Arrangement applies to the Contract or a part thereof, the Contractor and Canada may, by agreement in writing, add items, units of measurement, estimated quantities and prices per unit to the Unit Price Table.
- 3) A price per unit referred to in paragraph 2) of GC6.4.1 shall be determined on the basis of the aggregate estimated cost of labour, Plant and Material that is required for the additional item as agreed upon by the Contractor and Canada, plus an allowance determined in accordance with paragraph 1) of GC6.4.1.
- 4) To facilitate approval of the price of the change or the additional price per unit as applicable, the Contractor shall submit a cost estimate breakdown identifying, as a minimum, the estimated cost of labour, Plant, Material, each subcontract amount, and the amount of the allowance.
- 5) If no agreement is reached as contemplated in paragraph 1) of GC6.4.1, the price shall be determined in accordance with GC6.4.2.
- 6) If no agreement is reached, as contemplated in paragraphs 2) and 3) of GC6.4.1, Canada shall determine the class and the unit of measurement of the item of labour, Plant or Material and the price per unit shall be determined in accordance with GC6.4.2.

**GC6.4.2 Price Determination Following Completion of Changes**

- 1) If it is not possible to predetermine, or if there is failure to agree upon the price of a change in the Work, the price of the change shall be equal to the aggregate of

- (a) all reasonable and proper amounts actually expended or legally payable by the Contractor in respect of the labour, Plant and Material that fall within one of the classes of expenditure described in paragraph 2) of GC6.4.2, that are directly attributable to the performance of the Contract;
  - (b) an allowance for profit and all other expenditures or costs, including overhead, general administration costs, financing and interest charges, in an amount that is equal to 10% of the sum of the expenses referred to in subparagraph 1)(a) of GC6.4.2; and
  - (c) interest on the amounts determined under subparagraphs 1)(a) and 1)(b) of GC6.4.2 calculated in accordance with GC5.12 INTEREST ON SETTLED CLAIMS;
- 2) The cost of labour, Plant and Material referred to in subparagraph 1)(a) of GC6.4.2 shall be limited to the following categories of expenditure:
- (a) payments to Subcontractors and Suppliers;
  - (b) wages, salaries, bonuses and, if applicable, travel and lodging expenses of employees of the Contractor located at the site of the Work and that portion of wages, salaries, bonuses and, if applicable, travel and lodging expenses of personnel of the Contractor generally employed at the head office or at a general office of the Contractor provided they are actually and properly engaged on the Work under the Contract;
  - (c) assessments payable under any statutory authority relating to workers' compensation, employment insurance, pension plan or holidays with pay, provincial health or insurance plans, environmental reviews, and GST / HST collection costs;
  - (d) rent that is paid for Plant, or an amount equivalent to the said rent if the Plant is owned by the Contractor, that is necessary for and used in the performance of the Work, if the rent or the equivalent amount is reasonable and use of that Plant has been approved by Canada;
  - (e) payments for maintaining and operating Plant necessary for and used in the performance of the Work, and payments for effecting repairs thereto that, in the opinion of Canada, are necessary for the proper performance of the Contract, other than payments for any repairs to the Plant arising out of defects existing before its allocation to the Work;
  - (f) payments for Material that is necessary for and incorporated in the Work, or that is necessary for and consumed in the performance of the Contract;
  - (g) payments for preparation, delivery, handling, erection, installation, inspection, protection and removal of the Plant and Material necessary for and used in the performance of the Contract; and
  - (h) any other payments made by the Contractor with the approval Canada that are necessary for the performance of the Contract in accordance with the Contract Documents.

**GC6.4.3 Price Determination - Variations in Tendered Quantities**

- 1) Except as provided in paragraphs 2), 3), 4) and 5) of GC6.4.3, if it appears that the final quantity of labour, Plant and Material under a price per unit item shall exceed or be less than the estimated tendered quantity, the Contractor shall perform the Work or supply the Plant and Material required to complete the item and payment shall be made for the actual Work performed or Plant and Material supplied at the price per unit set out in the Contract.
- 2) If the final quantity of the price per unit item exceeds the estimated tendered quantity by more than 15%, either party to the Contract may make a written request to the other party to negotiate an

amended price per unit for that portion of the item which exceeds 115% of the estimated tendered quantity, and to facilitate approval of any amended price per unit, the Contractor shall, on request, provide Canada with

- (a) detailed records of the actual cost to the Contractor of performing or supplying the tendered quantity for the price per unit item up to the time the negotiation was requested; and
  - (b) the estimated unit cost of labour, Plant and Material required for the portion of the item that is in excess of 115% of the tendered quantity.
- 3) If agreement is not reached as contemplated in paragraph 2) of GC6.4.3, the price per unit shall be determined in accordance with GC6.4.2.
- 4) If it appears that the final quantity of labour, Plant and Material under a price per unit item shall be less than 85% of the estimated tendered quantity, either party to the Contract may make a written request to the other party to negotiate a change to the price per unit for the item if
- (a) there is a demonstrable difference between the unit cost to the Contractor of performing or supplying the estimated tendered quantity and the unit cost to the Contractor for performing or supplying the final quantity; and
  - (b) the difference in unit cost is due solely to the decrease in quantity and not to any other cause.
- 5) For the purposes of the negotiation referred to in paragraph 4) of GC6.4.3
- (a) the onus of establishing, justifying and quantifying a proposed change lies with the party making the request for negotiation; and
  - (b) in no event shall the total price for an item that has been amended as a result of a reduction in quantity pursuant to paragraph 4) of GC6.4.3 exceed the amount that would have been payable to the Contractor had 85% of the tendered quantity actually been performed or supplied.

#### **GC6.5 DELAYS AND EXTENSION OF TIME**

- 1) Upon application of the Contractor made before the date first fixed for completion of the Work or before any other date previously fixed under this clause, Canada may extend the time for completion of the Work by fixing a new date if Canada determines that causes beyond the control of the Contractor have delayed its completion.
- 2) The Contractor's application shall be accompanied by the written consent of the bonding company whose bond forms part of the Contract Security.
- 3) Subject to paragraph 4) of GC6.5, no payment, other than a payment that is expressly stipulated in the Contract, shall be made by Canada to the Contractor for any extra expense, loss or damage incurred or sustained by the Contractor due to delay, whether or not the delay is caused by circumstances beyond the control of the Contractor.
- 4) If the Contractor incurs or sustains any extra expense or any loss or damage that is directly attributable to any neglect or delay that occurs after the date of the Contract on the part of Canada in providing any information or in doing any act that the Contract either expressly requires Canada to do or that would ordinarily be done by an owner in accordance with the practice of the trade, the Contractor shall give Canada written notice of intention to claim for that extra expense or loss or damage within ten working days of the date the neglect or delay first occurred.

- 5) When the Contractor has given a notice referred to in paragraph 4) of GC6.5, the Contractor shall give Canada a written claim for the extra expense, loss or damage no later than 30 days after the date that a Certificate of Completion is issued and not afterwards.
- 6) A written claim referred to in paragraph 5) of GC6.5 shall contain a sufficient description of the facts and circumstances of the occurrence that is the subject of the claim to enable Canada to determine whether or not the claim is justified and the Contractor shall supply such further and other information for that purpose as Canada may require.
- 7) If Canada determines that a claim referred to in paragraph 5) of GC6.5 is justified, Canada shall make an extra payment to the Contractor in an amount that is calculated in accordance with GC6.4 DETERMINATION OF PRICE.
- 8) If the Contractor fails to give a notice referred to in paragraph 4) and a claim referred to in paragraph 5) of GC6.5 within the times stipulated, an extra payment shall not be made to the Contractor in respect of the occurrence.

## **GC6.6 ALLOWABLE COSTS FOR CONTRACT CHANGES UNDER GC6.4.1**

### **GC6.6.1 General**

- 1) The Contractor shall submit a cost estimate breakdown for each contemplated change, in accordance with paragraph 4) of GC6.4.1 PRICE DETERMINATION PRIOR TO UNDERTAKING CHANGES. The breakdown shall itemize all labour, material, plant and equipment costs estimated by the Contractor and subcontractors, and the amount of each allowance.
- 2) It is the responsibility of the Contractor to ensure that all prices included in the Contractor's breakdown to the NCC, including those of subcontractors, are fair and reasonable in view of the terms expressed herein.
- 3) The labour hours required for the contemplated change shall be based on the estimated number of hours to perform the work.
- 4) Time spent by a working foreman may be included in the number of labour hours, at a rate agreed to in writing by the Contractor and the NCC.
- 5) Time attributable to material handling, productivity factors and approved rest periods is to be included in the number of hours required by the contemplated change and will not be paid as a separate item under hourly rates.
- 6) Allowances referred to in section 04 below are not to be included in the hourly labour rates.
- 7) Credit for work deleted will only be for the work directly associated with the change.
- 8) When a change deletes work which has not yet been performed, the NCC is entitled to an adjustment in the Contract Amount equal to the cost the Contractor would have incurred had the work not been deleted.
- 9) Allowances referred to in Section 04 below shall not be applied to any credit amounts for deleted work.
- 10) In those cases where the change involves additions and deletions to the work, the allowances referred to in section 04 below shall apply only when the cost of the additions minus the cost of the deletions would result in an increase in the Contract Amount. The percentage allowance shall only be applied to that portion of the costs of the additions that is in excess of the cost of the deletions.



- 11) If the contemplated change in the work necessitates a change in the contract completion date, or has an impact on the work, the Contractor shall identify and include the resulting cost in the breakdown.

**GC6.6.2 Hourly Labour Rates**

- 1) The hourly labour rates listed in the Contractor's breakdown shall be determined in accordance with the collective agreements that are applicable at the site of the work and shall include:
- (a) the base rate of pay;
  - (b) vacation pay;
  - (c) benefits which includes:
    - (i) welfare contributions;
    - (ii) pension contributions;
    - (iii) union dues;
    - (iv) training and industry funds contributions; and
    - (v) other applicable benefits, if any, that can be substantiated by the Contractor.
  - (d) statutory and legislated requirements, assessed and payable under statutory authority, which includes:
    - (i) Employment Insurance contributions;
    - (ii) Canada Pension Plan or Québec Pension Plan contributions;
    - (ii) Worker's Compensation Board or Commission de la santé et de la sécurité du travail premiums;
    - (iv) Public Liability and Property Damage insurance premiums; and
    - (v) health tax premiums.
- 2) In the case of nonunion labour, all rates claimed shall be in accordance with the terms of the Labour Conditions forming part of this contract and the Contractor must provide satisfactory proof of the rates actually paid.

**GC6.6.3 Material, Plant and Equipment Costs**

- 1) The costs of all purchases and rentals must be based on the actual amount paid to the suppliers by the Contractor or subcontractor and said costs are to include all applicable discounts.

**GC6.6.4 Allowance to the Contractor or Subcontractor**

- 1) The allowances determined in accordance with paragraph 1) of GC6.4.1 PRICE DETERMINATION PRIOR TO UNDERTAKING CHANGES shall be considered as full compensation for:
- (a) supervision, co-ordination, administration, overhead, margin and the risk of undertaking the work within the stipulated amount; and

- (b) miscellaneous additional costs related to:
  - (i) the purchase or rental of material, plant and equipment;
  - (ii) the purchase of small tools and supplies;
  - (iii) safety and protection measures; and
  - (iv) permits, bonds, insurance, engineering, as built drawings, commissioning and site office.

- GC7.1 TAKING THE WORK OUT OF THE CONTRACTOR'S HANDS
- GC7.2 SUSPENSION OF WORK
- GC7.3 TERMINATION OF CONTRACT
- GC7.4 SECURITY DEPOSIT - FORFEITURE OR RETURN

**GC7.1 TAKING THE WORK OUT OF THE CONTRACTOR'S HANDS**

- 1) By giving notice in writing to the Contractor in accordance with GC2.3 NOTICES, the NCC, without any other authorization, may take all or any part of the Work out of the Contractor's hands, and may employ such means as the NCC sees fit to have the Work completed if the Contractor:
  - (a) fails to remedy any delay in the commencement or default in the diligent performance of the Work to the satisfaction of the NCC within six days of the NCC giving notice to the Contractor in writing in accordance with GC2.3 NOTICES;
  - (b) defaults in the completion of any part of the Work within the time fixed for its completion by the Contract;
  - (c) becomes insolvent, or has committed an act of bankruptcy, and has neither made a proposal to its creditors nor filed a notice of intention to make such a proposal, pursuant to the Bankruptcy and Insolvency Act;
  - (d) abandons the work;
  - (e) makes an assignment of the Contract without the consent required by GC1.16 ASSIGNMENT;  
or
  - (f) otherwise fails to observe or perform any of the provisions of the Contract.
- 2) If the whole or any part of the Work is taken out of the Contractor's hands, the Contractor's right to any further payment that is due or accruing due under the Contract is, subject only to paragraph 3) of GC7.1, extinguished, and the Contractor is liable to pay the NCC, upon demand, an amount that is equal to the amount of all loss and damage incurred or sustained by the NCC in respect of the Contractor's failure to complete the Work.
- 3) If the whole or any part of the Work that is taken out of the Contractor's hands is completed by the NCC, the NCC may pay the Contractor the amount, if any, of the holdback or a progress claim as determined by the NCC that had accrued and was due prior to the date on which the Work was taken out of the Contractor's hands and that is not required for the purposes of having the Work performed or of compensating the NCC for any other loss or damage incurred or sustained by reason of the Contractor's default.
- 4) The taking of the Work or any part thereof out of the Contractor's hands does not relieve the Contractor from any obligation under the Contract or imposed by law except the obligation to complete the performance of that part of the Work that was taken out of the Contractor's hands.
- 5) If the Work or any part thereof is taken out of the Contractor's hands, all Plant and Material and the interest of the Contractor, or its suppliers or subcontractors at any tier, in all real property, licences, powers and privileges acquired, used or provided by the Contractor, or its suppliers or subcontractors at any tier, under the Contract shall continue to be the property of the NCC without compensation.
- 6) When the NCC certifies that any Plant, Material, or any interest of the Contractor is no longer required for the purposes of the Work, or that it is not in the interests of the NCC to retain that Plant, Material, or interest, it shall revert to the Contractor.

- 7) If the Contractor has become insolvent or has committed an act of bankruptcy, and has either made a proposal to its creditors or filed a notice of intention to make such a proposal, pursuant to the Bankruptcy and Insolvency Act, the Contractor shall immediately forward a copy of the proposal or the notice of intention to the NCC.

#### **GC7.2 SUSPENSION OF WORK**

- 1) When, in the NCC's opinion, it is in the public interest to do so, the NCC may require the Contractor to suspend performance of the Work either for a specified or an unspecified period, by giving a notice of suspension in writing to the Contractor in accordance with GC2.3 NOTICES.
- 2) When a notice of suspension is received by the Contractor, the Contractor shall suspend all operations in respect of the Work except those that the NCC determines are necessary for the care and preservation of the Work, Plant and Material.
- 3) During a period of suspension, the Contractor shall not remove any part of the Work, Plant or Material from its site without the consent of the NCC.
- 4) If a period of suspension is 60 days or less, the Contractor shall resume the performance of the Work on the expiration of that period, and the Contractor is entitled to be paid the extra costs necessarily incurred by the Contractor as a result of the suspension, determined in accordance with GC6.4 DETERMINATION OF PRICE.
- 5) If a period of suspension is more than 60 days, the NCC and the Contractor may agree that the performance of the Work shall be continued by the Contractor, and the Contractor shall resume performance of the Work subject to any terms and conditions agreed upon by the NCC and the Contractor. If the NCC and the Contractor do not agree that performance of the Work shall be continued by the Contractor, or upon the terms and conditions under which the Contractor shall continue the Work, the notice of suspension shall be deemed to be a notice of termination pursuant to GC7.3 TERMINATION OF CONTRACT.

#### **GC7.3 TERMINATION OF CONTRACT**

- 1) The NCC may terminate the Contract at any time by giving a notice of termination in writing to the Contractor in accordance with GC2.3 NOTICES.
- 2) If the Contractor receives a notice of termination, the Contractor shall forthwith cease all operations in performance of the Contract, subject to any conditions stipulated in the notice.
- 3) Subject to paragraph 4) of GC7.3, if the Contract is terminated, the NCC shall pay the Contractor an amount determined to be due to the Contractor pursuant to GC6.4 DETERMINATION OF PRICE less the aggregate of all amounts that were paid to the Contractor by the NCC and all amounts that are due to the NCC from the Contractor pursuant to the Contract.
- 4) In no event shall the total amount payable by the NCC to the Contractor exceed the amount, calculated in accordance with GC5 TERMS OF PAYMENT, that would have been payable to the Contractor had the Contractor completed the Work.
- 5) Payment to the Contractor, if any, shall be made as soon as practicable under the circumstances.

#### **GC7.4 SECURITY DEPOSIT - FORFEITURE OR RETURN**

- 1) If the Work is taken out of the Contractor's hands, or the Contractor is in breach of, or in default under, the Contract, the NCC may convert a security deposit to the NCC's own use.

- 2) If the NCC converts a security deposit, the amount realized shall be deemed to be an amount due from the NCC to the Contractor under the Contract.
- 3) Any balance of the amount realized that remains after payment of all losses, damage and claims of the NCC and others shall be paid by the NCC to the Contractor if, in the opinion of the NCC, it is not required for the purposes of the Contract.

- 1) The Contractor may, within 10 days after the communication to the Contractor of any decision or direction referred to in GC6.1 CHANGES IN THE WORK and GC2.2 INTERPRETATION OF CONTRACT, protest that decision or direction.
- 2) A protest referred to in paragraph 1) of GC8 shall be in writing, contain full reasons for the protest, be signed by the Contractor and be given to the NCC.
- 3) If the Contractor gives a protest pursuant to paragraph 2) of GC8, any compliance by the Contractor with the decision or direction that was protested shall not be construed as an admission by the Contractor of the correctness of that decision or direction, or prevent the Contractor from taking whatever action the Contractor considers appropriate in the circumstances.
- 4) The giving of a protest by the Contractor pursuant to paragraph 2) of GC8 shall not relieve the Contractor from complying with the decision or direction that is the subject of the protest.
- 5) Subject to paragraph 6) of GC8, the Contractor shall take any action referred to in paragraph 3) of GC8 within 3 months after the date of the Certificate of Completion referred to in GC5.6 FINAL COMPLETION and not afterwards, except where it is otherwise provided by law.
- 6) The Contractor shall take any action referred to in paragraph 3) of GC8 resulting from a direction under GC3.13 WARRANTY AND RECTIFICATION OF DEFECTS IN WORK, within 3 months after the expiry of a warranty or guarantee period and not afterwards, except where it is otherwise provided by law.
- 7) Subject to paragraph 8) of GC8, if the NCC determines that the Contractor's protest is justified, the NCC shall pay the Contractor the cost of the additional labour, Plant and Material necessarily incurred by the Contractor in carrying out the protested decision or direction.
- 8) Costs referred to in paragraph 7) of GC8 shall be calculated in accordance with GC6.4 DETERMINATION OF PRICE.

- GC9.1 OBLIGATION TO PROVIDE CONTRACT SECURITY
- GC9.2 TYPES AND AMOUNTS OF CONTRACT SECURITY
- GC9.3 IRREVOCABLE STANDBY LETTER OF CREDIT

**GC9.1 OBLIGATION TO PROVIDE CONTRACT SECURITY**

- 1) The Contractor shall, at the Contractor's expense and within 7 days after the date that the Contractor receives notice that the Contractor's bid was accepted by the NCC, obtain and deliver Contract Security to the NCC in one or more of the forms prescribed in GC9.2 TYPES AND AMOUNTS OF CONTRACT SECURITY.
- 2) If the whole or a part of the Contract Security provided is in the form of a security deposit, it shall be held and disposed of in accordance with GC5.13 RETURN OF SECURITY DEPOSIT and GC7.4 SECURITY DEPOSIT - FORFEITURE OR RETURN.
- 3) If a part of the Contract Security provided is in the form of a labour and material payment bond, the Contractor shall post a copy of that bond at the site of the Work.
- 4) It is a condition precedent to the release of the first progress payment that the Contractor has provided the Contract Security as specified herein.
- 5) In addition to the limitation imposed in paragraph 4) of GC9.1, the Contractor further acknowledges and agrees that it will not be entitled to have access to the site, nor to commence work pursuant to this contract until it has delivered the Contract Security as specified herein.

**GC9.2 TYPES AND AMOUNTS OF CONTRACT SECURITY**

- 1) The Contractor shall deliver to the NCC (a), (b) or (c):
  - (a) A performance bond and a labour and material payment bond each in an amount that is equal to not less than 50% of the Contract Amount including taxes
  - (b) A labour and material payment bond in an amount that is equal to not less than 50% of the Contract Amount including taxes, and a security deposit in an amount that is equal to not less than 10% of the Contract Amount including taxes.
  - (c) A security deposit in an amount prescribed by subparagraph 1)(b) of GC9.2, plus an additional amount that is equal to 10% of the Contract Amount including taxes.
- 2) The amount of a security deposit referred to in subparagraph 1)(b) of GC9.2 shall not exceed \$2,000,000 regardless of the Contract Amount including taxes.
- 3) A performance bond and a labour and material payment bond referred to in paragraph 1) of GC9.2 shall be in a form and be issued by a bonding or surety company that is approved by the NCC.
  - (a) The approved form for the performance bond is enclosed at the end of GC9.
  - (b) The approved form for the labour and material payment bond is enclosed at the end of GC9
  - (c) The list of approved bonding or surety companies is displayed at the following Website:  
<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12027> .
- 4) A security deposit referred to in subparagraphs 1)(b) and 1)(c) of GC9.2 shall be in the form of:

- (a) a bill of exchange, bank draft or money order made payable to the NCC and certified by an approved financial institution or drawn by an approved financial institution on itself; or
  - (b) bonds of, or unconditionally guaranteed as to principal and interest by, the Government of Canada.
- 5) For the purposes of subparagraph 4)(a) of GC9.2:
- (a) a bill of exchange is an unconditional order in writing signed by the Contractor and addressed to an approved financial institution, requiring the said institution to pay, on demand, at a fixed or determinable future time a certain sum of money to, or to the order of, the NCC;
  - (b) if a bill of exchange, bank draft or money order is certified by or drawn on an institution or corporation other than a chartered bank, it must be accompanied by proof that the said institution or corporation meets at least one of the criteria described in subparagraph 5)(c) of GC9.2, either by letter or by a stamped certification on the bill of exchange, bank draft or money; and
  - (c) An approved financial institution is:
    - (i) a corporation or institution that is a member of the Canadian Payments Association as defined in the Canadian Payments Act;
    - (ii) a corporation that accepts deposits that are insured, to the maximum permitted by law, by the Canada Deposit Insurance Corporation or the Régie de l'assurance-dépôts du Québec;
    - (iii) a corporation that accepts deposits from the public if repayment of the deposit is guaranteed by Her Majesty the Queen in right of a province;
    - (iv) a corporation, association or federation incorporated or organized as a credit union or co-operative credit society that conforms to the requirements of a credit union which are more particularly described in paragraph 137(6) of the Income Tax Act; or
    - (v) Canada Post Corporation.
- 6) Bonds referred to in subparagraph 4)(b) of GC9.2 shall be provided on the basis of their market value current at the date of the Contract, and shall be:
- (a) made payable to bearer; or
  - (b) accompanied by a duly executed instrument of transfer of the bonds to the NCC in the form prescribed by the Domestic Bonds of Canada Regulations; or
  - (c) registered as to principal, or as to principal and interest, in the name of the NCC pursuant to the Domestic Bonds of Canada Regulations.

### **GC9.3 IRREVOCABLE STANDBY LETTER OF CREDIT**

- 1) As an alternative to a security deposit, an irrevocable standby letter of credit is acceptable to the NCC, the amount of which shall be determined in the same manner as a security deposit referred to in GC9.2  
**TYPES AND AMOUNTS OF CONTRACT SECURITY.**
- 2) An irrevocable standby letter of credit shall:
  - (a) be an arrangement, however named or described, whereby a financial institution (the "Issuer") acting at the request and on the instructions of a customer (the "Applicant") or on its own behalf:



- (i) is to make a payment to, or to the order of, the NCC as the beneficiary;
- (ii) is to accept and pay bills of exchange drawn by the NCC;
- (ii) authorizes another financial institution to effect such payment or accept and pay such bills of exchange; or
- (iv) authorizes another financial institution to negotiate against written demand(s) for payment provided that the terms and conditions of the letter of credit are complied with;
- (b) state the face amount that may be drawn against it;
- (c) state its expiry date;
- (d) provide for sight payment to the NCC by way of the financial institution's draft against presentation of a written demand for payment signed by the NCC;
- (e) provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face value of the letter of credit;
- (f) provide that it is subject to the International Chamber of Commerce (ICC) Uniform Customs and Practice for Documentary Credits, 2007 Revision, ICC Publication No. 600;
- (g) clearly specify that it is irrevocable or deemed to be irrevocable pursuant to article 6 c) of the International Chamber of Commerce (ICC) Uniform Customs and Practice for Documentary Credits, 2007 Revision, ICC Publication No. 600; and
- (h) be issued or confirmed, in either official language in a format left to the discretion of the issuer or confirmer, by an approved financial institution on its letterhead.

# PERFORMANCE BOND

Bond Number \_\_\_\_\_

Amount \$ \_\_\_\_\_

**KNOW ALL MEN BY THESE PRESENTS**, that \_\_\_\_\_ as Principal,  
hereinafter called the Principal, and \_\_\_\_\_ as Surety, hereinafter

called the Surety, are, subject to the conditions hereinafter contained, held and firmly bound unto the National Capital Commission as

Obligee, hereinafter called the NCC, In the amount of \_\_\_\_\_ dollars

(\$ \_\_\_\_\_), lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the

Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**SIGNED AND SEALED** this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_. WHEREAS, the Principal has

entered into a Contract with the NCC, dated the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_,

for: \_\_\_\_\_.

**NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION** are such that if the Principal shall well and faithfully observe and perform all the obligations on the part of the Principal to be observed and performed in connection with the Contract, then this obligation shall be void, otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. Whenever the Principal shall be, and declared by the NCC to be, in default under the Contract, the Surety shall
  - (a) if the work is not taken out of the Principal's hands, remedy the default of the Principal,
  - (b) if the work is taken out of the Principal's hands and the NCC directs the Surety to undertake the completion of the work, complete the work in accordance with the Contract provided that if a contract is entered into for the completion of the work,
    - (i) it shall be between the Surety and the completing contractor, and
    - (ii) the selection of such completing contractor shall be subject to the approval of the NCC,
  - (c) if the work is taken out of the Principal's hands and the NCC, after reasonable notice to the Surety, does not direct the Surety to undertake the completion of the work, assume the financial responsibility for the cost of completion in excess of the moneys available to the NCC under the Contract,
  - (d) be liable for and pay all the excess costs of completion of the Contract, and
  - (e) not be entitled to any Contract moneys earned by the Principal, up to the date of his default on the Contract and any holdbacks relating to such earned Contract moneys held by the NCC, and the liability of the Surety under this Bond shall remain unchanged provided, however, and without restricting the generality of the foregoing, upon the completion of the Contract to the satisfaction of the NCC, any Contract moneys earned by the Principal or holdbacks related thereto held by the NCC may be paid to the Surety by the NCC.
2. The Surety shall not be liable for a greater sum than the amount specified in this Bond.
3. No suit or action shall be instituted by the NCC herein against the Surety pursuant to these presents after the expiration of two (2) years from the date on which final payment under the Contract is payable.

**IN TESTIMONY WHEREOF**, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its authorized signing authority, the day and year first above written.

**SIGNED, SEALED AND DELIVERED in the presence of:**

Principal \_\_\_\_\_

Witness \_\_\_\_\_

Surety \_\_\_\_\_

Note: Affix Corporate seal if applicable.

# LABOUR AND MATERIAL PAYMENT BOND

Bond Number \_\_\_\_\_

Amount \$ \_\_\_\_\_

**KNOW ALL MEN BY THESE PRESENTS**, that \_\_\_\_\_ as Principal,  
hereinafter called the Principal, and \_\_\_\_\_ as Surety, hereinafter

called the Surety, are, subject to the conditions hereinafter contained, held and firmly bound unto the National Capital Commission as Oblige, hereinafter called the NCC, In the amount of \_\_\_\_\_ dollars

(\$ \_\_\_\_\_), lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**SIGNED AND SEALED** this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ . WHEREAS, the Principal has entered into a Contract with the NCC, dated the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, for: \_\_\_\_\_

\_\_\_\_\_ which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

**NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION** are such that, if payment is promptly made to all Claimants who have performed labour or services or supplied material in connection with the Contract and any and all duly authorized modifications and extensions of the Contract that may hereafter be made, notice of which modifications and extensions to the Surety being hereby waived, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. For the purpose of this bond, a Claimant is defined as one having a direct contract with the Principal or any Sub-Contractor of the Principal for labour, material or both, used or reasonably required for use in the performance of the Contract, labour and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone services or rental of equipment (but excluding rental of equipment where the rent pursuant to an agreement is to be applied towards the purchase price thereof) directly applicable to the Contract.
2. For the purpose of this Bond, no payment is required to be made in respect of a claim for payment for labour or services performed or material supplied in connection with the Contract that represents a capital expenditure, overhead or general administration costs incurred by the Principal during the currency or in respect of the Contract.
3. The Principal and the Surety hereby jointly and severally agree with the NCC that if any Claimant has not been paid as provided for under the terms of his contract with the Principal or a Sub-Contractor of the Principal before the expiration of a period of ninety (90) days after the date on which the last of such Claimant's labour or service was done or performed or materials were supplied by such Claimant, the NCC may sue on this bond, have the right to prosecute the suit to final judgment for such sum or sums as may be due and have execution thereon; and such right of the NCC is assigned by virtue of Part VIII of the Financial Administration Act to such Claimant.
4. For the purpose of this bond the liability of the Surety and the Principal to make payment to any claimant not having a contract directly with the Principal shall be limited to that amount which the Principal would have been obliged to pay to such claimant had the provisions of the applicable provincial or territorial legislation on lien or privileges been applicable to the work. A claimant need not comply with provisions of such legislation setting out steps by way of notice, registration or otherwise as might have been necessary to preserve or perfect any claim for lien or privilege which the claimant might have had. Any such claimant shall be entitled to pursue a claim and to recover judgment hereunder subject to the terms and notification provisions of the Bond.
5. Any material change in the Contract between the Principal and the NCC shall not prejudice the rights or interest of any Claimant under this Bond who is not instrumental in bringing about or has not caused such change.
6. No suit or action shall be commenced hereunder by any Claimant:
  - (a) Unless such Claimant shall have given written notice within the time limits hereinafter set forth to the Principal and the Surety above named, stating with substantial accuracy the amount claimed. Such notice shall be served by mailing the same by registered mail to the Principal and the Surety at any place where an office is regularly maintained for the transaction of business by such persons or served in any manner in which legal process may be served in the Province or other part of Canada in which the subject matter of the Contract is located. Such notice shall be given
  - (i) in respect of any claim for the amount or any portion thereof required to be held back from the Claimant by the Principal or by the Sub-Contractor of the Principal under either the terms of the Claimant's Contract with the Principal or the Claimant's Contract with the Sub-Contractor of the Principal within one hundred and twenty (120) days after such Claimant should have been paid in full under this Contract;

- (ii) in respect of any claim other than for the holdback or portion thereof referred to above within one hundred and twenty (120) days after the date upon which such Claimant did or performed the last of the service, work or labour or furnished the last of the materials for which such claim is made under the Claimant's Contract with the Principal or a Sub-Contractor of the Principal
  - (b) After the expiration of one (1) year following the date on which the Principal ceased work on the said Contract, including work performed under the guarantees provided in the Contract;
  - (c) Other than in a court of competent jurisdiction in the province or district of Canada in which the subject matter of the Contract or any part thereof is situated and not elsewhere, and the parties hereto hereby agree to submit to the jurisdiction of such court.
7. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder.
  8. The Surety shall not be entitled to claim any moneys relating to the Contract and the liability of the Surety under this Bond shall remain unchanged and, without restricting the generality of the foregoing, the Surety shall pay all valid claims of Claimants under this Bond before any moneys relating to the Contract held by the NCC are paid to the Surety by the NCC.
  9. The Surety shall not be liable for a greater sum than the amount specified in this bond.

**IN TESTIMONY WHEREOF**, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its authorized signing authority, the day and year first above written.

**SIGNED, SEALED AND DELIVERED in the presence of:**

Principal \_\_\_\_\_

Witness \_\_\_\_\_

Surety \_\_\_\_\_

Note: Affix Corporate seal if applicable.

- GC10.1 INSURANCE CONTRACTS
- GC10.2 INSURANCE PROCEEDS
- GC10.3 INSURANCE TERMS
  - GC10.3.1 General
    - GC10.3.1.1 Proof of Insurance
    - GC10.3.1.2 Payment of Deductible
  - GC10.3.2 Commercial General Liability
    - GC10.3.2.1 Scope of Policy
    - GC10.3.2.2 Insured
    - GC10.3.2.3 Period of Insurance
  - GC10.3.3 Builder's Risk / Installation Floater
    - GC10.3.3.1 Scope of Policy
    - GC10.3.3.2 Amount of Insurance
    - GC10.3.3.3 Insurance Proceeds

**GC10.1 INSURANCE CONTRACTS**

- 1) The Contractor shall, at the Contractor's expense, obtain and maintain insurance contracts in respect of the work and shall provide evidence thereof to the NCC in accordance with the requirements of GC10.
- 2) The insurance contracts referred to in paragraph 1) of GC10.1 shall:
  - (a) be in a form, of the nature, in the amounts, for the periods and containing the terms and conditions specified in GC10; and
  - (b) provide for the payment of claims under such insurance contracts in accordance with GC10.2 INSURANCE PROCEEDS.

**GC10.2 INSURANCE PROCEEDS**

- 1) In the case of a claim payable under a Builders Risk/Installation (All Risks) insurance contract maintained by the Contractor pursuant to GC10.1 INSURANCE CONTRACTS, the proceeds of the claim shall be paid directly to the NCC, and:
  - (a) the monies so paid shall be held by the NCC for the purposes of the contract; or
  - (b) if the NCC elects, shall be retained by the NCC, in which event they vest in the NCC absolutely.
- 2) In the case of a claim payable under a General Liability insurance contract maintained by the Contractor pursuant to GC10.1 INSURANCE CONTRACTS, the proceeds of the claim shall be paid by the insurer directly to the claimant.
- 3) If an election is made pursuant to paragraph 1) of GC10.2, the NCC may cause an audit to be made of the accounts of the Contractor and of the NCC in respect of the part of the work that was lost, damaged or destroyed for the purpose of establishing the difference, if any, between:
  - (a) the aggregate of the amount of the loss or damage suffered or sustained by the NCC, including any costs incurred in respect of the clearing of the work and its site and any other amount that is payable by the Contractor to the NCC under the contract, minus any monies retained pursuant to subparagraph 1)(b) of GC10.2; and
  - (b) the aggregate of the amounts payable by the NCC to the Contractor pursuant to the contract up to the date of the loss or damage.

- 4) A difference that is established pursuant to paragraph 3) of GC10.2 shall be paid forthwith by the party who is determined by the audit to be the debtor to the party who is determined by the audit to be the creditor.
- 5) When payment of a deficiency has been made pursuant to paragraph 4) of GC10.2, all rights and obligations of the NCC and the Contractor under the contract shall, with respect only to the part of the work that was the subject of the audit referred to in paragraph 3) of GC10.2, be deemed to have been expended and discharged.
- 6) If an election is not made pursuant to subparagraph 1)(b) of GC10.2, the Contractor shall, subject to paragraph 7) of GC10.2, clear and clean the work and its site and restore and replace the part of the work that was lost, damaged or destroyed at the Contractor's expense as if that part of the work had not yet been performed.
- 7) When the Contractor clears and cleans the work and its site and restores and replaces the work referred to in paragraph 6) of GC10.2, the NCC shall pay the Contractor out of the monies referred to in paragraph 1) of GC10.2 so far as they will thereunto extend.
- 8) Subject to paragraph 7) of GC10.2, payment by the NCC pursuant to paragraph 7) of GC10.2 shall be made in accordance with the contract but the amount of each payment shall be 100% of the amount claimed notwithstanding subparagraphs 3)(a) and 3)(b) of GC5.4 PROGRESS PAYMENT.

### **GC10.3 INSURANCE TERMS**

#### **GC10.3.1 General**

##### **GC10.3.1.1 Proof of Insurance**

- 1) Before commencement of the Work, and prior to contract award, the Contractor shall deposit with the NCC a Certificate of Insurance (approved Insurance form is enclosed at the end of this section).
- 2) Upon request by the NCC, the Contractor shall provide originals or certified true copies of all contracts of insurance maintained by the Contractor pursuant to the provisions contained herein.
- 3) The insurance policies shall be endorsed to provide the NCC with no less than 30 days notice in writing in advance of a cancellation of insurance or any reduction in coverage.

##### **GC10.3.1.2 Payment of Deductible**

- 1) Any moneys paid or payable in respect of a deductible amount shall be borne exclusively by the Contractor.

#### **GC10.3.2 Commercial General Liability**

##### **GC10.3.2.1 Scope of Policy**

- 1) The insurance coverage provided shall not be less than that provided by IBC Form 2100, as amended from time to time, and shall have:
  - (a) an Each Occurrence Limit of not less than \$5,000,000;
  - (b) a Products/Completed Operations Aggregate Limit of not less than \$5,000,000; and
  - (c) a General Aggregate Limit of not be less than \$10,000,000 per policy year, if the policy is subject to such a limit.

- 2) The policy shall 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 building or land whether such support be natural or otherwise if the work is performed by the insured Contractor.

#### **GC10.3.2.2 Insured**

- 1) The policy shall insure the Contractor and shall include the NCC as an additional Insured, with respect to liability arising out of the operations of the Contractor with regard to the work.

#### **GC10.3.2.3 Period of Insurance**

- 1) Unless otherwise directed in writing by the NCC, or, otherwise stipulated elsewhere herein, the policy required herein shall be in force and be maintained from the date of contract award until the day of issue of the Certificate of Completion except that the coverage for Completed Operations Liability shall, in any event, be maintained for a period of at least six (6) years beyond the date of the Certificate of Substantial Performance.

#### **GC10.3.3 Builder's Risk / Installation Floater**

##### **GC10.3.3.1 Scope of Policy**

- 1) The insurance coverage provided by a Builder's Risk policy or an Installation Floater policy shall not be less than that provided by IBC Forms 4042 and 4047, as amended from time to time.
- 2) The policy shall permit use and occupancy of the project, or any part thereof, where such use and occupancy is for the purposes for which the project is intended upon completion.
- 3) The policy may exclude or be endorsed to exclude coverage for loss or damage caused by any of the following:
  - (a) Asbestos;
  - (b) Fungi or spores;
  - (c) Cyber;
  - (d) Terrorism.

##### **GC10.3.3.2 Amount of Insurance**

- 1) The amount of insurance shall not be 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 the NCC 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 shall be changed to reflect the revised contract value.

##### **GC10.3.3.3 Insurance Proceeds**

- 1) The policy shall provide that the proceeds thereof are payable to the NCC may direct in accordance with GC10.2, "Insurance Proceeds".
- 2) The Contractor shall, without delay, do such things and execute such documents as are necessary to effect payment of the proceeds.



• To be completed by the insurer / À être rempli par l'assureur

<b>CONTRACT / MARCHÉ</b>					
Description and location of work / Description et endroit des travaux				Contract no. / N° de contrat	
<b>INSURER / ASSUREUR</b>					
Name / Nom					
Address / Adresse					
No., Street / N°, rue		City / Ville		Province	
				Postal code / Code postal	
<b>BROKER / COURTIER</b>					
Name / Nom					
Address / Adresse					
No., Street / N°, rue		City / Ville		Province	
				Postal code / Code postal	
<b>INSURED / ASSURÉ</b>					
Name of contractor / Nom de l'entrepreneur					
Address / Adresse					
No., Street / N°, rue		City / Ville		Province	
				Postal code / Code postal	
<b>ADDITIONAL INSURED / ASSURÉ ADDITIONNEL</b>					
The National Capital Commission / La Commission de la capitale nationale					
<b>This insurer certifies that the following policies of insurance are at present in force covering all operations of the Insured, in connection with the contract made between the named insured and the National Capital Commission.</b>					
<b>L'assureur atteste que les polices d'assurances suivantes sont présentement en vigueur et couvrent toutes les activités de l'assuré en fonction du marché conclu entre l'Assuré dénommé la Commission de la capitale nationale</b>					
<b>POLICY / POLICE</b>					
Type Genre	Number Numéro	Inception Date Date d'effet	Expiry Date Date d'expiration	Limit of Liability Limites de garantie	
Commercial General Liability Responsabilité civile des entreprises					
Builder's Risk "All Risks" Assurance des chantiers « tous risques »					
Installation Floater "All Risks" Risques d'installation « tous risques »					
Other (list) / Autre (énumérer)					
Each of these policies includes the coverages and provisions as specified in Insurance Terms and each policy has been endorsed to cover the National Capital Commission as an Additional Insured. The Insurer agrees to notify the National Capital Commission in writing thirty (30) days prior to any material change in, or cancellation of any policy or coverage.			Chacune des présentes polices renferment des garanties et dispositions spécifiées aux Conditions d'assurance, et chaque police a été amendée pour couvrir la Commission de la capitale nationale en tant qu'assuré additionnel. L'assureur convient de donner un préavis de trente (30) jours à la Commission de la capitale nationale en cas de changement visant la garantie d'assurance ou les conditions ou de l'annulation de n'importe quelle police ou garantie.		
Name of Insurer's Office or Authorized Employee / Nom du cadre ou de la personne autorisée			Telephone number / Numéro de téléphone		
Signature			Date		

**1. General**

- 1.1 In this Contract “OHS” means “occupational health and safety”.
- 1.2 With respect to the work to be performed under the Contract, the Contractor covenants and agrees to perform at, and to enforce conformity with, a standard equivalent to or greater than the best practices prevailing in the construction industry at that time.
- 1.3 The Contractor acknowledges that, to the extent that the following matters may be affected by conduct of the work, it is responsible for the:
- 1.3.1 health and safety of persons on site;
  - 1.3.2 safety of property on site;
  - 1.3.3 protection of persons adjacent to the site; and,
  - 1.3.4 protection of the environment.
- 1.4 Without limiting the generality of section 1.3, the Contractor acknowledges that it is required to, and covenants and agrees to, comply and to enforce compliance with all laws or regulations that may be applicable to the conduct of the work including, without limitation:
- (a) the provisions of the *Occupational Health and Safety Act* of Ontario and all regulations, policies or directives issued thereunder for work performed in Ontario;
  - (b) *La Loi sur la santé et la sécurité du travail* of Québec and all regulations, policies or directives issued thereunder for work performed in Québec;
  - (c) Applicable provisions of the *Canada Labour Code, Part II*;
  - (d) Employment standards legislation in the province(s) in which any part of the work is performed; and
  - (e) Any policies or directives issued by the NCC in respect of the subject matter of the contract.
- The NCC will present any such policies or directives referred to in paragraph (e) to the Contractor in written form by not later than the pre-construction meeting. The Contractor is obliged to ensure that the relevant policies and directives have been communicated to and acknowledged by all its employees and that they will be complied with. The NCC reserves the right to require the Contractor to produce evidence satisfactory to the NCC acting reasonably that the Contractor has discharged the foregoing obligations.
- 1.5 By entering into the Contract with the NCC, the Contractor represents and warrants to the NCC that it has informed itself of and is knowledgeable about the obligations imposed by the legislation referred to in 1.4. above.
- 1.6 For purposes of the relevant provincial OHS legislative regime the Contractor acknowledges and agrees that it is the “Constructor” and covenants to discharge and accept all liability for the performance of the obligations of the “Constructor” in respect of the work provided for in the Contract. Notwithstanding a determination by the relevant authority having jurisdiction that the NCC is the “Constructor” in the event of a dispute between the Contractor and the NCC, the Contractor acknowledges and agrees that the Contractor shall be financially responsible for the implementation of protective measures necessary to fulfill the obligations of the “Constructor”.

- 1.7 As between the NCC and the Contractor, the NCC's decision as to whether the Contractor is discharging its obligations in respect of OHS issues shall be definitive. Without limiting the generality of the foregoing, in the event of any dispute with respect to instructions given by the NCC's designated representative, the Contractor may note such dispute, but must nevertheless forthwith comply with any such instructions.
- 1.8 The Contractor hereby indemnifies and agrees to hold harmless the NCC, its agents and employees, from and against any and all claims, demands, losses, costs (including legal fees on a full indemnity basis), damages, actions, suits or proceedings (hereinafter collectively referred to as "claims") by third parties that arise out of or are attributable to the Contractor's errors or omissions in the performance of the Contract. Without limiting the generality of the foregoing, this indemnification extends to any claims related to any violation of any statute or regulation relating to OHS matters.
- 1.9 The NCC shall provide the contractor:
- 1.9.1 a written description of every known and foreseeable health and safety hazard to which persons employed in the performance of the work may be exposed because of the nature of the site;
  - 1.9.2 a list of any prescribed materials, equipment, devices and clothing necessary because of the nature of the site;
  - 1.9.3 with written information indicating the prescribed circumstances and manner to use all prescribed materials, equipment, devices and clothing listed pursuant to 1.9.2; and,
  - 1.9.4 with a copy of any NCC policies and procedures that may be applicable in relation to the work site.
- 1.10 Without limiting the generality of 1.9, prior to the commencement of the work by the contractor, the contractor shall, at the contractor's expense:
- 1.10.1 take all reasonable care to ensure that all persons employed in the performance of the work or granted access to the work or its site are informed of any health and safety hazard described pursuant to 1.9.1;
  - 1.10.2 provide all persons employed in the performance of the work or granted access to the work or its site with prescribed materials, equipment, devices and clothing listed pursuant to 1.9.2;
  - 1.10.3 take all reasonable care to ensure that all persons employed in the performance of the work or granted access to the work or its site are familiar with the prescribed circumstances and manner all prescribed materials, equipment, devices and clothing listed pursuant to 1.9.2; and
  - 1.10.4 take all reasonable care to ensure that all persons employed in the performance of the work or granted access to the work or its site are familiar with policies and procedures referred to in 1.9.4.

## **2. Qualifications of Personnel**

- 2.1 By entering into this agreement the contractor represents and warrants that it has the requisite experience, training, formal certification and equipment to enable it to discharge the obligations enumerated in sections 1.3, 1.4, 1.5 and 1.6 above.
- 2.2 The Contractor represents and warrants that supervisory personnel employed by the Contractor in respect of performance of any part of the work have the requisite experience, authority, training, formal certification and equipment to ensure that the obligations enumerated in sections 1.3, 1.4, 1.5

and 1.6 above are discharged and agrees to deliver such evidence as may be required by the NCC from time to time to verify same.

### **3. Certification**

3.1 After receiving notification that its bid has been retained and prior to and as a condition of contract award, the Contractor covenants and agrees to deliver a Worker's Compensation Clearance Certificate. Where the duration of the project is greater than sixty days, the Contractor covenants and agrees to deliver up-dated certificates at least every 60 days. In the event of a failure by the Contractor to deliver up-dated certificates, the NCC shall be entitled to immediately terminate the contract without notice and without incurring any liability to the Contractor.

3.2 After receiving notification that its bid has been retained and prior to and as a condition of contract award, the Contractor covenants and agrees to deliver historical information on its injury experience including any pertinent Worker's Compensation Experience Reports. Such historical information shall report data for the previous three years.

### **4. Plans Policies and Procedures**

4.1 After receiving notification that its bid has been retained and prior to and as a condition of contract award, the Contractor covenants and agrees to deliver for the review and approval of the NCC:

- (a) A copy of the contractor's OHS policy;
- (b) A safety program and plan specific to the work to be performed pursuant to the Contract which plan shall include a risk assessment and analysis, a description of safe working methods, injury and incident reporting protocols, regular periodic reporting on compliance with OHS obligations including any policies, practices and procedures otherwise provided for herein, and a site-specific contingency and emergency response plan; and
- (c) Health and safety training records of personnel and alternates responsible for OHS issues on site.

The Contractor covenants and agrees to deliver the necessary material safety data sheets for the review and approval of the NCC prior to entering the site to perform work related to the relevant material.

Approval by the NCC does not amend the provisions of the Contract with respect to the allocation of liability for discharging or failing to discharge OHS obligations. Such liability remains with the Contractor notwithstanding the granting of such approval.

4.2 The Contractor acknowledges and agrees that prior to commencement of work it must attend a pre-construction briefing at which any special or additional practices and procedures to be followed in completing the work are to be established. Without limiting the provisions of section 1.4(e) above, the representatives of the Contractor attending the briefing will be required to deliver a signed acknowledgement that the practices and procedures set out in the pre-construction briefing have been understood and will be complied with.

4.3 At any time and from time to time during the performance of the work, the NCC shall have the right to audit the manner in which the Contractor is discharging its OHS obligations and to determine whether the project specification and/or OHS policies, practices and procedures are being complied with. In the event that the audit discloses any failure by the Contractor to discharge such OHS obligations, the NCC shall be entitled to forthwith rectify at the Contractor's expense any such deficiency and the NCC shall have the further right to immediately terminate the contract without notice and without incurring any liability to the Contractor.

- 4.4 The Contractor covenants and agrees to conform with all requirements of the Workplace Hazardous Materials Information System.
- 4.5 The Contractor acknowledges and agrees that where required by any law or regulation applicable to the performance of the work it must establish and maintain a project health and safety committee. The contractor further acknowledges and agrees that it must enable staff to attend all relevant safety meetings, and that the cost of same, including costs attributable to standing down equipment is included in its bid price and is not independently recoverable.
- 4.6 Where required by the relevant provincial regulatory regime, the Contractor acknowledges and agrees that it is responsible for delivery of notice of the project to the relevant regulatory authority, and for the performance of any other administrative activity required to meet the obligations imposed in the pertinent provincial regulatory regime.
- 4.7 **(Optional depending on hazard or scope of project)**. The contractor covenants and agrees that it shall employ and assign to the work, a competent OHS professional as Health and Safety Coordinator that must:
- (a) have a minimum two (2) years' site-related working experience specific to activities associated with.(identify specific subject matter)
  - (b) have basic working knowledge of specified occupational safety and health regulations,
  - (c) be responsible for completing health and safety training session and ensuring that personnel not successfully completing the required training are not permitted to enter the site to perform the Work,
  - (d) be responsible for implementing, enforcing daily and monitoring the site-specific Health and Safety Plan, and
  - (e) be on site during execution of the Work.

The parties acknowledge that in lieu of employing an OHS professional, the Contractor may provide same by sub-contracting for such services.

- 4.8 Upon completion of the work the Contractor covenants and agrees to participate with the NCC in a post performance interview to evaluate the performance of the Contractor in respect of the OHS obligations under the contract. Without limiting the generality of the foregoing, the interview will identify areas of compliance and non-compliance in terms of:
- (a) actual performance of the work;
  - (b) reporting or procedural requirements;
  - (c) resolution of deficiencies.

The contractor acknowledges and agrees that the results of the post-completion interview may be relied upon by the NCC in evaluating bids subsequently submitted by the Contractor on other NCC projects.

### Security Requirements

The NCC complies with Treasury Board's *Policy on Government Security* and consequently, it will require that the Contractor's employees submit to a personal security screening process (Security Clearance Form TBS/SCT 330-60E). The NCC may also perform a credit check when the duties or tasks to be performed require it or in the event of a criminal record containing a charge/offence of a financial nature.

The NCC reserves the right to not award the Contract until such time as the Contractor's core employees have obtained the required level of security screening as identified by the NCC's Corporate Security. In this case the level of security required will be **Reliability/Site Access/Secret**.

The NCC also reserves the right to request that the Contractor submit to a *Designated Organisation Screening* and/or *Facility Security Clearance*— depending on the nature of the information it will be entrusted with. In the event that the Contractor does not meet the requirements to obtain the requested clearance, the Contractor shall take the corrective measures recommended by the Canadian Industrial Security Directorate (of PWGSC) or by the NCC's Corporate Security in order to meet these requirements. If no corrective measures are possible or if the Contractor fails to take the recommended measures, then the Contractor shall be in default of its obligations under this Contract and the NCC shall have the rights and remedies listed in section 2.14, including the right to terminate the Contract without further notice to the Contractor.

### Additional information

As part of their personal screening, individuals may be required to provide evidence of their status as a Canadian citizen or permanent resident as well as any other information/documentation requested by the NCC's Corporate Security in order to complete the screening.

The NCC reserves the right to refuse access to personnel who fail to obtain the required level of security screening.

The NCC reserves the right to impose additional security measures with respect to this Contract as the need arises.

### Company Security Representative

The Contractor shall appoint one Company Security Representative (CSR) as well as one alternate (for companies who have more than five employees).

Selection criteria for the CSR and the alternate are the following:

- They must be employees of the Contractor;
- They must have a security clearance (the NCC will process the clearances once the individuals have been identified).

### Responsibilities of the Company Security Representative

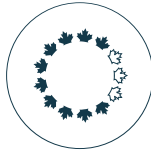
The CSR's responsibilities are the following:

- Act as liaison between the NCC's Corporate Security and the Contractor to ensure coordination;
- In collaboration with the NCC's Corporate Security, identify the Contractor's employees who will require access to NCC information/assets/sites **as well as any recurring subcontractors** (and their employees) who will require similar access and may not be supervised by the Contractor at all times during such access. Ensure that accurate and complete Personnel Security Screening documentation is

**SECURITY REQUIREMENTS**

submitted to the NCC's Corporate Security for the employees/subcontractors who have been identified;

- Ensure that employees/subcontractors, upon notification of having been granted a reliability status, sign the *Security Screening Certificate and Briefing Form* and return to the NCC's Corporate Security;
- Ensure that only persons who have been security screened to the appropriate level and who are on a "need-to-know basis" will have access to information and assets;
- Maintain a current list of security screened employees/subcontractors;
- Ensure proper safeguard of all information and assets, including any information/assets entrusted to subcontractors;
- If a Security incident or suspected breach of security occurs, prepare and submit to the NCC an occurrence report as soon as possible.



NATIONAL CAPITAL COMMISSION  
COMMISSION DE LA CAPITALE NATIONALE

# Rideau Canal Promenade Interpretive Installations

## CONSTRUCTION SPECIFICATIONS

ISSUED FOR TENDER  
January 17, 2018



**DRAWING LISTS**  
**LANDSCAPE ARCHITECTURE**

<u>Ottawa Locks</u>	
Demolition and Layout Plan	OTL-01
Grading Plan	OTL-02
Planting Plan	OTL-03
<u>Ottawa Convention Centre</u>	
Demolition and Layout Plan	OCC-01
<u>Pretoria Bridge</u>	
Demolition, Layout and Grading Plan	PR-01
Planting Plan	PR-02
<u>Lansdowne</u>	
Demolition, Layout and Grading Plan	LAN-01
Planting Plan	LAN-02
<u>Dows Lake</u>	
Demolition, Layout and Grading Plan	DL-01
Planting Plan	DL-02
<u>Hartwells Locks</u>	
Demolition Plan	HL-01
Layout and Grading Plan	HL-02
Planting Plan	HL-03
<u>Central Experimental Farm</u>	
Demolition, Layout and Grading Plan	CEF-01
Planting Plan	CEF-02
<u>Construction Details</u>	D-01 / D-02 / D-03

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## **APPENDICES**

A – MMF: Basic Project Mitigation Measures Form, Rideau Canal Interpretive Nodes Project, NCC, October 2016, 13 pages.

B – Location of existing panels and nodes to be removed (Map)

C – Archaeological Services and Utility Locates

- .1 Rideau Promenade, Locates, Paterson Group, PA1064-1, NCC, December, 2015, 32 pages.
- .2 Rideau Promenade Archaeological Assessment – Pretoria Bridge and Central Experimental Farm, Paterson Group, PA1064-MEMO.01, NCC, December 17, 2015, 10 pages.
- .3 Rideau Promenade Archaeological Assessment – Ottawa Locks, Paterson Group, PA1064-MEMO.02, NCC, December 17, 2015, 15 pages.

D – Interpretive Elements Installation Drawings

.1	2380PCH_VS_0001	(Vertical Elements)	Pages 1-3, 6-7 of 7
.2	2380PCH_IS_0000	(Interpretive Structures)	Pages 1-2 of 7
.3	2380PCH_WB_0000	(OCC Wall Brackets)	Pages 1-2 of 4
.4	2380PCH_CSC_0000	(Corten Steel Canoe)	Pages 1-2 of 14
.5	2380PCH_HP_B_0010	(Heel Post Support Brackets)	Pages 1-2 of 2
.6	Heel Post General Assembly		Pages 1-8 of 11

Hardware Supply and Installation List	Page 1 of 1
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E – Photographs of existing conditions at seven (7) future interpretive installation sites along the Rideau Canal

Basis of Payment

- .1 Payment at the price per item listed in the Tender Form shall be full compensation for all labour, services and equipment as well as the supply, delivery and installation of all materials required for the proper execution of this Contract.

1.0 SITE PREPARATION

1.1 Mobilization and General Requirements

- .1 This item includes, but may not be limited to, steps to obtain permits, implementation of safety measures, environmental protection, supply and installation of 1.8m high Moduloc-style steel fencing and tree protection fencing, temporary facilities, signage, cleaning, layout, utility locates at the new sites, surveying, contractor testing, moving equipment, supply of a spill kit on-site, site reinstatement, removing equipment and fencing at job completion, aeration of compacted soils, and all other requirements identified in the contract documents not covered under specific items.
- .2 Included in this lump sum price are the completion of record drawings at the end of the Contract for provision to the NCC Representative.
- .3 This item will not be measured but will be paid on a monthly lump sum basis per site as progress is made.

1.2 Demolition, Removals and Salvage

- .1 This item includes the demolition and removal of sod, vegetation, concrete and asphalt paving, concrete curbing and granular bases to specified depths.
- .2 This item includes demolition and removal of existing interpretive concrete footings and the removal and transportation of existing panels and supports to NCC storage facility.
- .3 This item includes the temporary removal and safe storage (salvage) of existing concrete pavers at Ottawa Convention Centre in a way that ensures they are not damaged.
- .4 This item includes the removal and salvage of cobblestone pavers and transportation to new locations.
- .5 This item includes disposing of and/or storing removed materials according to the Mitigation Measures Form (Appendix A).
- .6 This item will not be measured but will be paid on a monthly lump sum basis per site as progress is made including provision of weigh bills.

1.3 Excavation, Backfilling and Grading

1. This item includes stripping, common excavation, backfilling and rough grading allowing for finished ground elevations and specified surface treatments and to meet and match adjacent elevations.
- .2 This item includes hauling, handling and placing, shaping, compacting and trimming of earth and excess material and the management of excess material.
- .3 This item includes the proof rolling of the exposed surface, and the sub-excavation as required of any soft areas encountered during proof rolling.
- .4 This item includes stripping and reuse of approved earth fill material including compaction.
- .5 This item includes stockpiling of acceptable and reusable topsoil material.
- .6 This item includes the removal of all excavated non-reusable or surplus material, from the site.

- .7 This item includes the excavation of planting beds.
- .8 This item will not be measured but will be paid on a monthly lump sum basis per site as progress is made with provision of weigh bills.

1.4 Soil Leachate Test for Contaminated Soils

- .1 This item includes testing soil for contaminants as per requirements of the Mitigation Measures Form (Appendix A) prior to construction.
- .2 Provide reports to NCC Representative.
- .3 This item will be measured and payed on a unit price basis with provision of weigh bills.

1.5 Contaminated Soil Disposal

- .1 This item includes transportation of contaminated soils from 2 sites (Ottawa Convention Center and Dow's Lake sites).
- .2 This item will not be measured but will be paid for on a cubic metre basis per site with provision of test results.

2.0 HARDSCAPE

2.1 Supply and Install Concrete Slabs

- .1 This item includes the supply and installation of cast-in-place or prefabricated concrete slabs for interpretive panels, canoe sculpture and limestone seat wall support including formwork, concrete, concrete placement, reinforcement, accessories, removal, granular bases.
- .2 This item includes the supply and installation of expansion anchor bolts, nuts and washers for the attachment of interpretive element support base plates to the slabs.
- .3 This item will be measured and payed on a square metre per site basis.

2.2 Supply and Install Concrete Vertical Marker Footings

- .1 This item includes the supply and installation of cast-in-place or prefabricated concrete footings for vertical marker support including formwork, concrete, concrete placement, reinforcement, accessories and removal.
- .2 This item includes the supply and installation of L shaped anchor rods embedded in concrete, nuts and washers for the attachment of the vertical marker baseplates to the footings.
- .3 This item will be measured and payed on a unit price basis.

2.3 Install Limestone Seat Wall

- .1 This item includes the coordination and transportation of materials including granite capstones and limestone blocks, located at the Central Experimental Farm
- .2 This item includes the supply of all necessary products other than granite capstones and limestone blocks and includes installation of the seat wall on concrete slab (per item 2.1) as indicated on drawings including any cuts necessary to achieve dimensions and finishes indicated in contract documents.
- .3 This item includes the supply and installation of mortar and dowels.
- .4 This item includes sawcutting the drip chanel, drilling the holes, cleaning the granite capstones and limestone blocks after work is completed.

- .5 This item includes the supply and installation of adhesives and membrane between granite capstone, membrane and limestone blocks.
- .6 This item will not be measured but will be paid on a lump sum basis.
- 2.4 Supply and Install Concrete Heal Post Slab and Supports
  - .1 This item includes the supply and installation of the cast-in-place concrete slab and concrete supports for the heal post, including formwork, concrete, concrete placement, reinforcement, accessories, removals, granular base and geotextile and cladding.
  - .2 This item includes the supply and installation of threaded galvanized steel rods and epoxy glue, the drilling of holes in the heel post and in concrete.
  - .3 This item includes coordination with Granterra Marble and Granite Company for the cladding of the concrete supports with ½" limestone.
  - .4 This item will not be measured but will be paid on a lump sum basis.
  - .5 This item includes the installation of metal brackets (supplied by Dymech) as shown on detail 8/D-01
- 2.5 Supply and Install Exposed Aggregate Concrete Walkway
  - .1 This item includes the supply and installation of new cast-in-place concrete with an exposed aggregate finish adjacent existing asphalt or existing concrete, including formwork, concrete, concrete placement, construction joints, welded wire mesh, accessories, granular base and geotextile.
  - .2 This item will be measured and payed on a square meter basis.
- 2.6 Reinstate Concrete Curb
  - .1 This item includes the supply and reinstatement of a small area of cast-in-place concrete curbing to match the existing concrete curb at Ottawa Locks including formwork, concrete, concrete placement, joints, fibreboard expansion joints, reinforcement, granular base and geotextile.
  - .2 This item will be measured and payed on a linear metre basis.
- 2.7 Supply and Install Coloured Concrete Walkway
  - 1. This item includes the supply and installation of cast-in-place coloured concrete in a wave pattern per drawings and specifications, including formwork, concrete, colour mix, concrete placement, welded wire mesh, accessories, granular base, geotextile and construction joints.
  - .2 This item will be measured and payed on a square metre basis.
- 2.8 Supply and Install Asphalt Paving
  - .1 This item includes the supply and installation of new asphalt paving at Hartwell's Locks including granular base, geotextile and sawcuts to meet and match adjacent finished surfaces.
  - .2 This item will be measured and payed on a square metre basis.
- 2.9 Supply and Install Prefabricated Concrete Paving
  - .1 This item includes the supply and installation of 80mm thick concrete paving including pavers, any cuts necessary to accommodate the new interpretive or landscaping elements, landscape edger and nails, sand leveling course, polymeric jointing sand, granular base and geotextile.
  - .2 This item will be measured and payed on a square metre basis.

- 2.10 Reinstall Existing Prefabricated Concrete Pavers at Ottawa Convention Centre
- .1 This item includes the reinstallation of existing concrete unit pavers that were temporarily removed to accommodate installation of the vertical element including any cuts necessary to accommodate the new vertical element, sand leveling course, polymeric jointing sand and granular base.
  - .2 This item will be measured and payed on a square metre basis
- 2.11 Supply and Install Riverstone Beach
- .1 This item includes the supply and installation of varying sizes of riverstone as shown in contract documents to achieve the look of a natural beach, including geotextile.
  - .2 This item will be installed with direction from the NCC Landscape Architect.
  - .3 This item will be measured and payed on a square metre basis.
- 2.12 Install Cobblestone Edging
- .1 This item includes installing salvaged cobblestones, including sand leveling course, polymeric jointing sand, granular base, geotextile and landscape edger.
  - .2 This item includes cleaning the cobblestones if necessary before installation.
  - .3 This item will be measured and payed on a square metre per site basis.
- 2.13 Transport and Install Type A, B and C Limestone Blocks
- .1 This item includes transportation of limestone blocks from Lower Beveridges Locks Station, Perth to Granterra Marble and Granite Company and then to sites as indicated on drawings.
  - .2 This item includes the installation of the blocks as indicated in contract documents including granular base and sand leveling course.
  - .3 This item will be measured and payed on a per unit basis.
- 2.14 Transport and Install Limestone and Granite Boulders
- .1 This item includes the transportation of limestone and/or granite boulders from the Central Experimental Farm to the sites as indicated in contract documents.
  - .2 This item includes power-washing the boulders before installation.
  - .3 This item includes the installation of the boulders as indicated in contract documents including, granular base and geotextile.
  - .4 This item will be measured and payed on a per unit basis.
- 2.15 Limestone Block Cleaning and Dressing
- 1. This item is to clean to remove dirt, lichen, moss, plant residues, orange spray paint and black sharpie marker. Work to be performed by Granterra Marble and Granite Company.
  - .2 This item includes the temporary identification of the numbering of the blocks until their installation at their respective sites.
  - .3 This item includes the dressing of blocks as indicated in 321415 Blocks, Boulders, Riverstone and Cladding specification in the contract documents which consists of sandblasting and/or engraving a pattern of lines on the faces of the blocks.
  - .4 This item includes the removal of sharp edges if necessary.
  - .5 This item will be measured on a lump sum basis.

- 2.16 Rigid foam insulation
  - .1 This item includes supply and installation of 100mm of high density rigid extruded polystyrene (XPS) insulation where indicated in the contract documents.
  
- 3.0 SOFTSCAPE
  - 3.1a-s Supply and Install Plant Material
    - .1 This item includes the supply and installation of perennials and shrubs as indicated in the contract documents.
    - .2 This item will be measured and payed on a per unit basis.
  
  - 3.1t-u Supply and Install Topsoil and Sod or Sport Turf
    - .1 This item includes the supply and installation of 150mm topsoil and sod or sport turf as indicated in the contract documents.
    - .2 This item includes soil aeration of compacted areas, including staging areas, prior to sod installation.
    - .3 This item will be measured and payed on a square metre basis.
  
  - 3.1v-w Supply and Install Topsoil and Mulch
    - .1 This item includes the supply and installation of 450mm depth topsoil, and 75mm compost pine bark mulch as indicated in contract documents.
    - .2 This item will be measured and payed on a square metre basis.
  
  - 3.2 Year 1 Plant Maintenance and Warranty
    - .1 This item includes the maintenance and warranty of all plant material in the first year in accordance with the Contract documents to ensure healthy plant material.
    - .2 This item will not be measured but will be paid for on a lump sum basis upon the following schedule:
      - 1. 40 % at the completion of all spring maintenance and warranty conditions as determined by the Contract Administrator.
      - 2. 20% at the completion of all summer maintenance and warranty conditions as determined by the Contract Administrator.
      - 3. 40% at the completion of all fall maintenance and warranty conditions as determined by the Contract Administrator.
  
  - 3.3 Year 2 Plant Maintenance and Warranty
    - .1 This item includes the maintenance and warranty of all plant material in the second year in accordance with the Contract documents to ensure healthy plant material.
    - .2 This item will not be measured but will be paid for on a lump sum basis upon the following schedule:
      - 1. 40 % at the completion of all spring maintenance and warranty conditions as determined by the Contract Administrator.
      - 2. 20% at the completion of all summer maintenance and warranty conditions as determined by the Contract Administrator.
      - 3. 40% at the completion of all fall maintenance and warranty conditions as determined by the Contract Administrator.



#### 4.0 INTERPRETIVE ITEMS

- 4.1 Transportation and Installation of the Cannonballs Interpretive Exhibit
  - .1 This item includes transportation of the cannonball exhibit from NCC facility (Woodroffe Ave) to Ottawa Locks.
  - .2 This item includes the installation of the exhibit on the limestone block (item 2.15) as indicated in contract documents.
  - .3 This item will not be measured but will be paid on a lump sum basis.
- 4.2 Installation of the Corten Steel Canoe Sculpture
  - .1 This item includes the Contractor's coordination of the delivery of the sculpture to site by Dymech.
  - .2 This item includes the coordination of Dymech's installation of the corten steel canoe sculpture on a concrete slab (item 2.1) as indicated in the contract documents.
  - .3 This item includes the supply of anchors, nuts and washers for attachment to slab.
  - .4 This item will not be measured but will be paid on a lump sum basis.
- 4.3 Assemblage and Installation of Interpretive Panels and Supports
  - .1 This item includes coordination of the delivery to sites by Dymech of the interpretation panels, their supports and hardware.
  - .2 This item includes the coordination of Dymech's assemblage and installation of interpretive panels and supports on concrete slabs (item 2.1) as indicated in the contract documents.
  - .3 This item includes protection of panels and supports with use of protective wrapping until such time as the NCC Representative approves permanent removal of protection
  - .4 This item will be measured on a lump sum basis per site.
- 4.4 Assemblage and Installation of Interpretive Panels at Ottawa Convention Centre
  - .1 This item includes coordination of the delivery to site by Dymech of interpretive panels and their attachments.
  - .2 This item includes coordination of Dymech's assembly and installation of interpretation panels and their fasteners on an existing wall as indicated in the contract documents.
  - .3 This item will not be measured but will be paid on a lump sum basis.
- 4.5 Assemblage and Installation of Vertical Markers and Panels
  - .1 This item includes coordination of the delivery to site by Dymech of vertical elements, graphic panels and hardware.
  - .2 This item includes coordination of Dymech's assemblage and installation of the vertical markers and panels on concrete footings (item 2.2) as indicated in the contract documents.
  - .3 This item includes protection of the vertical markers and panels with use of protective wrapping until such time as the NCC Representative approves permanent removal of protection
  - .4 This item will be measured and payed on a per unit basis.

- 4.6 Transportation and Installation of Cedar Posts
- .1 This article includes the coordination of cedar posts pick up with Woodroffe Storage Facility and the transportation of the cedar posts from the Woodroffe Storage Facility to Dows Lake.
  - .2 This article includes the installation of cedar posts as indicated in the contract documents in a clean stone base.
  - .3 This item includes the supply and installation of clear stone, waterproof membrane around the posts, geotextile and the wood filler.
  - .4 This article includes labour and equipment to finish the ends of the cedar posts.
  - .5 This item will not be measured but will be paid on a lump sum basis.
- 4.7 Transportation, Assemblage and Installation of Heel Post
- .1 This item includes transportation of the approximately 2 000 lbs heel post from the Woodroffe Storage Facility to Hartwell's Locks.
  - .2 This article includes the installation of the heel post to concrete supports including the supply and installation of galvanized steel rods and epoxy as indicated in the contract documents.
  - .3 This item includes the coordination of Dymech's delivery, assemblage and installation of interpretive panels on the heel post as indicated in the contract documents.
  - .4 This item includes the supply of attachment hardware per Dymech's drawing 2380PCH\_HP\_B\_0010
  - .5 This item will not be measured but will be paid on a lump sum basis.

END OF SECTION

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## PART 1 - GENERAL

### 1.01 RELATED REQUIREMENTS

- .1 Section 01 05 05 – Pay Items Description
- .2 Section 01 33 00 – Submittal Procedures

### 1.02 CONTRACT METHOD

- .1 Construct Work under unit price contract.

### 1.03 WORK SEQUENCE

- .1 Work must begin immediately following Contract award and be substantially completed on the day and year determined by the NCC Representative, **June 29, 2018**.
- .2 On-site Work shall be limited from Monday to Friday, unless approved by the NCC Representative.
- .3 The Contractor is advised that events and landscaping Works are scheduled along the Rideau Canal Promenade. Therefore, the Contractor may be required to adjust their work schedule to accommodate official functions and demands as well as coordinate with other Contractors on very short notice.
- .4 Provide within five (5) working days after Contract award, in form acceptable to NCC Representative, detailed schedule showing anticipated progress stages and final completion of Work within time period specified in Contract documents.
- .5 Interim reviews of work progress based on work schedule will be conducted as decided by NCC Representative and schedule updated by Contractor in conjunction with and to approval of NCC Representative.
- .6 Events include, but may not be limited to, the following: opening of the Ottawa Locks in April (weather dependent), Sunday closures of Queen Elizabeth Drive for Sunday Bike Days, the Tulip Festival from May 11<sup>th</sup> to 21<sup>th</sup> 2018, Ottawa Race Weekend, May 26-27<sup>th</sup> 2018.

### 1.04 SCOPE OF WORK

- .1 Work under this contract covers the work involved in the construction of seven (7) Interpretive Installations along the Rideau Canal, the removal of existing promenade panels and includes, but is not limited to, the following. See Section 01 05 05 Pay Items Description for complete list:
  - .1 Site mobilization including tree and environmental protection
  - .2 Removal and disposal or salvage of existing site elements such as interpretive panels and footings, cobblestones and plant material.
  - .3 Reinstatement of existing interpretive nodes that are being removed entirely and not being replaced with new plazas, with topsoil and sod.
  - .4 Testing and contaminated soil disposal
  - .5 Removal and storage of granite cobblestones in specified locations for re-use in other interpretive installations in this contract
  - .6 Excavation, backfilling and site grading
  - .7 Supply and installation of concrete footings and slabs and limestone seat wall
  - .8 Supply, transportation and installation of paved plazas including concrete and asphalt paving, salvaged cobblestone banding, limestone and/or precast unit pavers, insulation and granular bases
  - .9 Transportation, where required, and installation of interpretive elements including interpretive panels, vertical elements, the canoe sculpture, heel post, limestone blocks and boulders, cedar posts and stone seat wall.

- .10 Supply and installation of new plant material and sod
- .11 Rehabilitation of disturbed areas
- .12 Two (2) year plant maintenance and warranty

#### **1.05 SPECIAL CONSTRUCTION REQUIREMENTS**

- .1 Contractor shall install and manage circulation of vehicles and pedestrians. The Contractor shall also maintain, at all times, access to the Rideau Canal Promenade.
- .2 Contractor shall install, supply, maintain, and manage construction hoarding and tree protection fencing during construction period.
- .3 Contractor to stake out the proposed layout of the new plazas including locations of all interpretive elements, and planting beds as indicated on drawings. NCC Representative to approve the layout.
- .4 The Contractor will be responsible to protect the subgrade at all times during construction and in particular following moderate to heavy rainfall. Construction traffic on exposed subgrade should be prohibited or limited to equipment, which will not damage subgrade.
- .5 The Contractor will be responsible to ensure that the equipment utilized in the site preparation, excavation and removal of granular material (where required) does not cause any damage or disturbance to the subgrade and any adjacent infrastructure. The Contractor will submit an equipment list to NCC Representative at least one week prior to beginning construction.
- .6 Any damaged subgrade areas caused as a result of construction traffic or construction techniques must be repaired by the Contractor as part of this contract and at no additional cost to the National Capital Commission.
- .7 The Contractor shall be responsible as part of the tender price for the stockpiling and reuse of approved fill material, or the removal from the site of all excavated non reusable or excess material as well as the supply and placement of all required imported fill material required to execute the Work of this contract.
- .8 The Contractor shall not excavate more than the depth indicated on the drawings and details, without the prior authorization and approval of the NCC Representative. The Contractor will not be compensated for any additional earth or granular backfill materials required as a result of over-excavations not approved and authorized by the NCC Representative prior to undertaking Work.
- .9 The Contractor shall implement the mitigation measures set forth in the Mitigation Measures Form (Appendix 1) to address adverse environmental effects of the project.
- 10. The contractor must subcontract to the fabricator Dymech Engineering Inc of the interpretive panels, supports, vertical markers and canoe sculpture the installation of these items .

#### **1.06 CODES, PERMITS AND STANDARDS**

- .1 Standards referred to in this Specification (CGSB, CSA, ASTM, OPSD, CHBDC etc.) may be examined at the following location:
  - Public Works and Government Services Canada
  - Standards and Specifications Branch
  - Place du Portage - Phase 3, 11 Laurier Street
  - Gatineau, Quebec, K1A 0S5
- .2 Perform Work in accordance with the National Building Code of Canada 2010 and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
- .3 Work to meet or exceed requirements of:
  - .1 Contract Documents

- .2 Specified standards, codes and referenced documents
- .4 Obtain and pay for permits, inspector approvals, and other licenses required for this project and also pay any charges incidental to such permits. Provide copy of permits to the NCC Representative.
- .5 Land Access Permits for NCC and Parks Canada lands will be provided by the NCC.

#### **1.07 DEFINITIONS**

- .1 Wherever the term "NCC Representative" appears throughout this specification, it shall be construed to mean a Site Supervisor, the Project Manager or the Landscape Architect representing the National Capital Commission and including a duly named Consultant on their behalf.
- .2 Wherever the terms "or equal", "or approved equal" appear after specific types of materials and items throughout this specification, they shall be construed to mean as being equal in the opinion of the NCC Representative, in material content, workmanship and quality to that designated as being the minimum acceptable standard, and that the NCC Representative's written approval must be obtained prior to submitting an alternative, seven (7) days before close of tender.
- .3 Wherever the term "NCC" appears throughout this specification, it shall be construed to mean the National Capital Commission.
- .4 Wherever the term "NCC Storage Facility" appears throughout this specification, it shall be construed to be the facility at 1740 Woodroffe Ave, Ottawa, ON.
- .5 Wherever the term "PCH" appears throughout this specification, it shall be construed to mean the Department of Patrimoine Canada Heritage.
- .6 Wherever the term "PCA" appears throughout this specification, it shall be construed to mean Parks Canada Agency.
- .7 Wherever the term "MMF" or "Appendix A" appears throughout this specification, it shall be construed to mean the Mitigation Measures Form.
- .8 Wherever the term "CEF" appears throughout this specification, it shall be construed to mean Central Experimental Farm.

#### **1.08 TAXES**

- .1 Referred to the instructions to tenderers.

#### **1.09 PROTECTION**

- .1 Provide and maintain guardrails, fences, barricades, lights and other devices required for protection of workmen and public in accordance with the requirements of Provincial and Local by-laws and the Canadian Construction Safety Code.
- .2 Protect existing structures against damage until completion of Work.
- .3 Take all precautions to protect vegetated areas and trees from any damage.
- .4 Contractor to keep spill kit on site at all times in accordance with the Mitigation Measures Form (Appendix A).

#### **1.10 DAMAGES**

- .1 Damages caused to existing plant material, landscaping, lawns, roadways, pathways, structures, finishes and public utilities due to work of this contract, will be restored or replaced to their original condition or better, or adequate compensation made to affected parties by the Contractor.
- .2 It is understood that restored or replaced Work includes, labour, equipment and material costs.

- .3 The restored or replaced Work shall be completed within seven (7) days of notification by the NCC Representative.

#### **1.11 FIRE SAFETY**

- .1 Maintain fire access / control.
- .2 Provide fire extinguishers to protect the work in progress.
- .3 Advise NCC Representative of any work that would impede fire apparatus / personnel response.

#### **1.12 CUTTING, FITTING AND PATCHING**

- .1 Execute cutting, fitting and patching of Work that may be a requirement to make Work fit properly together, to receive or be received by other Work.
- .2 Where new Work connects with existing and where existing Work is altered, cut, patch and make good to match existing Work.
- .3 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.

#### **1.13 SITE VISIT**

- .1 Referred to the instructions to tenderers and see appendix E.

#### **1.14 WORKMANSHIP**

- .1 It is a requirement of this contract that qualified tradesmen execute each type of Work specified.
- .2 Example: Landscape contractor for landscape work, mason for stonework, carpenter for carpentry work, etc.
- .3 Work unsatisfactorily completed by unqualified tradesmen will be redone and paid for by the Contractor.

#### **1.15 DOCUMENTS REQUIRED**

- .1 Maintain at job site, one copy of each of following:
  - .1 Contract drawings.
  - .2 Specifications.
  - .3 Addenda.
  - .4 Change orders.
  - .5 Other modifications to Contract.
  - .6 Field test reports.
  - .7 Manufacturer's installation and application instructions.
  - .8 Copy of current and approved work schedule.
  - .9 Permits
  - .10 Health and Safety Plan approved by NCC Representative
  - .11 Construction Staging Plan approved by NCC Representative
  - .12 Traffic Control/Routing Plan approved by NCC Representative
  - .13 Mitigation Measures Form (Appendix A)

#### **1.16 CONTRACTOR'S USE OF PREMISES**

- .1 Limited to area immediately surrounding Work and areas designated by the NCC Representative for material stockpiling and work equipment parking. Coordinate use of local premises under direction of NCC Representative if required.
- .2 Do not unreasonably encumber site with materials or equipment during construction.

- .3 Obtain and pay for use of additional storage or work areas needed for operations if required.
- .4 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

**1.17 SETTING-OUT OF WORK**

- .1 The NCC shall furnish the Contractor with the reference co-ordinates necessary for laying out the work of this contract. The Contractor shall employ survey personnel with experience in the use of coordinates to physically lay out work utilizing a total station survey system.
- .2 Contractor shall assume full responsibility for and execute complete layout of Work to locations, lines and elevations indicated.
- .3 Provide devices needed to lay out and construct Work. Supply such devices as required to facilitate NCC Representative's inspection of Work.
- .4 Supply stakes and other survey markers required for laying out Work.
- .5 Contractor must obtain NCC Representative's approval of each layout prior to commencing Work.

**1.18 OWNER FURNISHED ITEMS**

- .1 Names and phone numbers of contact personnel will be provided at the start-up meeting.
- .2 All items to be transported to site by contractor unless otherwise specified. Pick-up addresses outlined in Pay Items Description.

	<b>Item</b>	<b>Pick up address or geographic coordinates, contact</b>	<b>To</b>
.1	Interpretive displays, graphic panels and hardware	To be delivered by Dymech Engineering Inc.	New interpretive nodes
.2	Vertical elements, graphic panels and hardware	To be delivered by Dymech Engineering Inc.	New interpretive nodes
.3	Corten steel canoe sculpture	To be delivered by Dymech Engineering Inc.	Ottawa Locks node
.4	Cannonball assembly	NCC Storage Facility, 1740 Woodrofee Ave, Ottawa, ON, 613-946-8713. Reserved under project name 'Rideau Canal Promenade'.	Ottawa Locks node
.5	Limestone blocks (large)	Lower Beveridges, (145, Beveridges Lock Road, RR 5, Perth K7H 3C7) annie.laurie@pc.gc.ca / Tel. 613-283-7199 ext. 278 / Cell : 613-207-0409 at Smith Falls office.	Ottawa Locks, Pretoria, Lansdowne, Central Experimental Farm and Hartwell's Locks nodes
.6	Limestone and granite boulders	Central Experimental Farm, 960 Carling Ave, field between Ash Lane and building #57 along NCC Drive	Ottawa Locks and Central Experimental Farm nodes
.7	Cobblestones	Pretoria, old site to be demolished	Pretoria node, new site
.8	Cedar posts	NCC Storage Facility, 1740	Dows Lake node

		Woodroffe Ave, Ottawa, ON, 613-946-8713. Reserved under project name 'Rideau Canal Promenade'	
.9	Limestone blocks (small) /granite capstones for limestone seat wall	Central Experimental Farm, 960 Carling Ave, field between Ash Lane and building #57 along NCC Drive	Central Experimental Farm node
.10	Heel post	NCC Storage Facility, 1740 Woodroffe Ave, Ottawa, ON, 613-946-8713. Reserved under project name 'Rideau Canal Promenade'	Hartwells Locks node

**1.19 PROJECT MEETINGS**

- .1 NCC Representative will arrange regular project meetings and ad-hoc meetings when required, and assume responsibility for setting times and recording and distributing minutes.

**1.20 EXISTING SERVICES**

- .1 Before commencing Work, establish location and extent of service and utility lines in area of Work and notify NCC Representative of findings.
- .2 Where unknown services and utilities are encountered, immediately advise NCC Representative and confirm findings in writing.
- .3 Where Work involves adjusting of existing services and utilities, carry out Work as directed by the NCC Representative.
- .4 Make good and pay for damage to existing service and utility lines resulting from Work.

**1.21 TRAFFIC CONTROL**

- .1 Do not infringe on adjacent roads, sidewalks, ramps, loading zones or interfere with required traffic flow in carrying out the Work. Incidental costs (e.g. for permits, signage, public notification of lane closures, etc) conforming to these requirements will be paid by Contractor.
- .2 Provide a suitable system of protective barricades, signs, and other such devices to warn and channel traffic and wherever necessary, the services of a flagman to direct and control traffic. Carry out protection in accordance with the requirements of the Provincial and Local by-laws having jurisdiction over this type of work.
- .4 Printed signage must be provided in both English and French.
- .5 The proposed methods and systems of traffic control and maintenance provisions together with supporting sketches must be submitted to the NCC Representative upon request following tender closing.

**1.22 ADDENDA**

- .1 Answers to questions directed to the NCC Contract Officer, and any amendments to the drawings and specifications during the tender period will be communicated in the form of addenda to all General Contractors tendering. Addenda will be considered part of the specifications and thereby included in the contract documents.



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### 1.23 ADDITIONAL DRAWINGS

- .1 The NCC may furnish additional drawings to the Contractor to assist in the proper execution of the Work. These additional drawings will be issued for clarification purposes only. Such drawings shall have the same meaning and intent as if they were included with the plans referred to in Contract Documents.

### 1.24 CONTRACT DOCUMENTS

- .1 Drawings and specifications are complementary. Items shown or mentioned in one and not in the other are deemed to be included in the contract work.

### 1.25 PAYMENT

- .1 This is a unit price Contract. Any minor or miscellaneous items indicated on the drawings as being part of the work of this Contract must be included by the Contractor in his or her overhead and indirect charges and incorporated into the various unit rates.
- .2 No separate payment will be made for work performed in respect to any of the special provisions where there is no specific pay item on the schedule of prices. The cost of these works must be appropriated among, and included in, the various unit and/or lump sum rates.

### 1.26 ADVERTISING

- .1 No advertising will be permitted on this project.

### 1.27 RECORD DRAWINGS

- .1 As Work progresses, maintain accurate record to show deviations from contract documents.
- .2 Just prior to NCC Representative's inspection for issuance of final certificate of completion, supply one (1) set of drawings in AUTOCAD format with all major and minor deviations neatly inked in. The NCC Representative will provide AUTOCAD files.

### 1.28 GUARANTEES AND WARRANTIES

- .1 Before completion of Work, collect all Manufacturer's guarantees and warranties, and submit to NCC Representative.
- .2 All Work shall be warranted for a period of two (2) years from the date of written preliminary acceptance by the NCC Representative. A warranty inspection will be carried out at the end of the warranty period.

## PART 2 - PRODUCTS

- .1 Not Used

## PART 3 - EXECUTION

- .1 Not Used

END OF SECTION

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Particular requirements for inspection and testing to be carried out by testing laboratory designated by NCC Representative are specified under various sections.

### **1.02 APPOINTMENT AND PAYMENT**

- .1 NCC Representative will appoint and pay for services of testing laboratory except as follows:
  - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
  - .2 Inspection and testing performed exclusively for Contractor's convenience.
  - .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
  - .4 Mill tests and certificates of compliance.
  - .5 Tests specified to be carried out by Contractor under supervision of NCC Representative.
- .2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by NCC Representative to verify acceptability of corrected work.

### **1.03 CONTRACTOR'S RESPONSIBILITIES**

- .1 Provide labour, equipment and facilities to:
  - .1 Provide access to Work for inspection and testing.
  - .2 Facilitate inspections and tests.
  - .3 Make good Work disturbed by inspection and test.
  - .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
- .2 Notify NCC Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
- .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .4 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and approved by NCC Representative.

**END OF SECTION**

## **1 GENERAL**

### **1.01 SECTION INCLUDES**

- .1 Shop drawings and product data
- .2 Samples
- .3 Certificates and transcripts

### **1.02 ADMINISTRATIVE**

- .1 Submit to NCC Representative submittals listed in the specifications for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to NCC Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify NCC Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are co-ordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by NCC Representative's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by NCC Representative review.
- .10 Keep one reviewed copy of each submission on site.

### **1.03 SHOP DRAWINGS AND PRODUCT DATA**

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Where indicated, submit drawings stamped and signed by professional engineer registered or licensed in Ontario, Canada.
- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where

articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

- .4 Allow 5 days for NCC Representative's review of each submission.
- .5 Adjustments made on shop drawings by NCC Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to NCC Representative and wait for written approval prior to proceeding with Work.
- .6 Make changes in shop drawings as NCC Representative may require, consistent with Contract Documents. When resubmitting, notify NCC Representative in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter containing:
  - .1 Date.
  - .2 Project title and number.
  - .3 Contractor's name and address.
  - .4 Identification and quantity of each shop drawing, product data and sample.
  - .5 Other pertinent data.
- .8 Submissions include:
  - .1 Date and revision dates.
  - .2 Project title and number.
  - .3 Name and address of:
    - .1 Subcontractor.
    - .2 Supplier.
    - .3 Manufacturer.
  - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
  - .5 Details of appropriate portions of Work as applicable:
    - .1 Fabrication.
    - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
    - .3 Setting or erection details.
    - .4 Capacities.
    - .5 Performance characteristics.
    - .6 Standards.
    - .7 Operating weight.
    - .8 Wiring diagrams.
    - .9 Single line and schematic diagrams.
    - .10 Relationship to adjacent work.
- .9 After NCC Representative's review, distribute copies.
- .10 Submit one electronic copy of shop drawings for each requirement requested in specification sections.
- .11 Submit electronic copy of product data sheets or brochures for requirements requested in specification sections and as requested by NCC Representative where shop drawings will not be prepared due to standardized manufacture of product.

- .12 Submit electronic copy of test reports for requirements requested in specification sections and as requested by NCC Representative.
  - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
  - 2 Testing must have been within 1 year of date of contract award for project.
- .13 Submit electronic copy of certificates for requirements requested in specification Sections and as requested by NCC Representative.
  - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
  - .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit electronic copy of manufacturer's instructions for requirements requested in specification Sections and as requested by NCC Representative.
  - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit electronic copy of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by NCC Representative.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .17 Submit electronic copy of Operation and Maintenance Data for requirements requested in specification Sections and as requested by NCC Representative.
- .18 Delete information not applicable to project.
- .19 Supplement standard information to provide details applicable to project.
- .20 If upon review by NCC Representative, no errors or omissions are discovered or if only minor corrections are made, electronic copy will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .21 The review of shop drawings by the NCC Representative is for sole purpose of ascertaining conformance with general concept.
  - .1 This review shall not mean that the NCC Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
  - .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

**1.04 SAMPLES**

- .1 Submit for review samples as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to NCC Representative's business address.
- .3 Notify NCC Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by NCC Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to NCC Representative prior to proceeding with Work.
- .6 Make changes in samples which NCC Representative may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

**1.05 PHOTOGRAPHIC DOCUMENTATION**

- .1 As requested by NCC Representative, submit electronic colour digital photography in jpg format at standard resolution as work progresses and at milestones or to indicate issues.
- .2 Project identification: name and number of project and date of exposure indicated.

**1.06 CERTIFICATES AND TRANSCRIPTS**

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Appendix A – MMF (Basic project Mitigation Measures Form)

### **1.02 REFERENCE STANDARDS**

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of Ontario
  - .1 Occupational Health and Safety Act and Regulations for Construction Projects, R.S.O. 1990, c.0.1, as amended and O. Reg. 213/91 as amended - Updated 2005.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Name of on-site Health and Safety Officer if it is someone other than site construction supervisor.
  - .2 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications. NCC Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

### **1.04 FILING OF NOTICE**

- .1 File Notice of Project with Province of Ontario authorities prior to beginning of Work.
- .2 Contractor shall agree to install proper site separation and identification in order to maintain time and space at all times throughout life of project.

### **1.05 SAFETY ASSESSMENT**

- .1 Perform site specific safety hazard assessment related to project.

### **1.06 PROJECT/SITE CONDITIONS**

- .1 Work at site will involve contact with:
  - 1. Dust and demolition
  - 2. Contaminated Soils at Ottawa Congress Center and Dow's Lake sites.

### **1.07 RESPONSIBILITY**

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Contractor will be responsible and assume the role Constructor as described in the Ontario Occupational Health and Safety Act and Regulations for Construction Projects.

- .3 Adhere to health and safety requirements of Mitigation Measures Form (Appendix A).

#### **1.08 COMPLIANCE REQUIREMENTS**

- .1 Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990, c. 0.1 and Ontario Regulations for Construction Projects, O. Reg. 213/91.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

#### **1.09 UNFORSEEN HAZARDS**

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Ontario and advise NCC Representative verbally and in writing.

#### **1.10 POSTING OF DOCUMENTS**

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Ontario, and in consultation with NCC Representative.

#### **1.11 CORRECTION OF NON-COMPLIANCE**

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by NCC Representative.
- .2 Provide NCC Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 NCC Representative may stop Work if non-compliance of health and safety regulations is not corrected.

#### **1.12 WORK STOPPAGE**

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

### **2 PRODUCTS**

#### **2.01 NOT USED**

- .1 Not used.

### **3 EXECUTION**

#### **3.01 NOT USED**

- .1 Not used.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 01 35 29.06 - Health and Safety.
- .2 Section 01 74 21 - Construction and Demolition Waste Management and Disposal
- .3 Section 01 74 11 – Cleaning
- .4 Appendix A – MMF (Basic project Mitigation Measures Form)
- .5 Appendix C – Archaeological Services and Utility Locates

### **1.02 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Environmental Protection Plan to include:
  - .1 Name(s) of person(s) responsible for ensuring adherence to Environmental Protection Plan.
  - .2 Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from site.
  - .3 Name(s) and qualifications of person(s) responsible for training site personnel.
  - .4 Descriptions of environmental protection personnel training program.
  - .5 Erosion and sediment control plan identifying type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
  - .6 Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather.
    - .1 Plans to include measures to minimize amount of material transported onto paved public roads by vehicles or runoff.
  - .7 Spill Control Plan to include procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
  - .8 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
  - .9 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.
  - .10 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
  - .11 Waste Water Management Plan identifying methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.

### **1.03 FIRES**

- .1 Fires and burning of rubbish on site is not permitted.

#### **1.04 DRAINAGE**

- .1 Develop and submit erosion and Sediment Control Plan (ESC).
- .2 Storm Water Pollution Prevention Plan (SWPPP) may be substituted for erosion and sediment control plan.
- .3 Provide temporary drainage and pumping required to keep excavations and site free from water.
- .4 Ensure pumped water into waterways, sewer or drainage systems is free of suspended materials.
- .5 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

#### **1.05 SITE CLEARING AND PLANT PROTECTION**

- .1 Protect trees and plants on site and adjacent properties as indicated.
- .2 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage.
  - .1 Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .3 Minimize stripping of topsoil and vegetation.
- .4 Do not remove trees unless authorized in writing by NCC Representative.

#### **1.06 WORK ADJACENT TO WATERWAYS**

- .1 Construction equipment to be operated on land only.
- .2 Waterways to be kept free of excavated fill, waste material and debris at all times.

#### **1.07 POLLUTION CONTROL**

- .1 Maintain temporary erosion and pollution control features installed under this Contract.
- .2 Control emissions from equipment and plant in accordance with local authorities' emission requirements.
- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

#### **1.08 HISTORICAL/ ARCHAEOLOGICAL CONTROL**

- .1 Refer to Mitigation Measures Form (Appendix A) for instructions.

#### **1.09 NOTIFICATION**

- .1 Various Government agencies may be on-site during construction to ensure compliance with requirements. Contractor shall provide timely and easy access.

**2 PRODUCTS**

.1 Not Used.

**3 EXECUTION**

.1 Not Used.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 01 52 00 - Construction Facilities.
- .2 Section 01 56 00 - Temporary Barriers and Enclosures

### **1.02 ACTION AND INFORMATIONAL SUBMITTALS**

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

### **1.03 INSTALLATION AND REMOVAL**

- .1 Provide temporary utilities controls in order to execute work expeditiously.
- .2 Remove from site all such work after use.

### **1.04 DEWATERING**

- .1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

### **1.05 WATER SUPPLY**

- .1 The owner will provide continuous supply of potable water for construction use.
- .2 Arrange for connection with appropriate utility company and pay costs for installation, maintenance and removal.
- .3 The owner will pay for utility charges at prevailing rates.

### **1.06 TEMPORARY HEATING AND VENTILATION**

- .1 Provide temporary heating required during construction period, including attendance, maintenance and fuel.
- .2 Provide temporary heat and ventilation in enclosed areas as required to:
  - .1 Facilitate progress of Work.
  - .2 Protect Work and products against dampness and cold.
  - .3 Prevent moisture condensation on surfaces.
  - .4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials.
  - .5 Provide adequate ventilation to meet health regulations for safe working environment.
- .3 Maintain temperatures of minimum 10 degrees C in areas where construction is in progress.
- .4 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
  - .1 Conform with applicable codes and standards.
  - .2 Enforce safe practices.
  - .3 Prevent abuse of services.

- .4 Prevent damage to finishes.
  - .5 Vent direct-fired combustion units to outside.
- .5 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

#### **1.07 TEMPORARY POWER AND LIGHT**

- .1 The owner will provide temporary power during construction for temporary lighting and operating of power tool, to a maximum supply of 230 volts 30 amps.
- .2 The contractor will arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.

#### **1.08 FIRE PROTECTION**

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.
- .2 Burning rubbish and construction waste materials is not permitted on site.

### **2 PRODUCTS**

#### **2.01 NOT USED**

- .1 Not Used.

### **3 EXECUTION**

#### **3.01 TEMPORARY EROSION AND SEDIMENTATION CONTROL**

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction, specific to site, that complies with authorities having jurisdiction.
- .2 Inspect, repair and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 01 51 00 - Temporary Facilities.
- .2 Section 01 56 00 - Temporary Barriers and Enclosures.

### **1.02 REFERENCE STANDARDS**

- .1 Canadian Standards Association (CSA International)
  - .1 CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
  - .2 CSA-0121-M1978(R2003), Douglas Fir Plywood.
  - .3 CAN/CSA-S269.2-M1987(R2003), Access Scaffolding for Construction Purposes.
  - .4 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.

### **1.03 INSTALLATION AND REMOVAL**

- .1 Indicate use of supplemental or other staging area.
- .2 Provide construction facilities in order to execute work expeditiously.
- .3 Remove from site all such work after use.

### **1.04 SITE STORAGE/LOADING**

- .1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

### **1.05 CONSTRUCTION PARKING**

- .1 Parking will not be permitted on site.
- .2 Provide and maintain adequate access to project site.

### **1.06 SECURITY**

- .1 Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

### **1.07 EQUIPMENT, TOOL AND MATERIALS STORAGE**

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

### **1.08 SANITARY FACILITIES**

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

**1.09 CONSTRUCTION SIGNAGE**

- .1 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN/CSA-Z321.
- .2 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project or earlier if directed by NCC Representative.
- .3 No other signs or advertisements, other than warning signs, are permitted on site.

**1.10 PROTECTION AND MAINTENANCE OF TRAFFIC**

- .1 Protect travelling public from damage to person and property.

**1.11 CLEAN-UP**

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.
- .3 Store materials resulting from demolition activities that are salvageable.
- .4 Stack stored new or salvaged material not in construction facilities.

**END OF SECTION**

## 1 GENERAL

### 1.01 RELATED SECTIONS

- .1 Section 01 52 00 - Construction Facilities.
- .2 Section 01 51 00 – Temporary Facilities

### 1.02 REFERENCES

- .1 Canadian General Standards Board (CGSB)
  - .1 CGSB 1.189M-00, Exterior Alkyd Primer for Wood.
  - .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
- .2 Canadian Standards Association (CSA International)
  - .1 CSA-O121-M1978 (R2003), Douglas Fir Plywood.
- .3 Public Works Government Services Canada (PSPC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as Of: May 14, 2004.

### 1.03 INSTALLATION AND REMOVAL

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

### 1.04 HOARDING

- .1 Erect temporary site enclosure using 1.8 m high steel Moduloc-style fencing around the Work Area where indicated on drawings, to the approval of the NCC Representative.. Provide minimum one lockable truck gate. Maintain hoarding in good repair.

### 1.05 GUARD RAILS AND BARRICADES

- .1 Provide secure, rigid guardrails and barricades around deep excavations.

### 1.06 DUST TIGHT SCREENS

- .1 Provide dust tight screens to localize dust generating activities, and for protection of workers, finished areas of Work and public.
- .2 Maintain and relocate protection until such work is complete.

### 1.07 ACCESS TO SITE

- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

### 1.08 PUBLIC TRAFFIC FLOW

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect the public.



**1.09 FIRE ROUTES**

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

END OF SECTION

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 01 74 21 Construction / Demolition Waste Management and Disposal.

### **1.02 PROJECT CLEANLINESS**

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by NCC Representative. Do not burn waste materials on site
- .3 Clear snow and ice from access.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site containers for collection of waste materials and debris.
- .6 Provide and use marked separate bins for recycling. Refer to Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .7 Dispose of waste materials and debris off site.
- .8 Clean areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .10 Provide adequate ventilation during use of volatile or noxious substances.
- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate nearby building systems.

### **1.03 FINAL CLEANING**

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste products and debris including subs waste.
- .5 Remove waste materials from site at regularly scheduled times.

- .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .7 Remove stains, spots, marks and dirt from surfaces.
- .8 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.
- .9 Broom clean and wash exterior walks, steps and surfaces; rake clean other surfaces of grounds.
- .10 Remove dirt and other disfiguration from exterior surfaces.
- .11 Sweep and wash clean paved areas.

**1.04 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and/or recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

**2 PRODUCTS**

- .1 Not Used.

**3 EXECUTION**

- .1 Not Used.

**END OF SECTION**

## 1 GENERAL

### 1.01 RELATED SECTIONS

- .1 Section 01 74 11 – Cleaning
- .2 Refer to Appendix A - Mitigation Measures Form

### 1.02 REFERENCE STANDARDS

- .1 Ontario Ministry of Environment
  - .1 Ontario 3 R's Regulations (regulation 102/94) for waste management programs applicable to construction and demolition projects.
  - .2 Ontario Environmental Protection Act (EPA)
    - .1 Regulation 102/94, Waste Audits and Waste Reduction Work Plans.
    - .2 Regulation 103/94, Source Separation Programs.
  - .3 Canadian Construction Association (CCA)
    - .1 CCA 81-2001: A Best Practices Guide to Solid Waste Reduction.
  - 4 Public Works and Government Services Canada (PSPC)
    - .1 2002 National Construction, Renovation and Demolition Non-Hazardous Solid Waste Management Protocol.
    - .2 CRD Waste Management Market Research Report (available from PSPC's Environmental Services).
    - .3 Sustainable Development Strategy 2007-2009: Target 2.1 Environmentally Sustainable Use of Natural Resources.
      - .1 Contractually ensure resources used in construction or maintenance are consumed and recovered in a sustainable manner.

### 1.03 DEFINITIONS

- .1 Recyclable: Ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse by others.
- .2 Recycle: Process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .3 Recycling: Process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .4 Reuse: Repeated use of product in same form but not necessarily for same purpose. Reuse includes:
  - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
  - .2 Returning reusable items including pallets or unused products to vendors.
- .5 Salvage: Removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
- .6 Separate Condition: Refers to waste sorted into individual types.

- .7 Source Separation: Acts of keeping different types of waste materials separate beginning from first time they became waste.

#### **1.04 WASTE PROCESSING SITES**

- .1 Contractor is responsible to research and locate waste diversion resources and service providers. Provide waste processing site destination locations.

#### **1.05 STORAGE, HANDLING AND PROTECTION**

- .1 Store, materials to be reused, recycled and salvaged in locations as directed by NCC Representative.
- .2 Unless specified otherwise, materials for removal do not become Contractor's property.
- .3 Protect, stockpile, store and catalogue salvaged items.
- .4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.
- .5 Protect surface drainage, mechanical and electrical from damage and blockage.
- .6 Provide on-site facilities and containers for collection and storage of reusable and recyclable materials.
- .7 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
  - .1 On-site source separation is recommended.
  - .2 Remove co-mingled materials to off-site processing facility for separation.
  - .3 Provide waybills for separated materials.

#### **1.06 DISPOSAL OF WASTES**

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste into waterways, storm, or sanitary sewers.
- .3 Keep records of construction waste including:
  - .1 Number and size of bins.
  - .2 Waste type of each bin.
  - .3 Total tonnage generated.
  - .4 Tonnage reused or recycled.
  - .5 Reused or recycled waste destination.
- .4 Remove materials from site as Work progresses.

#### **1.07 SCHEDULING**

- .1 Coordinate Work with other activities at site to ensure timely and orderly progress of Work.

### **PART 3 - EXECUTION**

#### **3.01 APPLICATION**

- .1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

#### **3.02 CLEANING**

- .1 Clean in accordance with Section 01 74 11- Cleaning.
  - .1 Clean-up work area as work progresses.

#### **3.03 DIVERSION OF MATERIALS**

- .1 Separate materials from general waste stream and stockpile in separate piles or containers, as reviewed by NCC Representative and consistent with applicable fire regulations.
  - .1 Mark containers or stockpile areas.
  - .2 Provide instruction on disposal practices.
- .2 On-site sale of materials is not permitted.

**END OF SECTION**

## **1 GENERAL**

### **1.01 ADMINISTRATIVE REQUIREMENTS**

- .1 Acceptance of Work Procedures:
  - .1 Contractor's Inspection: Contractor: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
    - .1 Notify NCC Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
    - .2 Request NCC Representative inspection.
  - .2 NCC Representative Inspection:
    - .1 NCC Representative and Contractor to inspect Work and identify defects and deficiencies.
    - .2 Contractor to correct Work as directed.
  - .3 Completion Tasks: submit written certificates that tasks have been performed as follows:
    - .1 Work: completed and inspected for compliance with Contract Documents.
    - .2 Defects: corrected and deficiencies completed.
    - .3 Work: complete and ready for final inspection.
  - .4 Final Inspection:
    - .1 When completion tasks are done, request final inspection of Work by NCC Representative.
    - .2 When Work incomplete according to NCC Representative, complete outstanding items and request re-inspection.
  - .5 Declaration of Substantial Performance: when NCC Representative considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.
  - .6 Commencement of Lien and Warranty Periods: date of NCC Representative's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
  - .7 Final Payment:
    - .1 When NCC Representative considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.
    - .2 When Work deemed incomplete by NCC Representative, complete outstanding items and request re-inspection.
  - .8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

### **1.02 FINAL CLEANING**

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.

## **2 PRODUCTS**

- .1 Not Used.

**3 EXECUTION**

.1 Not Used.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 01 74 21 – Construction and Demolition Waste Management and Disposal.
- .2 Section 01 74 11 – Cleaning
- .3 Appendix A – Mitigation Measure Form (MMF)

### **1.02 REFERENCE STANDARDS**

- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .2 Transport Canada (TC)
  - .1 Transportation of Dangerous Goods Act, 1992 (TDGA), c. 34.

### **1.03 DEFINITIONS**

- .1 Demolition: rapid destruction of building following removal of hazardous materials
- .2 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: asbestos PCB's, CFC's, HCFC's poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health or well-being or environment if handled improperly.

### **1.04 ADMINISTRATIVE REQUIREMENTS**

- .1 Site Meetings.
  - .1 Arrange for site visit with NCC Representative to examine existing site conditions adjacent to demolition work, prior to start of Work.

### **1.05 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings:
  - .1 Submit for approval drawings, diagrams or details showing sequence of demolition work and supporting structures and underpinning, where required by authorities having jurisdiction.
- .3 Hazardous Materials:
  - .1 Provide description of Hazardous Materials and Notification of Filing with proper authorities prior to beginning of Work as required.
- .4 Certificates:
  - .1 Submit copies of certified weigh bills or receipts from authorized disposal sites and reuse and recycling facilities for material removed from site upon request of NCC Representative.

## 1.06 QUALITY ASSURANCE

- .1 Regulatory Requirements: ensure Work is performed in compliance with applicable Municipal, Provincial and Federal regulations.

## 1.07 DELIVERY, STORAGE AND HANDLING

- .1 Store and manage hazardous materials in accordance with Section 01 35 43 – Environmental Procedures.
- .2 Storage and Protection.
  - .1 Protect in accordance with Section 31 23 33.01 - Excavating, Trenching and Backfilling.
  - .2 Protect existing items designated to remain and items designated for salvage. Prevent movement, settlement or damage of adjacent structures, services, walks, paving, trees, landscaping to remain. Provide bracing, shoring as required. In event of damage to such items, immediately replace or make repairs to approval of NCC Representative and at no cost to NCC.
  - .3 Remove and store materials to be salvaged, in manner to prevent damage.
  - .4 Store and protect in accordance with requirements for maximum preservation of material.
  - .5 Handle salvaged materials as new materials.

## 1.08 SITE CONDITIONS

- .1 Site Environmental Requirements :
  - .1 Perform work in accordance with Section 01 35 43 - Environmental Procedures.
  - .2 Ensure that selective demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
  - .3 Do not dispose of waste of volatile materials including but not limited to, mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into the canal, watercourses, storm or sanitary sewers.
    - .1 Ensure proper disposal procedures are maintained throughout the project.
  - .4 Do not pump water containing suspended materials into the canal, watercourses, storm or sanitary sewers or onto adjacent properties.
  - .5 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities.
  - .6 Protect trees, plants and foliage on site and adjacent properties where indicated.
  - .7 Where existing interpretive installations are to be removed and reinstated with sod only, perform work in a single day or protect with hoarding.

## 2 PRODUCTS

### 2.01 EQUIPMENT

- .1 Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

### **3 EXECUTION**

#### **3.01 PREPARATION**

- .1 Inspect site with NCC Representative and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
- .3 Notify and obtain approval of utility companies before starting demolition.

#### **3.02 REMOVAL OF HAZARDOUS WASTES**

- .1 Remove contaminated or dangerous materials defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.
- .2 Refer to Mitigation Measure Form (MMF) in Appendix A for requirements related to soil quality, including worker safety, testing and removal.

#### **3.03 REMOVAL OPERATIONS**

- .1 Remove items as indicated.
- .2 Do not disturb items designated to remain in place.
- .3 Removal of pavements, curbs and gutters:
  - .1 Square up adjacent surfaces to remain in place by saw cutting or other method approved by NCC Representative
  - .2 Protect adjacent joints and load transfer devices.
  - .3 Protect underlying and adjacent granular materials.
- .4 Prevent contamination with base course aggregates, when removing asphalt pavement for subsequent incorporation into hot mix asphalt concrete paving,
- .5 Excavate at least 300 mm below pipe invert, when removing pipes under existing or future pavement area.
- .6 Obtain written approval of NCC Representative prior to removal of trees not designated for removal.
- .7 Where indicated on drawings, stockpile topsoil for final grading and landscaping:
  - .1 Provide erosion control if not immediately used.
- .8 Salvage:
  - .1 Items to be salvaged and re-used in this contract: granite cobblestones and perennials to transplant. NCC Representative to inspect condition of cobblestones and plants prior to removal. Carefully remove to prevent scrapes/cracks/chipping, protect and store for reinstallation in new interpretive installations as drawings and directed by NCC Representative.
  - .2 Items to be salvaged and transported to NCC storage facility for storage: existing interpretive panels and supports.
  - .3 Dismantle items containing materials for salvage and stockpile salvaged materials at

locations approved by NCC Representative.

- .9 Disposal of Material:
  - .1 Dispose of materials not designated for salvage or reuse daily at designated landfill facility.
- .10 Backfill:
  - .1 Backfill in areas as indicated and in accordance with Section 31 23 33.01 - Excavating, Trenching and Backfilling.

### **3.04 STOCKPILING**

- .1 Label stockpiles, indicating material type and quantity.
- .2 Designate appropriate security resources/measures to prevent vandalism, damage and theft.
- .3 Locate stockpiled materials convenient for use in new construction to eliminate double handling wherever possible.
- .4 Stockpile materials designated for alternate disposal in location which facilitates removal from site and examination by potential end markets, and which does not impede disassembly, processing, or hauling procedures.

### **3.05 REMOVAL FROM SITE**

- .1 Remove stockpiled material as directed by NCC Representative, when it interferes with operations of project.
- .2 Remove stockpiles of like materials by alternate disposal option once collection of materials is complete.
- .3 Transport material designated for alternate disposal using approved haulers and facilities and in accordance with applicable regulations.
- .4 Dispose of materials not designated for alternate disposal in accordance with applicable regulations.

### **3.06 RESTORATION**

- .1 Restore areas and existing works outside areas of demolition to conditions that existed prior to beginning of Work.
- .2 Use soil treatments and procedures which are not harmful to health, are not injurious to plants, and do not endanger wildlife, adjacent canal, water courses or ground water.

### **3.07 CLEANING**

- .1 Progress and Final Cleaning to be in accordance with Section 01 74 11 - Cleaning.

### **3.08 PROTECTION**

- .1 Repair damage to adjacent materials or property caused by selective site demolition.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 03 20 00 Concrete Reinforcing.
- .2 Section 03 30 00 Cast in Place Concrete.

### **1.02 REFERENCE STANDARDS**

- .1 Canadian Standards Association (CSA International)
  - .1 CSA-A23.1-[04]/A23.2-[04], Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
  - .2 CSA-O86S1-[05], Supplement No. 1 to CAN/CSA-O86-01, Engineering Design in Wood.
  - .3 CSA O121-[M1978(R2003)], Douglas Fir Plywood.
  - .4 CSA O151-[04], Canadian Softwood Plywood.
  - .5 CSA O153-[M1980(R2003)], Poplar Plywood.
  - .6 CAN/CSA-O325.0-[92(R2003)], Construction Sheathing.
  - .7 CSA O437 Series-[93(R2006)], Standards for OSB and Waferboard.
  - .8 CSA S269.1-[1975(R2003)], Falsework for Construction Purposes.
  - .9 CAN/CSA-S269.3-[M92(R2003)], Concrete Formwork, National Standard of Canada
- .2 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S701-05, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit product information and sample of high density rigid styrofoam insulation for approval.
- .3 Indicate method and schedule of construction, shoring, stripping and re-shoring procedures, materials, arrangement of joints, special architectural exposed finishes, ties, liners, and locations of temporary embedded parts.
- .4 Indicate formwork design data: permissible rate of concrete placement, and temperature of concrete, in forms.
- .5 Indicate sequence of erection and removal of formwork/falsework as directed by NCC Representative.

### **1.04 DELIVERY, STORAGE AND HANDLING**

- .1 Store materials on site in a manner to prevent damage thereto. Protect from weather. Comply with CSA A23.1
- .2 Waste Management and Disposal:
  - .1 Separate waste materials for reuse and/or recycling in accordance with Section 01 47 21 - Construction/Demolition Waste Management and Disposal.

## **2 PRODUCTS**

### **2.01 MATERIALS**

Formwork materials:

- .1 For concrete without special architectural features, use wood and wood product formwork materials to CSA-O121, CAN/CSA-O86, CSA O437 Series, CSA-O153.
- .2 Tubular column forms: round, spirally wound laminated fibre forms, internally treated with release material.
- .3 Form ties:
  - .1 For concrete not designated 'Architectural', use removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25 mm diameter in concrete surface.
- .4 Form liner:
  - .1 Plywood: medium density overlay Douglas Fir to CSA O121 or Canadian Softwood Plywood to CSA O151 or Poplar to CSA O153.
- .5 Form release agent: non-toxic, biodegradable, low VOC.
- .6 Form stripping agent: colourless mineral oil, non-toxic, biodegradable, low VOC, free of kerosene, with viscosity between 15 to 24 mm<sup>2</sup>/s at 40 degrees C, flashpoint minimum 150 degrees C, open cup.

## **3 EXECUTION**

### **3.01 FABRICATION AND ERECTION**

- .1 Verify lines, levels and centres before proceeding with formwork/falsework and ensure dimensions agree with drawings.
- .2 Fabricate and erect formwork in accordance with CAN/CSA-S269.3 to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CSA-A23.1/A23.2.
- .3 Align form joints and make watertight.
  - .1 Keep form joints to minimum.
- .4 Build in anchors, sleeves, and other inserts required to accommodate Work specified in other sections.
  - .1 Ensure that anchors and inserts will not protrude beyond surfaces designated to receive applied finishes.
- .5 Clean formwork in accordance with CSA-A23.1/A23.2, before placing concrete.

### **3.02 REMOVAL AND RESHORING**

- .1 After placing concrete, leave formwork in place for a minimum of 5 days to ensure curing.
- .2 Remove formwork when the concrete attains 70% of design strength or after the minimum

hardening period indicated, whichever is first, and immediately reinstall shoring where required.

- .3 Provide necessary reshoring of members where early removal of forms may be required or where members may be subjected to additional loads during construction as required.
- .4 Re-use formwork and falsework subject to requirements of CSA-A23.1/A23.2.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 03 10 00 - Concrete Forming and Accessories.

### **1.02 REFERENCE STANDARDS**

- .1 American Concrete Institute (ACI)
  - .1 SP-66-04, ACI Detailing Manual 2004.
- .2 ASTM International
  - .1 ASTM A 82/A 82M-07, Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
  - .2 ASTM A 143/A 143M-[07], Standard Practice for Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement.
  - .3 ASTM A 185/A 185M-[07], Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
  - .4 ASTM A 775/A 775M-07b, Standard Specification for Epoxy-Coated Reinforcing Steel Bars.
- .3 CSA International
  - .1 CSA-A23.1-09/A23.2-09, Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.
  - .2 CAN/CSA-A23.3-04(R2010), Design of Concrete Structures.
  - .3 CSA-G30.18-[09], Carbon Steel Bars for Concrete Reinforcement.
  - .4 CSA-G40.20/G40.21-04(R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .5 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .6 CSA W186-M1990(R2007), Welding of Reinforcing Bars in Reinforced Concrete Construction.
- .4 Reinforcing Steel Institute of Canada (RSIC)
  - .1 RSIC-2004, Reinforcing Steel Manual of Standard Practice.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prepare reinforcement drawings in accordance with RSIC Manual of Standard Practice and SP-66.
- .3 Shop Drawings:
  - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Ontario, Canada.
    - .1 Indicate placing of reinforcement and:
      - .1 Bar bending details.
      - .2 Lists.
      - .3 Quantities of reinforcement.
      - .4 Sizes, spacings, locations of reinforcement and mechanical splices if approved by NCC Representative, with identifying code marks to permit correct placement without reference to structural drawings.
      - .5 Indicate sizes, spacings and locations of chairs, spacers and hangers.



- .2 Detail lap lengths and bar development lengths to CAN/CSA-A23.3, unless otherwise indicated.

#### **1.04 QUALITY ASSURANCE**

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures
  - .1 Mill Test Report: Provide NCC Representative with certified copy of mill test report of reinforcing steel, showing physical and chemical analysis, minimum 4 weeks prior to beginning reinforcing work.
  - .2 Inform, in writing to NCC Representative, proposed source of reinforcement material to be supplied.

#### **1.05 DELIVERY, STORAGE AND HANDLING**

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labeled with manufacturer's name and address.
- .2 Storage and Handling Requirements:
  - .1 Store materials in protected location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Replace defective or damaged materials with new.

### **2 PRODUCTS**

#### **2.01 MATERIALS**

- .1 Substitute different size bars only if permitted in writing by NCC Representative
- .2 Reinforcing steel: billet steel, grade 400, deformed bars to CSA-G30.18, unless indicated otherwise.
- .3 Reinforcing steel: weldable low alloy steel deformed bars to CSA-G30.18.
- .4 Cold-drawn annealed steel wire ties: to ASTM A 82/A 82M.
- .5 Welded steel wire fabric: to ASTM A 185/A 185M.
  - .1 Provide in flat sheets only.
- .6 Welded deformed steel wire fabric: to ASTM A 82/A 82M.
  - .1 Provide in flat sheets only.
- .7 Epoxy Coating of non-prestressed reinforcement: to ASTM A 775/A 775M.
- .8 Chairs, bolsters, bar supports, spacers: to CSA-A23.1/A23.2.
- .9 Mechanical splices: subject to approval of NCC Representative.
- .10 Plain round bars: to CSA-G40.20/G40.21.

#### **2.02 FABRICATION**

- .1 Fabricate reinforcing steel in accordance with CSA-A23.1/A23.2 P-66 and Reinforcing Steel

Manual of Standard Practice by the Reinforcing Steel Institute of Canada.

- .1 SP-66 unless indicated otherwise.
- .2 Obtain NCC Representative's written approval for locations of reinforcement splices other than those shown on placing drawings.
- .3 Upon approval of NCC Representative, weld reinforcement in accordance with CSA W186.
- .4 Ship bundles of bar reinforcement, clearly identified in accordance with bar bending details and lists.
  - .1 Ship epoxy coated bars in accordance with ASTM A 775A/A 775M.

### **3 EXECUTION**

#### **3.01 FIELD BENDING**

- .1 Do not field bend or field weld reinforcement except where indicated or authorized by NCC Representative.
- .2 When field bending is authorized, bend without heat, applying slow and steady pressure.
- .3 Replace bars, which develop cracks or splits.

#### **3.02 PLACING REINFORCEMENT**

- .1 Place reinforcing steel as indicated on placing drawings and in accordance with CSA-A23.1/A23.2.
- .2 Use plain round bars as slip dowels in concrete.
  - .1 Paint portion of dowel intended to move within hardened concrete with one coat of asphalt paint.
  - .2 When paint is dry, apply thick even film of mineral lubricating grease.
- .3 Prior to placing concrete, obtain NCC Representative's approval of reinforcing material and placement.
- .4 Ensure cover to reinforcement, as per drawings, is maintained during concrete pour.
- .5 Protect epoxy and paint coated portions of bars with covering during transportation and handling.

#### **3.03 FIELD TOUCH-UP**

- .1 Touch up damaged and cut ends of epoxy coated or galvanized reinforcing steel with compatible finish to provide continuous coating.

#### **3.04 CLEANING**

- .1 Progress and final cleaning: in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.

**END OF SECTION**

## GENERAL

### 1.01 RELATED REQUIREMENTS

- .1 Section 03 10 00 – Concrete Forming and Accessories
- .2 Section 03 20 00 – Concrete Reinforcing
- .3 Section 32 11 23 – Aggregate Base Courses

### 1.02 REFERENCES

- .3 Reference Standards:
  - .1 ASTM International
    - .1 ASTM C260-06, Standard Specification for Air-Entraining Admixtures for Concrete.
    - .2 ASTM C309-07, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
    - .3 ASTM C494/C494M-08a, Standard Specification for Chemical Admixtures for Concrete.
    - .4 ASTM C1017/C1017M-07, Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.
    - .5 ASTM D412-06ae1, Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
    - .6 ASTM D624-00(2007), Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomer.
    - .7 ASTM D1751-04, Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
    - .8 ASTM D1752-04a, Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction.
  - .2 Canadian General Standards Board (CGSB)
    - .1 CAN/CGSB-37.2-M88, Emulsified Asphalt, Mineral Colloid-Type, Unfilled, for Dampproofing and Waterproofing and for Roof Coatings.
    - .2 CAN/CGSB-51.34-M86(R1988), Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
  - .3 CSA International
    - .1 CSA A23.1/A23.2-2009, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
    - .2 CSA A283-06, Qualification Code for Concrete Testing Laboratories.
    - .3 CSA A3000-13, Cementitious Materials Compendium
    - .4 CSA G30.18-09, Carbon Steel Bars for Concrete Reinforcement

### 1.03 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-installation Meetings: convene pre-installation meeting one week prior to beginning concrete works.
  - .1 Ensure key personnel, subcontractor if applicable and NCC Representative attend.

### 1.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit product data for coloured admixtures for coloured wave concrete paving at Ottawa Locks.
- .3 Submit two (2) 500g bags of each proposed aggregate, illustrating size and colour range, for exposed aggregate concrete paving at Ottawa Locks.
- .4 Submit product data for rigid insulation.

### 1.05 QUALITY ASSURANCE

- .1 Provide to the NCC Representative minimum 4 weeks prior to starting concrete work, with valid and recognized certificate from plant delivering concrete.
  - .1 Provide test data and certification by qualified independent inspection and testing laboratory that materials and mix designs used in concrete mixture will meet specified requirements and comply with CSA-A23.1.
  - .2 Ensure that the representatives of the testing laboratories are present during pouring.
- .2 Concrete pours: provide accurate records of poured concrete items indicating date and location of pour, quality, air temperature and test samples taken as described in PART 3 - FIELD QUALITY CONTROL.
- .3 Integrally coloured concrete and exposed aggregate concrete to be installed by experienced decorative concrete installer.

### 1.06 MOCK-UPS

- .1 Mock-ups shall be constructed using processes and techniques intended for use on permanent work and shall be produced by the workers who will be performing the permanent work.
- .2 Construct one horizontal 1m x 1m field sample of exposed aggregate concrete with full aggregate colour range represented. Locate where directed by NCC Representative.
- .3 Construct one horizontal 1m x 1m field sample of the coloured concrete wave pattern at Ottawa Locks with both colours of concrete and construction joint represented. Follow manufacturer's installation instructions. Locate where directed by NCC Representative.
- .4 Approved mock-ups may remain as part of work.

### 1.07 DELIVERY, STORAGE AND HANDLING

- .1 Delivery and Acceptance Requirements:
  - .1 Concrete hauling time: concrete must be delivered to site of Work and discharged within 120 minutes maximum after batching.

- .2 If applicable, any change in the maximum transportation time shall be accepted in writing by the Testing Laboratory Representative and the concrete producer, according to the indications of CSA A23.1/A23.2.
- .2 Concrete delivery: ensure continuous concrete delivery from plant meets CSA A23.1/A23.2.

## PRODUCTS

### 2.01 PERFORMANCE CRITERIA

- .1 Quality Control Plan: ensure concrete supplier meets performance criteria of concrete as established by the NCC Representative and provide verification of compliance as described in PART 1 - QUALITY ASSURANCE.

### 2.02 MATERIALS

- .1 Cement: to CSA A3001, Type GU.
- .2 Supplementary cementing materials: refer to CSA A3001.
- .3 Water: refer to CSA A23.1.
- .4 Aggregates: refer to CSA A23.1/A23.2.
- .5 Aggregates for exposed aggregate paving: Match aggregate of existing adjacent concrete paving.
- .6 Coloured concrete materials:
  - .1 Pigment and curing/sealing compound suppliers:
    - .1 Interstar, 4255 Portland Boulevard  
Sherbrooke, Quebec, Canada J1L 3A5.  
Tel: (819) 563-9975 or (800) 567-1857  
Email: [info@interstar.ca](mailto:info@interstar.ca) or approved equal.
    - .2 Curing compound shall be same colour as the coloured concrete and supplied by same Manufacturer of the coloured admixture.
    - .3 Colours: Refer to colour patterns on plans.
      - .1 Colour #1: NR5790R, Black Onyx, 1 bag
      - .2 Colour #2: NR5790R, Black Onyx, 2 bags
  - .2 Substitutions for coloured admixtures or curing and sealing compound will be considered providing that the Contractor requests its use in writing within fourteen (14) days prior to bid date. This request shall be accompanied by the following:
    - .1 A certificate of compliance from material Manufacturer stating that proposed products meet or exceed requirements of this Section.
    - .2 Documented proof that proposed materials have a 10-year proven record of performance, confirmed by at least 5 local projects that Representative can examine.
- .7 Admixtures:
  - .1 Air entraining admixture: refer to ASTM C260.
  - .2 Chemical admixture: refer to ASTM C494. The NCC Representative must approve accelerating or set retarding admixtures during cold and hot weather placing, according to the recommendation of the laboratory in charge of testing.

- .8 Shrinkage compensated grout: premixed product containing a non-metallic aggregate, Portland cement, a plasticizer and a water reducer, according to CSA A23.1/A23.2.
  - .1 Compressive strength: 32 MPa at 28 days.
- .9 Curing compound: to CSA A23.1/A23.2 white and ASTM C309.
- .10 Premoulded joint fillers:
  - .1 Bituminous impregnated fiber board: to ASTM D1751. The board thickness shall comply with the indications specified in the plans and details, unless corrected to the contrary, i.e. 12 mm thick.
- .11 The caulking shall be a polyurethane-based one-component product, grey colour (Sika-Flex 1a or approved equivalent).
- .12 Epoxy resin for dowels: provide epoxy resin especially formulated for the purpose intended and to provide sufficient bond between steel bar and existing concrete to develop the strength of the bar in tension.
- .13 Insulation: Extruded polystyrene (XPS) rigid insulation
- .14 Prefabricated concrete slabs manufactured to standards outlined in this specification will be accepted for use under interpretive panel assemblies, corten steel canoe sculpture, heel post and limestone seat wall.

### 2.03 MIXES

- .1 Must satisfy the performance criteria defined by the NCC Representative and CSA A23.1.
  - .1 Ensure concrete supplier meets performance criteria as established below and provide verification of compliance.
  - .2 Provide concrete mix to meet following plastic state requirements:
    - .1 Workability: concrete free of colour variations.
    - .2 Compressive strength:
      - .1 Any surface structure and unless otherwise indicated: 32 MPa at 28 days.
      - .2 Concrete base completely buried underground, unless otherwise indicated: 32 MPa at 28 days
    - .3 Aggregate diameter: approximately 20 mm.
    - .4 Water/Cement ratio: maximum of 0.40.
    - .5 Air content, unless otherwise indicated: 6 to 8%
    - .6 Subsidence: 80 mm with acceptable deviation  $\pm$  20 mm.
  - .3 Provide quality management plan to ensure verification of concrete quality to specified performance.
  - .4 Concrete supplier's certification: both batch plant and materials meet CSA A23.1 requirements.
- .2 Add coloured concrete admixture to concrete mix according to manufacturer's written instructions.
- .3 Do not add calcium chloride to coloured concrete mix.

**Part 2 Execution**

**3.01 PREPARATION**

- .1 Obtain the NCC Representative's written approval before placing concrete.
  - .1 Provide 48 hours minimum notice prior to placing of concrete.
- .2 Place concrete reinforcing in accordance with Section 03 20 00 - Concrete Reinforcing.
- .3 During concreting operations:
  - .1 Development of cold joints not allowed.
  - .2 Ensure concrete delivery and handling facilitates placing with minimum of re-handling, and without damage to existing structure or Work.
- .4 Pumping of concrete is permitted only after approval of equipment and mix.
- .5 Ensure reinforcement and inserts are not disturbed during concrete placement.
- .6 Prior to placing of concrete, obtain from the NCC Representative's approval of proposed method for protection of concrete during placing and curing in adverse weather.
- .7 Protect previous Work from staining.
- .8 Clean and remove stains prior to application for concrete finishes.
- .9 Maintain accurate records of poured concrete items to indicate date, location of pour, quality, air temperature and test samples taken.
- .10 In locations where new concrete is dowelled to existing work, drill holes in existing concrete.
  - .1 Place steel dowels of deformed steel reinforcing bars to anchor and hold dowels in positions as indicated.
- .11 Do not place load upon new concrete until authorized by the NCC Representative.

**3.02 INSTALLATION/APPLICATION**

- .1 Do cast-in-place concrete work to CSA A23.1/A23.2.
- .2 Sleeves and inserts:
  - .1 Do not permit penetrations, sleeves, ducts, pipes or other openings to pass through joists, beams, column capitals or columns, except where indicated or approved by the NCC Representative.
  - .2 Where approved by the NCC Representative, set sleeves, ties, pipe hangers and other inserts and openings as indicated or specified elsewhere.
  - .3 Sleeves and openings greater than 100 x 100 mm not indicated, must be reviewed by the NCC Representative.
  - .4 Do not eliminate or displace reinforcement to accommodate hardware. If inserts cannot be located as specified, obtain written approval of modifications from the NCC Representative before placing of concrete.
  - .5 Confirm locations and sizes of sleeves and openings shown on drawings.
  - .6 Set special inserts for strength testing as indicated and as required by non-destructive method of testing concrete.

- .1 Anchor bolts:
  - .1 Set anchor bolts to templates provided by Dymech.
  - .2 Grout anchor bolts in preformed holes or holes drilled after concrete has set only after receipt of written approval from NCC Representative.
  - .3 Protect anchor bolt holes from water accumulations, snow and ice build-ups.
- .2 Finishing and curing:
  - .1 Finish concrete to CSA A23.1/A23.2.
- .3 Construction and expansion joints - Joint fillers:
  - .1 Furnish filler for each joint in single piece for depth and width required for joint, unless otherwise authorized by the NCC Representative.
  - .2 When more than one piece is required for joint, fasten abutting ends and hold securely to shape by stapling or other positive fastening.
  - .3 Locate and form construction and expansion joints as indicated.
  - .4 Install joint filler. Use 12 mm thick joint filler to separate slabs-on-grade from vertical surfaces and extend joint filler from bottom of slab to within 12 mm of finished slab surface unless indicated otherwise.

### **3.03 FIELD QUALITY CONTROL**

- .1 A laboratory will control the quality of the concrete. The control is at the NCC's expense and will be designated by the NCC.

### **3.04 CONCRETE PLACEMENT**

- .1 Execute the cast-in-place structures and perform the tests in accordance with the latest version of CSA A23.1- (Concrete Materials and Methods of Concrete Construction) and A23.2- (Methods of Test and Standard Practices for Concrete) – except where otherwise indicated.
- .2 Construction of curbs and other concrete structures corresponding to exposure class C-2 of Table 11 of CSA A23.1- shall be performed in accordance with the latest version of said standard and those cited in reference. The following requirements shall be respected:
  - .1 The contractor shall prepare the surface of the bed according to the plans and profiles and shall compact the infrastructure mechanically to the equivalent of 90% of the Modified Proctor. The contractor shall pass the vibrating plate over the clean stone.
  - .2 The formwork shall be oiled and the stone watered before pouring the concrete.
- .3 The concrete shall be transported from the mixer to its final position as quickly as possible by means designed to avoid segregation of aggregates.
- .4 It is forbidden to place concrete by letting it fall freely from a height greater than 1,500 mm.
- .5 Pouring shall be continuous to ensure a good bond between each concrete layer.
- .6 Tamp the concrete with mechanical vibrators of the type and dimensions approved by the NCC Representative. Avoid excessive vibration. Formwork vibrators are prohibited.
- .7 Ensure reinforcement and inserts are not disturbed during concrete placement.
- .8 Pumping of the concrete is authorized.



- .9 The temperature limits of the concrete during placement shall be as indicated in the following table (according to CAN/CSA-A23).

Smallest dimension of the element	Temperature, in degrees Celsius	
	Minimum	Maximum
Less than 0.3 m	10°	35°
From 0.3 m to 1 m	10°	30°
From 1 m to 2 m	5°	25°
More than 2 m	5°	20°

- .10 No concrete shall be placed against a surface with a temperature of less than 5°C.  
 .11 During hot weather, water the formwork and the reinforcing steel with cold water before placement. During very hot weather, concreting is permitted only during the night.

### 3.05 CONCRETE FINISHING

- .1 Curbs finish to match existing adjacent curbs.  
 .2 Exposed aggregate finish (aggregates no larger than 10 mm):
1. When required, the contractor shall build a concrete pavement with exposed aggregate with an aggregate coverage density matching that of existing adjacent exposed aggregate paving. The structure shall comply with the existing standards and the requirements of these specifications.
  2. The concrete formula shall be submitted to the NCC Representative for approval. The concrete including the chosen aggregate shall be mixed at the plant and the mix shall be placed in a single layer to obtain a homogeneous concrete over the entire thickness of the required slab.
  3. Moreover, setting of the concrete must be retarded on the surface by a chemical product submitted by the contractor with the application method and the dosage required by the manufacturer.
  4. When the concrete has reached a sufficient strength, strip the surface by water blasting to expose the largest aggregates to a depth of approximately 2 mm, without exceeding 3 mm. Stripping shall be done to obtain a uniform and constant degree of aggregate exposure. Any cavity, cracking or unevenness and any stain on this surface shall be corrected to the NCC Representative's satisfaction. For this purpose, the structure may be demolished and rebuilt by the contractor at its expense if the NCC Representative so requires.
  5. During concrete curing, no water-based curing compound shall be used.
  6. The stripped concrete residues shall be recovered and shall not be released into the sewer. The contractor shall take all precautions to avoid soiling and damaging the facilities near the structure. The contractor is liable for any damaged caused by the work.

### 3.06 CONCRETE CURING

- .1 The concrete that has just been placed shall be protected against frost, high temperatures, excessively rapid drying and loss of moisture for a sufficient period of time for the concrete to attain the prescribed characteristics. A minimum period of 30 days after concreting is required before application of de-icing salts.

- .2 Curing during the initial period, or obtaining a strength equivalent to 40% of the strength specified at 28 days, shall be done by spraying water and by application of a curing membrane. Fabric soaked in water may also be used to ensure cooling by evaporation.
- .3 The curing product is applied mechanically with a vaporizer mixer to obtain a homogeneous mixture and ensure uniform application over the entire surface. In cold weather, 5°C and under, the concrete must be protected against frost for a period of at least 7 days, by means of insulating covers or straw covered with a plastic film. Never use curing product on concrete that will be exposed to frost less than one month after its placement.
- .4 In all cases, the concrete mixing formulas and the technical data sheets of the curing products are supplied to the laboratories for approval.
- .5 Water is added on the site in accordance with the latest version of CSA A23.1
- .6 For coloured concrete, apply curing and sealing compound according to Manufacturer's instructions using Manufacturer's recommended application techniques. Apply curing and sealing compound at consistent time for each pour to maintain close colour consistency.

### 3.07 TEMPERATURE PROTECTION

Indicative table of interventions:

<b>Requirements</b>	<b>Daily mean outdoor temperature during the protection period (° Celsius)</b>	
	<b>Smallest dimension of the element, less than 1 m</b>	<b>Smallest dimension of the element, greater than 1 m</b>
Suitable shelter and appropriate heating or insulation	Below 0°C	Below -5°C
Appropriate cover and sufficient insulation	From 0 to 5°C	From -5 to 5°C
Normal curing	From 5 to 25°C	From 5 to 20°C
Continuous water curing to minimize the concrete's rise in temperature	Over 25°C	Over 20°C

- .1 Ensure protection of the structures, either by building an enclosure or a shelter, or by covering the concrete surfaces with raised tarps or using thick enough insulation. The methods used shall be submitted for approval to the NCC Representative and comply with the latest version of CAN/CSA-A23.1.
- .2 In a frost period, make the necessary arrangements to allow introduction of heat into the enclosure or the shelter, as needed.
- .3 During placement and curing, the concrete surfaces shall be protected against direct contact with combustion gases, either by formwork or with a protective membrane.
- .4 In no case shall the concrete be allowed to freeze before it reaches 7 MPa of strength.
- .5 Cooling of the concrete to the ambient temperature shall not exceed the rate of 1°C per hour.

### 3.08 REPAIR OF CRACKS IN CURBS AND SIDEWALKS

- .1 The cracks or other deficiencies that could appear in curbs or sidewalks during the warranty period will be repaired at the contractor's expense as follows:
  - .1 **Sidewalks:** saw in the expansion and movement joints on each side of the sections containing one or more cracks and/or deficiencies, remove and dispose of the damaged sections. Drill holes and place the new metal rods. Place new joint filler and proceed with concreting according to the indications of this section of the specifications and according to the construction details. Repair the adjacent surfaces (asphalt concrete, cement concrete, paving stones, grass, etc.).
  - .2 **Curbs:** Saw the damaged section on both sides of the crack and/or the deficiency over a minimum length of 1.5 m (if the deficiency is located within 1.5 m of a movement joint, the contractor shall go to this point), remove and dispose of the materials, drills holes and install the new metal rods (minimum of 2 rods). Place new joint filler and proceed with concreting according to the indications of this section of the specifications and according to the construction details. Repair the adjacent surfaces (asphalt concrete, cement concrete, paving stones, grass, etc.).
- .2 No vertical movement of the sidewalk or curb section will be tolerated.

### 3.09 CLEANING

- .3 Clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Provide appropriate area on job site where concrete trucks and be safely washed.
  - .2 Divert unused admixtures and additive materials (pigments, fibres) from landfill to official hazardous material collections site as approved by NCC Representative.
  - .3 Do not dispose of unused admixtures and additive materials into sewer systems, into lakes, streams, onto ground or in other location where it will pose health or environmental hazard.
  - .4 Prevent admixtures and additive materials from entering drinking water supplies or streams.
  - .5 Using appropriate safety precautions, collect liquid or solidify liquid with inert, non-combustible material and remove for disposal.
  - .6 Dispose of waste in accordance with applicable local, Provincial and National regulations.

**END OF SECTION**

## **1 GENERAL**

### **1.01 REFERENCE STANDARDS**

- .1 CAN/CSA-A179-04(R2009), Mortar and Grout for Unit Masonry.
- .2 International Masonry Industry All-Weather Council (IMIAC)
  - .1 Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.
- .3 CAN/CSA-A371-04(R2009), Masonry Construction for Buildings.
- .4 CAN/CSA-A3000-[08], Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).

### **1.02 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 masonry mortar and grout and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
  - .1 Submit two full size samples of mortar for limestone seat wall at CEF.

### **1.03 QUALITY ASSURANCE**

- .1 Test Reports: submit certified test reports including sand gradation tests in accordance with CAN/CSA-A179 showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Qualifications:
  - .1 Masons to have certificate of qualification with 5 years minimum experience in stone masonry work.
  - .2 Obtain approval from NCC Representative for changes to qualified personnel.
- .4 Mock up
  - .1 Mock-up shall be constructed using processes and techniques intended for use on permanent work and shall be produced by the workers who will be performing the permanent work.
  - .2 Construct one linear metre field sample of stone wall. Locate where directed by NCC Representative.
  - .3 Approved mock-ups may remain as part of work.

#### 1.04 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Deliver prepackaged, dry-blended mortar mix to project site in labelled plastic-lined bags each bearing name and address of Manufacturer, production codes or batch numbers, and colour or formula numbers.
- .3 Maintain mortar, grout and packaged materials clean, dry, and protected against dampness, freezing, traffic and contamination by foreign materials.

#### 1.05 SITE CONDITIONS

- .1 Ambient Conditions: maintain materials and surrounding air temperature to:
  - .1 Minimum 10 degrees C prior to, during, and 48 hours after completion of masonry work.
  - .2 Maximum 25 degrees C prior to, during, and 48 hours after completion of masonry work.

## 2 PRODUCTS

### 2.01 MATERIALS

- .1 Cement:
  - .1 Portland Cement: to CAN/CSA-A3000, Type GU - General use hydraulic cement Type 10, gray colour.
    - .1 Use low VOC products in compliance with SCAQMD Rule 1168.
  - .2 Masonry Cement: to CAN/CSA-A3002 and CAN/CSA-A179, Type N.
  - .3 Mortar Cement: to CAN/CSA-A3002 and CAN/CSA-A179, Type N, integral water repellents.
    - .1 Use low VOC products in compliance with SCAQMD Rule 1168.
  - .4 Packaged Dry Combined Materials for mortar: to CAN/CSA-A179, Type N, using gray colour cement.
- .2 Aggregate: supplied by one supplier.
  - .1 Fine Aggregate: to CAN/CSA-A179
  - .2 Course Aggregate: to CAN/CSA-A179.
  - .3 Aggregate passing 1.18mm sieve
- .3 Water: clean and potable.
- .4 Lime:
  - .1 Hydrated Lime: to CAN/CSA-A179, Type SA.

### 2.02 MORTAR

- .1 Mortar for exterior masonry above grade: non-load bearing Type N
- .2 Use only pre-blended, pre-coloured mortar from a single manufacturer, prepackaged under controlled factory conditions. Ingredients batching limitations to be within 1% accuracy.
- .3 Acceptable pre-blended product or approved equivalent:
  - .1 King 1-1-6, grey colour, as manufactured by:  
KPM Industries Inc., 3385 Harvester Road, P.O. Box 699, Burlington, ON., L7R 3Y5  
1-800-461-0566

- .4 No additives are acceptable.
- .5 Mix mortar ingredients in accordance with CAN/CSA-A179 in quantities needed for immediate use.
- .6 Maintain sand uniformly damp immediately before mixing process.
- .7 Do not use anti-freeze compounds including calcium chloride or chloride based compounds.
- .8 Air entrainment must not exceed 8% by volume of binder.
- .9 Use a batch type mixer in accordance with CAN/CSA-A179.
- .10 Re-temper mortar only within two hours of mixing, when water is lost by evaporation.
- .11 Use mortar within 2 hours after mixing at temperatures of 25 degrees C.

### **3 EXECUTION**

#### **3.01 CONSTRUCTION**

- .1 Notify by writing NCC Representative when work to begin.
- .2 Do masonry mortar and grout work in accordance with CAN/CSA-A179 except where specified otherwise.

#### **3.02 MIXING**

- .1 Clean all mixing boards and mechanical mixing machine between batches.
- .2 Mortar must be weaker than the units it is binding.
- .3 Contractor to appoint one individual to mix mortar, for duration of project. In the event that this individual must be changed, mortar mixing must cease until the new individual is trained, and mortar mix is tested.

#### **3.03 CLEANING**

- .1 Progress and final cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Remove droppings and splashings using clean sponge and water.
- .3 Clean masonry with low pressure clean water and soft natural bristle brush.

#### **3.04 PROTECTION**

- .1 Cover completed and partially completed work not enclosed or sheltered with waterproof covering at end of each work day. Anchor securely in position.

### **END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 31 22 13 – Rough Grading
- .2 Section 32 01 90.33 – Tree and Shrub Preservation
- .3 Section 32 11 23 – Aggregate Base Courses
- .4 Appendix A – MMF (Basic project Mitigation Measures Form)
- .5 Appendix C – Archaeological Services and Utility Locates

### **1.02 REFERENCE STANDARDS**

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM C 117-04, Standard Test Method for Material Finer than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing.
  - .2 ASTM C 136-05, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
  - .3 ASTM D 422-63-2002, Standard Test Method for Particle-Size Analysis of Soils.
  - .4 ASTM D 698-00ae1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ü) (600 kN-m/m ü).
  - .5 ASTM D 1557-02e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ü) (2,700 kN-m/m ü).
  - .6 ASTM D 4318-05, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
- .2 Canadian Standards Association (CSA International)
  - .1 CAN/CSA-A3000-[03], Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
    - .1 CSA-A3001-[03], Cementitious Materials for Use in Concrete.
  - .2 CSA-A23.1/A23.2-[04], Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.

### **1.03 DEFINITIONS**

- .1 Common excavation: excavation of materials of whatever nature, which are not included under definitions of rock excavation.
- .2 Unclassified excavation: excavation of deposits of whatever character encountered in Work.
- .3 Waste material: excavated material unsuitable for use in Work or surplus to requirements.

### **1.04 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Quality Control:
  - .1 Submit condition survey of existing conditions as described in 1.06 Existing conditions article of this Section.

- .2 Submit for review by NCC Representative proposed dewatering and heave prevention methods, if required, as described in Part 3 Execution of this Section.
  - .3 Submit to NCC Representative written notice when bottom of excavation is reached.
  - .4 Submit to NCC Representative inspection results as described in Part 3 Execution of this Section.
- .3 Preconstruction Submittals:
- .1 Submit construction equipment list for major equipment to be used in this section prior to start of Work.
  - .2 Submit records of underground utility locates, indicating: location plan of existing utilities as found in field, clearance record from utility authority, location plan of relocated and abandoned services, as required.

### **1.05 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for disposal, reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

### **1.06 EXISTING CONDITIONS**

- .1 Buried services:
- .1 Before commencing work verify location of buried services on and adjacent to site.
  - .2 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.
  - .3 Prior to beginning excavation Work, notify applicable NCC Representative of location and state of use of buried utilities and structures. Authorities having jurisdiction to clearly mark such locations to prevent disturbance during Work.
  - .4 Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered.
  - .5 Where utility lines or structures exist in area of excavation, obtain direction of NCC Representative before removing or re-routing.
  - .6 Record location of maintained, re-routed and abandoned underground lines.
  - .7 Confirm locations of recent excavations adjacent to area of excavation.
  - .8 In case of damage to a utility during excavation, immediately notify the appropriate authorities and NCC Representative.
- .2 Existing buildings and surface features:
- .1 Conduct, with NCC Representative, condition survey of existing buildings, trees and other plants, lawns, fencing, sidewalks, service poles, wires, pavement, survey bench marks and monuments which may be affected by Work.
  - .2 Protect existing buildings and surface features from damage while Work is in progress. In event of damage, immediately make repair as directed by NCC Representative.
  - .3 Where required for excavation, cut roots or branches as directed by NCC Representative in accordance with Section 32 01 90.33 - Tree and Shrub Preservation.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- .1 Type 1 and Type 2 fill to the following requirements:
  - .1 Crushed, pit run or screened stone, gravel or sand.
  - .2 Gradations to be within limits specified when tested to ASTM C 136 and ASTM C 117.



.3 Sieve sizes to CAN/CGSB-8.1 and CAN/CGSB-8.2 .  
 Table:

Sieve Designation	% Passing	
	Type 1	Type 2
75 mm	-	[100]
50 mm	-	-
37.5 mm	-	-
25 mm	[100]	-
19 mm	[75-100]	-
12.5 mm	-	-
9.5 mm	[50-100]	-
4.75 mm	[30-70]	[22-85]
2.00 mm	[20-45]	-
0.425 mm	[10-25]	[5-30]
0.180 mm	-	-
0.075 mm	[3-8]	[0-10]

### 3 EXECUTION

#### 3.01 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
- .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

#### 3.02 SITE 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 in accordance with Section 02 41 13 - Selective Site Demolition.

#### 3.03 PREPARATION / PROTECTION

- .1 Protect existing features in accordance with Section 01 56 00 - Temporary Barriers and Enclosures and applicable federal/provincial/local regulations.
- .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 NCC Representative approval.

#### 3.04 STOCKPILING

- .1 Stockpile fill materials in areas as indicated in contract documents or designated by NCC Representative.

- .1 Stockpile granular materials in manner to prevent segregation.
- .2 Protect fill materials from contamination.
- .3 Implement sufficient erosion and sediment control measures to prevent sediment release off construction boundaries and into water bodies.

### **3.05 DEWATERING AND HEAVE PREVENTION**

- .1 Keep excavations free of water while Work is in progress.
- .2 Provide for NCC Representative's review and approval, details of proposed dewatering or heave prevention methods.
- .3 Avoid excavation below groundwater table if quick condition or heave is likely to occur.
  - .1 Prevent piping or bottom heave of excavations by groundwater lowering, sheet pile cut-offs, or other means.
- .4 Protect open excavations against flooding and damage due to surface run-off.

### **3.06 EXCAVATION**

- .1 Excavate to lines, grades, elevations and dimensions as indicated in the contract documents or as directed by NCC Representative.
- .2 Remove concrete, masonry, paving, walks, demolished foundations, rubble and other obstructions encountered during excavation in accordance with Section 02 41 13 - Selective Site Demolition.
- .3 Excavation must not interfere with bearing capacity of adjacent foundations.
- .4 Do not disturb soil within branch spread of trees or shrubs that are to remain.
  - .1 If excavating through roots, excavate by hand and cut roots with sharp, clean axe or saw in accordance with Section 32 01 90.33 – Tree and Shrub Preservation.
- .5 For trench excavation, unless otherwise authorized by NCC Representative in writing, do not excavate more than 30 m of trench in advance of installation operations and do not leave open more than 15 m at end of day's operation.
- .6 Keep excavated and stockpiled materials safe distance away from edge of trench as directed by NCC Representative].
- .7 Restrict vehicle operations directly adjacent to open trenches.
- .8 Dispose of surplus and unsuitable excavated material in approved location off site.
- .9 Do not obstruct flow of surface drainage or natural watercourses.
- .10 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.
- .11 Notify NCC Representative when bottom of excavation is reached.
- .12 Obtain NCC Representative approval of completed excavation.

- .13 Remove unsuitable material from trench bottom including those that extend below required elevations to extent and depth as directed by NCC Representative.
- .14 Correct unauthorized over-excavation as follows:
  - .2 Fill under other areas with Type 2 fill compacted to not less than 95% of corrected Standard Proctor maximum dry density.
- .15 Hand trim, make firm and remove loose material and debris from excavations.
  - .1 Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil.
  - .2 Clean out rock seams and fill with concrete mortar or grout to approval of NCC Representative.

### **3.07 BACKFILLING**

- .1 Do not proceed with backfilling operations until completion of following:
  - .1 NCC Representative has inspected and approved installations.
- .2 Areas to be backfilled to be free from debris, snow, ice, water and frozen ground.
- .3 Do not use backfill material which is frozen or contains ice, snow or debris.
- .4 Place backfill material in uniform layers not exceeding 150 mm compacted thickness up to depth indicated. Compact each layer before placing succeeding layer.
- .5 Backfilling around installations:
  - .1 Place bedding and surround material as specified in the specs and drawings.
  - .2 Do not backfill around or over cast-in-place concrete within 24 hours after placing of concrete.
  - .3 Place layers simultaneously on both sides of installed Work to equalize loading.
- .6 Compaction:
  - .1 Granular materials: 100%
  - .2 Subgrade under paving: 100%
  - .3 Earth fill: 95%
  - .4 Fill under areas other than bearing surfaces: 85%

### **3.08 RESTORATION**

- .1 Upon completion of Work, remove waste materials and debris in accordance to Section 01 74 21 - Construction/Demolition Waste Management and Disposal, trim slopes, and correct defects as directed by NCC Representative.
- .2 Reinstall pavements and sidewalks disturbed by excavation to thickness, structure and elevation which existed before excavation.
- .3 Clean and reinstall areas affected by Work as directed by NCC Representative.
- .4 Protect newly graded areas from traffic and erosion and maintain free of trash or debris.

**END OF SECTION**

### 1.01 RELATED REQUIREMENTS

- .1 Section 32 93 20 – Plant Material Maintenance and Warranty
- .2 Section 32 93 10 – Trees, Shrubs and Groundcover Planting

### 1.02 REFERENCE STANDARDS

- .1 Health Canada - Pest Management Regulatory Agency (PMRA)
  - .1 National Standard for Pesticide Education, Training and Certification in Canada (1995).
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .3 Department of Justice Canada
  - .1 Canadian Environmental Protection Act (CEPA), 1999, c. 33.
  - .2 Fertilizers Act (R.S. 1985, c. F-10).
  - .3 Fertilizers Regulations (C.R.C., c. 666).
  - .4 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.
- .4 American National Standard Institute (ANSI)
  - .1 ANSI A300 (Part 1)-2017, Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance - Standard Practices

### 1.03 ADMINISTRATIVE REQUIREMENTS

- .1 Obtain approval from NCC Representative of schedule indicating beginning of Work.

### 1.04 ACTION AND INFORMATIONAL SUBMITTALS

- .1 When requested, provide samples of materials in accordance with Section 01 33 00 - Submittal Procedures.

## 2 PRODUCTS

### 2.01 MATERIALS

- .1 Fertilizer:
  - .1 To Canada Fertilizer Act and Fertilizers Regulations.
  - .2 Complete, commercial, slow release with 35% of nitrogen content in water-insoluble form.
- .2 Anti-desiccant: commercial, wax-like emulsion.
- .3 Filter Cloth:
  - .1 Type 1: 100 % non-woven needle punched polyester, 2.75 mm thick, 240 g/m<sup>2</sup> mass.
  - .2 Type 2: biodegradable burlap.
- .4 Tree Protection Fencing: steel T-rail posts 40 x 40 x 2440 mm, at 1500 mm o.c., with snow fencing attached tightly to posts with cable ties, to the approval of the NCC Representative.

### **3 EXECUTION**

#### **3.01 IDENTIFICATION AND PROTECTION**

- .1 Tree protection to be installed PRIOR to the start of any on site work and shall be maintained in place until the NCC representative authorizes the removal of the protection.
- .2 Identify plants and limits of root systems to be preserved as approved by NCC Representative.
- .3 Protect plant and root systems from damage, compaction and contamination resulting from construction as approved by NCC Representative.
- .4 Do not store material or equipment within the tree protection fencing.
- .5 Ensure no root pruning is done inside drip line. If pruning inside drip line is required cut roots cleanly with sharp disinfected tools to point obliquely downwards to the satisfaction of the NCC Representative.
- .6 Roots exposed during construction should be immediately reburied with soil or covered with filter cloth or wood chips and kept moist until they can be reburied permanently.

#### **3.02 RAISING OR LOWERING GRADE AROUND EXISTING TREE**

- .1 Do not raise or lower grades within dripline of existing trees unless indicated on drawings.

#### **3.03 WATERING**

- .1 During the construction period, in June, July, August, September, apply water to surface bi-weekly, soaking area 1.5 times the diameter of the drip line of each tree within tree protection limit.

#### **3.04 PRUNING**

- .1 Prune in accordance with ANSI A300 (Part 1) - 2017– Tree Care Operations.
- .2 Prune branches as NCC Representative instructions to compensate for root loss while maintaining general form and character of plant.

#### **3.05 ANTI-DESICCANT**

- .1 Apply anti-desiccant to foliage where applicable and as directed by NCC Representative.

#### **3.06 CLEANING**

- .1 Progress and final cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
  - .2 Remove protection fencing when approved by NCC Representative.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 03 10 00 Concrete Forming and Accessories
- Section 03 20 00 Concrete Reinforcing
- Section 03 30 00 Cast In Place Concrete
- Section 32 12 16.01 Asphalt Paving
- Section 32 14 13 Precast Concrete Unit Paving and Salvaged Cobblestones
- Section 32 14 15 Blocks, Boulders, Riverstone and Cladding

### **1.02 REFERENCE STANDARDS**

- .1 Ontario Provincial Standard Specification (OPSS) Volume 1 - 501 – Construction Specification for Compacting
- .2 Ontario Provincial Standard Specification (OPSS) Volume 1 – 1001 – Construction Specification for Aggregates
- .3 Ontario Provincial Standard Specification (OPSS) Volume 2 – 1010 – Material Specification for Aggregates – Granular A, B, M, and Select Subgrade Material

### **1.03 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with OPSS 1001 Aggregates.
- .2 Storage and Handling Requirements:
  - .1 Stockpile minimum 50% of total aggregate required prior to beginning operation.
  - .2 Store materials in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .3 Replace defective or damaged materials with new.
  - .4 Store cement in weathertight bins or silos that provide protection from dampness and easy access for inspection and identification of each shipment.

## **2 PRODUCTS**

### **2.01 MATERIALS**

- Granular base material: in accordance with OPSS 1001 – Aggregates and the following requirements:
- .1 Granular A in accordance with OPSS 1010 manufactured from crushed limestone and free from deleterious material.
  - .2 Gradations to be within limits specified when tested to OPSS-1010.

### **3 EXECUTION**

#### **3.01 PLACEMENT AND INSTALLATION**

- .1 Place granular base after subgrade surface is inspected and approved in writing by NCC Representative.
- .2 Install geotextile per 2.05, Section 321413 Precast Concrete Unit Paving.
- .3 Placing:
  - .1 Construct granular base to depth and grade in areas indicated.
  - .2 The thickness of granular and stone materials shown on the drawings shall be the real thickness after the materials have been compacted as specified.
  - .3 Ensure no frozen material is placed.
  - .4 Place material only on clean unfrozen surface, free from snow, ice and standing water accumulation.
  - .5 Place material using methods which do not lead to segregation or degradation of aggregate.
  - .6 For spreading and shaping material, use spreader boxes having adjustable templates or screeds which will place material in uniform layers of required thickness.
  - .7 Place material to full width in uniform layers not exceeding 150 mm compacted thickness.
    - .1 NCC Representative may authorize thicker lifts (layers) if specified compaction can be achieved.
  - .8 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
  - .9 Remove and replace that portion of layer in which material becomes segregated during spreading.
- .4 Compaction Equipment:
  - .1 Ensure compaction equipment is capable of obtaining required material densities.
- .5 Compacting:
  - .1 Compact to density not less than 95% maximum dry density in accordance with OPSS – 1010 Material Specification for Aggregates.
  - .2 Shape and roll alternately to obtain smooth, even and uniformly compacted base.
  - .3 Apply water as necessary during compacting to obtain specified density.
  - .4 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved in writing by NCC Representative.
  - .5 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

#### **3.02 SITE TOLERANCES**

- .1 Finished base surface to be within plus or minus 5 mm of established grade and cross section but not uniformly high or low.

#### **3.03 CLEANING**

- .1 Progress and final cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .2 Waste Management: separate and recycle waste materials for reuse and recycling in accordance

with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

- .2 Divert unused granular material from landfill to local facility as approved by NCC Representative.

### **3.04 PROTECTION**

- .1 Maintain finished base in condition conforming to this Section until succeeding material is applied or until acceptance by NCC Representative.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 02 41 13 Selective Site Demolition
- .2 Section 32 11 23 Aggregate Base Courses

### **1.02 REFERENCE STANDARDS**

- .1 American Association of State Highway and Transportation Officials (AASHTO)
  - .1 AASHTO M320- 02, Standard Specification for Performance Graded Asphalt Binder.
  - .2 AASHTO R29- 02, Standard Specification for Grading or Verifying the Performance Graded of an Asphalt Binder.
  - .3 AASHTO T245- 97(2001), Resistance to Plastic flow of Bituminous Mixtures Using Marshall Apparatus.
- .2 American Society for Testing and Materials International, (ASTM)
  - .1 ASTM C88- 99a, Standard Test Method for Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate.
  - .2 ASTM C117- 95, Standard Test Method for Material Finer Than 0.075mm (No.200) Sieve in Mineral Aggregates by Washing.
  - .3 ASTM C123- 98, Standard Test Method for Lightweight Particles in Aggregate.
  - .4 ASTM C127- 01, Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate.
  - .5 ASTM C128- 01, Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate.
  - .6 ASTM C131- 01, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
  - .7 ASTM C136- 01, Standard Method for Sieve Analysis of Fine and Coarse Aggregates.
  - .8 ASTM C207- 91(1997), Standard Specification for Hydrated Lime for Masonry Purposes.
  - .9 ASTM D995- 95b(2002), Standard Specification for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
  - .10 ASTM D2419- 02, Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
  - .11 ASTM D3203- 94(2000), Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures.
  - .12 ASTM D4791- 99, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.
- .3 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-8.1- 88, Sieves Testing, Woven Wire, Inch Series.
  - .2 CAN/CGSB-8.2- M88, Sieves Testing, Woven Wire, Metric.
  - .3 CAN/CGSB-16.3- M90, Asphalt Cements for Road Purposes.
- .4 Ontario Provincial Standard Specifications (OPSS).

- .1 OPSS 302-April 1999, Construction Specification for Primary Granular Base.
- .2 OPSS 310-March 1993, Construction Specification for Hot Mixed, Hot Laid Asphaltic Concrete Paving and Hot Mix Patching.
- .3 OPSS 314-December 1993, Construction Specification for Untreated Granular, Subbase, Base, Surface Shoulder and Stockpiling.
- .4 OPSS 1010-March 1993, Material Specification for Aggregates, Granular A, B, M and Select Subgrade Material.
- .5 OPSS 1103-February 1996, Material Specification for Emulsified Asphalt.
- .6 OPSS 1150-May 1994, Material Specification for Hot Mixed, Hot Laid Asphalt Concrete.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit viscosity-temperature chart for asphalt cement to be supplied showing either Saybolt Furol viscosity in seconds or Kinematic Viscosity in centistokes, temperature range 105 to 175 degrees C at least 4 weeks prior to beginning Work.
- .3 Submit asphalt concrete mix design and trial mix test results to NCC Representative for approval at least 4 weeks prior to beginning Work.
- .4 Inform NCC Representative of proposed source of aggregates and provide access for sampling at least 4 weeks prior to beginning Work.

### **1.04 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with manufacturer's written instruction].
- .2 Stockpile minimum 50% of total amount of aggregate required before beginning asphalt mixing operation.
- .3 When necessary to blend aggregates from one or more sources to produce required gradation, do not blend in stockpiles.
- .4 Stockpile fine aggregate separately from coarse aggregate, although separate stockpiles for more than two mix components are permitted.
- .5 Provide approved storage, heating tanks and pumping facilities for asphalt cement.
- .6 Submit to NCC Representative copies of freight and waybills for asphalt cement as shipments are received.
  - .1 NCC Representative reserves right to check weights as material is received.

## **2 PRODUCTS**

### **2.01 MATERIAL**

- .1 Aggregates: in accordance with Section 31 05 16 - Aggregate Materials and following requirements:
  - .1 Crushed stone or gravel.
  - .2 Gradations: within limits specified when tested to current norms and regulations. Sieve sizes to CAN/CGSB-8.1.

.3 Table

Sieve Designation	% Passing		
	Lower Course	Surface Course	Sheet Asphalt
200 mm	-	-	-
75 mm	-	-	-
50 mm	-	-	-
38.1 mm	-	-	-
25 mm	100	-	-
19 mm	-	-	-
12.5 mm	70-85	100	-
9.5 mm	-	-	100
4.75 mm	40-65	55-75	85-100
2.00 mm	30-50	35-55	80-95
0.425 mm	15-30	15-30	40-70
0.180 mm	5-20	5-20	10-35
0.075 mm	3-8	3-8	4-14

.4 Coarse aggregate: aggregate retained on 4.75 mm sieve and fine aggregate is aggregate passing 4.75mm sieve when tested to ASTM C136.

.5 When dryer drum plant or plant without hot screening is used, process fine aggregate through 4.75 mm sieve and stockpile separately from coarse aggregate.

.6 Separate stockpiles for coarse and fine aggregates not required for sheet asphalt.

.2 Mineral filler:

.1 Finely ground particles of limestone, hydrated lime, Portland cement or other approved non-plastic mineral matter, thoroughly dry and free from lumps.

.2 Add mineral filler when necessary to meet job mix aggregate gradation or as directed to improve mix properties.

.3 Mineral filler to be dry and free flowing when added to aggregate.

.3 Anti-stripping agent: hydrated lime to ASTM C207. Add lime at rate of approximately 2-3% of dry weight of aggregate.

.4 Water: to approval of NCC Representative.

**2.02 EQUIPMENT**

.1 Pavers: mechanical grade controlled self-powered pavers capable of spreading mix within specified tolerances, true to line, grade and crown indicated.

.2 Rollers: sufficient number of type and weight to obtain specified density of compacted mix.

.3 Vibratory rollers:

.1 Drum diameter: 1200 mm minimum.

.2 Amplitude of vibration (machine setting): 0.5 mm maximum for lifts less than 40 mm thick.

.4 Hand tools:

.1 Lutes or rakes with covered teeth for spreading and finishing operations.

.2 Tamping irons having mass 12 kg minimum and bearing area not exceeding 310 cm<sup>2</sup> for

compacting material along curbs, gutters and other structures inaccessible to roller. Mechanical compaction equipment, when approved by NCC Representative], may be used instead of tamping irons.

- .3 Straight edges, 34.5 m in length, to test finished surface.

### **2.03 MIX DESIGN**

- .1 Mix design to be approved by NCC Representative.
  - .1 Measure physical requirements as follows:
    - .1 Marshall load and flow value: to AASHTO T245.
    - .2 Air voids: to ASTM D3203.
    - .3 Voids in mineral aggregates: to AI MS2, chapter 4.
    - .4 Index of Retained Stability: measure in accordance with current norms and regulations.
  - .2 Do not change job-mix without prior approval of NCC Representative. When change in material source proposed, new job-mix formula will be provided for approval by NCC Representative.
  - .3 Return plant dust collected during processing to mix in quantities acceptable to NCC Representative.

## **3 EXECUTION**

### **3.01 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for geotextile material installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate before installing geotextile.
  - .2 Inform NCC Representative 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 NCC Representative.

### **3.02 PREPARATION**

- .1 Temporary Erosion and Sedimentation Control:
  - .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
  - .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
  - .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
  - .4 Protect Adjacent Surfaces Prior to Application of Asphalt Concrete.

### 3.03 TRANSPORTATION OF MIX

- .1 Transport mix to job site in vehicles cleaned of foreign material.
- .2 Paint or spray truck beds with limewater, soap or detergent solution, or non-petroleum based commercial product, at least daily or as required. Elevate truck bed and thoroughly drain. No excess solution to remain in truck bed.
- .3 Schedule delivery of material for placing in daylight, unless NCC Representative approves artificial light.
- .4 Deposit mix from surge or storage silo to trucks in multiple drops to reduce segregation. Do not dribble mix into trucks.
- .5 Deliver material to paver at uniform rate and in an amount within capacity of paving and compacting equipment.
- .6 Deliver loads continuously in covered vehicles and immediately spread and compact. Deliver and place mixes at temperature within range as directed by NCC Representative, but not less than 135 degrees C.

### 3.04 PLACING

- .1 Obtain NCC Representative's approval of base prior to placing asphalt.
- .2 Place asphalt concrete to thicknesses, grades and lines as indicated.
- .3 Placing conditions:
  - .1 Place asphalt mixtures only when air temperature is above 5 degrees C.
  - .2 When temperature of surface on which material is to be placed falls below 10 degrees C, provide extra rollers as necessary to obtain required compaction before cooling.
  - .3 Do not place hot-mix asphalt when pools of standing water exist on surface to be paved, during rain, or when surface is damp.
- .4 Place asphalt concrete in compacted lifts of thickness as follows:
  - .1 Levelling course to thicknesses required but not exceeding 50 mm.
  - .2 Surface course in layer of maximum 60 mm.
- .5 Where possible do tapering and levelling where required in lower lifts. Overlap joints by not less than 300 mm.
- .6 Place individual strips no longer than 500m.
- .7 Spread and strike off mixture with self-propelled mechanical finisher.
  - .1 Maintain constant head of mix in auger chamber of paver during placing.
  - .2 If segregation occurs, immediately suspend spreading operation until cause is determined and corrected.
  - .3 Correct irregularities in alignment left by paver by trimming directly behind machine.
  - .4 Correct irregularities in surface of pavement course directly behind paver. Remove by shovel or lute excess material forming high spots. Fill and smooth indented areas with hot mix. Do not broadcast material over such areas.
  - .5 Do not throw surplus material on freshly screened surfaces.

- .8 When hand spreading is used:
  - .1 Use approved wood or steel forms, rigidly supported to assure correct grade and cross section. Use measuring blocks and intermediate strips to aid in obtaining required cross-section.
  - .2 Distribute material uniformly. Do not broadcast material.
  - .3 During spreading operation, thoroughly loosen and uniformly distribute material by lutes or covered rakes. Reject material that has formed into lumps and does not break down readily.
  - .4 After placing and before rolling, check surface with templates and straightedges and correct irregularities.
  - .5 Provide heating equipment to keep hand tools free from asphalt. Control temperature to avoid burning material. Do not use tools at higher temperature than temperature of mix being placed.

### 3.05 COMPACTING

- .1 Roll asphalt continuously using established rolling pattern for test strip and to density of not less than 100 % of maximum density determined for test strip.
- .2 Do not change rolling pattern unless mix changes or lift thickness changes. Change rolling pattern only as directed by NCC Representative.
- .3 General:
  - .1 Provide at least two rollers and as many additional rollers as necessary to achieve specified pavement density. When more than two rollers are required, one roller must be pneumatic tired type.
  - .2 Start rolling operations as soon as placed mix can bear weight of roller without excess displacement of material or cracking of surface.
  - .3 Operate roller slowly initially to avoid displacement of material. Do not exceed 5km/h for breakdown and intermediate rolling for static steel-wheeled and pneumatic tired rollers. Do not exceed 9 km/h for finish rolling.
  - .4 Use static compaction for levelling course less than 25 mm thick.
  - .5 For lifts 50 mm thick and greater, adjust speed and vibration frequency of vibratory rollers to produce minimum of 25 impacts per metre of travel. For lifts less than 50 mm thick, impact spacing not to exceed compacted lift thickness.
  - .6 Overlap successive passes of roller by minimum of 200mm and vary pass lengths.
  - .7 Keep wheels of roller slightly moistened with water to prevent pick-up of material but do not over-water.
  - .8 Do not stop vibratory rollers on pavement that is being compacted with vibratory mechanism operating.
  - .9 Do not permit heavy equipment or rollers to stand on finished surface before it has been compacted and has thoroughly cooled.
  - .10 After traverse and longitudinal joints and outside edge have been compacted, start rolling longitudinally at low side and progress to high side. Ensure that all points across width of pavement receive essentially equal numbers of passes of compactors.
  - .11 When paving in echelon, leave unrolled 50 to 75 mm of edge which second paver is following and roll when joint between lanes is rolled.

- .12 Where rolling causes displacement of material, loosen affected areas at once with lutes or shovels and restore to original grade of loose material before re-rolling.

### 3.06 JOINTS

- .1 General:
  - .1 Remove surplus material from surface of previously laid strip. Do not deposit on surface of freshly laid strip.
  - .2 Construct joints between asphalt concrete pavement and Portland cement concrete pavement as indicated.
  - .3 Paint contact surfaces of existing structures such as manholes, curbs or gutters with bituminous material prior to placing adjacent pavement.
- .2 Transverse joints:
  - .1 Offset transverse joint in succeeding lifts by at least 600 mm.
  - .2 Cut back to full depth vertical face and tack face with thin coat of hot asphalt prior to continuing paving.
  - .3 Compact transverse joints to provide smooth riding surface. Use methods to prevent rounding of compacted surface at joints.
- .3 Longitudinal joints:
  - .1 Offset longitudinal joints in succeeding lifts by at least 150 mm.
  - .2 Cold joint is defined as joint where asphalt mix is placed, compacted and left to cool below 100 degrees C prior to paving of adjacent lane.
    - .1 For airfield runway paving, avoid cold joint construction in mid 30 m of runway.
    - .2 If cold joint cannot be avoided, cut back by saw cutting previously laid lane, by at least 150 mm, to full depth vertical face, and tack face with thin coat of hot asphalt of adjacent lane.
  - .3 Overlap previously laid strip with spreader by 25 to 50 mm.
  - .4 Before rolling, carefully remove and discard coarse aggregate in material overlapping joint with lute or rake.
  - .5 Roll longitudinal joints directly behind paving operation.
  - .6 When rolling with static or vibratory rollers, have most of drum width ride on newly placed lane with remaining 150 mm extending onto previously placed and compacted lane.

### 3.07 FINISH TOLERANCES

- .1 Finished asphalt surface to be within 5mm of design elevation but not uniformly high or low.
- .2 Finished asphalt surface not to have irregularities exceeding 5mm when checked with 4.5m straight edge placed in any direction.

### 3.08 DEFECTIVE WORK

- .1 Correct irregularities which develop before completion of rolling by loosening surface mix and removing or adding material as required. If irregularities or defects remain after final compaction, remove surface course promptly and lay new material to form true and even surface and compact immediately to specified density.
- .2 Repair areas showing checking, rippling, or segregation.

- .3 Adjust roller operation and screed settings on paver to prevent further defects such as rippling and checking of pavement.

### **3.09 CLEANING**

- .1 Progress and Final Cleaning: clean in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**



## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 32 11 23 Aggregate Base Courses.

### **1.02 REFERENCE STANDARDS**

- .1 ASTM International
  - .1 ASTM C 136-13, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
  - .2 ASTM C 979/C 979M-10, Standard Specification for Pigments for Integrally Colored Concrete.
- .2 CSA Group
  - .1 CSA A23.1/A23.2-09, Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.
  - .2 CAN/CSA-A179-04(R2009), Mortar and Grout for Unit Masonry.
  - .3 CSA A231.1/A231.2-06(R2010), Precast Concrete Paving Slabs/Precast Concrete Pavers.
  - .4 CSA A283-06(R2011), Qualification Code for Concrete Testing Laboratories.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit samples for approval a minimum two weeks prior to installation:
  - .1 Full size sample of each type, colour and size of pre-cast concrete unit pavers.
  - .2 Product data for bedding sand and jointing sand.
  - .3 Landscape edger.

### **1.04 DELIVERY, STORAGE AND HANDLING**

- .1 Delivery and Acceptance Requirements: deliver new materials to site in original factory packaging, labeled with manufacturer's name and address.
- .2 Storage and Handling Requirements:
  - .1 Store materials in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect salvaged granite cobblestones and precast concrete units from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.
  - .4 Cover bedding sand and jointing sand with waterproof film to protect from rain and wind. Secure the film in place.

### **1.05 QUALITY ASSURANCE**

- .1 Mock-ups:
  - 1. Install 2m<sup>2</sup> mock-up of each type of unit paving.
  - 2. Allow 48 hours for inspection of mock-up before proceeding with work.
  - 3. NCC Representative to assess workmanship. When accepted, mock-up may remain as

part of finished work.

## 2 PRODUCTS

### 2.01 CONCRETE PAVERS

- .1 Concrete pavers: to CSA A23.1/A23.2 and as follows:
  - .1 Beacon Hill Flagstone from Unilock
    - .1 Sizes: 540mm x 360mm x 80mm / 360mm x 360mm x 80mm / 180mm x 360mm x 80mm
    - .2 Shape: Large rectangular, square and small rectangle.
    - .3 Colour: Granite Fusion.
    - .4 Standard end, corner, border units as required.
    - .5 Pattern: Random
  - .2 If product differs significantly from approved sample in colour or texture the NCC Representative may refuse it. Pigments used for coloring concrete pavers: according to ASTM C 979.

### 2.02 SALVAGED GRANITE COBBLESTONES

- .1 Use granite cobblestones from existing interpretive nodes to be demolished. Do not re-install damaged cobblestones at new nodes.
- .2 Pattern: 3 rows running bond as drawings.
- 3. Joints: Maximum 7mm

### 2.03 BEDDING AND JOINT MATERIAL

- .1 Bedding sand: clean, non-plastic masonry sand, free from deleterious or foreign matter, manufactured from crushed rock or gravel. Do not use limestone screenings or stone dust.
  - .1 Gradation to CSA A23.1/A23.2, Table 4 - Grading Limits for Fine Aggregate, and CAN/CSA-A179 as follows:

Sieve Designation	% Passing
10 mm	100
5 mm	95-100
2.5 mm	80-100
1.25 mm	50-90
630 microns	25-65
315 microns	10-35
160 microns	2-10
- .2 Polymeric sand for joint filling.
  - .1 Mix of graded sand and clear high quality binding polymeric agent with no Portland cement, type EV Evolution from Sable Marco or equivalent approved by the NCC Representative.

- .2 Colour : Gray
- .3 Gradation to CSA A23.1, Table 1 - Grading Limits for Fine Aggregate, and CAN/CSA-A179.
- .4 Do not use joint sand for bedding sand.

#### **2.04 LANDSCAPE EDGER**

- .1 PVC or medium density polyethylene, industrial and flexible type edging for 80mm depth pavers approved by NCC Representative, manufactured for use in paver installation, complete with connectors and pre-manufactured anchoring locations for spikes.
  - .1 Anchoring: to manufacturer's instructions.
  - .2 Galvanized, spiral, steel anchor spikes 9.5 mm diameter x 254 mm length, one (1) per 300 mm of edging and at 100 mm each side of joints.
  - .3 Top of edger must be minimum 25mm below the top of the pavers.

#### **2.05 GEOTEXTILE**

- .1 Geotextile 7612 from Texel or equivalent approved by NCC Representative.
- .2 Place geotextile smooth and free of tension stress and folds and retain in position with appropriate staples or fill.
- .3 Overlap each successive strip of geotextile 100 mm over previously laid strip.
- .4 Protect installed geotextile material from displacement, damage or deterioration before, during and after placement of material layers.
- .5 Replace damaged or deteriorated geotextile to approval of NCC Representative.

#### **2.06 CLEANING COMPOUND**

- .1 Clear, organic solvent, designed and recommended by manufacturer of pavers for cleaning concrete pavers of contamination encountered.

### **3 EXECUTION**

#### **3.01 SUBGRADE**

- .1 Verify the bottom of the excavation conforms to levels and compaction required for installation of granular base layers. If discrepancies occur, notify NCC Representative and do not commence work until instructed by NCC Representative.
- .2 Ensure that bottom of the excavation is not frozen or standing water is present during installation.

#### **3.02 GRANULAR BASE LAYERS**

- .1 Install geotextile.
- .2 Granular base thickness as per drawings.
- .3 Spread in lifts of 150mm maximum while avoiding segregation.

- .4 Verify that the granular base layers surfaces conform to levels and compaction required for installation of unit pavers. If discrepancies occur, notify NCC Representative and do not commence work until instructed by NCC Representative.
- .5 Perform compaction as specified on the drawings using a vibrating plate. If necessary, water to facilitate compaction.
- .6 Verify that top of structural surface (top of base) does not exceed  $\pm 5$  mm of grade over 3 m straight edge.
- .7 Width of granular base layers to be wider than the surface to be paved, as indicated on the drawings, and filled with the same granular foundation materials.
- .8 Ensure that the granular base is not frozen and no standing water is present during installation.

### **3.03 INSTALLATION OF EDGE RESTRAINTS**

- .1 Install restraints true to grade, in accordance with manufacturer's recommendations.

### **3.04 PLACING OF BEDDING MATERIAL**

- .1 Ensure bedding material is not saturated or frozen at all times until installation is complete.
2. Non-compacted bedding materials shall be uniformly spread in a thickness not exceeding 25mm.
3. The bedding materials should be kept loose before the pavers are laid. Material that has been consolidated, even simply by rain, must be scarified, loosened and restored to their original state.
- .4 Do not disturb screeded material. Do not use bedding material to fill depressions in structural surface.

### **3.05 INSTALLATION OF PAVERS**

- .1 Lay pavers to pattern indicated. Arrange the pavers at a 90-degree angle following the indicated dimensions. Check the alignment of the pavers after each installation of five (5) rows; readjust the pavers using a screwdriver. The space between the pavers should be 2 mm to 3 mm wide.
- .2 Use appropriate end, edge and corner stones. Saw cut pavers to fit around obstructions and at abutting structures. Move away from existing pavers when sawing to avoid staining and wearing appropriate protection equipment (PPI).
- .3 Use a low amplitude, high frequency plate compactor capable of at least 22 kN centrifugal compaction force to vibrate pavers into bedding sand. Use neoprene pad under plate compactor and over pavers until units are true to grade and free of movement.
- .4 Inspect, remove, and replace chipped, broken and damaged pavers.
- .5 Sweep dry joint sand material into joints of completely dry pavers, then make it penetrate into the joints by sweeping it in all directions.
- .6 Settle sand by vibrating pavers with plate compactor.
- .7 Continue application of joint material and vibrating of pavers until joints are full. Do not vibrate within 1 m of unrestrained edges of pavers.

- .8 Complete installation to within 1 m of laying face, with sand-filled joints, at completion of each work day or before any work stoppage of more than one hour.
- .9 Sweep off excess joint material when installation is complete. Use a stiff bristled broom for the initial sweeping of the polymeric sand and then use a soft bristle broom to sweep the excess sand off the surface to ensure that no sand sticks to the surface of the pavers. Finally, use a leaf blower to ensure the removal of any excess sand residue from the surface. These two cleaning steps are crucial in order to maintain the original paver appearance. Obtain approval from the NCC Representative before proceeding to the next step.
- .10 WATERING/ACTIVATING: Ideally, work in maximum 200 sq. ft. (20 m<sup>2</sup>) sections at a time. Set your spray nozzle to the "shower" position. Always begin the watering process from the lowest part of the project. Using the shower head position, generously shower the pavers in a left and right motion when spraying. Continue until the water starts to accumulate. Avoid flooding the pavers. Check if the water has filtered down to at least 1 inch (2.5 cm) of the depth of the joints by simply using a screwdriver and scratch the sand, then pack-it back in to its original position. Eliminate any standing water off the paver surface using a leaf blower.
- .11 DRYING/SETTING : At least 24 hours are required to allow the polymeric sand to cure and harden for optimal performance. Stay off the paved surface during that period. The curing and hardening process will take substantially longer in cold and damp temperatures. The longer the drying time, the better and longer lasting the end result will be.
  - Use this product at temperatures over 32° F (0° C).
  - In case of the possibility that paved surfaces could be exposed to rainfall during the drying period, we recommend covering the area with a tarp.
  - Install the product only in good weather conditions. Rain showers immediately after the installation could carry the polymeric sand back to the paver surface. Cover the work.
  - Make sure the pavers, slabs or stones are dry before you start spreading the sand to avoid sticking or staining. Make sure that pavers are free of polymeric sand before spraying with water.
  - Before using sealers or cleaners, it is recommended to wait at least 30 days. Check with the paver manufacturer to determine if it is safe to use these products on your paver surface.
  - Polymeric sand bags must be stored in a dry place.
- .12 Final surface elevations not to exceed plus or minus 3 mm under 3 m long straightedge.
- .13 Surface elevation of pavers: 3 to 4 mm above adjacent drainage inlets, concrete collars or channels.
- .14 Ensure conformance of final elevations.

### **3.06 PAVER UNIT CLEANING**

- .1 Carry out cleaning at times and conditions recommended by manufacturer of cleaning compound and so as not to void paver warranty and as directed by NCC Representative.
- .2 Remove and dispose of loose, extraneous materials from surfaces to be cleaned.
- .3 Apply cleaning compounds appropriate for removal of various contaminants encountered in

accordance with manufacturer's recommendations and so as not to void paver warranty.

- .4 Final surface to be free of contamination.

### **3.07 FINAL INSPECTION**

- .1 After removing the excess joint sand, check that the final elevation of the pavers is in accordance with the drawings. Conduct surface condition verification with the NCC Representative.
- .2 If pavers have been damaged, they must be replaced.

### **3.08 SITE CLEANING**

- .1 Progress and final cleaning: clean in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 31 23 10 Excavating, Trenching and Backfilling
- .2 Section 32 11 23 Aggregate Base Courses.

### **1.02 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit samples for approval a minimum two weeks prior to installation:
  - .1 Sample of riverstone.
  - .2 Sample of dressed limestone block.
  - .3 Sample of limestone cladding for concrete heel post supports.
  - .4 Sample of high performance latex bond mortar for cladding.
- .3 Submit list of equipment to be used for transportation and installation of limestone blocks and boulders for approval.

### **1.03 DELIVERY, STORAGE AND HANDLING**

- .1 Limestone Blocks (large)
  - .1 Contractor to transport large limestone blocks (marked with orange spray paint) from Lower Beveridges Lock Station (145 Beveridges Lock Road, RR 5, Perth, ON, K7H 3C7) to Granterra Marble and Granite Company (5638 Power Road, Gloucester, ON, K1G 3N4, 613-286-1852) or approved equivalent, for finishing. When finishing is complete, contractor to transport blocks to their final sites.
  - .2 Contractor to note that blocks are stored in partially overgrown area with the furthest block approximately 9 metres from the edge of the gravel road. Access passes under a bridge with approximately 4.8m vertical clearance and the narrowest point along access road is approximately 4.4m wide.
- .2 Limestone or Granite Boulders
  - .1 Boulders are stored at the Central Experimental Farm, 960 Carling Avenue, in a field between Ash Lane and Building #57 along NCC driveway. Contractor to contact Pierre Huppé, 613-371-1314, to coordinate pick-up.
  - .2 Boulders to be selected in cooperation with NCC Landscape architect. Boulders may be either granite or limestone.
- .3 Limestone Blocks (small) and Granite Capstones for CEF Seat Wall
  - .1 Small limestone blocks and capstones are stored at the Central Experimental Farm, 960 Carling Avenue, in a field between Ash Lane and Building #57 along NCC driveway. Contractor to contact Pierre Huppé, 613-371-1314, to coordinate pick-up. Granite

capstones to be selected in cooperation with NCC Landscape architect.

## **2 PRODUCTS**

### **2.01 RIVERSTONE FOR THE BEACH (OTTAWA LOCKS)**

- .1 Riverstone: Size 38mm (1.5") to 100mm (4")  $\varnothing$ . Minimum 15-20% of 100mm (4") stones.
- .2 Finish: smooth, washed & weathered. Free from clay lumps, cementation, organic material, frozen material and other deleterious materials.
- .3 Colour: beige/grey.

### **2.02 LIMESTONE BLOCKS (Large) FOR ALL NEW SITES EXCEPT OCC**

- .1 See Table 1.1 below

### **2.03 LIMESTONE CLADDING FOR HEEL POST (HARTWELL'S LOCKS)**

- .1  $\frac{1}{2}$ " natural Eramosa, flame-finished limestone cladding. Cut the cladding to fit around heel post and metal brackets as directed by NCC Representative.

## **3 EXECUTION**

### **3.01 BLOCK AND BOULDER FINISHING**

- .1 Boulders to be cleaned to remove dirt, lichen, moss, plant residues and any other markings that identify them.
- .2 All blocks to be modified as follows:
  - .1 Clean to remove dirt, lichen, moss, plant residues, orange spray paint and black sharpie marker that identify them. Ensure block numbers are maintained by other temporary means until installed on-site.
  - .2 Remove sharp edges and smooth for public safety.
- .3 'Rough hewn' (Type A) finishing:
  - .1 Raw rock, as provided
- .4 'Finished' finishing (Type B):
  - .1 Rough square block, as provided.
- .5 'Dressed' finishing (Type C):
  - .1 Sandblast all visible sides of blocks at Ottawa Locks and Hartwells Locks, as indicated in Table 1.1, below. No other blocks require sandblasting.
  - .2 Finish top side only of all dressed blocks with decorative etching to match the condition and quality of the etching on blocks used on the canal walls at Ottawa Locks, as shown in Image 1.1 below and confirmed on-site by contractor.



### 3.02 CLADDING INSTALLATION FOR HEEL POST (HARTWELL'S LOCKS)

- .1 Fix limestone cladding to concrete supports with high performance latex bond mortar or equivalent approved by NCC Representative.

### 3.03 CLEANING

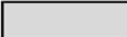
- .1 Progress and final cleaning: clean in accordance with Section 01 74 11 - Cleaning.



Image 1.1: Sandblasted and Dressed Block

TABLE 1.1 RIDEAU CANAL PROMENADE LARGE BLOCK AND BOULDER SUMMARY

OTL					PR				LAN				DOW				HL				CEF			
TYPE	NO.	L x W (m) (approx)	Ttl HT	HT ABOVE FG (approx)	NO.	L x W (m) (approx)	Ttl HT	HT ABOVE FG (approx)	NO.	L x W (m) (approx)	Ttl HT	HT ABOVE FG (approx)	NO.	L x W (m) (approx)	Ttl HT	HT ABOVE FG (approx)	NO.	L x W (m) (approx)	Ttl HT	HT ABOVE FG (approx)	NO.	L x W (m) (approx)	Ttl HT	HT ABOVE FG (approx)
TYPE A BLOCKS (rough hewn)	OTL-BL-A	1.0 x 0.75	TBD	TBD																				
TYPE B BLOCKS (finished)	OTL-BL-B	0.7 x 0.7	TBD	TBD																				
TYPE C BLOCKS (dressed)	OTL-BL-C1	1.0 x 0.6	0.6	0.5	PR-BL-C1	1.0 x 0.56	0.4	0.3	LAN-BL-C1	0.65 x 0.5	0.6	0.5		HL-BL-C1	1.15 x 1	0.4	0.33							
	OTL-BL-C2	1.0 x 0.6	0.6	0.5	PR-BL-C2	1.0 x 0.6	0.6	0.5	LAN-BL-C2	1.0 x 0.5	0.5	0.4		HL-BL-C2	0.95 x 0.6	0.6	0.5							
	OTL-BL-C3	1.0 x 0.6	0.6	0.5	PR-BL-C3	1.2 x 0.6	0.47	0.37																
					PR-BL-C4	0.75 x 0.6	0.44	0.34																
					PR-BL-C5	1.2 x 0.3	0.44	0.34																
LS OR GRANITE BOULDERS	OTL-BO-1	1.3 x 0.8	0.7	0.6									DL-BO-1	1.2 x 0.6	0.7	0.6					CEF-BO-1	0.6 x 0.6	0.8	0.7
	OTL-BO-2	0.5 x 0.4	0.4	0.3																	CEF-BO-2	1.3 x 0.6	0.5	0.4
	OTL-BO-3	1.3 x 1.3	0.8	0.7																				

 Blocks requiring sandblasting on all visible sides  
 See specification section 321415, Blocks, Boulder, Riverstone and Cladding for additional instructions

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 31 23 33.01 - Excavating, Trenching and Backfilling.

### **1.02 REFERENCE STANDARDS**

- .1 Agriculture and Agri-Food Canada
  - .1 The Canadian System of Soil Classification, Third Edition, 1998.
- .2 Canadian Council of Ministers of the Environment
  - .1 PN1340-2005, Guidelines for Compost Quality.

### **1.03 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit samples and soil and compost analysis and recommendations for amendments to NCC Representative a minimum of 2 weeks prior to scheduled delivery of materials to site.
- .3 Test topsoil for N, P, K, Mg, total salts, pH value, and percent organic matter, silt, sand, and clay content.
- .4 Test leaf compost for pH, total carbon, and total nitrogen.

## **2 PRODUCTS**

### **2.01 IMPORTED TOPSOIL AND PLANTING SOIL**

- .1 Topsoil and planting soil for sodded areas and planting beds: mixture of particulates, micro-organisms and organic matter which provides suitable medium for supporting intended plant growth. Use Topdressing Soil from Greely Sand & Gravel or equivalent approved by the NCC Representative with the following characteristics:
  - .1 Soil used in planting beds shall be manufactured planting soil.
  - .2 Soil texture based on The Canadian System of Soil Classification, to consist of 30-70 % sand, 15-50% silt, 15-25% clay, and contain 5-10 % organic matter by weight.
  - .3 Contain no toxic elements or growth inhibiting materials.
  - .4 Finished surface free from:
    - .1 Debris and stones over 50 mm diameter.
    - .2 Course vegetative material, 10 mm diameter and 100 mm length, occupying more than 2% of soil volume.
  - .5 Consistence: friable when moist.
  - .6 Topsoil containing crabgrass, couch grass or other noxious weeds, not acceptable.
  - .7 Ph value: 5.0 – 7.0.

## 2.02 SOIL AMENDMENTS

- .1 Fertilizer: industry accepted standard medium containing nitrogen, phosphorous, potassium and other micro-nutrients suitable to specific plant species or application or defined by soil test.
- .2 Peatmoss: Unamended Sphagnum Peat Moss: shall be coarsely shredded sphagnum peat moss, brown in colour, with a pH of 5.0-5.5 and suitable for horticultural purposes. Shredded particles shall not exceed 16 mm in size. It shall be baled and free of decomposed colloidal residue, wood, sulphur, iron, containing minimum 60% organic matter by weight and moisture content not exceeding 15%. Sphagnum peat moss to have a natural pH and is not to be amended with lime.
- .3 Sand: washed coarse silica sand, medium to course textured.
- .4 Shredded Leaf Compost: shall be fully cured, commercial source of leaf compost with a carbon: nitrogen ratio no greater than 33:1. No odor or steam shall emanate from the compost. Compost shall be capable of passing screen size of 10 mm or less.
- .5 Limestone:
  - .1 Ground agricultural limestone.
  - .2 Gradation requirements: percentage passing by weight, 90% passing 1.0 mm sieve, 50% passing 0.125 mm sieve.
- .6 Sulphur: granular horticultural grade sulphur, 0-0-0-90, TIGER 90CR sulphur or approved equal.

## 2.03 SOURCE QUALITY CONTROL

- .1 Advise NCC Representative of sources of topsoil and planting soil to be utilized when the contract is signed giving sufficient time for testing.
- .2 Contractor is responsible for amendments to supply topsoil as specified.
- .3 Soil testing by recognized testing facility for PH, P and K, and organic matter.
- .4 Testing of topsoil will be carried out by testing laboratory designated by NCC Representative.
  - .1 Soil sampling, testing and analysis to be in accordance with Provincial standards.

## 3 EXECUTION

### 3.01 STRIPPING OF TOPSOIL

- .1 Begin topsoil stripping of areas as indicated after area has been cleared of vegetation and removed from site.
- .2 Strip topsoil to depths as shown on drawings.
  - .1 Avoid mixing topsoil with subsoil where textural quality will be moved outside acceptable range of intended application.
- .3 Stockpile in locations as directed by NCC Representative.
  - .1 Stockpile height not to exceed 1 m.
- .4 Disposal of unused topsoil is to be in an environmentally responsible manner but not used as

landfill.

- .5 Protect stockpiles from contamination and compaction.

### **3.02 PREPARATION OF EXISTING GRADE**

- .1 Verify that grades are correct.
  - .1 If discrepancies occur, notify NCC Representative and do not commence work until instructed by NCC Representative.
- .2 Grade soil, eliminating uneven areas and low spots, ensuring positive drainage.
- .3 Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials.
  - .1 Remove soil contaminated with calcium chloride, toxic materials and petroleum products as specified in Appendix A (MMF).
  - .2 Remove debris which protrudes more than 75 mm above surface.
  - .3 Dispose of removed material off site.
- .4 Cultivate entire area which is to receive topsoil to minimum depth of 150 mm.
  - .1 Cross cultivate those areas where equipment used for hauling and spreading has compacted soil.

### **3.03 PLACING AND SPREADING OF TOPSOIL/PLANTING SOIL**

- .1 Place topsoil after NCC Representative has accepted subgrade.
- .2 Spread topsoil in uniform layers not exceeding 150 mm.
- .3 Spread topsoil to following minimum depths after settlement.
  - .2 150 mm for sodded areas.
  - .3 450 mm for shrub and perennials.
- .4 Manually spread topsoil/planting soil around trees, shrubs and obstacles.

### **3.04 FINISH GRADING**

- .1 Fine grade entire soil area to contours and elevations as indicated on drawings or as directed. Unless otherwise indicated, eliminate rough spots and low areas to ensure positive surface drainage.
- .2 Roll topsoil with 50 kg roller, minimum 900 mm wide, to compact and retain surface and ensure a stable planting medium for plant material.
- .3 Prepare loose friable bed by means of cultivation and subsequent raking.

### **3.05 ACCEPTANCE**

- .1 NCC Representative will inspect and test topsoil in place and determine acceptance of material, depth of topsoil and finish grading.

**3.06 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

**END OF SECTION**

## 1 GENERAL

### 1.01 RELATED REQUIREMENTS

- .1 Section 32 91 19.13 - Topsoil Placement and Grading  
Section 32 93 20 – Plant Warranty and Maintenance.

### 1.02 SCHEDULING

- .1 Scheduling:
  - .1 Schedule sod laying to coincide with preparation of soil surface.
  - .2 Schedule sod installation when frost is not present in ground.

### 1.03 QUALITY ASSURANCE

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures the following:
  - .1 Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements of seed mix, seed purity and sod quality.
  - .2 Certified reports showing compliance with specified performance characteristics and physical properties of seed mix, seed purity, and sod quality
- .2 Qualifications:
  - .1 Landscape Contractor: to be a Member of Landscape Ontario or the Association des Paysagistes Professionnels du Québec.

## 2 PRODUCTS

### 2.01 MATERIALS

- .1 Number One Turf Grass Nursery Sod: sod that has been especially sown and cultivated in nursery fields as turf grass crop.
  - .1 Turf Grass Nursery Sod types:
    - .1 Sport Turf supplied by Mountainview: 25% Sudden Impact Kentucky Bluegrass, 25% Bluechip Kentucky Bluegrass, 25% Rush Kentucky Bluegrass, 25% Cheetah Kentucky Bluegrass, or approved equivalent.
    - .2 #1 Kentucky Bluegrass/Fescue/Ryegrass Sod: Nursery Sod grown solely from seed in the following proportions:
      - .1 30% Sudden Impact Kentucky Bluegrass
      - .2 40% SR5250 Creeping Red Fescue.
      - .3 30% Arctic Perennial Ryegrass
  - .2 Turf Grass Nursery Sod quality:

- .1 Density of sod sufficient so that no soil is visible from height of 1500 mm when mown to height of 75 mm.
  - .2 Mowing height limit: 75 to 100 mm.
  - .3 Soil portion of sod: 15 mm in thickness.
- .2 Water:
    - .1 Potable water supplied by Contractor.
  - .3 Fertilizer:
    - .1 Natural fertilizer 100% hen manure. Organic multipurpose natural fertilizer 5-3-2 from Acti-Sol Inc.

## **2.02 SOURCE QUALITY CONTROL**

- .1 Obtain written approval from NCC Representative of sod at source.
- .2 When proposed source of sod is approved, use no other source without written authorization from NCC Representative.

## **3 EXECUTION**

### **3.01 PREPARATION**

- .1 Verify that grades are correct and prepared in accordance with Section 32 91 19.13 - Topsoil Placement and Grading. If discrepancies occur, notify NCC Representative and commence work when instructed by NCC Representative.
- .2 Do not perform work under adverse field conditions such as frozen soil, excessively wet soil or soil covered with snow, ice, or standing water.
- .3 Fine grade surface free of humps and hollows to smooth, even grade, to contours and elevations indicated, to tolerance of plus or minus 8 mm, for Turf Grass Nursery Sod, surface to drain naturally.
- .4 Remove and dispose of weeds; debris; stones 50 mm in diameter and larger; soil contaminated by oil, gasoline and other deleterious materials; off site in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .5 Cultivate fine grade approved by Contract Administrator to 25 mm depth immediately prior to sodding.
- .6 Before sodding staging areas, aerate compacted soil to a depth of 150mm.

### **3.02 SOD PLACEMENT**

- .1 Ensure sod placement is done by the Landscape Contractor.
- .2 Lay sod within 24 hours of being lifted from the nursery if air temperature exceeds 20 degrees C.
- .3 Lay sod sections in rows, joints staggered. Butt sections closely without overlapping or leaving gaps between sections. Cut out irregular or thin sections with sharp implements. Avoid small



pieces.

- .4 Overlapping sod will not be accepted, including at the joint between old and new sod.
- .5 Roll sod as directed by NCC Representative. Provide close contact between sod and soil by light rolling. Use of heavy roller to correct irregularities in grade is not permitted.

### **3.03 FERTILIZING PROGRAM**

- .1 Apply the fertilizer in spring following acceptance of the work.

### **3.04 MAINTENANCE DURING ESTABLISHMENT AND WARRANTY PERIODS**

- .1 Perform following operations from time of installation until acceptance:
  - .1 Water sodded areas in sufficient quantities and at frequency required to maintain optimum soil moisture condition to depth of 75 to 100 mm.
  - .2 Cut grass to 100 mm when or prior to it reaching height of 120 mm. Remove clippings which will smother grassed areas as directed by NCC Representative.
  - .3 Maintain sodded areas weed 95 % free.
  - .4 Fertilize areas in accordance with fertilizing program. Spread half of required amount of fertilizer in one direction and remainder at right angles and water in well.
  - .5 Repair and resod dead or bare spots to satisfaction of NCC Representative.

### **3.05 ACCEPTANCE**

- .1 Turf Grass Nursery Sod areas and Sport Turf areas will be accepted by NCC Representative provided that:
  - .1 Sodded areas are properly established.
  - .2 Sod is free of bare and dead spots.
  - .3 No surface soil is visible from height of 1500 mm when grass has been cut to height of 100 mm.
  - .4 Sodded areas have been cut minimum 2 times prior to acceptance.
- .2 Areas sodded in fall will be accepted in following spring one month after start of growing season provided acceptance conditions are fulfilled.

**END OF SECTION**

## **1 GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Section 32 91 19.13 - Topsoil Placement and Grading.
- .2 Section 32 93 20 – Plant Material Maintenance and Warranty
- .3 Section 32 01 90.33 – Tree and Shrub Preservation

### **1.02 REFERENCE STANDARDS**

- .1 Agriculture and Agri-Food Canada (AAFC).
  - .1 Plant Hardiness Zones in Canada-2000.
- .2 Canadian Nursery Landscape Association (CNLA)
  - .1 Canadian Standards for Nursery Stock-latest edition.

### **1.03 ADMINISTRATIVE REQUIREMENTS**

- .1 By May 30, 2018, the Contractor must provide the NCC Representative with confirmation of the supplier's order for the plants.
  - .1 The confirmation of the plant order must include the following information:
    - 1. The name and address of the supplier;
    - 2. For each species of plant: quantity, height / caliber, scientific name, rooting type
- .2 Scheduling: 7 days in advance of shipment of plant material, obtain approval from NCC Representative.
  - .1 Schedule to include:
    - .1 Quantity, species and size plant material.
    - .2 Shipping dates.
    - .3 Arrival dates on site.
    - .4 Planting Dates.

### **1.04 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit product data for fertilizer, anti-desiccant, and mulch.
- .3 Samples:
  - .1 Submit samples of mulch.

### **1.05 QUALITY ASSURANCE**

- .1 Qualifications:
  - .1 Landscape Contractor: to be a Member of Landscape Ontario or the Association des Paysagistes Professionnels du Québec.

## **1.06 DELIVERY, STORAGE AND HANDLING**

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labeled with the species name for the plants, manufacturer's name and address for other products.
  - .1 Abundant watering must be done before the plants leave the nursery or the contractor's shop to the job sites. Regular watering should be done when the plants are stored to keep the root systems moist.
  - .2 Protect plant material from frost, excessive heat, wind and sun during delivery.
  - .3 Protect plant material from damage during transportation:
    - .1 Delivery distance is less than 30 km and vehicle travels at speeds under 80 km/h, tie tarpaulins around plants or over vehicle box.
    - .2 Delivery distance exceeds 30 km or vehicle travels at speeds over 80 km/h, use enclosed vehicle where practical.
    - .3 Protect foliage and root balls using anti-desiccants and tarpaulins, where use of enclosed vehicle is impractical due to size and weight of plant material.
- .2 Storage and Handling Requirements:
  - .1 Immediately store and protect plant material which will not be installed within 1 hour in accordance with supplier's written recommendations and after arrival at site in storage location approved by NCC Representative.
  - .2 Protect stored plant material from frost, wind and sun and as follows:
    - .1 For bare root plant material, preserve moisture around roots by heeling-in or burying roots in sand or topsoil and watering to full depth of root zone.
    - .2 For pots and containers, maintain moisture level in containers. Heel-in fibre pots.
    - .3 For balled and burlapped and wire basket root balls, place to protect branches from damage. Maintain moisture level in root zones.

## **2 PRODUCTS**

### **2.01 PLANT MATERIAL**

- .1 Type of root preparation, sizing, grading and quality: comply to Canadian Standards for Nursery Stock.
- .2 Plant material: free of disease, insects, defects or injuries and structurally sound with strong fibrous root system.
- .3 Trees: with straight trunks, well and characteristically branched for species.

### **2.02 DIMENSIONS OF PLANT CONTAINERS**

- .1 Plants supplied in containers must have a good development of their root systems. Freshly planted plants and plants with spiral roots inside the containers are refused. The size of the containers must correspond to the development of the plants they contain.

### **2.03 WATER**

- .1 Free of impurities that would inhibit plant growth.

### **2.04 MULCH**

- .1 Composted Pine Mulch free of small branches and leaves. Bark chip: varying in size from 25 to 50 mm in diameter, from bark of coniferous trees.

## **2.05 FERTILIZER**

- .1 Mycorrhizal inoculant for planting: Mike Pro Landscape from Premier Tech

## **2.06 SOURCE QUALITY CONTROL**

- .1 No planting must be carried out by the Contractor until the plants have been verified and accepted by the NCC's Landscape Architect.
- .2 The minimum heights prescribed for the species of plants must be reached in the autumn before planting. No equivalence is accepted.
- .3 Plants can be inspected by the grower before being sent to the site. Plant selection by the NCC Landscape Architect does not relieve the contractor of the guarantee inherent in the planting work.
- .4 Imported plant material must be accompanied with necessary permits and import licenses. Conform to Federal, Provincial or Territorial regulations.
- .5 The Contractor must obtain the written approval of the NCC Landscape Architect for any substitutions.

## **3 EXECUTION**

### **3.01 PRE-PLANTING PREPARATION**

- .1 Proceed only after receipt of written acceptability of plant material from NCC Representative.
- .2 Remove damaged roots and branches from plant material in accordance with Canadian Standards for Nursery Stock.

### **3.02 EXCAVATION AND PREPARATION OF PLANTING BEDS**

- .2 Preparation of planting beds in accordance with Section 32 91 19.13 - Topsoil Placement and Grading.
- .3 Digging of planting beds:
  - .1 Stake out location and obtain approval from NCC Representative prior to excavating.
  - .2 Excavate to depth and width as indicated on drawings.
  - .3 Remove subsoil, rocks, roots, debris and toxic material from excavated material that will be used as planting soil for trees and individual shrubs. Dispose of excess material.
  - .4 Scarify sides of planting hole.
  - .5 Remove water which enters excavations prior to planting. Notify NCC Representative if water source is ground water.

### **3.03 FERTILIZER**

- .1 Place a generous handful of mycorrhiza in the bottom of each hole and apply directly to the roots. The product must be in contact with the roots before filling.

### **3.04 PLANTING**

- .1 For bare root stock, place 50 mm backfill soil in bottom of hole.

- .1 Plant trees and shrubs with roots placed straight out in hole.
- .2 For jute burlapped root balls, cut away top one third of wrapping and wire basket without damaging root ball.
  - .1 Do not pull burlap or rope from under root ball.
- .3 For container stock or root balls in non-degradable wrapping, remove entire container or wrapping without damaging root ball.
- .4 Plant vertically in locations as indicated.
  - .1 Orient plant material to give best appearance in relation to structure, roads and walks.
- .5 For trees and shrubs:
  - .1 Backfill soil in 150 mm lifts.
    - .1 Tamp each lift to eliminate air pockets.
    - .2 When two thirds of depth of planting pit has been backfilled, fill remaining space with water.
    - .3 After water has penetrated into soil, backfill to finish grade.
  - .2 Form watering saucer as indicated.
- .6 For ground covers, backfill soil evenly to finish grade and tamp to eliminate air pockets.
- .7 Water plant material thoroughly.
- .8 After soil settlement has occurred, fill with soil to finish grade.

### **3.05 MULCHING**

- .1 Ensure soil settlement has been corrected prior to mulching.
- .2 Spread mulch as directed by NCC Representative.

### **3.06 MAINTENANCE DURING ESTABLISHMENT AND WARRANTY PERIOD**

- .1 Refer to Section 32 93 20 - Plant Material Maintenance and Warranty

### **3.07 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**

## **PART 1 - GENERAL**

### 1.1 Related Sections

- .1 Section 32 93 10 Trees, Shrubs and Groundcover Planting

### 1.2 Plant Warranty

- .1 All plant material shall be warranted for two years from the date of substantial performance.
- .2 The warranty shall cover any defects in materials and workmanship.
- .3 A warranty inspection will be carried out at the end of the warranty period.
- .4 The warranty will be extended for an additional year on replacement plant material.

### 1.3 Duration of maintenance and warranty

- .1 Plant material maintenance shall begin immediately after each portion of planting has been completed and shall continue till the end of the warranty period to the satisfaction of the NCC Representant.

## **PART 2 - PRODUCTS**

### 2.1 Materials

- .1 Mulch: shall be in conformance with Section 32 93 10.
- .2 Pruning Tools: shall be designed specifically for horticultural purposes and shall be clean, sharp and in proper, safe, working order. Pruning equipment shall be capable of producing clean, flush cuts without tearing or fraying the bark.
- .3 Water: shall be free from any contaminants which could adversely affect plant growth.
- .4 Fertilizer : Natural fertilizer made from hen manure and bone meal. Organic transplanting fertilizer 4-10-2 from Acti-Sol Inc.

## **PART 3 - EXECUTION**

### 3.1 Operational Constraints

- .1 Do each maintenance operation continuously and complete within a reasonable time period.
- .2 No maintenance equipment, materials or other miscellaneous items may be stored on site unless approved by the NCC Representant.
- .3 All debris, waste and other extraneous material resulting from the maintenance operation shall be removed from the site daily upon completion of maintenance, unless otherwise directed or approved by the NCC Representant.

- .4 The Contractor shall be fully acquainted with all relevant Federal, Provincial and Municipal By-laws and Regulatory Codes relating to the work of this contract, and will be required to comply with such by-laws and codes without extra compensation.
- .5 Notify the NCC Representant immediately of damage incurred by pest, disease, mechanical or vandalism.
- .6 Minimize excessive trampling and compaction of soil during maintenance operations.

### 3.2 Interim Replacement of Plant Material

- .1 Throughout the maintenance and warranty period, units of plant material that are found to be unacceptable will be replaced by the Contractor. Replace material within one month of notification of the need for replacement unless otherwise directed by the NCC Representant.
- .2 At the discretion of the NCC Representant, plant material that is identified as a third or more dead or in a poor or diseased condition shall be immediately removed from the site.

### 3.3 Watering

- .1 Water all plant material immediately after installation. Thereafter, ensure that plants receive adequate water for the duration of the maintenance and warranty period.
- .2 At a minimum, the Contractor will inspect all the beds after four days without precipitation and subsequently every two days until rainfall, to ensure the soil is moist and friable. Water as required to ensure a minimum moisture penetration of 300 mm.
- .3 Watering will not be carried out between the hours of 10:00 a.m. and 3:00 p.m. The applied water temperature will be a maximum of 10°C below the ambient air temperature.
- .4 Ensure the root zone is thoroughly saturated during each watering operation.
- .5 For evergreen plant material (cedars at Dow's Lake node), water thoroughly in late fall prior to freeze-up to saturate soil around root system.
- .6 Repair any damage caused by watering operations.

### 3.4 Weeding

- .1 All weeds, dead plants, leaves, branches and paper within planting beds shall be removed by hand and disposed of off the Contract site.
- .2 Weeds shall not exceed 5 cm in height between weedings.
- .3 Ensure the entire root system of weeds is removed and not just the above ground growth.
- .4 Weeding shall occur:
  - .1 As often as required after the snow has melted in Spring until the end of June. Thereafter, weed a minimum every two weeks until the snow falls.
  - .2 A final weeding shall be completed immediately prior to the final warranty inspection.

- .5 The application of herbicides or mechanical weed removers is prohibited.
- .6 Ensure planting beds are weed free prior to the application of mulch material.
- 3.5 Mulch
  - .1 Replace or re-spread damaged, missing or disturbed mulch to maintain the thickness required.
- 3.6 Pruning and Deadheading
  - .1 Prune off dead and injured branches in accordance with accepted horticultural practices.
  - .2 Remove damaged leaves and faded flowers unless otherwise directed. Retain spent flowers of plants with attractive seedheads.
- 3.7 Garbage Removal
  - .1 On a bi-weekly basis, keep planting beds free of garbage, paper and other foreign debris. Remove garbage off-site.
- 3.8 Pest Management
  - .1 Monitor plant material throughout the warranty period for any sign of disease or insect problems. Practice integrated pest management.
  - .2 The use of pesticides shall not be permitted unless approved by NCC Representative and in accordance with Federal, Provincial and Municipal regulations.
- 3.9 Fertilizer
  - 1. Each Spring of the warranty period, apply fertilizer in the beds for vigorous growth.
  - 2. Prior to the application, submit technical sheet with application rate by square meter to NCC Representative for approval.
- 3.10 Winter Preparation
  - .1 In the fall, the Contractor is responsible for completion of the following:
    - .1 Ensure all plant material is well watered before freeze-up.
    - .2 At the end of November, the following species are to be cut back to 100 mm above ground once plants are no longer attractive (when they turn yellow or black or are damaged by frost. All other perennials are to be left in place over the winter, including their seed heads.
      - .1 *Baptisia australis*
      - .2 *Geranium macrorrhizum* (flower stalks only)
      - .3 *Geum triflorum*
      - .4 *Iris vericolor*
    - .3 Species to be left over winter:
      - .1 *Bouteloua gracilis*
      - .2 *Calamagrostis canadensis*
      - .3 *Carex elata aurea*



- .4 *Carex glauca*
- .5 *Carex pensylvanica*
- .6 *Deschampsia cepitosa*
- .7 *Liatris spicata*
- .8 *Sedum telephium 'Matrona'*
- .9 *Sporobulus heterolepsis*
- .10 *Sorghastrum nutans*

- 4. Completely wrap all coniferous trees with burlap each fall, prior to the first major snowfall. Monitor the wrapping throughout the winter, and repair as required.

### 3.11 Spring Preparation

- .1 In the spring, the Contractor is responsible for completion of the following:

- .1 Between March 20 and April 15 of each warranty year, cut all remaining dead growth on perennials and ornamental grasses to 100 mm above ground. This work may be completed when up to 100 mm of snow is covering planting beds.

- .1 *Bouteloua gracilis*
- .2 *Calamagrostis canadensis*
- .3 *Carex elata aurea*
- .4 *Carex glauca*
- .5 *Carex pensylvanica*
- .6 *Deschampsia cepitosa*
- .7 *Liatris spicata*
- .8 *Sedum telephium 'Matrona'*
- .9 *Sporobulus heterolepsis*
- .10 *Sorghastrum nutans*

### 3.12 Incidental Maintenance

- .1 The Contractor shall in general be responsible for any incidental maintenance to ensure healthy plant growth and a satisfactory appearance of plant material.

### 3.13 Reinstatement

- .1 Any damage to vegetation, hard surfaces, structures or services caused as a result of the Contractor's work methods and practices for plant material maintenance shall be reinstated or repaired to the satisfaction of the NCC Representant. The cost of such reinstatement or repair shall be solely at the Contractor's expense.

### 3.14 Final Warranty Inspection

- .1 A one-time inspection of all plant material shall be carried out by the NCC Representant upon completion of the maintenance and warranty period.

Plant material shall be **acceptable** when it is undamaged, shows adequate growth and formation of buds, and is free from blight of any description. All planting beds and tree pits shall be free of weeds, litter and in good order.

Plant material shall be **unacceptable** when it does not meet this quality standard.

Units of plant material that are found to be unacceptable will be replaced by the Contractor at the earliest opportunity. The NCC Representant reserves the right to extend the

Contractor's maintenance and warranty responsibilities for an additional one-year for replacement plant material.

In the event that this inspection is satisfactory to the NCC Representant, and that there are no outstanding commitments to the contracted works, the Contractor will be given final approval of the maintenance and warranty requirements.

- .2 Where, in the opinion of the NCC Representant, the Contractor has failed to complete obligations as detailed in this Specification; and further, fails to rectify said deficiency within two days of written notification from the NCC Representant, the NCC Representant reserves the right to retain others to complete the work and deduct incurred expenses from monies owing to the Contractor.

**END OF SECTION**

## **GENERAL**

### **1.01 RELATED REQUIREMENTS**

- .1 Appendix D Interpretive Elements Installation Specifications
  - .1 2380PCH\_VS\_0001 (Vertical Elements)
  - .2 2380PCH\_IS\_0000 (Interpretive Structures)
  - .3 2380PCH\_WB\_0000 (OCC Wall Brackets)
  - .4 2380PCH\_CSC\_0000 (Corten Steel Canoe)
  - .5 2380PCH\_HP\_0010 (Heel Post Support Brackets)
  - .6 Heel Post General Assembly
  - .7 Hardware Supply and Installation List
- .2 03 30 00 Cast In Place Concrete

### **1.02 SCHEDULING AND PREPARATION**

- .1 Schedule installation of interpretive elements as late as possible to prevent damage during construction.
- .2 Obtain anchor bolt template from Dymech Engineering Inc (Dymech) when installing anchor bolts in concrete vertical marker footings.
- .3 Completion of unit paver installation on concrete vertical marker footings must occur after installation of vertical markers but before graphic panels are attached.

### **1.03 QUALITY ASSURANCE**

- .1 Installation of interpretive elements to be by fabricator of interpretive elements: Dymech Engineering Inc., 1359 Coker Street Greely, Ontario, K4P 1A1. Contact: Mike Surowiec 613-821-2917

## **2 PRODUCTS**

### **2.01 ANCHORS**

- .1 See Hardware and Supply Installation List in Appendix D
- .2 All hardware not supplied by Dymech shall be supplied by the Contractor.

### **3 EXECUTION**

#### **3.02 HANDLING AND STORAGE**

- .1 Inspect products to ensure they have not been damaged during transport and the protective wrapping is in good condition.
- .2 Store panels horizontally and fully supported. Ensure you have protection on top of each piece to protect against damages while in storage.
- .3 Do not leave wrapped products in direct sunlight, in hot or humid environments or near a heat source.
- .4 Never slide panels against one another.
- .5 Keep panels clean.

#### **3.03 INSTALLATION**

- .1 Perform work according to construction details and Interpretive Element Installation Specifications, Appendix D.

#### **3.04 DAMAGE**

- .1 Interpretive elements damaged during installation by Dymech will be replaced by Dymech at no additional cost to the NCC and PCH.
- .2 Interpretive elements damaged after Dymech has completed installation will be replaced by the contractor at no additional cost to the NCC and PCH.

#### **3.05 CLEANING**

- .1 Use a soft cloth and soapy water for surfaces. Do not use abrasive products or materials, highly acidic cleaners or cleaners with unknown chemicals.
- .2 Once cleaned, rinse off any excess soap with water and then dry with a non-abrasive cloth.
- .3 For tough stains, use a mild cleaning solution, such as Windex, along with a damp cloth. Rinse and dry.
- .4 For greasy, oily or glue stains, you can use a rag dipped in rubbing alcohol. Rinse and dry.
- .5 To remove graffiti, use "DISAPPEAR Organic Graffiti/Adhesive Remover" ([www.ndclean.com](http://www.ndclean.com)). For very tough marks, use "Professional's Choice Shadow Max" ([www.graffitisolutions.com](http://www.graffitisolutions.com)). Rinse with warm water and wipe dry with a soft cloth.
- 6 Never sand, wax or varnish.

### 3.06 ACCEPTANCE

- .1 Interpretive elements will be accepted by the NCC Representative after demobilization provided:
  - .1 No damage has occurred during construction.
  - .2 Panels are in accurate locations.
  - .3 All interpretive elements have been cleaned.

**END OF SECTION**

**APPENDIX A**

MMF: BASIC PROJECT MITIGATION MEASURES FORM

# MMF: Basic Project Mitigation Measures Form

This template is meant to be used by Authorities in determining the significance of potential adverse environmental effects of a proposed basic project, as well as outlining the associated mitigation measures.

## Section A: Project Identification

<b>Project Title</b>	<b>Rideau Canal Interpretive Nodes Project</b>
<b>Project Location</b>	<b>Ottawa, Ontario</b>
<b>Lead Authority</b>	<b>National Capital Commission</b>
<b>Contact Name:</b>	<b>Juan Galindez</b>
<b>Title:</b>	<b>Environment Officer</b>
<b>Telephone No.</b>	<b>613-239-5678 extension 5523</b>
<b>Email address:</b>	<b><a href="mailto:juan.galindez@ncc-ccn.ca">juan.galindez@ncc-ccn.ca</a></b>
<b>Other Authority(ies)</b>	<b>Canadian Heritage (PCH), Parks Canada (PC), Agriculture and Agri-Food Canada (AAFC) Carrie Hurst (PCH), <a href="mailto:carrie.hurst@canada.ca">carrie.hurst@canada.ca</a>; Harry Szeto (PC), <a href="mailto:harry.szeto@pc.gc.ca">harry.szeto@pc.gc.ca</a>; James Winkel (AAFC), <a href="mailto:james.winkel@agr.gc.ca">james.winkel@agr.gc.ca</a></b>
<b>Contact Information (if required)</b>	

## Section B: Project Description and Description of the Environment

<b>Project Description:</b>	<p>The proposed Rideau Canal interpretive nodes project entails the construction of seven interpretive nodes along the shorelines of the Rideau Canal from Hartwell's Locks to the Ottawa Locks. In accordance with the strong heritage component of the site, the purpose of the interpretive nodes project is the creation of a new visitor experience which captures the symbolic and cultural importance of the Rideau Canal as a UNESCO World Heritage Site.</p> <p>The objective of the project is to ensure that visitors situate and understand the Rideau Canal within the canon of UNESCO Word Heritage Sites; understand why the Rideau Canal was included on the World Heritage List; understand the Canal as the technological achievement it was for its time; recognize the shifts in the Canal's purpose over time and its ongoing relevance to the changing needs of society; and expand their thinking from the immediate site to the broader Capital, country and world.</p> <p>The selected locations for the interpretation nodes include the Ottawa Locks, the Ottawa Convention Centre (OCC), the Pretoria Bridge, Lansdowne Park, Dows Lake, the Central Experimental Farm's (CEF) arboretum area, and Hartwell's Locks. The node locations were selected based on existing high traffic areas of the Rideau Canal where the congregation of visitors is expected and possible and in proximity to the Rideau Canal pathways in order to prevent conflicts between visitors and bypassers. Excluding</p>
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the OCC, all the interpretation nodes are along the western shoreline of the Rideau Canal. The project also entails the removal of 16 existing interpretive panels from 9 sites adjacent to the Rideau Canal.

The undertaking meets the definition of project under CEAA 2012 and as such is subject to the determination required under section 67 of CEAA 2012 by four federal authorities who are the project proponents: Canadian Heritage (PCH), Parks Canada (Parks), Agriculture and Agri-Food Canada (AAFC), and the NCC. Although not a federal authority, the City of Ottawa (the City), and three federal authorities, PCH, AAFC and Parks, are providing financial assistance to enable the project to proceed. Parks, AAFC and the NCC are also granting an interest in land to enable the undertaking to proceed. The NCC has an additional trigger under section 67 for this project stemming from the federal approval required under the *National Capital Act* for the undertaking. The four federal authorities and the City signed a Memorandum of Agreement (MOA) in March 2015 outlining their responsibilities. Among the responsibilities assigned to the NCC are the coordination, as lead authority, of the federal environmental assessment of this project, and the implementation of the actual undertaking.

Project components include excavation to an approximate depth of 1.5m to install the foundation of the new interpretive elements of the nodes which entail design structures, embedded artifacts, and interpretive panels that derive from the Rideau Canal's historic features of national historic significance, landscaping and ground treatments, and the removal of existing panels, metal supports, some asphalt, concrete and excess soil, some granite cobblestone, perennial and shrubs from existing interpretive panels. The foundation of the existing interpretive panels will be left in place at an approximate depth of 6 inches below ground level. The 6 inch deep holes will be capped with a clean layer of soil / vegetated topsoil. While the project does not involve in-water works, all the works will be undertaken in close proximity to the Rideau Canal, a fish habitat.

Limestone, concrete, wood/lumber (cedar posts), painted metal, stainless and corten steel are among the materials to be used at the new interpretive nodes.

The works are anticipated to commence in the fall 2016.

**Description of the Environment (if applicable):**

The Rideau Canal has a UNESCO World Heritage Site designation. The UNESCO designation includes all the main elements of the original Canal as well as later changes in the shape of watercourses, dams, bridges, fortifications, lock stations and related archaeological resources. All the elements of the Rideau Canal area, also designated as a National Historic Site of Canada by Parks Canada (canal, associated buildings and forts), are protected as national historic sites under the *Historic Sites and Monuments Act*. In addition, a buffer zone and a Management Plan, the Canal Plan, have been established and put in place underpinned by the *Historic Canals Regulations* which provide enforcement mechanisms for any activities that may adversely impact the cultural values of the Canal.

The lands where the proposed interpretive nodes will be installed are located adjacent to pathways, manicured lawns, deciduous and coniferous trees, shrubs, and floral beds, which are used as recreational and open space.

The Rideau Canal is home to numerous species at risk (SAR) listed federally and/or provincially including birds, plants, amphibians, reptiles, mammals and fish. Blanding's Turtle, Eastern Musk Turtle, Northern Map Turtle, and Snapping Turtle are among the reptile species listed federally and/or provincially as SAR observed within the Rideau



Canal segment where the new interpretive nodes are proposed. Pugnose Shiner, Bridle Shiner, Northern Brook Lamprey, and American Eel are fish species federally and/or provincially listed as SAR also recorded in the Rideau Canal. However, no trees or vegetation located on or near the new interpretive nodes are listed as SAR or are anticipated to be removed or adversely impacted. Some minor vegetation removal will be undertaken. Ornamental grass, perennials and shrubs will be planted at the interpretive nodes.

Three sites, the Ottawa Locks, the Pretoria Bridge and the CEF's arboretum area nodes, were deemed to have high archeological potential. Paterson Group Inc. (Paterson) was retained to undertake a Stage 2 archaeological investigation.

No significant archaeological deposits were observed at the Ottawa Locks node to the 1.5 m construction depth. However, significant historic deposits may be encountered at excavation beyond the 1.3 m depth.

No significant archaeological deposits were observed at the Pretoria Bridge and CEF's arboretum area nodes. Based on these findings, Paterson recommended no further archaeological testing at these nodes.

Contaminants of concern were identified at the Dows Lake and the OCC nodes. For the Dows Lake node, the contamination was found in fill material of samples taken from adjacent land. For the OCC node, the site should be considered to be contaminated due to its former land-use as a railway / railyard.

At Dows Lake, the contaminants of concern include metals (antimony, arsenic, copper, lead, zinc); Petroleum Hydrocarbons (PHC); and Polycyclic Aromatic Hydrocarbons (PAH). The metals and PAH soil contamination of this site stems from its former land use for lumber and railyards and as a landfill. The site has had a risk assessment completed.

At the OCC, the contaminants of concern include metals (lead, arsenic, zinc, antimony, lead, mercury); PHC; and PAH.

The Ottawa Locks lands are not managed by the NCC. However, Parks indicated that the soils are not known to be contaminated at this location. Unless additional information is provided by Parks, soil and groundwater could be considered clean.

There is no indication of soil contamination at the Pretoria node area. Soil and groundwater could be considered clean.

Because there is no evidence of contamination within the Lansdowne node area, soil and groundwater could be considered clean unless evidence of contamination is encountered during excavation. However, NCC experts also indicated that there is contaminated soil and groundwater at the adjacent Lansdowne Park which is located south-west of the node, so encountering contamination is a possibility at this site.

A Phase I ESA was completed for CEF's arboretum area node in 2006. No areas of environmental concern were identified. Soil and groundwater could be considered clean at this node.

Site assessments have been completed on adjacent lands to the Hartwell's Locks, managed by Parks, and no areas of environmental concern were noted. When contacted, Parks did not identify any contaminants of concern in soil and groundwater.

Based on the information available and on the fact that all the environmental effects can be managed by established and effective mitigation measures, the proposed undertaking has been classified as a basic project.

## Section C: Resources

### Resources consulted

Advice provided by NCC Experts.

NCC GIS Database.

NCC AIMT Database.

Report on *Fill Investigation, Colonel By Drive, Laurier Avenue to Government Conference Centre, Ottawa, Ontario*, prepared by Golder Associates, dated February 2011.

Phase I/II ESA for the Central Experimental Farm (including the Arboretum), prepared by Trow Associates Inc., dated March 2004

Phase I ESA report on *Vacant Lot of Land Prince of Wales Drive in the Vicinity of Dows Lake Shoreline, Ottawa, Ontario*, prepared by Trow Associates Inc., dated December 2006.

Final report on *Screening-Level Risk Assessment Former Dow's Lake Landfill and Commissioner's Park, Ottawa, Ontario*, prepared by Intera Engineering Ltd., dated October 2005.

OMNRF Database, 2016.

DFO website on *Measures to Avoid Causing Harm to Fish and Fish Habitat* when conducting a project near water.

Technical Drawings prepared by Lashley + Associates, reviewed by the NCC, dated March 21, 2016.

Memorandums named *Rideau Canal Archaeological Assessment - Ottawa Locks, Pretoria Bridge and Central Experimental Farm*, prepared by Paterson Group Inc., dated December 17, 2015.

*Rideau Canal Promenade – Consolidated Interpretive Plan*, Draft dated August 2013.

Interviews with Sylvie Lagueux, NCC Project Manager, Landscape Architect, 2015 and 2016.

Interviews held with representatives of local aboriginal groups from 2010 to 2016:

- Chief Kirby Whiteduck, B.A. (Hon.) in Anthropology from York University – Chief, Pikwakanagan Reserve and Author of *Algonquin Traditional Culture* published in 2002 Council of the Algonquins of Pikwàkanagàn;

- Ron Bernard – Member, Tribal Council, Pikwakanagan. Recipient – 2005 Anishinabek Lifetime Achievement Award;
- Aimee Bailey- Executive Director of Omàmiwinini Pimàdjowin (OP), Pikwakanagan;
- Anita Tenasco – Director, Kitigan Zibi Education Sector;
- Rene Tenasco – Aboriginal liaison, National Capital Commission;
- Janet Stavinga – Algonquins of Ontario, Executive Director;
- Christine Luskavitch – Algonquins of Ontario;
- Joan Holmes – M.A. Canadian Studies;
- Dr. Jean-Luc Pilon, Curator, Central Archeology, Canadian Museum of History;
- Ian Badgely, Archeologist, National Capital Commission;
- Jean-Pierre Morin, Historian, Aboriginal Affairs and Northern Development Canada

Letter from the Algonquins of Ontario to Jean-François Trepanier (NCC (Acting) CEO), dated September 19, 2013; Subject: *Rideau Canal Promenade – Creating and Securing Placeholders for Algonquin-themed Commemorative Features*. (See Annex A)

Email from Katharine Lepora (PCH) to Ron Bernard (Algonquins of Pikwàkanagàn), Anita and Rene Tenasco, dated July 7, 2015; Subject: *Rideau Canal Promenade texts*. (See Annex B).

Email from Ron Bernard (Algonquins of Pikwàkanagàn) to Katharine Lepora (PCH), dated February 15, 2016; Subject: *Rideau Canal Promenade exhibit text*. (See Annex C)

Email from Janik Cazabon (PCH) to Juan Galindez (NCC), dated September 23, 2016; Subject: *Determination on the obligation to consult*. (See Annex D)

## Section D: Mitigation Measures Requirement

Check the following box if no mitigation measures are required. If mitigation measure are required, proceed to section E.

<input type="checkbox"/>	<b>No mitigation measures are required as one or more of the following conditions apply.</b>	
	<i>Continue to Section F. Do not complete Section E.</i>	
	<input type="checkbox"/>	<b>Potential impacts are limited to the interior of a building</b>
	<input type="checkbox"/>	<b>There are no potential adverse biophysical and/or socio economic effects</b>

## Section E: Identify Environmental Effects & Mitigation Measures

Summarize the potential adverse environmental effects as well as any corresponding effective and established mitigation measures which will be implemented should the project proceed. Establish if the

environmental effect is biophysical (B.P.) and/or socio-economic (S.E.) by checking the corresponding box for each completed row. Consult Step 3a of the Guide for help determining what constitutes biophysical and socio-economic effects. Add rows as needed.

Environmental Effect	B.P.	S.E.	Effective and Established Mitigation Measure
Archaeology	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>- NCC Project Manager (NCC-PM) must ensure that archaeological monitoring is conducted by a licensed professional archaeologist during all construction activities at the Ottawa Locks as significant historic deposits may be encountered, particularly at excavation beyond 1.3 m depth. If excavation is to be undertaken beyond the limits investigated under the foregoing assessment, NCC-PM will ensure that the recommended archaeological review is conducted prior to the works.</p> <p>- If excavation is to be undertaken beyond the limits investigated under the archaeological investigation conducted Pretoria Bridge and CEF's arboretum area, NCC-PM shall ensure that an archaeological review is conducted prior to the works.</p> <p>- If vestiges of human occupation are found during the works at any of the nodes, all activity must cease immediately and the contractor must contact Ian Badgley, NCC Archaeologist (613-239-5678 ext. 5751 / <a href="mailto:ian.badgley@ncc-ccn.ca">ian.badgley@ncc-ccn.ca</a>). A complete evaluation of archaeological artefacts may be required prior to re-starting work.</p>
Heritage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>NCC-PM will ensure that the measures identified below be appropriately implemented to protect the physical and cultural heritage of the Rideau Canal:</p> <ul style="list-style-type: none"> <li>- Work closely with PCH to ensure that the thematic framework, design concept, the development of the interpretation content, the final texts, and the final design, fabrication and delivery of all interpretive elements, including all physical structures and elements, protect and enhance the physical and cultural heritage of the Rideau Canal.</li> <li>- Limestone blocks discarded for use during the construction of the Rideau Canal are to be brought from Smith Falls and used at the nodes.</li> <li>- Limestone boulders and rocks that were used in the CEF and in the recently demolished FHBRO designated Sir John Carling Building are to be used at the new interpretive nodes.</li> <li>- Granite cobblestone from some of the existing interpretive sites to be removed are to be salvaged and reused in the new nodes.</li> </ul>
Aboriginal Peoples	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>- PCH has determined that, based on the information provided on the project, there is no legal obligation to consult with Aboriginal groups under section 35 of the <i>Constitution Act, 1982</i> for the</p>

		<p>project. The impacts to the environment from this project are expected to be very low as the land use remains essentially unchanged, therefore it is anticipated that there will be no impacts to established or potential Aboriginal rights in the area of this project. Even though there is no legal obligation to consult, it should be noted that various consultations with regards to the direction, themes, messages and content development were undertaken with two local indigenous communities in the spirit of relationship-building. The comments provided by local aboriginal groups were incorporated into the content of the new interpretive nodes.</p>
<p>Soil Quality and Quantity / Health</p>	<p><input checked="" type="checkbox"/></p>	<p><input checked="" type="checkbox"/></p> <ul style="list-style-type: none"> <li>- At Dows Lake, NCC-PM must ensure that any soil removed from this area <u>be disposed of at a licensed landfill</u>. Prior to disposal, the landfill will require that soils have a TCLP (leachate) test as per Regulation 347 to demonstrate that they are non-hazardous. The leachate test is a requirement of the landfill. It determines whether they can accept the soil or if this should be classified as “hazardous” and disposed of at specialized landfill. Workers encountering the soil should use appropriate PPE and contaminated site procedures.</li> <li>- Any engineered fill (granular A, granular B, etc.) encountered at Dows Lake and the OCC can only be considered clean material if it is not in direct contact with contaminated fill material. Otherwise, it should be considered contaminated, tested and disposed of at a licensed landfill. Prior to disposal, Contractor will develop and implement a soil management plan to ensure that any potentially contaminated excavated soil does not adversely affect adjacent soil and water.</li> <li>- At the OCC, NCC-PM shall ensure that soil and groundwater be sampled for lead, arsenic, zinc, antimony, lead, mercury; PHC; and PAH prior to disposal at a licensed facility.</li> <li>- If any visual or olfactory evidence of soil contamination is observed during excavation work at any of the nodes, work should be immediately halted and Eric Soulard, Senior Manager, NCC contaminated sites group (613-239-5678 ext. 5418 / <a href="mailto:eric.soulard@ncc-ccn.ca">eric.soulard@ncc-ccn.ca</a>), should be contacted for an onsite solution.</li> <li>- NCC-PM must ensure that contractor keeps a spill kit onsite during the entire duration of the works. In the event of an accidental spill on NCC property, contractor will be responsible for containing, cleaning out and disposing the contaminants caused by the spill in accordance with existing</li> </ul>

			<p>regulations. Contractor will also report any spill on NCC property to the NCC Emergency line at 613-239-5353 and send a copy of the spill and clean up reports to Eric Soulard, Senior Manager, NCC contaminated sites group (613-239-5678 ext. 5418 / <a href="mailto:eric.soulard@ncc-ccn.ca">eric.soulard@ncc-ccn.ca</a>). Activities including refueling, oil changes, and machinery lubrications are not permitted within 30 m of the high water mark of a waterbody.</p> <p>- Any soil brought to the Site must meet CCME Soil Quality Guidelines for Parkland land use and MOECC Soil, Ground water and Sediment Standards for use under Part XV.1 of the Environmental Protection Act, 2011 Table 1 standards for Parkland land use. In conflicts, the most stringent of the two standards will apply. Fill must not contain visual evidence of debris or other deleterious materials.</p>
Waste Reduction	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<p>- In accordance with the NCC environmental strategy objective of diverting waste by 70% (through reducing, reusing, recycling) from all NCC businesses, the NCC-PM will ensure that some materials from the existing interpretive sites, including interpretive panels, metal supports, all metal parts be salvaged and recycled at the NCC Woodroffe facility. Other materials stored at the NCC Woodroffe facility could be reused at the worksites include jersey barriers in good shape.</p>
Surface Water & Groundwater Quality and Quantity / Fish Habitat / Species at Risk	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>- NCC-PM must ensure compliance with the standard measures set out by the Department of Fisheries and Oceans Canada (DFO) to avoid harm to fish and fish habitat while conducting works near water: <a href="http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html">http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html</a></p> <p>- Overland discharge of pumped surface water / groundwater either on NCC property or within the Rideau Canal is prohibited. If required, the contractor should attain a Sanitary Sewer Agreement (SSA) from the City to allow the discharge of pumped water / groundwater into a City sewer in compliance with the City's thresholds. If a SSA is needed, the contractor will provide a copy to the project proponents.</p>
Trees - Vegetation / Migratory Birds / Species at Risk	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>- Prior to the commencement of the works, NCC-PM shall ensure that the tree - vegetation protection plan is developed to protect the Critical Root Zone and the dripline of trees located within or near the worksites and to minimize damage to vegetation is appropriately implemented and maintained as planned during the duration of the works.</p>

		<ul style="list-style-type: none"> <li>- Upon project completion, NCC-PM will be responsible for removing the devices used to protect trees and vegetation.</li> <li>- Prior to the commencement of construction work, NCC-PM will undertake a survey to identify the potential presence of invasive species at the worksites. If invasive species are identified at the worksites, NCC-PM will ensure that these are removed and disposed of at a landfill.</li> <li>- Although the works are anticipated to be undertaken outside the core breeding window of birds protected under the <i>Migratory Birds Convention Act</i> (MBCA) in the Ottawa region, April 15-August 15, this does not mean there would not be nesting birds outside of this period. To avoid adverse effects on the active nests of birds protected under the MBCA, NCC-PM will ensure that a bird nest survey is conducted prior to the vegetation removal works. A skilled and experienced avian observer shall be retained by the NCC-PM shall conduct nest surveys a maximum of 2-3 days prior to any activities on the sites being carried out. These nest surveys have to be carried out following a methodology approved by the Canadian Wildlife Service;</li> <li>- If one or more nests containing eggs or chicks of migratory birds are spotted or discovered prior to the construction activity, work must not proceed, the immediate area shall be avoided, and an action plan must be developed by the avian observer retained by the NCC-PM. The plan shall include a species-appropriate buffer zone to work and provide further information on noise levels which may not be exceeded within an appropriate distance to the nest taking into account the species of bird and the area surrounding the nest. The buffer zone shall be clearly identified to the construction crew and the construction supervisor at the site. However, in all cases, the nest itself should never be marked using flagging tape or other similar material as this increases the risk of nest predation;</li> <li>- If one or more nests containing eggs or chicks of migratory birds are spotted or discovered during the work, stop any disruptive activity in the nesting area until the establishment of a buffer zone by an experienced avian observer. This is based on a range of appropriate protection to the species and circumstances and must be maintained until the chicks have naturally left permanently the area near the nest.</li> </ul>
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			<p>- To prevent adverse effects on wildlife species federally and/or provincially listed at risk (SAR), inspect the site prior to the commencement of construction and on a daily basis during the duration of the works for the potential presence of SAR. If federally or provincially listed SAR(s) are observed onsite or nearby, the species must be left alone until they move out of the area on their own. If the species listed at risk do not leave or cannot leave the worksite on their own, the contractor must immediately stop the works and contact Madeline Austen, Head, Species at Risk, Canadian Wildlife Service, phone: 416.739.4214, <a href="mailto:Madeline.Austen@ec.gc.ca">Madeline.Austen@ec.gc.ca</a> and the Ontario Ministry of Natural Resources (OMNR) Kemptville Office at 613-258-8418 / <a href="mailto:jane.devlin@ontario.ca">jane.devlin@ontario.ca</a></p> <p>- Upon the completion of the work, NCC-PM will reinstate any disturbed soils and topsoil vegetation, will monitor the success of all plantings for 2 years for all the seven nodes, and will undertake any remedial actions that may be needed. After the 2-year period, Parks and the NCC will be responsible for the plant materials of their respective nodes (Parks will maintain the Ottawa Locks and the Hartwell's Locks nodes, and the NCC will maintain the remaining five nodes).</p>
Noise	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	- NCC-PM will be responsible for ensuring compliance with the City of Ottawa Noise Control Bylaw during the entire duration of the works.
Dust / Health	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	- NCC-PM will be responsible for ensuring that workers wear protective equipment to avoid exposure to silica when cutting concrete, and that dust suppressant measures are put in place and maintained during the duration of the works to prevent adverse effects from designated substances, e.g., silica, on the health of workers and adjacent residents.



## Section F: Determination

Taking into account implementation of mitigation measures outlined in the analysis, this project:

<input checked="" type="checkbox"/>	Is not likely to cause significant adverse environmental effects
<input type="checkbox"/>	Requires further analysis. Complete an Environmental Effects Evaluation (Step 3b)

## Section G: Sign-off and Approval

Mitigation Measures Form (MMF) Reviewed and Approved by:

<b>Comments:</b> <i>Enter any additional comments you consider warranted here.</i>		
Chaouki Dakdaouki Director, Capital Experience Canadian Heritage		enter date
	Signature	Date


MMF Reviewed by:

<b>Comments:</b> <i>Enter any additional comments you consider warranted here.</i>		
Harry Szeto Resource Management Officer II Parks Canada		enter date
	Signature	Date

MMF Reviewed and Approved by:

<b>Comments:</b> <i>Enter any additional comments you consider warranted here.</i>		
Jewel Cunningham Director, Ontario Waterways Parks Canada		enter date
	Signature	Date

MMF Reviewed and Approved by:

<b>Comments:</b> <i>Enter any additional comments you consider warranted here.</i>		
James Winkel Contaminated Sites Officer Agriculture & Agri-Food Canada		enter date
	Signature	Date

MMF Prepared and Approved by:

<b>Comments:</b> <i>Enter any additional comments you consider warranted here.</i>		
Juan Galindez Environment Officer National Capital Commission		enter date
	Signature	Date

## Section F: Determination

Taking into account implementation of mitigation measures outlined in the analysis, this project:

<input checked="" type="checkbox"/>	Is not likely to cause significant adverse environmental effects
<input type="checkbox"/>	Requires further analysis. Complete an Environmental Effects Evaluation (Step 3b)

## Section G: Sign-off and Approval

Mitigation Measures Form (MMF) Reviewed and Approved by:

<b>Comments:</b> <i>Enter any additional comments you consider warranted here.</i>		
Chaouki Dakdaoui Director, Capital Experience Canadian Heritage	<i>C. Dakdaoui</i>	<i>23-09-2016</i> enter date
	Signature	Date

MMF Reviewed by:

<b>Comments:</b> <i>Enter any additional comments you consider warranted here.</i>		
Harry Szeto Resource Management Officer II Parks Canada		enter date
	Signature	Date

MMF Reviewed and Approved by:

<b>Comments:</b> <i>Enter any additional comments you consider warranted here.</i>		
Jewel Cunningham Director, Ontario Waterways Parks Canada		enter date
	Signature	Date

MMF Reviewed and Approved by:

<b>Comments:</b> <i>Enter any additional comments you consider warranted here.</i>		
James Winkel Contaminated Sites Officer Agriculture & Agri-Food Canada		enter date
	Signature	Date

MMF Prepared and Approved by:

<b>Comments:</b> <i>Enter any additional comments you consider warranted here.</i>		
Juan Galindez Environment Officer National Capital Commission		enter date
	Signature	Date

**Section F: Determination**

Taking into account implementation of mitigation measures outlined in the analysis, this project:

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**Section G: Sign-off and Approval**

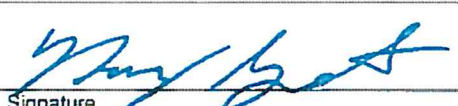
Mitigation Measures Form (MMF) Reviewed and Approved by:

**Comments:** *Enter any additional comments you consider warranted here.*

Chaouki Dakdaoui Director, Capital Experience Canadian Heritage		<small>enter date</small>
	Signature	Date

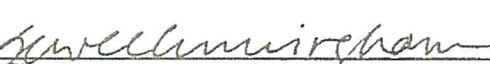
MMF Reviewed by:

**Comments:** *Enter any additional comments you consider warranted here.*

Harry Szeto Resource Management Officer II Parks Canada		<small>enter date</small>
	Signature	Date <i>Oct. 04, 2016</i>

MMF Reviewed and Approved by:

**Comments:** *Enter any additional comments you consider warranted here.*

Jewel Cunningham Director, Ontario Waterways Parks Canada		<small>enter date</small>
	Signature	Date <i>Oct 4, 2016</i>


MMF Reviewed and Approved by:

**Comments:** *Enter any additional comments you consider warranted here.*

James Winkel Contaminated Sites Officer Agriculture & Agri-Food Canada		<small>enter date</small>
	Signature	Date

MMF Prepared and Approved by:

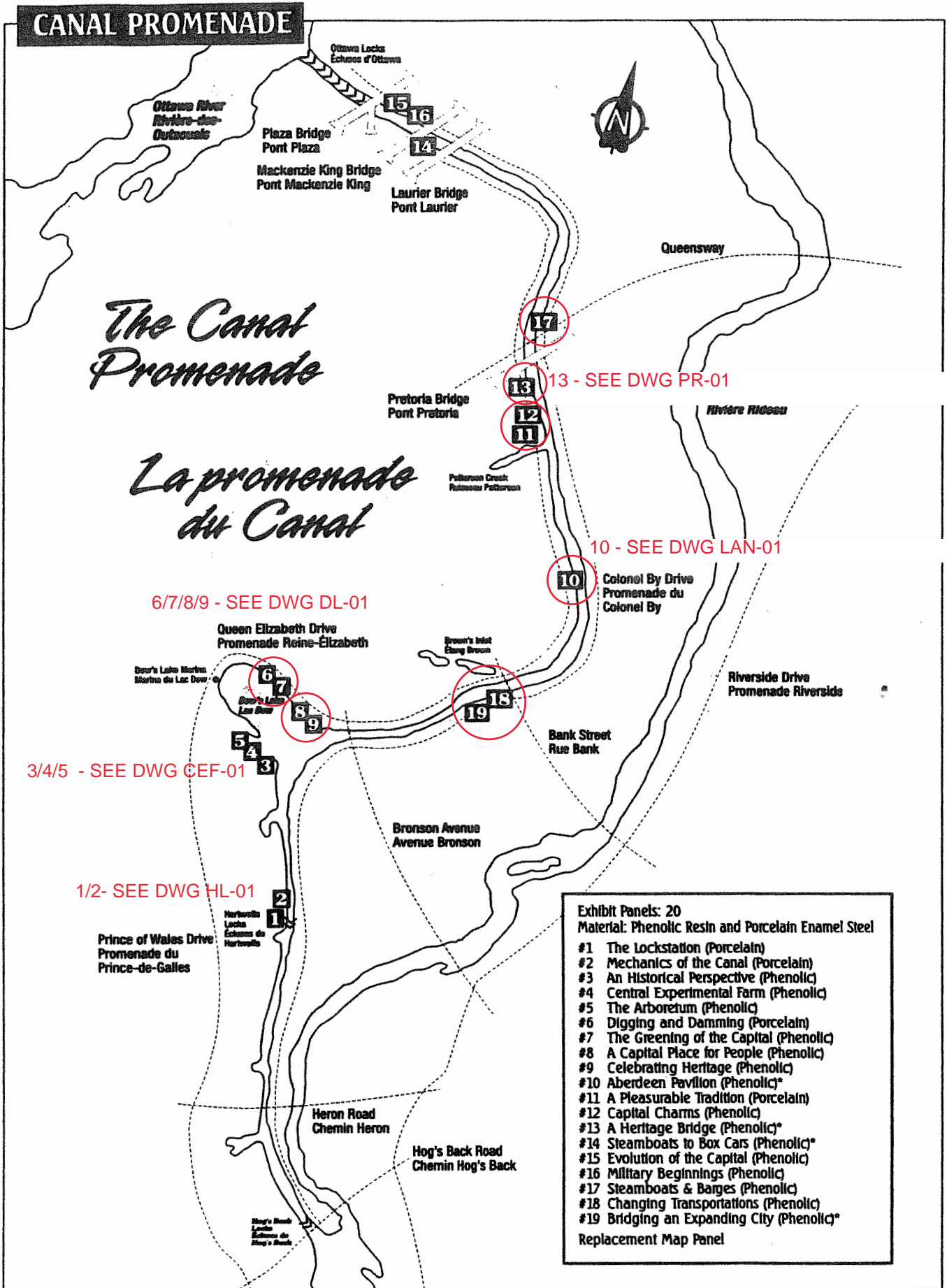
**Comments:** *Enter any additional comments you consider warranted here.*

Juan Galindez Environment Officer National Capital Commission		<small>enter date</small>
	Signature	Date <i>Oct 6, 2016</i>

**APPENDIX B**

LOCATION OF EXISTING PANELS AND NODES TO BE REMOVED

APPENDIX B  
 RIDEAU CANAL PROMENADE  
 PANELS AND NODES TO DEMOLISH



**APPENDIX C**

ARCHAEOLOGICAL SERVICES AND UTILITY LOCATES

Archaeological  
Services

Geotechnical  
Engineering

Environmental  
Engineering

Hydrogeology

Geological  
Engineering

Materials Testing

Building Science

**Paterson Group Inc.**  
Consulting Engineers  
154 Colonnade Road South  
Ottawa (Nepean), Ontario  
Canada K2E 7J5

Tel: (613) 226-7381  
Fax: (613) 226-6344  
[www.patersongroup.ca](http://www.patersongroup.ca)

# patersongroup

## Archaeological Services – Rideau Promenade

### LOCATES

Prepared For  
National Capital Commission

December 2015

Nadine Kopp

Report: PA1064-1

**Rideau Promenade  
Archaeological Investigations  
Locates**

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Ottawa Locks Locates.....	20-31



Dow's Lake



Primary Locate Sheet UNION GAS EMERGENCY # 1-877-969-0999

Request #2015472942

Phone: 613-723-9888

Fax: 613-723-9277

Toll free: 1-800-371-8866

Email:

NORMAL

Utilities Located: <input type="checkbox"/> Bell <input checked="" type="checkbox"/> Gas <input checked="" type="checkbox"/> HydroOttawa <input type="checkbox"/> Street Lighting <input type="checkbox"/> Videotron <input type="checkbox"/> Lakefront Utilities <input type="checkbox"/> Veridian Connections	Revised Excavation Date N/A <small>mm/dd/yyyy</small>	Excavation Date 11/24/2015 08:00:00 <small>mm/dd/yyyy</small>	Status STANDARD Homeowner <input type="checkbox"/> Contractor <input checked="" type="checkbox"/> Project <input type="checkbox"/>
Requested by: ANNA GRAHAM	Company: PATERSON GROUP	Phone: (613)-226-7381 ext.	Fax/email: (613)-226-6344 ext.

Appt Date: N/A <small>mm/dd/yyyy</small>	Received Date: 11/17/2015 <small>mm/dd/yyyy</small>	Locate Address: 1010, COLONEL BY DR 1st Inters.: NATIONAL CAPITAL      2nd Inters.: PRINCE OF WALES DRIVE
---	--	--

Type of work: TEST HOLES	City: OTTAWA
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Caller's Remarks:  
 CORLOT=U 2 HOLES TO BE PLACED IN THE INDICATED AREA, BY HAND, EACH 1Mx1M.  
 \*\*\*SEND HYDRO OTTAWA\*\*\*\*MCL\*\*\*-75.703658, 45.383241, NB\_SEGMENTS::1, NO\_PLAN::813 727, ROGRAIL1, ENOE01, BCOE01, OTWASL01, 360OTT, HOT1, ROGOFT01 -C. OTWAWSD01. OTWATS01

Bell Mark   Clear	Enbridge Gas Mark   Clear	HydroOttawa Mark   Clear	Street Lighting Mark   Clear	Lakefront Mark   Clear	Blink Mark   Clear	Veridian Mark   Clear	Union Gas Mark   Clear	Videotron Mark   Clear
	1	1						

**LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE.**

Records Reference: ___ Map    ___ Network X #    ● LAC Multiviewer ___ Byers    ● Datapak: PMTOTTO0084 Field Notes: NE179,6N4084-1 Other: DPT Remarks:	___ Third Party Notification _____  <div style="border: 2px solid black; padding: 10px; text-align: center;"> <p><b>**CAUTION**</b></p> <p><input checked="" type="checkbox"/> Privately owned hydro in LOCATED AREA, not marked</p> <p><input type="checkbox"/> HYDRO SHOWN as reference only please contact site developer</p> <p><input type="checkbox"/> EMPTY CONDUITS shown as reference only, unable to locate</p> </div> <p style="text-align: center;">Apply Sticker Here if Required</p>
---	--

Excavator shall notify & receive a clearance from Utility prior to excavation for the following: Telecon <input type="checkbox"/> High Priority Cable <input type="checkbox"/> Central Office Vicinity	N/A
---	-----

**Method of Field Marking:**  Paint  Stakes  Flags  Offset Flags  Other (Telecom=Orange, Gas=Yellow, Hydro Ott. =Red)

**Caution:** Locates are VOID after 30 days. See Disclaimer on reverse side for the specific Facility Owner's Guidelines.

Caution: Any changes to location or nature of work require new locate. The Excavator must not work outside the Located Area without a new locate. Privately owned services within the located area have not been marked - check with service/property owner. For all Locate requests including remarks contact:  
 Ontario One Call at 1-800-400-2255 or www.on1call.com.

Locator Name: LACHAPELLE BRANDEN ID #: 1792 Date: 11/20/2015	Start Time: 11:00 End Time: 12:30 Total Hours: 1H30MIN	___ Mark & Fax    ___ Left on Site    ● Emailed Print: N/A Signature: N/A
--	--	---

**A copy of this Primary Locate Sheet and Auxillary Locate Sheet(s) must be on site and in the hands of the machine operator during work operations. If sketch and markings do not coincide, the Excavator must obtain a new locate**



Auxiliary Locate Sheet

Union Gas Emergency #  
1-877-968-8888

Phone:  
613-723-9888

Fax:  
613-723-9277

Toll free:  
1-800-371-8866

Email

Utilities Located:  Bell  Gas  HydroOttawa   
 Videotron  Peel Fibre  Veridian connections

Date Located:  
mm/dd/yyyy 11/20/2015

Request # 2015472942

Number of Services marked: (Specify building/house numbers) 0

**LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE**

FROM: S.AE OF RIDEAU CANAL W.PATHWAY

TO: 27.0M S OF S.AE OF RIDEAU CANAL W.PATHWAY

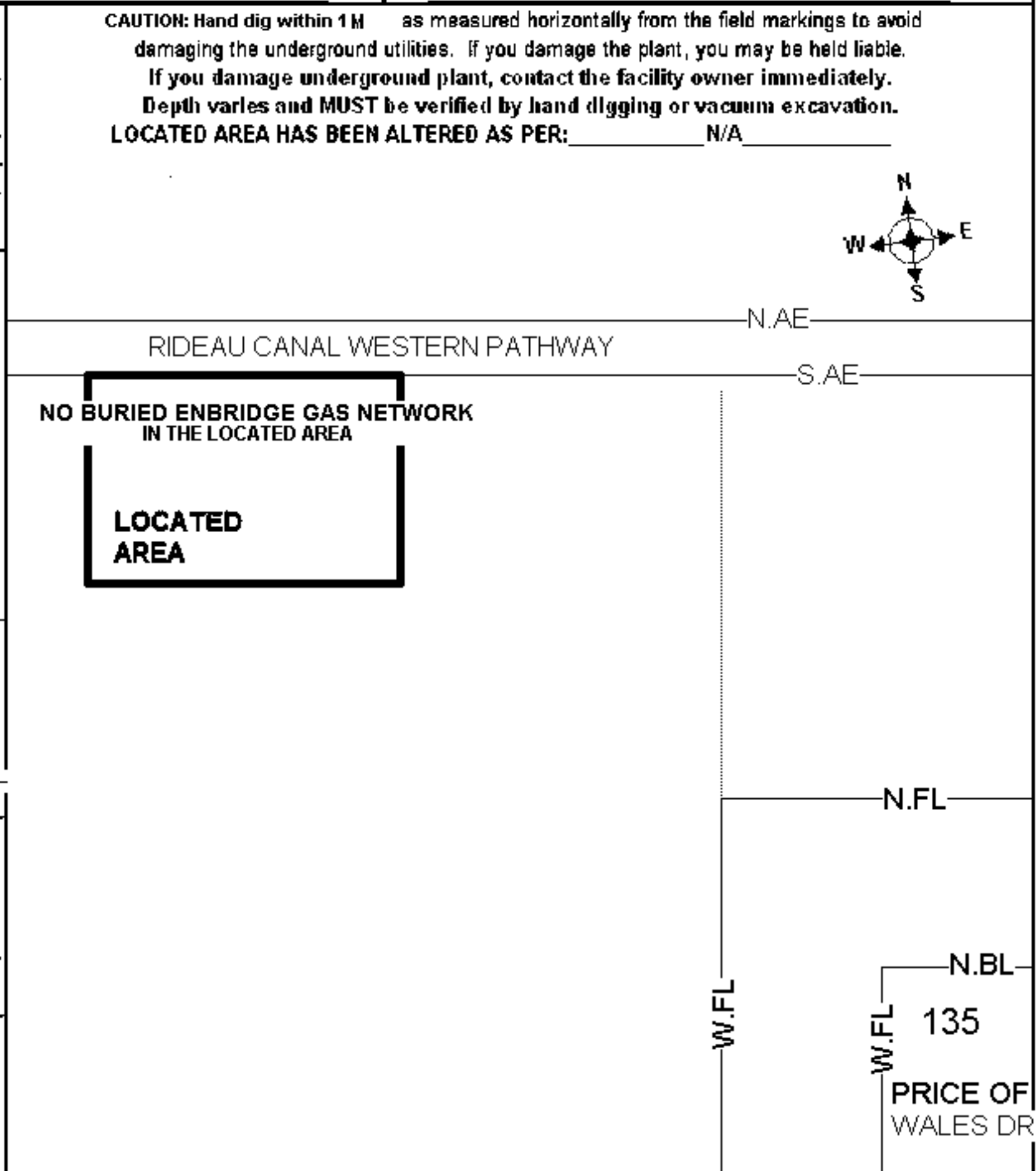
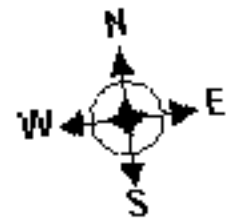
FROM: 40.0M W OF W.FL OF 135 PRINCE OF WALES DR

TO: 80.0M W OF W.FL OF 135 PRINCE OF WALES DR

**CAUTION: Hand dig within 1 M as measured horizontally from the field markings to avoid damaging the underground utilities. If you damage the plant, you may be held liable. If you damage underground plant, contact the facility owner immediately. Depth varies and MUST be verified by hand digging or vacuum excavation.**

LOCATED AREA HAS BEEN ALTERED AS PER: N/A

- Legend**
- Building Line — BL—
  - Fence Line — FL—
  - Face of Curb — FC—
  - Road Edge — RE—
  - Property Line — PL—
  - ASPHALT EDGE — AE—
  - Driveway — DW—
  - Catch Basin
  - Sidewalk
  - Demarcation
  - Railway
  - Pole
  - Flush to Grade
  - Pedestal
  - Pedestal
  - Buried Cable — B—
  - Conduit — C—
  - Buried Service Wire — BSW—
  - Manhole
  - Fibre Optic Cable — FO—
  - Gas Main — GM—
  - Gas Service — GS—
  - Gas Valve
  - Hydrant
  - Transformer
  - Hydro — H—
  - Hydro Pole X
  - Street Light Cable — SL—
  - Street Light
  - North N.
  - South S.
  - East E.
  - West W.



THIS FORM VALID ONLY WITH Primary Locate Form. This sketch is not to scale.  
Any privately owned services within the located area have not been marked- check with service/property owner.

**A copy of this Auxillary Locate Sheet(s) and the Primary Locate Sheet must be on site and in the hands of the machine operator during work operations. If sketch and markings do not coincide, the Excavator must obtain a new locate.**



Auxiliary Locate Sheet

Union Gas Emergency #  
1-877-969-0999

Phone:  
613-723-9888

Fax:  
613-723-9277

Toll free:  
1-800-371-8866

Email

Utilities  Bell  Gas  HydroOttawa  Street Lighting  
 Located:  Blink  Peel Fibre

Date Located:  
mm/dd/yyyy 11/20/2015

Request # 2015472942

Number of Services marked: (Specify building/house numbers) N/A

**LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE**

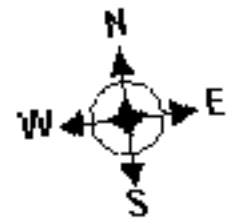
FROM: N/A

TO: N/A

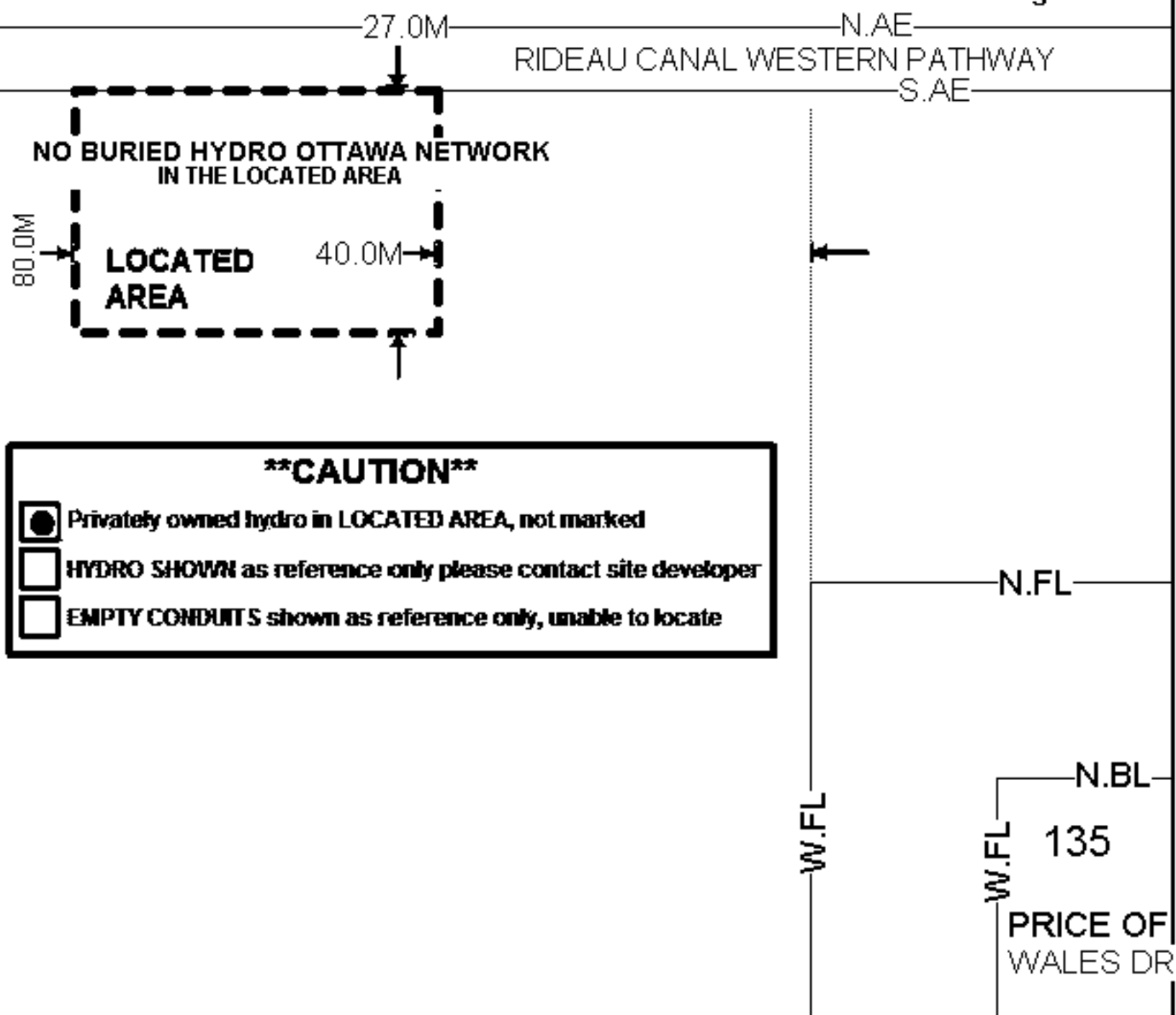
FROM: N/A

TO: N/A

**CAUTION: Hand dig within 1.5M as measured horizontally from the field markings to avoid damaging the underground utilities. If you damage the plant, you may be held liable. If you damage underground plant, contact the facility owner immediately. Depth varies and MUST be verified by hand digging or vacuum excavation.**  
 LOCATED AREA HAS BEEN ALTERED AS PER: N/A



- Legend**
- Building Line — BL—
  - Fence Line — FL—
  - Face of Curb — FC—
  - Road Edge — RE—
  - Property Line — PL—
  - ASPHALT EDGE — AE—
  - Driveway — DW—
  - Catch Basin
  - Sidewalk
  - Demarcation
  - Railway
  - Pole
  - Flush to Grade Pedestal
  - Pedestal
  - Buried Cable — B—
  - Conduit — C—
  - Buried Service Wire — BSW—
  - Manhole
  - Fibre Optic Cable — FO—
  - Gas Main — GM—
  - Gas Service — GS—
  - Gas Valve
  - Hydrant
  - Transformer
  - Hydro Ottawa — H—
  - Hydro Pole X
  - Street Light Cable — SL—
  - Street Light
  - North N.
  - South S.
  - East E.
  - West W.



THIS FORM VALID ONLY WITH Primary Locate Form. This sketch is not to scale.  
 Any privately owned services within the located area have not been marked- check with service/property owner.

**A copy of this Auxillary Locate Sheet(s) and the Primary Locate Sheet must be on site and in the hands of the machine operator during work operations. If sketch and markings do not coincide, the Excavator must obtain a new locate.**



# Service Request Details

**Service Request** 948628

**Lagan Case ID:** 20154729421

**Source:** Contractor  
**Priority:**  
**Status:** RESOLVED

**Created By:** Ga Maxpusr  
**Reported By:** Robert Hawkins  
**Initiated:** 2015-Nov-17 2:54 PM

## Location Information

<b>Address:</b> 1010 COLONEL BY DR	<b>Range:</b>	<b>Unit:</b>
<b>Between Streets:</b> NATIONAL CAPITAL COMM DRWY / PRINCE OF WALES DR		<b>Municipality:</b> OO
<b>Description:</b> -- Non Specific Location --		
Street Range:1010- Street:COLONEL BY DR Intersect 1:NATIONAL CAPITAL COMMISSION DRIVEWAY Intersect 2:PRINCE OF WALES DRIVE Door Numbers:- Municipality:OTTAWA -- Additional Information --		
Alternate Phone: 6132267381		
Your work area is clear of underground water and sewer pipes owned by The City of Ottawa. Any underground water and sewer pipes in your work area are privately owned.		

## Requestor Information

<b>Name:</b> ANNA GRAHAM	<b>Phones</b>	
<b>Address:</b> 154 COLONNADE RD S	<b>Res:</b>	<b>Cell:</b>
<b>City:</b> NEPEAN	<b>Bus:</b> 6132267381	<b>Ext:</b>
<b>Postal Code:</b> K2E7J5	<b>Unit:</b>	<b>Fax:</b>

## Call Back & Other Assignments

<b>Responsibilities</b>		
<b>Service Request</b>	<b>Work Order #</b>	<b>Work Order</b>

## Request Details

<b>Start Date:</b> 2015-Nov-18	<b>Appointment Time:</b> 11:13:36 AM	<b>Service:</b> ESD
<b>Finish Date:</b> 2015-Nov-18	<b>Classification:</b> LOCATES - PROVIDE	
<b>Amount Charge to Customer:</b>	<b>Category:</b>	

## Structures

Structure ID	District	Description	Location	Qualifier	Unit

# Service Request Details

LP : LOCATES - PROVIDE		
Attribute Description	Values	Comments
ON1CALL LOCATE ADDRESS	Street Range:1010-   Street:COLONEL BY DR   Intersect 1:NATIONAL CAPITAL COMMISSION DRIVEWAY   Intersect 2:PRINCE OF WALES DRIVE   Door Numbers:-   Municipality:OTTAWA	
IF THERE IS AN ADDRESS NUMBEF		
ARE YOU A HOMEOWNER, CONTRA	CONTRACTOR	
WHO ARE YOU WORKING FOR?	PATERSON GROUP	
WHAT IS THE CALLER'S TITLE?	ASSESSOR	
WHAT IS YOUR COMPANY NAME?	PATERSON GROUP	
PLEASE PROVIDE A CONTACT PHONE NUMBER	6132267381	
PLEASE PROVIDE AN ALTERNATE C	ADRIAN MENYHART	
PLEASE PROVIDE CONTACT PHONE INFORMATION FOR PERSON ON SITE		
PLEASE PROVIDE A FAX NUMBER	6132266344	
PLEASE PROVIDE AN EMAIL ADDR	agraham@patersongroup.ca	
WHAT TYPE OF WORK ARE YOU DOING?	TEST HOLES	
WHERE ARE YOU WORKING ON THE PROPERTY?	CORLOT=U 2 HOLES TO BE PLACED IN THE INDICATED AREA, BY HAND, EACH 1MX1M.	
HOW DEEP ARE YOU DIGGING/ EXCAVATING?	3.000000	
WHAT IS THE UNIT OF MEASURE Y	METERS	
ARE YOU DIGGING BY HAND OR B	;Hand Dig	
WILL THERE BE DIRECTIONAL DRI		
IS THE AREA MARKED OUT?	Area Not Marked;Mark + Fax;	
IS A SITE MEETING REQUIRED?		
EXTRA MARKING INSTRUCTIONS?		
EXCAVATION ON PUBLIC PROPERT	Publ. Prop.;	
WHAT DATE IS THE WORK STARTI	2015-11-17	
OTHER AGENCIES ALSO NOTIFIED	ROGRAIL1; ENOE01; BCOE01; OTWASL01; 360OTT; HOT1; ROGOTT01; OTWAWS01; OTWATS01;	
WHAT TYPE OF REQUEST, IF NOT C		
IF NOT ORIGINAL, THE PREVIOUS		
FURTHER COMMENTS:		

# BELL CANADA CLEARANCE

CLEARANCE # A1184423

One Call Ticket #: 2015472942

Issued By: BELL CANADA

For Station Code: 360OTT

Date: 11/18/2015

Time: 05:50:00

Primary Contact: ANNA GRAHAM

Fax: (613)-226-6344 ext.

Type of Work: TEST HOLES

## LOCATE DETAILS

Location: 1010, COLONEL BY DR  
OTTAWA, OTTAWA

## Remarks:

LOT/UNIT#: NB OF SEGMENTS: 1 LATITUDE: 45.38324100 LONGITUDE: -75.70365850 DEPTH: 9.84 FT OTWATS01 CITY OF OTTAWA TRAFF OTWAWWS01  
CITY OF OTTAWA WATER ROGOTT01 -C PRO-TECH FOR ROGERS HOT1 HYDRO OTTAWA (HOT1) 360OTT BELL FOR GROUP TELEC  
OTWASL01 BLACK AND MC DONALD BCOE01 PROMARK FOR BELL CAN ENOE01 PROMARK FOR ENBRIDGE ROGRAIL1 LTS FOR ROGERS  
(ROGR)

613 567 CORLOT=U 2 HOLES TO BE PLACED IN THE INDICATED ARE A, BY HAND, EACH 1MX1M.

## CONDITIONS

*If your clearance is conditional, conditions are listed below. Otherwise, you are all clear.*

**NOT DIGGING ON RAILWAY PROPERTY**

It is the excavator/requestor's responsibility to notify the Look-Up Centre if they cannot meet the conditions outlined above. Failing to do so would acknowledge the acceptance of the conditions outlined prior to any excavation/work.

**CAUTION:** Stakes or markings may disappear or be displaced. Should sketch and markings not coincide, a new locate must be obtained. This locate is based on information that was provided to the One Call Centre. Any change to location/scope of work requires a new locate from the One Call Centre.

As there may be other buried utilities in the dig site area, you are advised to contact all buried utility owners for your work area and obtain the necessary locates/clearances.

Please pay special attention to who/what this clearance is for. Please review the document carefully and compare it to your locate request to ensure you understand what you are being cleared for. We are not responsible for any damages that result from misunderstanding what utility you are cleared for on this paperwork. Please do not hesitate to contact us if you have any questions or concerns.

**If you have any questions or concerns regarding your clearance, please call the Look-Up Centre at 1-844-225-5550.**

# ROGERS

ROGERS LOCATE SERVICE

8200 Dixie Rd  
East Bldg, 2nd Flr  
Brampton, Ontario, L6T 0C1  
Tel.: (855) 232-0342  
Fax.: (905) 780-7379

## CLEAR TO DIG

TICKET#: 2015472942

CLEARANCE#: A2368032

DATE: 11/19/2015 7:33:21 PM

ROGRAIL1

Requested By: Company: PATERSON GROUP

Contact name: ANNA GRAHAM Ph: (613)-226-7381 ext. Fax: (613)-226-6344 ext.

Dig Site Location :

Municipality : OTTAWA

Call Date: 11/17/2015 2:50:00 PM

Address : 1010, COLONEL BY DR Intersection : NATIONAL CAPITAL  
COMMISSION DRIVE (WAY)

Remarks (Additional Dig Info)

CORLOT=U 2 HOLES TO BE PLACED IN THE INDICATED AREA, BY HAND, EACH 1MX1M.

ROGRAIL1 LTS FOR ROGERS (ROGR,  
U\_CROQUIS1::2015472942.PNG

### **ALL CLEAR HAS BEEN GIVEN FOR THE WORK AREA DESCRIBED ABOVE.**

YOU WILL BE LIABLE FOR ANY DAMAGES TO ROGERS FACILITIES IF EXCAVATING / DIGGING PRIOR TO RECEIVING A COMPLETED LOCATE OR CLEARANCE NUMBER FROM ROGERS OR IT'S AGENTS.

PLEASE CALL ROGERS LOCATE SERVICES AT (800) 738-7893, IF THERE ARE ANY CHANGES TO THIS LOCATE REQUEST. LOCATES AND CLEARANCES ARE VALID FOR 60 DAYS ONLY.

CAUTION: Stakes and or markings may disappear or be displaced. Should the sketches and markings not coincide, a new stake out must be obtained.

**FOR ALL CUT CABLES CALL  
1-800-265-9501**



**UNDERGROUND SERVICE LOCATORS**

DATE: *Nov 30 /15*

**ONE-CALL SYSTEMS INC.**

**775 TAYLOR CREEK DRIVE**

PHONE (613) 226-8750

**OTTAWA, ON, K1C 1T1**

FAX (613) 226-8677

CUSTOMER: *PATERSON GROUP*

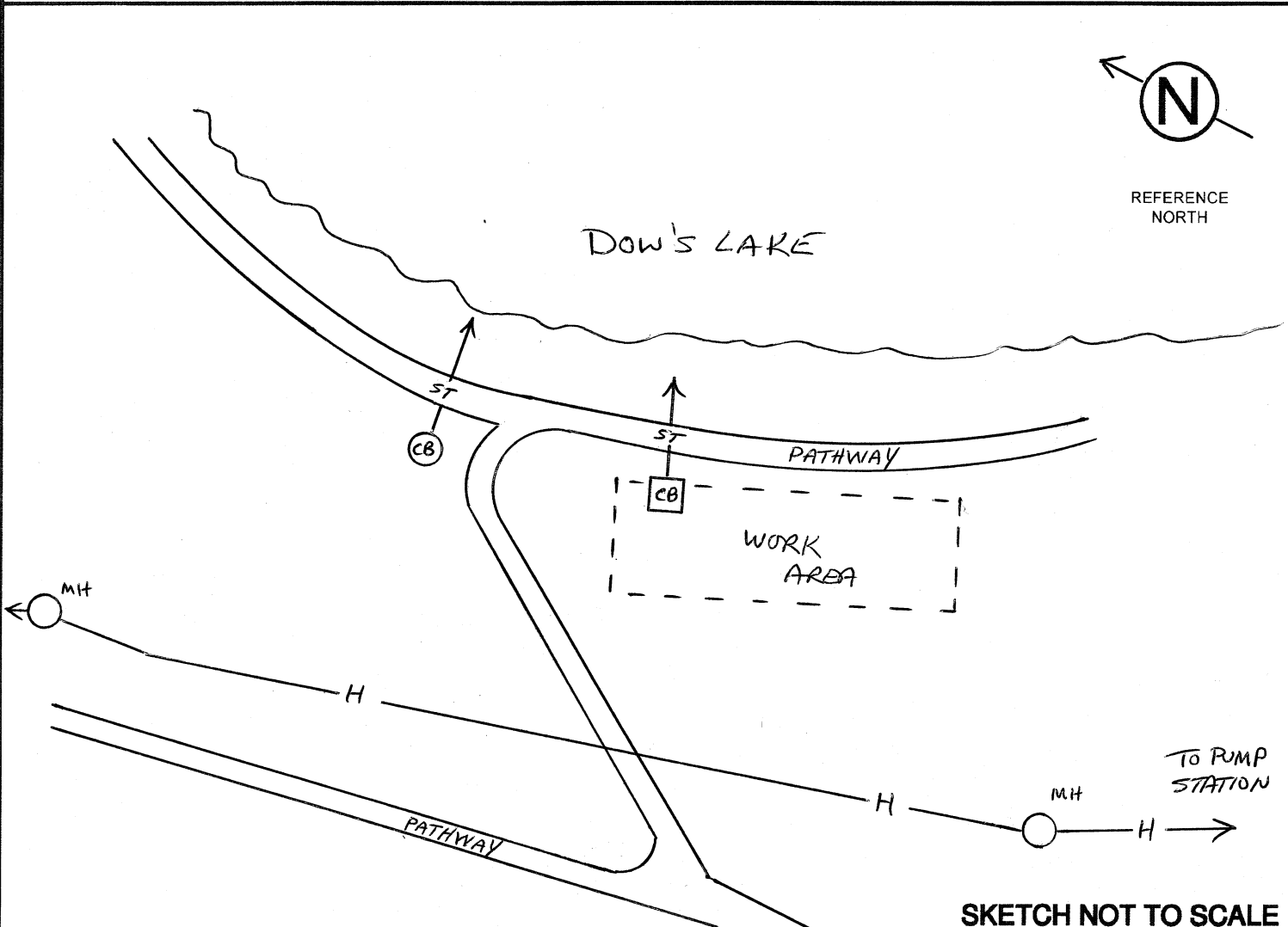
REQUESTED BY: *ANNA GRAHAM*

LOCATION OF WORK: *1010 COLONEL BY*

LIMITS OF WORK: *HAND DIG TO 1 M*

HYDRO	-- H --	CABLE T.V.	-- T.V. --	STEAM	-- STM --
GAS	-- G --	SANITARY	-- SAN --	PRIVATE LIGHTING	-- PL --
BELL	-- B --	STORM	-- ST --	<u>OTHER:</u>	
WATER	-- W --	FIBER OPTIC	-- FO --		

**LOCATES ONLY APPLICABLE TO INFO ABOVE - LOCATES VOID AFTER 30 DAYS!**



**COMMENTS:**

**THIS SKETCH IS NOT A VALID PUBLIC UTILITY LOCATE. CONTRACTOR IS RESPONSIBLE TO ENSURE THEY HAVE PUBLIC LOCATES BEFORE COMMENCING WORK.**

ASBUILTS OR PLANS PROVIDED:  YES  NO If No, Provide Comments:

LOCATORS NAME: *DAN SPARLING*

SIGNATURE: *[Signature]*

LOCATE RECEIVED AND REVIEWED BY \_\_\_\_\_

Print Name

Signature

**CAUTION: HAND DIG WITHIN 1.5 METERS OF MARKINGS**

Pretoria Bridge



Primary Locate Sheet UNION GAS EMERGENCY # 1-877-968-0999

Request #2015472883

Phone: 613-723-9888

Fax: 613-723-9277

Toll free: 1-800-371-8866

Email:

NORMAL

Utilities Located: <input type="checkbox"/> Bell <input checked="" type="checkbox"/> Gas <input checked="" type="checkbox"/> HydroOttawa <input type="checkbox"/> Street Lighting <input type="checkbox"/> Videotron <input type="checkbox"/> Lakefront Utilities <input type="checkbox"/> Veridian Connections	Revised Excavation Date N/A <small>mm/dd/yyyy</small>	Excavation Date 11/23/2015 08:00:00 <small>mm/dd/yyyy</small>	Status STANDARD Homeowner <input type="checkbox"/> Contractor <input checked="" type="checkbox"/> Project <input type="checkbox"/>
Requested by: ANNA GRAHAM	Company: PATERSON GROUP	Phone: (613)-226-7381 ext.	Fax/email: (613)-226-6344 ext.

Appt Date: N/A <small>mm/dd/yyyy</small>	Received Date: 11/16/2015 <small>mm/dd/yyyy</small>	Locate Address: 375, QUEEN ELIZABETH DRWY 1st Inters: BANK ST      2nd Inters: FIFTH AVE
---	--	---

Type of work: TEST HOLES	City: OTTAWA
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Caller's Remarks:  
 CORLOT=U 2 HOLES, 1X1M EACH TO BE DUG BY HAND IN INDICATED AREA.

\*\*\*SEND HYDRO OTTAWA\*\*\*\*AS\*\*\*\*-75.683530, 45.400425, NO\_SEGMENTS::1, NO\_PLAN:613 567, OTWATS01, HOT1, OH20, AT10, OTWAWWS01, BCOE01, TELLISON3 -C, OTWASLD1, ENOE01, ROGOTT01 -C

Bell Mark   Clear	Enbridge Gas Mark   Clear	Hydro Ottawa Mark   Clear	Street Lighting Mark   Clear	Lakefront Mark   Clear	Blink Mark   Clear	Veridian Mark   Clear	Union Gas Mark   Clear	Videotron Mark   Clear
	1	1						

**LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE.**

Records Reference: ___ Map    ___ Network X #    ● LAC Multiviewer ___ Byers    ● Datapak: PMTOTTO0084 Field Notes: NE191,6N1632-1 Other: DPT Remarks:	___ Third Party Notification _____  <div style="font-size: 48px; text-align: center;">N/A</div> <p style="text-align: center;">Apply Sticker Here if Required</p>
---	---

Excavator shall notify & receive a clearance from Utility prior to excavation for the following: Telecon <input type="checkbox"/> High Priority Cable <input type="checkbox"/> Central Office Vicinity	N/A
---	-----

**Method of Field Marking:**  Paint  Stakes  Flags  Offset Flags  Other (Telecom=Orange, Gas=Yellow, Hydro Ott. =Red)

**Caution:** Locates are VOID after 30 days. See Disclaimer on reverse side for the specific Facility Owner's Guidelines.

Caution: Any changes to location or nature of work require new locate. The Excavator must not work outside the Located Area without a new locate. Privately owned services within the located area have not been marked - check with service/property owner. For all Locate requests including remarks contact: Ontario One Call at 1-800-400-2255 or [www.on1call.com](http://www.on1call.com).

Locator Name: LACHAPELLE BRANDEN ID #: 1792 Date: 11/19/2015	Start Time: 13:30 End Time: 14:30 Total Hours: 1H	___ Mark & Fax    ___ Left on Site    ● Emailed Print: N/A Signature: N/A
--	---	---

**A copy of this Primary Locate Sheet and Auxillary Locate Sheet(s) must be on site and in the hands of the machine operator during work operations. If sketch and markings do not coincide, the Excavator must obtain a new locate**



Auxiliary Locate Sheet

Union Gas Emergency #  
1-877-968-8888

Phone:  
613-723-9888

Fax:  
613-723-9277

Toll free:  
1-800-371-8866

Email

Utilities Located:  Bell  Gas  HydroOttawa   
 Videotron  Peel Fibre  Veridian connections

Date Located: 11/19/2015

Request # 2015472883

Number of Services marked: (Specify building/house numbers) 0

LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE

FROM: 5.0M S OF S.FL OF HAWTHORNE AVE

TO: 45.0M S OF S.FL OF HAWTHORNE AVE

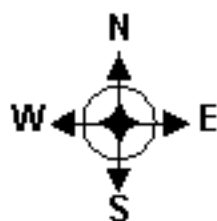
FROM: W.FL OF RIDEAU CANAL

TO: 35.0M W OF W.FL OF RIDEAU CANAL

CAUTION: Hand dig within 1 M as measured horizontally from the field markings to avoid damaging the underground utilities. If you damage the plant, you may be held liable. If you damage underground plant, contact the facility owner immediately. Depth varies and MUST be verified by hand digging or vacuum excavation.

LOCATED AREA HAS BEEN ALTERED AS PER: N/A

- Legend**
- Building Line — BL—
  - Fence Line — FL—
  - Face of Curb — FC—
  - Road Edge — RE—
  - Property Line — PL—
  - Driveway — DW—
  - Catch Basin
  - Sidewalk
  - Demarcation
  - Railway
  - Pole
  - Flush to Grade Pedestal
  - Pedestal
  - Buried Cable Conduit — B—
  - Conduit — C—
  - Buried Service Wire — BSW—
  - Manhole
  - Fibre Optic Cable — FO—
  - Gas Main — GM—
  - Gas Service — GS—
  - Gas Valve
  - Hydrant
  - Transformer
  - Hydro — H—
  - Hydro Pole X
  - Street Light Cable — SL—
  - Street Light
  - North N.
  - South S.
  - East E.
  - West W.

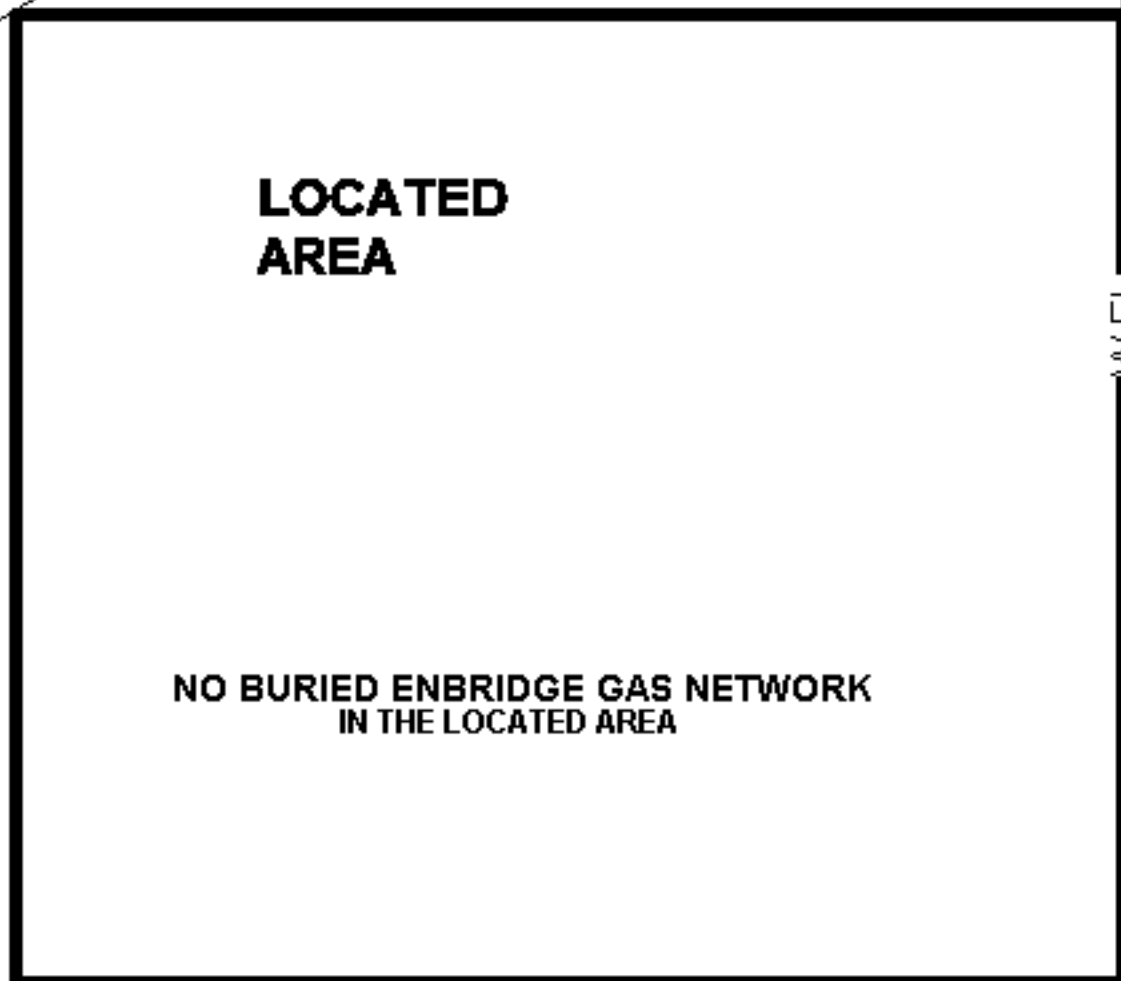


HAWTHORNE AVE

S.FL

QUEEN ELIZABETH DW

EFC



RIDEAU CANAL

THIS FORM VALID ONLY WITH Primary Locate Form. This sketch is not to scale. Any privately owned services within the located area have not been marked- check with service/property owner.

A copy of this Auxillary Locate Sheet(s) and the Primary Locate Sheet must be on site and in the hands of the machine operator during work operations. If sketch and markings do not coincide, the Excavator must obtain a new locate.



Auxiliary Locate Sheet

Union Gas Emergency #  
1-877-969-0999

Phone:  
613-723-9888

Fax:  
613-723-9277

Toll free:  
1-800-371-8866

Email

Utilities  Bell  Gas  Hydro Ottawa  Street Lighting  
 Located:  Blink  Peel Fibre

Date Located:  
mm/dd/yyyy 11/19/2015

Request # 2015472883

Number of Services marked: (Specify building/house numbers) N/A

LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE

FROM: N/A

TO: N/A

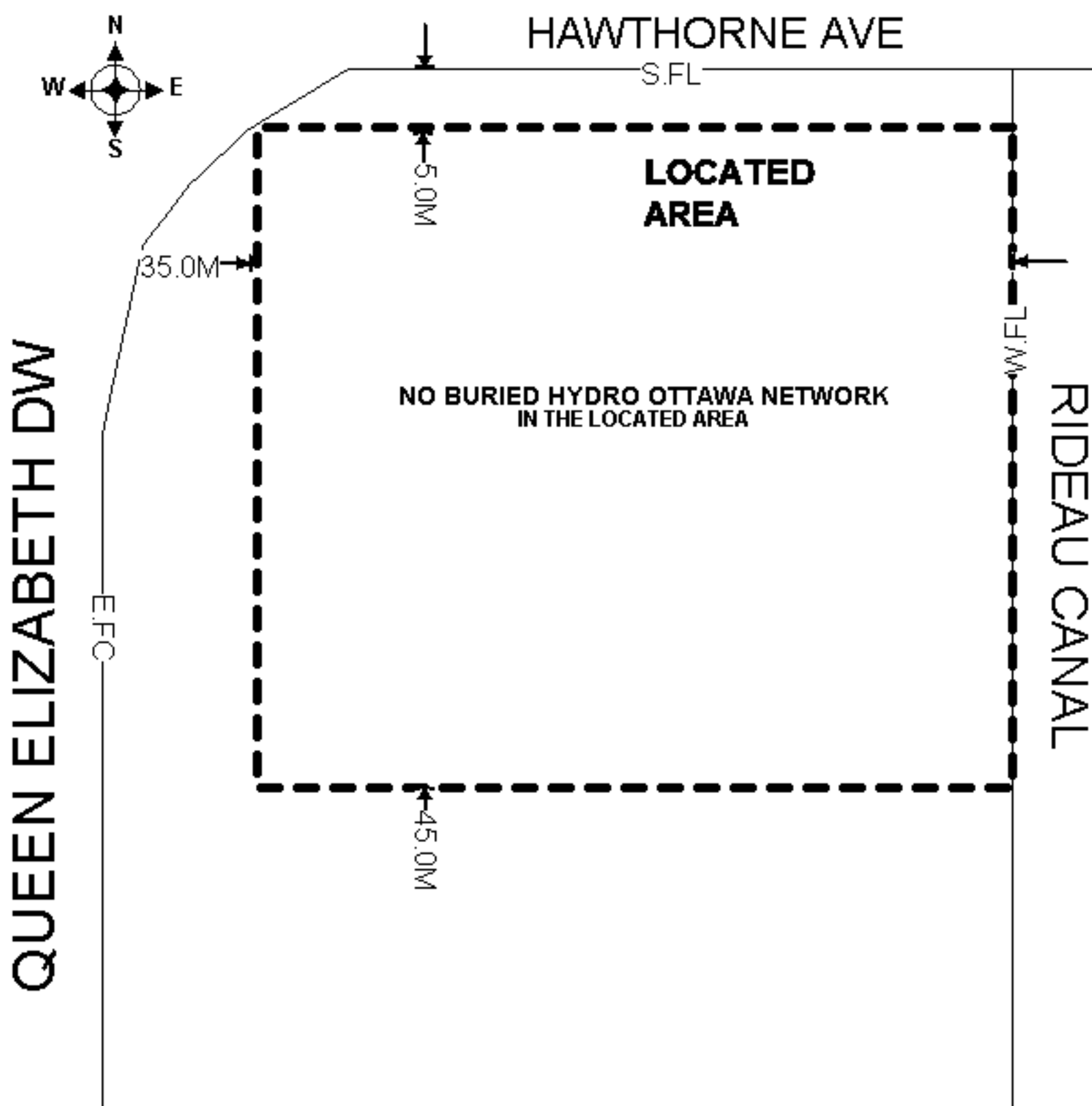
FROM: N/A

TO: N/A

CAUTION: Hand dig within 1.5M as measured horizontally from the field markings to avoid damaging the underground utilities. If you damage the plant, you may be held liable. If you damage underground plant, contact the facility owner immediately. Depth varies and MUST be verified by hand digging or vacuum excavation.

LOCATED AREA HAS BEEN ALTERED AS PER: N/A

- Legend**
- Building Line — BL—
  - Fence Line — FL—
  - Face of Curb — FC—
  - Road Edge — RE—
  - Property Line — PL—
  - Driveway — DW—
  - Catch Basin
  - Sidewalk
  - Demarcation
  - Railway
  - Pole
  - Flush to Grade Pedestal
  - Pedestal
  - Buried Cable Conduit — B—
  - Conduit — C—
  - Buried Service Wire — BSW—
  - Manhole
  - Fibre Optic Cable — FO—
  - Gas Main — GM—
  - Gas Service — GS—
  - Gas Valve
  - Hydrant
  - Transformer
  - Hydro Ottawa — H—
  - Hydro Pole X
  - Street Light Cable — SL—
  - Street Light
  - North N.
  - South S.
  - East E.
  - West W.



THIS FORM VALID ONLY WITH Primary Locate Form. This sketch is not to scale.  
 Any privately owned services within the located area have not been marked- check with service/property owner.

A copy of this Auxillary Locate Sheet(s) and the Primary Locate Sheet must be on site and in the hands of the machine operator during work operations. If sketch and markings do not coincide, the Excavator must obtain a new locate.



# NO CONFLICT

## Cable Locate Request

ALL-000001

1-800-837-6448

EXCAVATION SITE <b>375, QUEEN ELIZABETH</b>	<b>OTTAWA, OTTAWA</b>	Xtreet: <b>BANK ST</b>	Xtreet2: <b>FIFTH AVE</b>
APPLICANT'S NAME <b>ANNA GRAHAM</b>		COMPANY NAME (if applicable) <b>PATERSON GROUP</b>	
APPLICANT'S ADDRESS <b>154 S COLONNADE RD</b>	<b>NEPEAN</b>	<b>K2E 5J7</b>	PHONE NO. <b>(613)-226-7381 ext.</b>
ALTERNATE CONTACT: <b>ADRIAN MENYHART</b>		ALTERNATE PHONE NO: <b>(613)-226-7381 ext.</b>	
EMAIL ADDRESS: <b>agraham@patersongroup.ca</b>		FAX NO.: <b>(613)-226-6344 ext.</b>	
ORIGINAL CALL DATE: <b>11/16/2015 7:48:00 PM</b>	WORK TO BEGIN DATE: <b>11/23/2015 8:00:00 AM</b>	ALLSTREAM TICKET NO. <b>2015472883</b>	

**Plant Type: No Allstream Cable Plant / Facilities Here.**

**Ticket Priority: STANDARD**

**Clearance Number: A640750**

BURIED CABLE LOCATION DETAILS (To be completed by ALLSTREAM Locator)

1. Were facilities located at excavation site? YES Reasons:

2. How was the location of the facilities marked?  PAINT  STAKED  OTHER (Specify Below)

3. What type of facilities marked?  BURIED CABLE  ENCASED CONDUIT  UNENCASED CONDUIT

4. Was the applicant present at time of locate? YES Reasons:  FIBRE WATCH REQUIRED-CALL FOR APPOINTMENT

---

Remarks:  
 NB\_SEGMENTS::1  
 TICKET SENT TO :OTWATS01 CITY OF OTTAWA TRAFF,HOT1 HYDRO OTTAWA (HOT1) ,OH20 HYDRO ONE (OH20) ,AT10  
 ALLSTREAM (AT10) ,OTVAWS01 CITY OF OTTAWA WATER,BCOE01 PROMARK FOR BELL CAN,TELUSON3 -C TELUS (TELUSON3)  
 ,OTWASL01 BLACK AND MC DONALD ,ENOE01 PROMARK FOR ENBRIDGE,ROGOTT01 -C PRO-TECH FOR ROGERS  
 U\_CROQUIS1::2015472883.PNG

---

Dig Info - Additional Dig Info:  
 CORLOT=U 2 HOLES, 1X1M EACH TO BE DUG BY HAND IN INDICATED AREA.

---

Dig Info: Utility Remarks:

---

Locator Remark:

**ALLSTREAM – INSTRUCTIONS TO APPLICANT- PLEASE READ CAREFULLY**

1. Requests for a locate should be made at least **2** working days prior to digging. Call Allstream anytime at **800-837-6448**.
  2. Allstream cannot guarantee precise location or depth of facilities. You must **HAND DIG** within one meter (3.28 feet) of markings for paired voice frequency and power cable and within 2.5 meters (8.2 feet) of markings for fiber optic cable.
  3. Because markings made by Allstream when locating cable may disappear, or be displaced, any delays in digging after locate require a new locate.
  4. This locate was completed based on information given to Allstream's locator at the time of the request or locate. **ANY CHANGES TO LOCATION OR NATURE OF WORK REQUIRE NEW LOCATE.**
  5. You will be liable for damages caused to Allstream facilities if you do not follow these instructions, or abide by the locate.
  6. **NOTE FIBRE WATCH REQUIREMENTS- PLEASE CALL THE NUMBER NOTED ABOVE AT LEAST ONE WEEK IN ADVANCE OF EXCAVATION.**
  7. Under no circumstances shall Allstream or any of its affiliated or associated companies, or any of their employees be held liable for any losses (including down time) suffered by anyone as a result of a location error made by Allstream.
  8. Applicant is responsible to remove any Allstream flags or stakes at locate site once construction is complete.
- Allstream locates are valid for a period of 60 days**



# Service Request Details

**Service Request** 948321

**Lagan Case ID:** 20154728831

**Source:** Contractor  
**Priority:**  
**Status:** RESOLVED

**Created By:** Ga Maxpusr  
**Reported By:** Robert Hawkins  
**Initiated:** 2015-Nov-16 7:49 PM

## Location Information

<p><b>Address:</b> 375 QUEEN ELIZABETH DRWY <b>Between Streets:</b> BANK ST / FIFTH AVE <b>Description:</b> -- Non Specific Location --  Street Range:375- Street:QUEEN ELIZABETH DRWY Intersect 1:BANK ST Intersect 2:FIFTH AVE Door Numbers:- Municipality:OTTAWA -- Additional Information --  Alternate Phone: 6132267381  Your work area is clear of underground water and sewer pipes owned by The City of Ottawa.</p>	<b>Range:</b>	<b>Unit:</b> <b>Municipality:</b> OO
--	---------------	---

## Requestor Information

<b>Name:</b> ANNA GRAHAM	<b>Phones</b>	
<b>Address:</b> 154 COLONNADE RD S	<b>Res:</b>	<b>Cell:</b>
<b>City:</b> NEPEAN	<b>Bus:</b> 6132267381	<b>Ext:</b>
<b>Postal Code:</b> K2E7J5	<b>Unit:</b>	<b>Fax:</b>

## Call Back & Other Assignments

<b>Responsibilities</b>		
<b>Service Request</b>	<b>Work Order #</b>	<b>Work Order</b>

## Request Details

<b>Start Date:</b> 2015-Nov-17	<b>Appointment Time:</b> 2:03:43 PM	<b>Service:</b> ESD
<b>Finish Date:</b> 2015-Nov-17	<b>Classification:</b> LOCATES - PROVIDE	
<b>Amount Charge to Customer:</b>	<b>Category:</b>	

## Structures

Structure ID	District	Description	Location	Qualifier	Unit



# Service Request Details

## LP : LOCATES - PROVIDE

Attribute Description	Values	Comments
ON1CALL LOCATE ADDRESS	Street Range:375-   Street:QUEEN ELIZABETH DRWY   Intersect 1:BANK ST   Intersect 2:FIFTH AVE   Door Numbers:-   Municipality:OTTAWA	
IF THERE IS AN ADDRESS NUMBER		
ARE YOU A HOMEOWNER, CONTRACTOR	CONTRACTOR	
WHO ARE YOU WORKING FOR?	PATERSON GROUP	
WHAT IS THE CALLER'S TITLE?	ASSESSOR	
WHAT IS YOUR COMPANY NAME?	PATERSON GROUP	
PLEASE PROVIDE A CONTACT PHONE NUMBER	6132267381	
PLEASE PROVIDE AN ALTERNATE CONTACT	ADRIAN MENYHART	
PLEASE PROVIDE CONTACT PHONE INFORMATION FOR PERSON ON SITE		
PLEASE PROVIDE A FAX NUMBER	6132266344	
PLEASE PROVIDE AN EMAIL ADDRESS	agraham@patersongroup.ca	
WHAT TYPE OF WORK ARE YOU DOING?	TEST HOLES	
WHERE ARE YOU WORKING ON THE PROPERTY?	CORLOT=U 2 HOLES, 1X1M EACH TO BE DUG BY HAND IN INDICATED AREA.	
HOW DEEP ARE YOU DIGGING/ EXCAVATING?	3.000000	
WHAT IS THE UNIT OF MEASURE	METERS	
ARE YOU DIGGING BY HAND OR BY MACHINE?	;Hand Dig	
WILL THERE BE DIRECTIONAL DRILLING?		
IS THE AREA MARKED OUT?	Area Not Marked;Mark + Fax;	
IS A SITE MEETING REQUIRED?		
EXTRA MARKING INSTRUCTIONS?		
EXCAVATION ON PUBLIC PROPERTY?	Publ. Prop.;	
WHAT DATE IS THE WORK STARTING?	2015-11-16	
OTHER AGENCIES ALSO NOTIFIED	OTWATS01; HOT1; OH20; AT10; OTWAWS01; BCOE01; TELUSON3; OTWASL01; ENOE01; ROGOTT01;	
WHAT TYPE OF REQUEST, IF NOT ORIGINAL, THE PREVIOUS REQUEST ID?		
FURTHER COMMENTS:		



# BELL CANADA CLEARANCE

CLEARANCE # A1181164

One Call Ticket #: 2015472883

Issued By: BELL CANADA

For Station Code: BCOE01

Date: 11/17/2015

Time: 07:00:07

Primary Contact: ANNA GRAHAM

Fax: (613)-226-6344 ext.

Type of Work: TEST HOLES

## LOCATE DETAILS

Location: 375, QUEEN ELIZABETH DRWY  
OTTAWA, OTTAWA

## Remarks:

-75.683530 45.400425 NB\_SEGMENTS::1 OTWATS01 HOT1 OH20 AT10 OTWAWWS01 BCOE01 TELUSON3 -C OTWASL01 ENOE01 ROGOTT01 -C

OTTAWA CORLOT=U 2 HOLES, 1X1M EACH TO BE DUG BY HAND IN INDICATED AREA. NO\_PLAN::613 567-K1S

557573

## CONDITIONS

*If your clearance is conditional, conditions are listed below. Otherwise, you are all clear.*

**Based on the information you have provided to the One Call centre, Bell approves this excavation to proceed. This approval pertains to Bell only.**

It is the excavator/requestor's responsibility to notify the Look-Up Centre if they cannot meet the conditions outlined above. Failing to do so would acknowledge the acceptance of the conditions outlined prior to any excavation/work.

**CAUTION:** Stakes or markings may disappear or be displaced. Should sketch and markings not coincide, a new locate must be obtained. This locate is based on information that was provided to the One Call Centre. Any change to location/scope of work requires a new locate from the One Call Centre.

As there may be other buried utilities in the dig site area, you are advised to contact all buried utility owners for your work area and obtain the necessary locates/clearances.

Please pay special attention to who/what this clearance is for. Please review the document carefully and compare it to your locate request to ensure you understand what you are being cleared for. We are not responsible for any damages that result from misunderstanding what utility you are cleared for on this paperwork. Please do not hesitate to contact us if you have any questions or concerns.

**If you have any questions or concerns regarding your clearance, please call the Look-Up Centre at 1-844-225-5550.**

**NOTICE OF INTENT TO EXCAVATE**

Header Code: STANDARD

Request Type: NORMAL

Ticket No: 2015472883

Original Call Date: 11/16/2015 7:49:09 PM

Work To Begin Date: 11/23/2015

Company: PATERSON GROUP

Contact Name: ANNA GRAHAM

Pager:

Contact Phone: (613)-226-7381 ext.

Cell:

Fax: (613)-226-6344 ext.

Alternate Contact: ADRIAN MENYHART

Alt. Phone: (613)-226-7381 ext.

Place: OTTAWA

Street: 375 QUEEN ELIZABETH DRWY

Nearest Intersecting Street: BANK ST

Second Intersecting Street: FIFTH AVE

Subdivision: OTTAWA

Additional Dig Information:

CORLOT=U 2 HOLES, 1X1M EACH TO BE DUG BY HAND IN INDICATED AREA. NO\_PLAN::613 567

WO/ JOB #: 8AM-5PM

Type Of Work: TEST HOLES

Remarks:

-75.683530 45.400425 NB\_SEGMENTS::1 OTWATS01 HOT1 OH20 AT10 OTWAWS01 BCOE01 TELUSON3 -C OTWASL01 ENOE01 ROGOTT01 -C

<b>On1 Call #</b>	2015472883
<b>Date Requested</b>	11/16/2015 7:49:09 PM

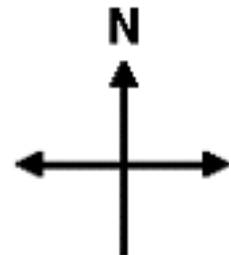
<b>Street Light Locate</b>
<b>Dispatcher:</b> Lisa Bisailon
<b>Phone:</b> 613-526-1226



<b>Company</b>	PATERSON GROUP
<b>Name</b>	ANNA GRAHAM
<b>Phone</b>	(613)-226-7381 ext.
<b>FAX</b>	(613)-226-6344 ext.
<b>Site Contact</b>	ADRIAN MENYHART
<b>Phone</b>	(613)-226-7381 ext.

**Instructions**  
 375, QUEEN ELIZABETH DRWY  
 CORLOT=U 2 HOLES, 1X1M EACH TO BE DUG BY HAND IN INDICATED AREA. NO\_PLAN:613 567


**LOCATOR SKETCH**





**Clear  
 Private Property  
 No City street light  
 assets in dig area**

**N.C.C Pathway**

—SL— Underground Street Light Cable  
 Street Light

—OH— Overhead/Aerial Wires  
 Globe/Decorative Light

 Source/Transformer  
 Hydro Pole

**Locator Notes/Comments:**

Locate is valid for 60 days. If sketch is different from markings, location or nature of work changes, a new locate must be requested. Hand dig within 1m (3.28ft) on either side of markings. Depth of buried plant varies.

Cette fiche n'est pas valide 60 jours de calendrier apres le reperation. Si les marques ne concordent pas avec celles sur le croquis, un nouveau reperation est requis. Tout changement a l'emplacement ou a la nature du travail necessite un nouveau reperation. Creuser a la main un metre (3.28 pieds) du reperation. La profondeur des installation varie d'un endroit a l'autre.

<b>Date Located</b>	11/23/2015
<b>Time of day</b>	
<b>Located by</b>	MIKE LESPERANCE
<b>Signature</b>	

Ottawa Locks


 UNION GAS EMERGENCY #  
 Primary Locate Sheet 1-877-968-0999

Request #2015472833

 Phone:  
 613-723-9888

 Fax:  
 613-723-9277

 Toll free:  
 1-800-371-8866

Email:

NORMAL

Utilities Located: <input type="checkbox"/> Bell <input checked="" type="checkbox"/> Gas <input checked="" type="checkbox"/> HydroOttawa <input type="checkbox"/> BIRCH HILL <input type="checkbox"/> Videotron <input type="checkbox"/> ALLSTREAM <input type="checkbox"/> Veridian Connections			Revised Excavation Date N/A <small>mm/dd/yyyy</small>	Excavation Date 11/23/2015 08:00:00 <small>mm/dd/yyyy</small>	Status STANDARD Homeowner <input type="checkbox"/> Contractor <input checked="" type="checkbox"/> Project <input type="checkbox"/>
Requested by: ANNA GRAHAM	Company: PATERSON GROUP	Phone: (613)-226-7381 ext.	Fax/email: (613)-226-6344 ext.		

Appt Date: <small>mm/dd/yyyy</small>	Received Date: 11/16/2015 <small>mm/dd/yyyy</small>	Locate Address: 1, CANAL LANE 1st Inters.: WELLINGTON ST      2nd Inters.: ELGIN STREET	
---	---	--	--

Type of work: TEST HOLES	City: OTTAWA
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Caller's Remarks:

CORLOT=U1 HOLE TO BE PLACED IN THE INDICATED AREA.

\*\*\*SEND HYDRO OTTAWA\*\*\*CA\*\*\*-75.697095, 45.425386, NO\_SEGMENTS::1, NO\_PLAN:613 241, ENVMOE01, BNOE01, BCOE01, TELUS03 -C, GOC01, OTWASLD1, HOT1, ROGOTT01 -C, OTWAWSD1, OTWATS01

Bell Mark   Clear <input type="checkbox"/>	Enbridge Gas Mark   Clear <input checked="" type="checkbox"/> 1	Hydro Ottawa Mark   Clear <input checked="" type="checkbox"/> 1	BIRCH HILL Mark   Clear <input type="checkbox"/>	ALLSTREAM Mark   Clear <input type="checkbox"/>	Blink Mark   Clear <input type="checkbox"/>	Veridian Mark   Clear <input type="checkbox"/>	Union Gas Mark   Clear <input type="checkbox"/>	Videotron Mark   Clear <input type="checkbox"/>
---	--	--	---	--	--	---	--	--

**LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE.**

Records Reference: <b>G MOBILE, PROVIEWER</b> <input type="checkbox"/> Map <input type="checkbox"/> Network X # <input type="checkbox"/> LAC Multiviewer <input type="checkbox"/> Byers <input checked="" type="checkbox"/> Datapak: #000055 Field Notes: <b>NE190</b> Other: DPT Remarks:	<input type="checkbox"/> Third Party Notification _____  <input type="checkbox"/> _____  Apply Sticker Here if Required
---	---

Excavator shall notify & receive a clearance from Utility prior to excavation for the following:

Telecom  High Priority Cable  Central Office Vicinity

Method of Field Marking:  Paint  Stakes  Flags  Offset Flags  Other (Telecom=Orange, Gas=Yellow, Hydro Ott. =Red)

Caution: Locates are VOID after 30 days. See Disclaimer on reverse side for the specific Facility Owner's Guidelines.

Caution: Any changes to location or nature of work require new locate. The Excavator must not work outside the Located Area without a new locate. Privately owned services within the located area have not been marked - check with service/property owner. For all Locate requests including remarks contact:  
 Ontario One Call at 1-800-400-2255 or www.on1call.com.

Locator Name: <b>WINTER PAT</b>  ID #: <b>1425</b>  Date: <b>11/18/15</b>	Start Time: <b>7:15</b>  End Time: <b>7:45</b>  Total Hours: <b>.5</b>	<input checked="" type="checkbox"/> Mark & Fax <input type="checkbox"/> Left on Site <input type="checkbox"/> Emailed  Print: <b>N/A</b>  Signature: _____
---	--	--

**A copy of this Primary Locate Sheet and Auxiliary Locate Sheet(s) must be on site and in the hands of the machine operator during work operations. If sketch and markings do not coincide, the Excavator must obtain a new locate**



Auxiliary Locate Sheet

Union Gas Emergency # 1-877-908-8888

Phone: 613-723-9888

Fax: 613-723-9277

Toll free: 1-800-371-8866

Email

UTILITIES LOCATED

- BELL  GAS  HYDRO OTTAWA  VIDEOTRON
- WATER  BH TELECOM  PVT HYDRO  STREET LIGHTS

DATE LOCATED 11/18/14 MM/DD/YYYY

Request # 2015472833

NUMBER OF SERVICES MARKED (SPECIFY HOUSE/BUILDING NUMBERS) 0

LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE

FROM: CANAL

TO: W.RW CANAL LANE

FROM: N.FC WELLINGTON

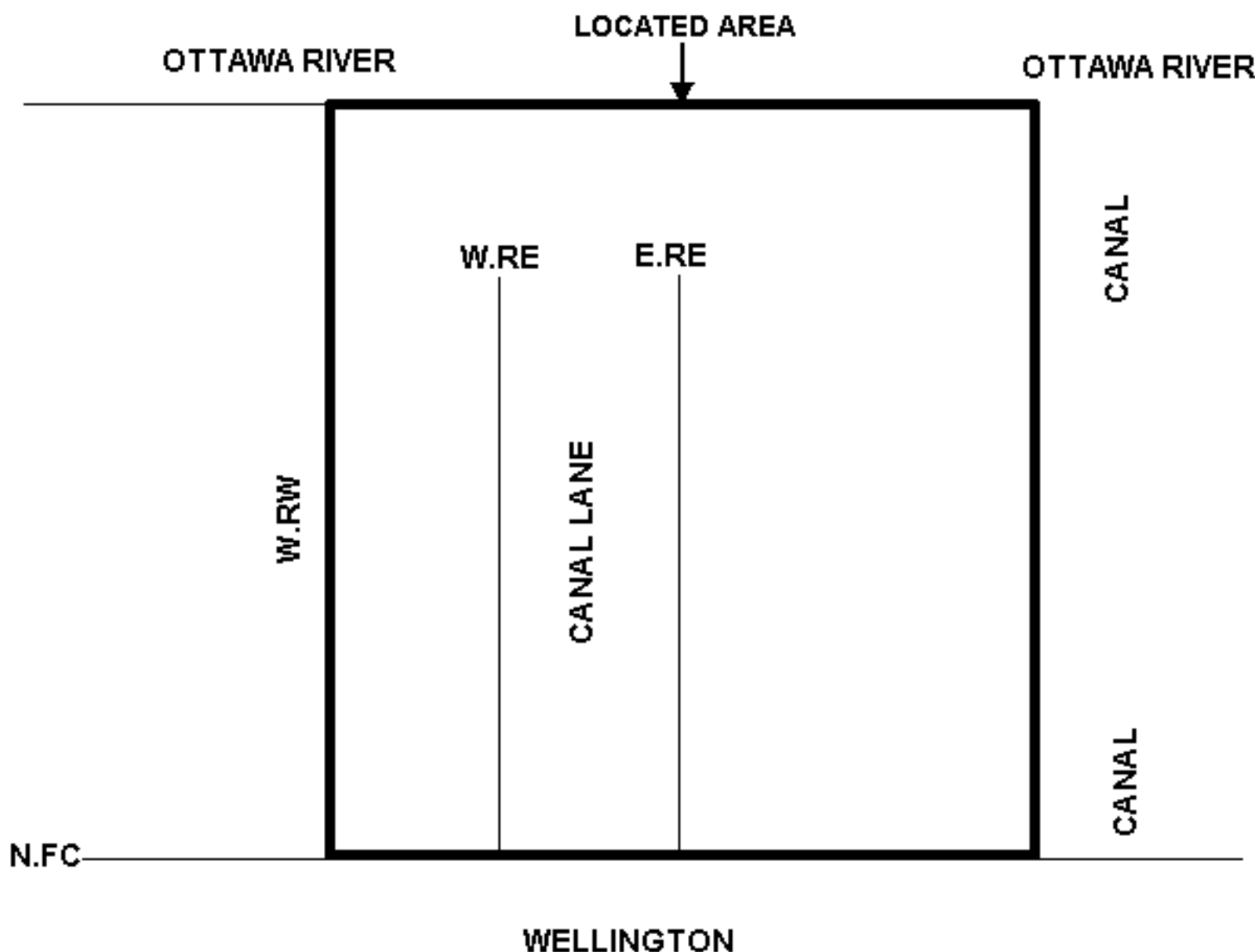
TO: OTTAWA RIVER

LEGEND

- Building Line — BL —
- Fence Line — FL —
- Face of Curb — FC —
- Road Edge — RE —
- Property Line — PL —
- Driveway — DRWY —
- Catch Basin  CB
- Sidewalk — SDWK —
- Demarcation  DM
- Railway
- Pole
- Flush to Grade Pedestal
- Pedestal
- Buried Cable — B —
- Conduit — C —
- Buried Service Wire — BSW —
- Manhole  M/H
- Fibre Optic Cable — FOC —
- Gas Main — GM —
- Gas Service — GS —
- Gas Valve
- Hydrant
- Transformer
- Hydro — H —
- Hydro Pole
- Street Light Cable — SL —
- Street Light  LP
- North N.
- South S.
- East E.
- West W.

CAUTION: Hand dig within 1 M as measured horizontally from the field markings to avoid damaging the underground utilities. If you damage the plant, you may be held liable. If you damage underground plant, contact the facility owner immediately. Depth varies and MUST be verified by hand digging or vacuum excavation. LOCATED AREA HAS BEEN ALTERED AS PER: \_\_\_\_\_

# NO BURIED ENBRIDGE GAS NETWORK IN THE LOCATED AREA



THIS FORM VALID ONLY WITH PRIMARY LOCATE FORM. THIS SKETCH IS NOT TO SCALE

ANY PRIVATELY OWNED SERVICES WITHIN THE LOCATED AREA HAVE NOT BEEN MARKED-CHECK WITH SERVICE/PROPERTY OWNER A COPY OF THIS AUXILLIARY LOCATE SHEET(S) AND THE PRIMARY LOCATE SHEET MUST BE ON SITE AND IN THE HANDS OF THE MACHINE OPERATOR DURING WORK OPERATIONS. IF SKETCH AND MARKINGS DO NOT COINCIDE, THE EXCAVATOR MUST OBTAIN A NEW LOCATE



Auxiliary Locate Sheet

Union Gas Emergency # 1-877-969-0999

Phone: 613-723-9888

Fax: 613-723-9277

Toll free: 1-800-371-8866

Email

UTILITIES LOCATED

- BELL
- GAS
- HYDRO OTTAWA
- VIDEOTRON
- WATER
- BH TELECOM
- PVT HYDRO
- STREET LIGHTS

DATE LOCATED 11/18/14 MM/DD/YYYY

Request # 2015472833

NUMBER OF SERVICES MARKED (SPECIFY HOUSE/BUILDING NUMBERS) 0

LOCATED AREA: EXCAVATOR SHALL NOT WORK OUTSIDE THE LOCATED AREA WITHOUT OBTAINING ANOTHER LOCATE

FROM: CANAL

TO: W.RW CANAL LANE

FROM: N.FC WELLINGTON

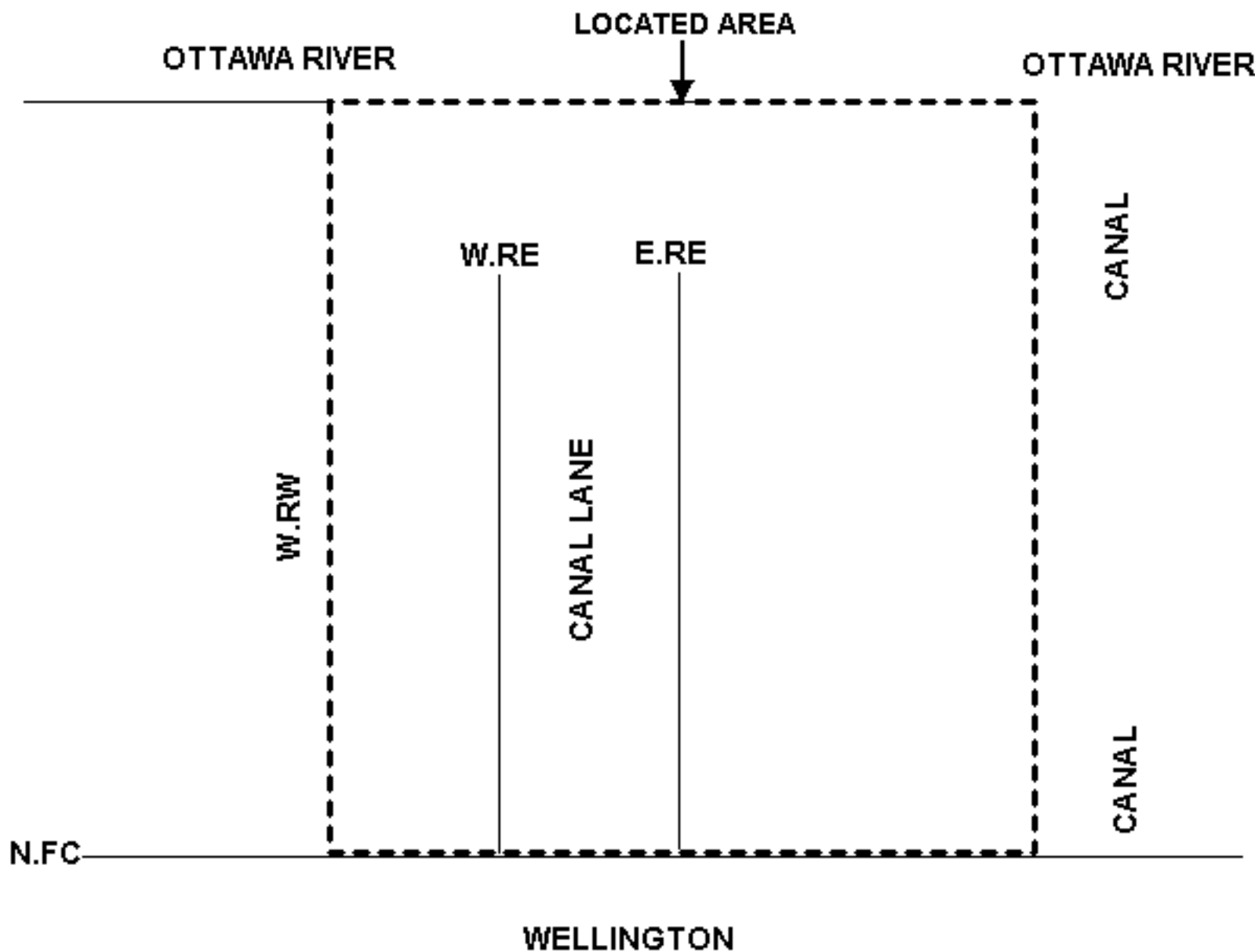
TO: OTTAWA RIVER

LEGEND

- Building Line — BL
- Fence Line — FL
- Face of Curb — FC
- Road Edge — RE
- Property Line — PL
- Driveway — DRWY
- Catch Basin [CB]
- Sidewalk — SDWK
- Demarcation (DM)
- Railway [Grid]
- Pole (O)
- Flush to Grade Pedestal [Box]
- Pedestal [Box with X]
- Buried Cable — B
- Conduit — C
- Buried Service Wire — BSW
- Manhole [M/H]
- Fibre Optic Cable — FOC
- Gas Main — GM
- Gas Service — GS
- Gas Valve [Symbol]
- Hydrant [Symbol]
- Transformer [Symbol]
- Hydro Ottawa — H
- Hydro Pole (●)
- Street Light Cable — SL
- Street Light (O LP)
- North N.
- South S.
- East E.
- West W.

CAUTION: Hand dig within 1.5M as measured horizontally from the field markings to avoid damaging the underground utilities. If you damage the plant, you may be held liable. If you damage underground plant, contact the facility owner immediately. Depth varies and MUST be verified by hand digging or vacuum excavation. LOCATED AREA HAS BEEN ALTERED AS PER: \_\_\_\_\_

# NO BURIED HYDRO OTTAWA NETWORK IN THE LOCATED AREA



THIS FORM VALID ONLY WITH PRIMARY LOCATE FORM. THIS SKETCH IS NOT TO SCALE

ANY PRIVATELY OWNED SERVICES WITHIN THE LOCATED AREA HAVE NOT BEEN MARKED-CHECK WITH SERVICE/PROPERTY OWNER A COPY OF THIS AUXILLIARY LOCATE SHEET(S) AND THE PRIMARY LOCATE SHEET MUST BE ON SITE AND IN THE HANDS OF THE MACHINE OPERATOR DURING WORK OPERATIONS. IF SKETCH AND MARKINGS DO NOT COINCIDE, THE EXCAVATOR MUST OBTAIN A NEW LOCATE

## DISCLAIMER

### Warning!

**The Excavator must have a copy of this locate on the job site during excavation.**

**Located Area:** The Excavator must not work outside the area indicated by the Located Area in the Diagram without a further locate by the Company

**Locate the plant:** The plant location information provided is the best we have available but constitutes only an estimate. Depth of underground plant varies and the exact location must be determined by hand digging prior to excavation with mechanical equipment.

Mechanical equipment must not be used within one metre of the estimated location of the plant.

**\*Hydro Ottawa must be notified prior to excavation and inspector on site\***

**Expose the plant:** Once the plant has been located by hand digging, it must be exposed along its length adjacent to or in the immediate vicinity of the proposed excavation. For this purpose, mechanical equipment must not be used within 0.5 metres of the plant.

**Digging around the exposed plant:** When the plant has been exposed, any further excavation within 0.3 metres, must only be done by hand digging and not with mechanical equipment.

**Support Requirements:** If the underground plant is exposed over a distance of more than 1.25 metres, the Facility Owner must be notified. Underground plant must be supported at all times.

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### O. Reg. 210/01 Oil and Gas Pipeline systems EXCERPTS

9. (1) No person shall dig, bore, trench, grade, excavate or break ground with mechanical equipment or explosives without first ascertaining the location of any pipeline that may be interfered with.

10. No person shall interfere with or damage any pipeline without authority to do so.

### Technical Standards & Safety Act 2000 EXCERPT

37 (1) Every person who contravenes or fails to comply with any provision of this act or the regulations; etc... is guilty of an offense and on conviction is liable to a fine of not more than \$50,000 or to imprisonment for a term of not more than one year, or to both.

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**Caution:** The markings may disappear or be misplaced. Should sketch and markings not coincide, Excavator must obtain a new locate. This is based on information given at the time. Any changes to location or nature of work require a new locate. The Excavator must not work outside the indicated Located Area without a further locate. Privately owned services within the located area have not been marked - check with service/property owner.

**Locate is VOID after 30 days.**

For remarks contact Ontario One Call 1-800-400-2255.  
or [www.on1call.com](http://www.on1call.com)







# Service Request Details

**Service Request** 948320

**Lagan Case ID:** 20154728331

**Source:** Contractor  
**Priority:**  
**Status:** RESOLVED

**Created By:** Ga Maxpusr  
**Reported By:** Serena Pugh  
**Initiated:** 2015-Nov-16 7:44 PM

## Location Information

<b>Address:</b> 1 CANAL LANE	<b>Range:</b>	<b>Unit:</b>
<b>Between Streets:</b> WELLINGTON ST W / ELGIN ST		<b>Municipality:</b> OO
<b>Description:</b> Your work area is clear of underground water and sewer pipes owned by The City of Ottawa. Any underground water and sewer pipes in your work area are privately owned.		
-- Non Specific Location --		
Street Range:1- Street:CANAL LANE Intersect 1:WELLINGTON ST Intersect 2:ELGIN STREET Door Numbers:- Municipality:OTTAWA		
-- Additional Information --		
Alternate Phone: 6132267381		

## Requestor Information

<b>Name:</b> ANNA GRAHAM	<b>Phones</b>	
<b>Address:</b> 154 COLONNADE RD S	<b>Res:</b>	<b>Cell:</b>
<b>City:</b> NEPEAN	<b>Bus:</b> 6132267381	<b>Ext:</b>
<b>Postal Code:</b> K2E7J5	<b>Unit:</b>	<b>Fax:</b>

## Call Back & Other Assignments

<b>Responsibilities</b>	<b>Work Order #</b>	<b>Work Order</b>
<b>Service Request</b>		

## Request Details

<b>Start Date:</b> 2015-Nov-17	<b>Appointment Time:</b> 1:32:58 PM	<b>Service:</b> ESD
<b>Finish Date:</b> 2015-Nov-17	<b>Classification:</b> LOCATES - PROVIDE	
<b>Amount Charge to Customer:</b>	<b>Category:</b>	

## Structures

Structure ID	District	Description	Location	Qualifier	Unit
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# Service Request Details

LP : LOCATES - PROVIDE		
Attribute Description	Values	Comments
ON1CALL LOCATE ADDRESS	Street Range:1-   Street:CANAL LANE   Intersect 1:WELLINGTON ST   Intersect 2:ELGIN STREET   Door Numbers:-   Municipality:OTTAWA	
IF THERE IS AN ADDRESS NUMBER		
ARE YOU A HOMEOWNER, CONTRACTOR	CONTRACTOR	
WHO ARE YOU WORKING FOR?	PATERSON GROUP	
WHAT IS THE CALLER'S TITLE?	ASSESSOR	
WHAT IS YOUR COMPANY NAME?	PATERSON GROUP	
PLEASE PROVIDE A CONTACT PHONE NUMBER	6132267381	
PLEASE PROVIDE AN ALTERNATE CONTACT	ADRIAN MENYHART	
PLEASE PROVIDE CONTACT PHONE INFORMATION FOR PERSON ON SITE		
PLEASE PROVIDE A FAX NUMBER	6132266344	
PLEASE PROVIDE AN EMAIL ADDRESS	agraham@patersongroup.ca	
WHAT TYPE OF WORK ARE YOU DOING?	TEST HOLES	
WHERE ARE YOU WORKING ON THE PROPERTY?	CORLOT=U 1 HOLE TO BE PLACED IN THE INDICATED AREA.	
HOW DEEP ARE YOU DIGGING/ EXCAVATING?	3.000000	
WHAT IS THE UNIT OF MEASURE?	METERS	
ARE YOU DIGGING BY HAND OR BY MACHINE?	Hand Dig	
WILL THERE BE DIRECTIONAL DRILLING?		
IS THE AREA MARKED OUT?	Area Not Marked;Mark + Fax;	
IS A SITE MEETING REQUIRED?		
EXTRA MARKING INSTRUCTIONS?		
EXCAVATION ON PUBLIC PROPERTY?	Publ. Prop.;	
WHAT DATE IS THE WORK STARTING?	2015-11-16	
OTHER AGENCIES ALSO NOTIFIED	ENVMOE01; ENOE01; BC0E01; TELUSON3; GOC01; OTWASL01; HOT1; ROGOTT01; OTWAWS01; OTWATS01;	
WHAT TYPE OF REQUEST, IF NOT ORIGINAL, THE PREVIOUS REQUEST ID?		
FURTHER COMMENTS:		

# BELL CANADA CLEARANCE

CLEARANCE # A1181155

One Call Ticket #: 2015472833

Issued By: BELL CANADA

For Station Code: BCOE01

Date: 11/17/2015

Time: 07:00:06

Primary Contact: ANNA GRAHAM

Fax: (613)-226-6344 ext.

Type of Work: TEST HOLES

## LOCATE DETAILS

Location: 1, CANAL LANE  
OTTAWA, OTTAWA

## Remarks:

-75.697095 45.425388 NB\_SEGMENTS::1 ENVMOE01 ENOE01 BCOE01 TELUSON3 -C GOC01 OTWASL01 HOT1 ROGOTT01 -C OTWAWWS01 OTWATS01

OTTAWA CORLOT=U 1 HOLE TO BE PLACED IN THE INDICATED AREA. NO\_PLAN:613 241-K1N

557553

## CONDITIONS

*If your clearance is conditional, conditions are listed below. Otherwise, you are all clear.*

**Based on the information you have provided to the One Call centre, Bell approves this excavation to proceed. This approval pertains to Bell only.**

It is the excavator/requestor's responsibility to notify the Look-Up Centre if they cannot meet the conditions outlined above. Failing to do so would acknowledge the acceptance of the conditions outlined prior to any excavation/work.

**CAUTION:** Stakes or markings may disappear or be displaced. Should sketch and markings not coincide, a new locate must be obtained. This locate is based on information that was provided to the One Call Centre. Any change to location/scope of work requires a new locate from the One Call Centre.

As there may be other buried utilities in the dig site area, you are advised to contact all buried utility owners for your work area and obtain the necessary locates/clearances.

Please pay special attention to who/what this clearance is for. Please review the document carefully and compare it to your locate request to ensure you understand what you are being cleared for. We are not responsible for any damages that result from misunderstanding what utility you are cleared for on this paperwork. Please do not hesitate to contact us if you have any questions or concerns.

**If you have any questions or concerns regarding your clearance, please call the Look-Up Centre at 1-844-225-5550.**

**NOTICE OF INTENT TO EXCAVATE**

Header Code: STANDARD

Request Type: NORMAL

Ticket No: 2015472833

Original Call Date: 11/16/2015 7:44:08 PM

Work To Begin Date: 11/23/2015

Company: PATERSON GROUP

Contact Name: ANNA GRAHAM

Pager:

Contact Phone: (613)-226-7381 ext.

Cell:

Fax: (613)-226-6344 ext.

Alternate Contact: ADRIAN MENYHART

Alt. Phone: (613)-226-7381 ext.

Place: OTTAWA

Street: 1 CANAL LANE

Nearest Intersecting Street: WELLINGTON ST

Second Intersecting Street: ELGIN STREET

Subdivision: OTTAWA

Additional Dig Information:

CORLOT=U 1 HOLE TO BE PLACED IN THE INDICATED AREA. NO\_PLAN::613 241

WO/ JOB #: 8AM-5PM

Type Of Work: TEST HOLES

Remarks:

-75.697095 45.425388 NB\_SEGMENTS::1 ENVMOE01 ENOE01 BCOE01 TELUSON3 -C GOC01 OTWASL01 HOT1 ROGOTT01  
-C OTWAWS01 OTWATS01

<b>On1 Call #</b>	2015472833
<b>Date Requested</b>	11/16/2015 7:44:08 PM

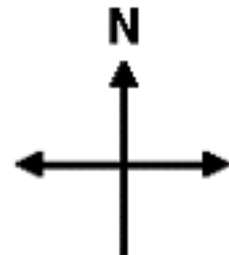
<b>Street Light Locate</b>
<b>Dispatcher:</b> Lisa Bisailon
<b>Phone:</b> 613-526-1226



<b>Company</b>	PATERSON GROUP
<b>Name</b>	ANNA GRAHAM
<b>Phone</b>	(613)-226-7381 ext.
<b>FAX</b>	(613)-226-6344 ext.
<b>Site Contact</b>	ADRIAN MENYHART
<b>Phone</b>	(613)-226-7381 ext.

**Instructions**  
 1, CANAL LANE  
 CORLOT=U 1 HOLE TO BE PLACED IN THE INDICATED AREA. NO\_PLAN:613  
 241

**LOCATOR SKETCH**



**Clear  
 Private Property  
 No City street light  
 assets in dig area**

**Public Works N.C.C**

—SL— Underground Street Light Cable  
 Street Light

—OH— Overhead/Aerial Wires  
 Globe/Decorative Light

Source/Transformer  
 Hydro Pole

**Locator Notes/Comments:**

Locate is valid for 60 days. If sketch is different from markings, location or nature of work changes, a new locate must be requested. Hand dig within 1m (3.28ft) on either side of markings. Depth of buried plant varies.

Cette fiche n'est pas valide 60 jours de calendrier apres le reperation. Si les marques ne concordent pas avec celles sur le croquis, un nouveau reperation est requis. Tout changement a l'emplacement ou a la nature du travail necessite un nouveau reperation. Creuser a la main un metre (3.28 pieds) du reperation. La profondeur des installation varie d'un endroit a l'autre.

<b>Date Located</b>	11/18/2015
<b>Time of day</b>	
<b>Located by</b>	MIKE LESPERANCE
<b>Signature</b>	

**UNDERGROUND SERVICE LOCATORS**

DATE: *Nov 30 /15*

**ONE-CALL SYSTEMS INC.**

**775 TAYLOR CREEK DRIVE**

PHONE (613) 226-8750

**OTTAWA, ON, K1C 1T1**

FAX (613) 226-8677

CUSTOMER: *PATERSON GROUP*

REQUESTED BY: *ANNA GRAHAM*

LOCATION OF WORK: *1 CANAL LANE*

LIMITS OF WORK: *HAND DIG TO 1 M*

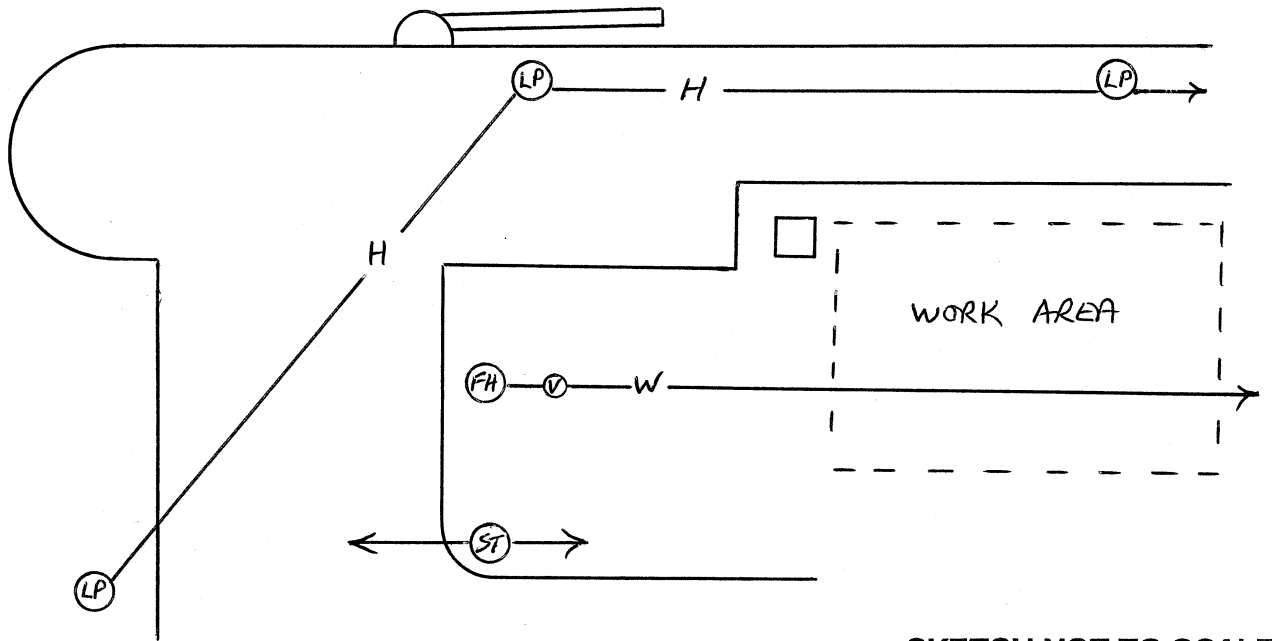
HYDRO	-- H --	CABLE T.V.	-- T.V. --	STEAM	-- STM --
GAS	-- G --	SANITARY	-- SAN --	PRIVATE LIGHTING	-- PL --
BELL	-- B --	STORM	-- ST --	<u>OTHER:</u> <i>FIRE HYDRANT - FH</i>	
WATER	-- W --	FIBER OPTIC	-- FO --	<i>LAMP POST - LP</i>	

**LOCATES ONLY APPLICABLE TO INFO ABOVE - LOCATES VOID AFTER 30 DAYS!**



REFERENCE NORTH

*CANAL LOCKS*



**SKETCH NOT TO SCALE**

**COMMENTS:**

**THIS SKETCH IS NOT A VALID PUBLIC UTILITY LOCATE. CONTRACTOR IS RESPONSIBLE TO ENSURE THEY HAVE PUBLIC LOCATES BEFORE COMMENCING WORK.**

ASBUILTS OR PLANS PROVIDED:  YES  NO If No, Provide Comments:

LOCATORS NAME: *DAN SPARLING*

SIGNATURE: *[Signature]*

LOCATE RECEIVED AND REVIEWED BY \_\_\_\_\_

Print Name

Signature

**CAUTION: HAND DIG WITHIN 1.5 METERS OF MARKINGS**

<b>to:</b>	National Capital Commission – Sylvie Lagueux – <a href="mailto:sylvie.lagueux@ncc-ccn.ca">sylvie.lagueux@ncc-ccn.ca</a> National Capital Commission – Ian Badgley – <a href="mailto:ian.badgley@ncc-ccn.ca">ian.badgley@ncc-ccn.ca</a>
<b>re:</b>	Rideau Promenade Archaeological Assessments – Pretoria Bridge and Central Experimental Farm
<b>date:</b>	December 17, 2015
<b>file:</b>	PA1064-MEMO.01
<b>from:</b>	Nadine Kopp

Paterson Group (Paterson) is pleased to provide this memo regarding the Rideau Promenade Archaeological Assessments at Pretoria Bridge and the Central Experimental Farm from November 30 to December 1, 2015.

The National Capital Commission (NCC) is planning to install new interpretive nodes at select location along the Rideau Promenade. Since some of these nodes include elements with subsurface components, an archaeological assessment of the locations was recommended by the NCC archaeologist, Mr. Ian Badgley. The NCC retained Paterson to undertake the assessments of the two noted locations to ascertain if archaeological potential existed and if archaeological resources were indeed present.

### **Methods**

Paterson archaeologists hand excavated two 1x1 m test units at the Central Experimental Farm, and one 1x1 m test unit at Pretoria Bridge. Each test pit was excavated stratigraphically, 5 cm into sterile soil or to 1.5 m. All soils were screened by stratigraphic layer through 6 mm (4") mesh. Test pit locations were recorded using a handheld Garmin GPSmap62 sampling five times over for one hour to 100% confidence.

All test pits were recorded using the methods outlined in the Parks Canada Archaeological Recording Manual. Test units were assigned proveniences based on the Paterson project number, suffixed with an operation and suboperation designation. At least one soil profile was recorded for each test pit. All artifacts were collected and bagged by their unique lot and sub-operation and labelled appropriately with their complete provenience. All artifacts were returned to Paterson's lab facility for washing, sorting, inventory, analysis, and temporary storage. Artifacts will be transferred to the NCC upon approval of the memo report.

### **General Findings:**

#### **Central Experimental Farm**

Two 1x1 m units were excavated at the proposed location for interpretive panel installation (Figure 2 and Figure 2) (Map 1). The first unit, designated PA1064-3A, encountered assumed bedrock or a large boulder approximately 20 cm below surface. Overlying this

assumed bedrock were three layers of jumbled fill of modern origin. Lot 1 consisted of 8 cm of modern sod, over top of 3 cm of brown topsoil (lot 2) which directly overlaid 4 cm of a gravely brown fill (lot 3), Directly above assumed bedrock (lot 5), was a dark brown/ black shale with clinker fill (lot 4). Given the presence of plastics and wire nails, cinder like material and the non-stratigraphic nature of the deposit it was determined that there was no remaining archaeological potential at this location (Figure 3 and Figure 4).

The second 1x1 m unit, PA1064-3B, consisted of 5 cm of sod (lot 1), overlaying 6 cm of topsoil (lot 2). Below the topsoil was a 9 cm thick gravely brown fill, the same as that encountered in unit 3A (lot 3). Directly below the fill was the dark brown/black clinker and shale layer with many boulders and cobbles (lot 4). This layer was much thicker than its correlated lot in unit 3A. Given the modern nature of the deposits encountered to approximately 50 cm and the relative homogeneity of the deposit, it was deemed best to see if the fill overlies any potentially intact soils rather than continuing the excavation the entire 1x1 m unit. Therefore a 50 x 50 cm sondage unit was excavated in the southern corner of the 1x1 m unit. This demonstrated that the fill overlies subsoil at a depth of about 1m below current grade. Natural subsoil (lot 5) was encountered at 1 m below the current surface and excavation continued 5 cm into subsoil to look for and cultural features (Figure 5 and Figure 6). Given the modern nature of the fill and it's depth it was determined that there was no remaining archaeological potential at this location.



**Figure 1: Overview of the proposed location for interpretive panel installation at the Central Experimental Farm (D003).**





Figure 2: Excavating 1x1 m units at the proposed location for interpretive panel installation at the Central Experimental Farm (D008).



Figure 3: Southwest profile of excavation unit 3A (D005).



Figure 4: Final plan view of excavation unit 3A showing assumed bedrock (D006).



Figure 5: Southwest profile of excavation unit 3B (D011).



Figure 6: Final plan view of excavation unit 3B (D010).

### **Pretoria Bridge:**

Only a single excavation unit (2A) was required to test the area at Pretoria Bridge, as it was in an area of lower potential and the initial unit demonstrated soil deposits in the area to be thin and not of archaeological nature (Figure 7) (Map 2). Lot 1 consisted of 20 cm of dark brown silty sandy loam topsoil, directly above 11 cm of mottled beige and dark brown silty sand fill (lot 2). A total of 16 artifacts were found in lot 2, which consisted of slag, mammal bone, pane glass, amber/brown, bottle glass, a wire nail, a cut nail, and a 2003 or 2008 Canadian dime (for complete artifact inventory see Appendix B). Directly below the fill was stiff grey clay subsoil, located approximately 30 cm below the current surface, which was excavated 5 cm into subsoil to uncover any possible cultural features (Figure 8 and Figure 9). Given the modern nature of the fill it was determined that there was no remaining archaeological potential at this location, which has been extensively landscaped.



Figure 7: Overview of excavations proposed location for interpretive panel installation at Pretoria Bridge (D012).



Figure 8: Southwest profile of excavation unit 2A (D016).



Figure 9: Final plan view of excavation unit 2A (D018).

**Recommendations:**

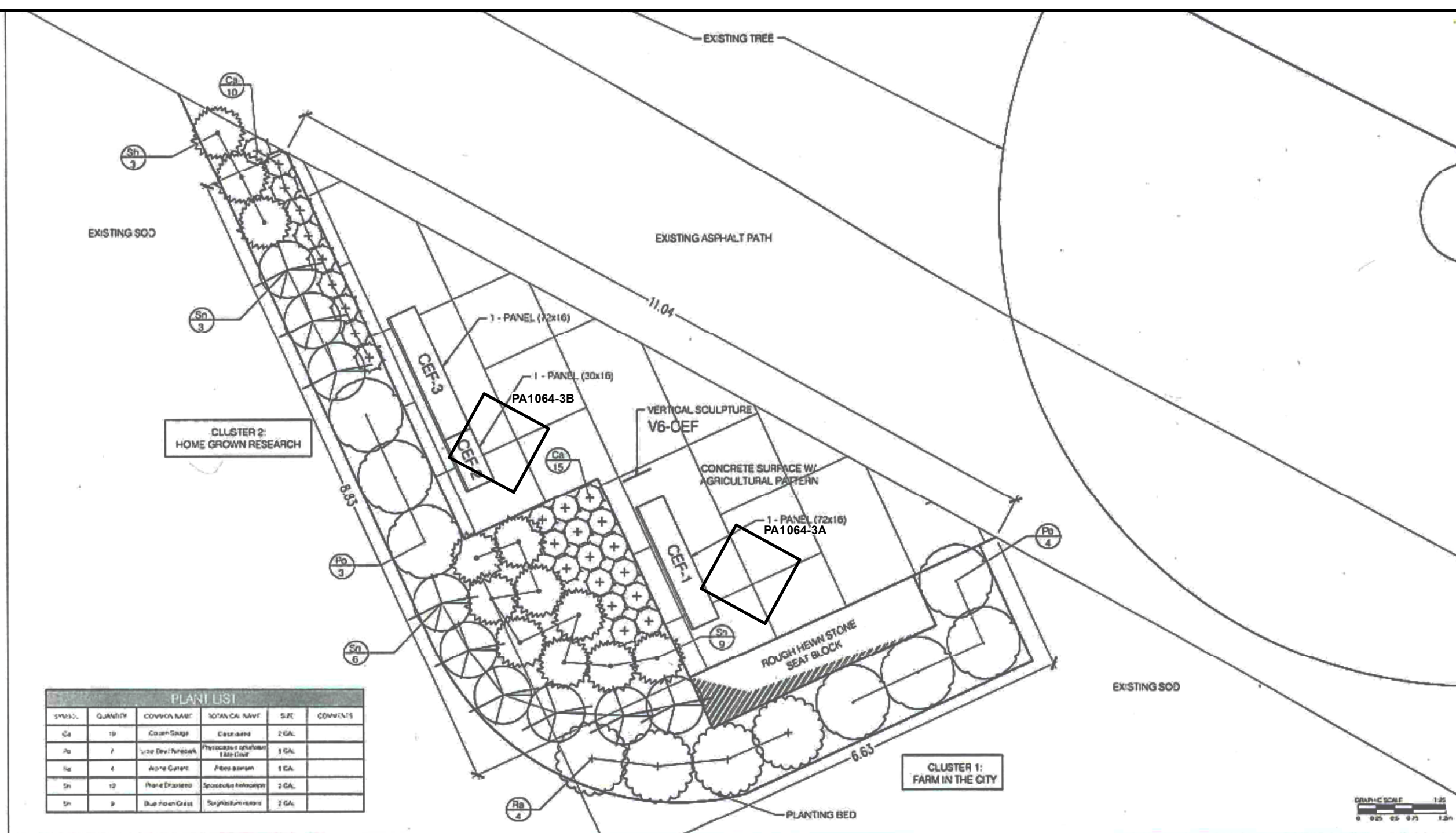
No significant archaeological deposits were observed at the Pretoria Bridge node, nor at the Central Experimental Farm node. Accordingly Paterson recommends:

- No further archaeological testing is required at the Central Experimental Farm interpretive node as illustrated in Map 1.
- No further archaeological testing is required at the Pretoria Bridge interpretive node as illustrated in Map 2.
- Future excavation beyond the limits investigated under this program should only be undertaken after archaeological review.

We trust that this update meets your requirements.

Paterson Group

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Ottawa - Ontario - K2E 7J5  
Tel: (613) 226-7381 ext. 242  
Cell: (613) 807-1124  
Fax: (613) 226-6344



PLANT LIST					
SYMBOL	QUANTITY	COMMON NAME	SCIENTIFIC NAME	SIZE	COMMENTS
Ca	19	Golden Spruce	Eleagnus	2 GAL.	
Pa	7	Little Drift Juniper	Platanus occidentalis	3 GAL.	
Pa	4	Wormy Ginkgo	Ginkgo biloba	1 GAL.	
Sn	12	Prune Diarrea	Spiraea alba	2 GAL.	
Sn	8	Blue Foam Grass	Syntherismastrum	2 GAL.	

1. Show the location of the proposed installation on the site plan.
2. Show the location of the proposed installation on the site plan.
3. Show the location of the proposed installation on the site plan.
4. Show the location of the proposed installation on the site plan.
5. Show the location of the proposed installation on the site plan.
6. Show the location of the proposed installation on the site plan.
7. Show the location of the proposed installation on the site plan.
8. Show the location of the proposed installation on the site plan.
9. Show the location of the proposed installation on the site plan.
10. Show the location of the proposed installation on the site plan.

- LEGEND**
- CONCRETE PAVEMENT WITH AGRICULTURAL PATTERN
  - EXISTING SOD
  - EXISTING ASPHALT
  - EXISTING TREE
  - NEW PLANTING
  - NEW PLANTING
  - ADJUSTED PLANTING

NO.	DATE	REVISIONS / SUBMISSIONS

**CENTRAL EXPERIMENTAL FARM INTERPRETIVE INSTALLATIONS**

LANDSCAPE PLAN

Project No. 10023-1

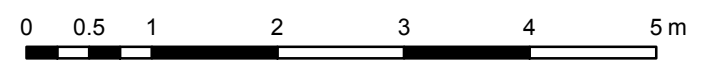
Client: AA

Scale: AS NOTED

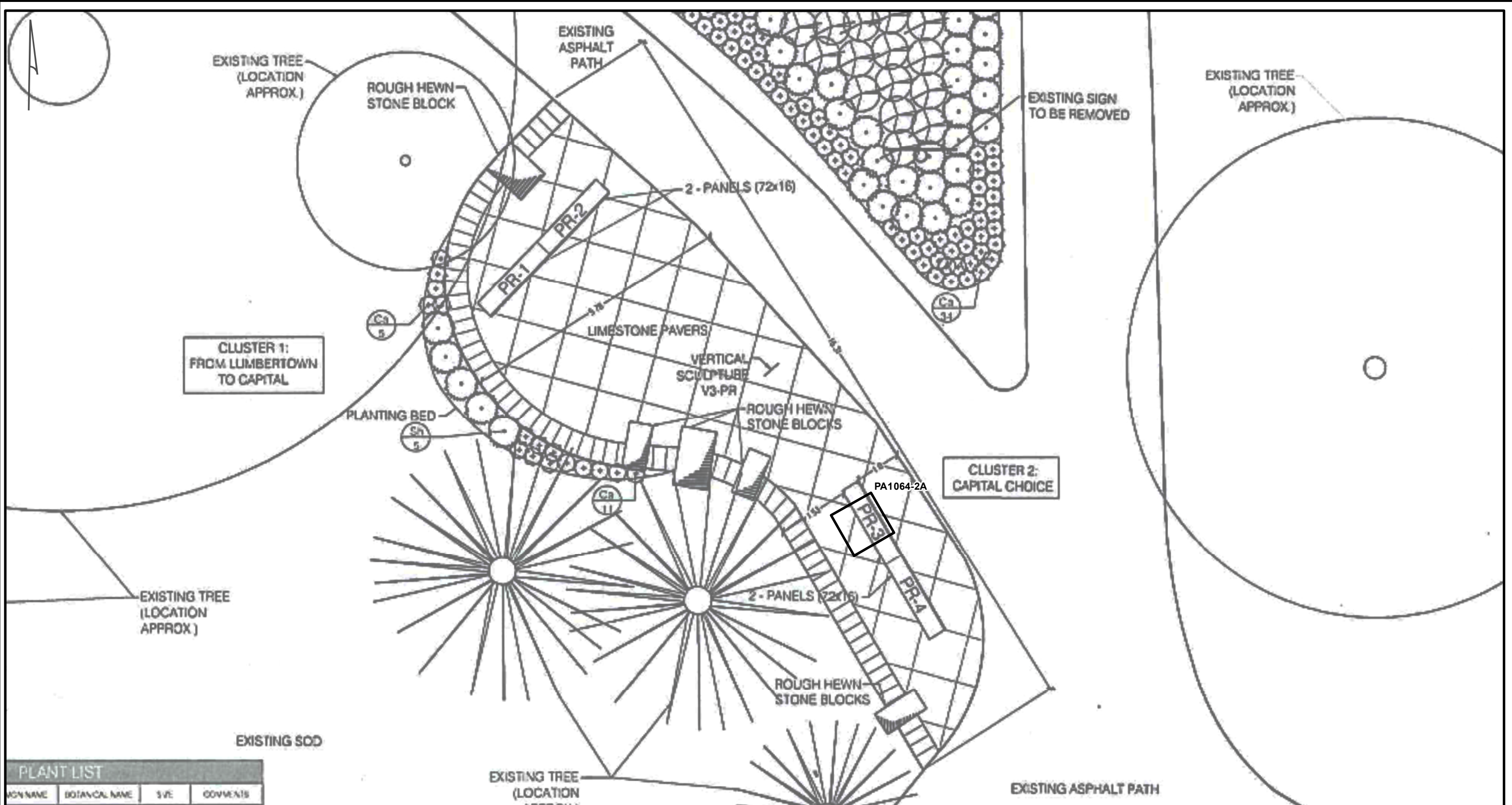
Map No. L-06

**1** CENTRAL EXPERIMENTAL FARM INTERPRETIVE INSTALLATION  
L-06 1:25

□ 1 x 1 m Unit (Approximate Location)



References:  
Projection: Transverse Mercator Datum NAD 83, UTM Zone 18  
Landscape Plan provided by the NCC

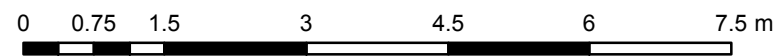


**CLUSTER 1:  
FROM LUMBERTOWN  
TO CAPITAL**

**CLUSTER 2:  
CAPITAL CHOICE**

PLANT LIST			
IGN NAME	BOTANICAL NAME	SVE	COMMENTS

□ 1 x 1 m Unit (Approximat Location)



References:

Projection: Transverse Mercator Datum NAD 83, UTM Zone 18  
Landscape Plan provided by the NCC

### Appendix A: Photo Inventory

Photo Number	Date Taken	Description	Direction	Photographer
PA1064-D001	30/11/2015	Overview of Dows Lake Location	E	B. Mortimer
PA1064-D002	30/11/2015	Overview of Dows Lake Location	SE	B. Mortimer
PA1064-D003	30/11/2015	Overview of Dows Lake Location	NE	B. Mortimer
PA1064-D004	30/11/2015	3A Southwest profile	SW	B. Mortimer
PA1064-D005	30/11/2015	3A Southwest profile	SW	B. Mortimer
PA1064-D006	30/11/2015	3A planview	SW	B. Mortimer
PA1064-D007	01/12/2015	Excavating 3B	S	B. Mortimer
PA1064-D008	01/12/2015	Excavating 3B	NE	B. Mortimer
PA1064-D009	01/12/2015	Excavating 3B	NE	B. Mortimer
PA1064-D010	01/12/2015	3B planview	NE	B. Mortimer
PA1064-D011	01/12/2015	3B SE profile	NE	B. Mortimer
PA1064-D012	01/12/2015	Overview of Pretoria Location	S	B. Mortimer
PA1064-D013	01/12/2015	Overview of Pretoria Location	S	B. Mortimer
PA1064-D014	01/12/2015	2A SW profile	SW	B. Mortimer
PA1064-D015	01/12/2015	2A SW profile	SW	B. Mortimer
PA1064-D016	01/12/2015	2A SW profile	SW	B. Mortimer
PA1064-D017	01/12/2015	Overview of Pretoria Location	S	B. Mortimer
PA1064-D018	01/12/2015	2A planview	SW	B. Mortimer

### Appendix B: Artifact Inventory

Record Number	Provenience	#	Function	Functional Group	Material	Primary Diagnostic	Comment
17550	2a2	1	Mammal bone	Mammal / Mammalia	bone		
17551	2a2	3	Slag (metal working)	Metal Working	slag		
17552	2a2	1	Pane glass	Construction Materials	Colourless Glass		
17553	2a2	1	rod	Unspecified	iron		
17554	2a2	1	wire	Unspecified	Copper Alloy		
17555	2a2	4	Bottle unidentified	Unspecified	Amber/Brown Glass		
17556	2a2	1	Tableware unspecified	Service Tableware / Teaware	Porcelain unspecified	Lithograph	
17557	2a2	1	coin	Adornment	Nickel		Canadian 2003 or 2008 dime
17558	2a2	1	Wire / drawn nail	Hardware Fasteners	Iron		
17559	2a2	1	Cut nail	Hardware Fasteners	Iron		
17560	2a2	1	Nail unidentified	Hardware Fasteners	Iron		



<b>to:</b>	National Capital Commission – Sylvie Lagueux – <a href="mailto:sylvie.lagueux@ncc-ccn.ca">sylvie.lagueux@ncc-ccn.ca</a> National Capital Commission - Ian Badgley – <a href="mailto:ian.badgley@ncc-ccn.ca">ian.badgley@ncc-ccn.ca</a> Parks Canada – Stacey Taylor - <a href="mailto:Stacey.Taylor@pc.gc.ca">Stacey.Taylor@pc.gc.ca</a>
<b>re:</b>	Rideau Promenade Archaeological Assessment – Ottawa Locks
<b>date:</b>	December 17, 2015
<b>file:</b>	PA1064-MEMO.02
<b>from:</b>	Nadine Kopp

Paterson Group (Paterson) is pleased to provide this memorandum regarding the Rideau Promenade Archaeological Assessments at Ottawa Locks from December 4-9, 2015.

The National Capital Commission (NCC) is planning to install a new interpretive node at Ottawa Locks along the Rideau Promenade. Since this node includes elements with subsurface components, an archaeological assessment of the location was recommended by the NCC archaeologist, Mr. Ian Badgley. The NCC retained Paterson to undertake the assessment of the noted location to ascertain if archaeological potential existed and if archaeological resources were indeed present.

## Methods

Paterson archaeologists hand excavated two 1x1 m test units at the Ottawa Locks, located at the lowest lock for the canal. Each test pit was excavated stratigraphically to 1.5 m, the limit of construction impact. All soils were screened by stratigraphic layer through 6 mm (4") mesh. Test pit locations were recorded using a Nikon DTM-322 total station.

All test pits were recorded using the methods outlined in the Parks Canada Archaeological Recording Manual. Test units were assigned proveniences based on the Parks Canada provenience system using a site number, 34H, and division of the site area using the Parks Canada classification system where each distinct area is given an operation number, each excavation unit, or sub-operation, within the operation is given a letter designation and each lot within the sub-operation receives a number. The current investigation was designated Operation 56, following on from previous work conducted at the site. Thus 34H56A1 refers to operation 56, sub-operation A, lot 1 (the letters I, O, and Z not being used in the Parks Canada system as they are too easily confused with the numbers 1, 0, and 2).

At least one soil profile was recorded for each test pit. All artifacts were collected and bagged by their unique lot and sub-operation and labelled appropriately with their complete provenience. All artifacts were returned to Paterson's lab facility for washing, sorting, inventory, analysis, and temporary storage. Artifacts will be transferred to Parks Canada upon approval of the memo report.

## General Findings:

Two 1x1 m units were excavated at the proposed location for interpretive panel installation (Figure 1 and Figure 4) (Map 1). The first unit, designated 34H56A, was excavated to the full proposed construction depth of 1.5 m, possibly reaching natural subsoil at that depth. A total of 14 lots were excavated, which demonstrated many layers of modern fill to a depth of 1.45 m, later determined to likely relate to disturbance from the water main.



Figure 1: Excavating 34H56A at Ottawa Locks (34H99E).

The current sod (lot 1) consisted of a 3 cm thick very dark brown loam that covered 6 cm thick sandy clay loam topsoil (lot 2). Beneath the topsoil was an 11 cm thick modern gravelly clay sand fill (lot 3) that contained pane glass, 20<sup>th</sup> century pop bottle glass, and some historic material such as a wrought nail, a cut nail, and a Prosser button (1840s+) (For complete artifact inventory see Appendix B). Below this modern fill layer was a 5 cm thick beige sand fill (lot 4) that that contained coarse earthenware, mammal bone, a cut nail, refined white earthenware (1830+), vitrified white earthenware (1840+), as well as modern material such as a wire nail. Below this sand fill were eight subsequent modern fill layers (lots 5, 6, 7, 8, 9, 10, 11 and 12). Plastic was discovered in lot 7, but discarded. Lot 11 contained clinker, asphalt, brick, pane glass, and a wire nail. Below lot 12 was a thin (5 cm) brown silty clay interface (lot 13) between lot 12 and natural subsoil (lot 14). Lot 13 contained displaced historic material such as the neck to an aqua blow glass bottle, a cut nail and mammal bone. Presumed natural silty clay subsoil (lot 14) was reached at 1.50 m, however this lot was not excavated as the construction grade was reached (Figure 3 and

Figure 4). Given the modern nature of the fill and it's depth it was determined that there was no remaining archaeological potential at this location to the depth investigated.



Figure 2: Northeast profile of excavation unit 34H56A (34H105E).



Figure 3: Final planview of 34H56A (34H107E).

The second unit, designated 34H56B (Map 1), was excavated to the full proposed construction depth of 1.5 m, without reaching natural strata. A total of 10 lots were excavated, which demonstrated many layers of modern fill to a depth of 1.13 m.

The current sod (lot 1) consisted of a 4 cm thick black sandy loam that covered a 12 cm thick very dark greyish brown sandy clay topsoil (lot 2). Below the topsoil is a series of crushed granular and clay-gravel fills (lot 3). These were excavated separately, but recorded as a single deposit as all were modern and not of archaeological concern. Lot 4 consisted of a 32 cm thick redeposited fill of silty clay glacial till with many rounded cobbles and pebbles. Below this layer was a 7 cm thick modern fill (lot 5) of light grey clay sand with flecks of brick mortar, and limestone cobbles. Below lot 5 was another modern fill layer (lot 6) of dark greyish brown sandy clay that measured 21 cm thick. Lot 6 contained mammal bone, pane glass, and 20<sup>th</sup> century pop bottle glass. Below lot 6, was the last of the modern fill layers (lot 7), a yellowish brown sand that was 24 cm deep, ending 1.13 m below the current surface.

Below the last of the modern fill layers was an 11 cm thick possible historic fill layer (lot 8) of black clay sand that contained a cut nail, milk glass, colourless bottle glass and mammal bone. Below this possible historic fill was another historic era fill layer that likely dates from 1850-1900. This fill was a dark greyish brown silty clay with a high percentage of plaster fragments, mortar flecks, a few pieces of brick, and a couple pieces of coal. Artifacts included only historic material. Ceramics fragments include part of a blue sponged refined

white earthenware teacup (1840-1890), a floral transfer printed refined white earthenware soup plate (1830+), a moulded and black painted scalloped rim refined white earthenware plate (1830+), a plain pearlware plate foot ring (1775-1830), and miscellaneous fragments of refined white earthenware decorated with Blue Willow pattern, blue edged Chicken Foot pattern, industrial slip banded, and various blue transfer patterns. Glass artifacts include green and dark olive green wine bottle glass, blue and aqua bottle glass, milk glass, shards from an aqua panel bottle, as well as lamp chimney glass. Construction material includes brick and plaster, one piece that still shows the light pink paint that originally decorated a room somewhere, and a cut nails. Faunal remains include mammal bone, mammal teeth, bird bone, and mollusc shells. Other items include a Prosser button (1840+), a two-hole porcelain button, two metal shank buttons, and part of a copper alloy key.

Directly below this historic fill layer was a black clay loam layer encountered at 1.50 m below the current surface. As the construction depth was reached, this layer was not excavated. The moderate slope to the north and high organic content of this layer indicate this is a possible buried A horizon, or an original historic ground surface (Figure 5 and Figure 6).

Given the modern nature of the fill and it's depth to the 1.3 m there will not be any significant impact to the limited resources present. Excavation beyond the 1.5 m depth, may encounter intact cultural resources.



Figure 4: Excavating 34H56B at Ottawa Locks (34H111E).



Figure 5: Southwest profile of excavation unit 34H56B (34H114E).



Figure 6: Final planview of excavation unit 34H56B (34H116E).

**Recommendations:**

No significant archaeological deposits were observed at the Ottawa Locks node to the 1.5 m construction depth, however, excavation beyond the 1.3 m depth, may encounter significant archaeological resources. Accordingly Paterson recommends:

- Archaeological monitoring by a licensed professional archaeologist should be undertaken alongside all construction activities at this location.
- Future excavation beyond the limits investigated under this program should only be undertaken after archaeological review.

We trust that this update meets your requirements.

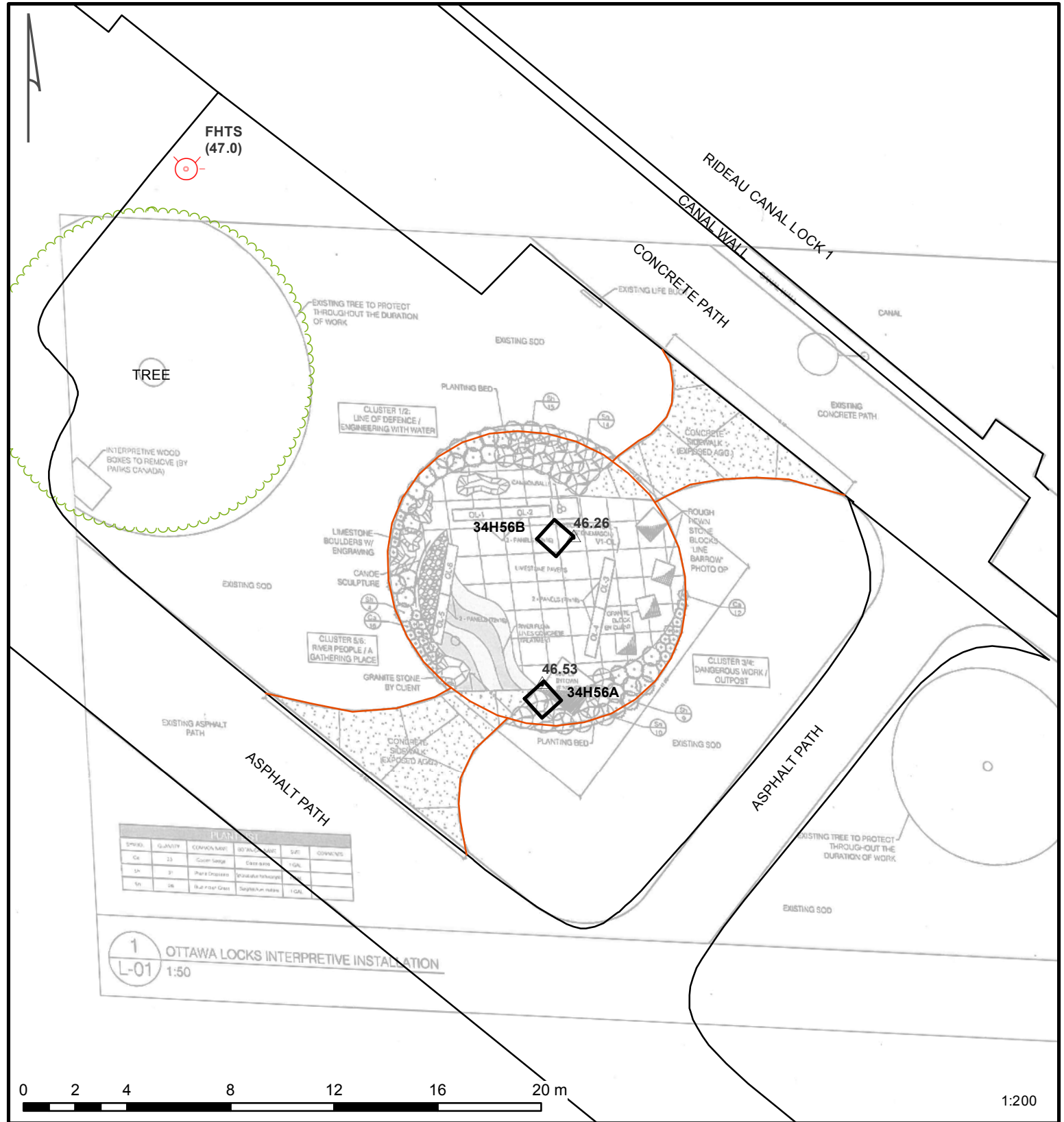
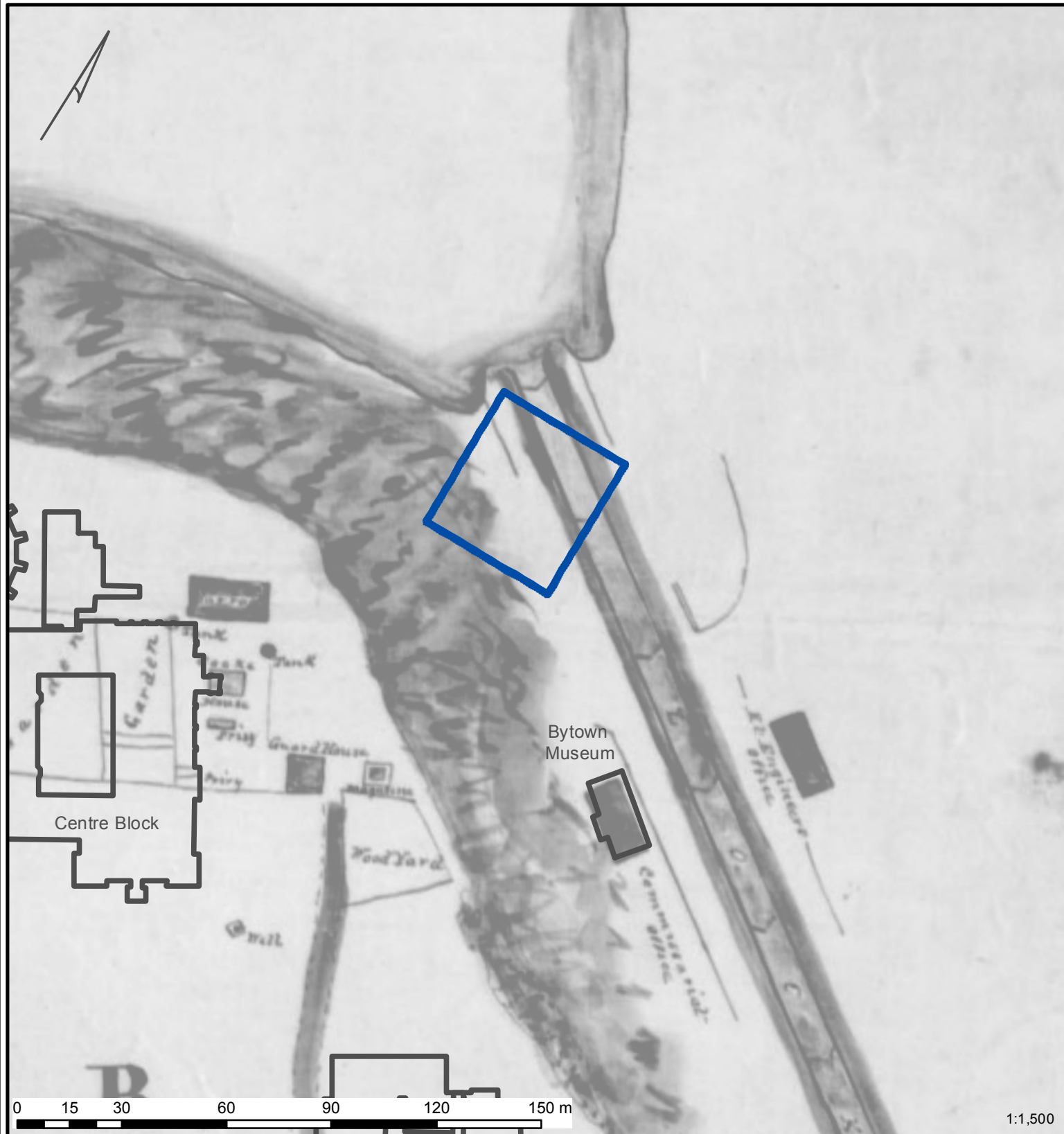
Paterson Group

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Fax: (613) 226-6344

## Appendix A: Photo Inventory

Photo #	Date Taken	Description	Direction	Photographer	Provenience
34H98E	04/12/2015	Excavating 34H56A	W	Nadine Kopp (186H)	34H56A
34H99E	04/12/2015	Excavating 34H56A	S	Nadine Kopp (186H)	34H56A
34H100E	04/12/2015	Excavating 34H56A	S	Nadine Kopp (186H)	34H56A
34H101E	04/12/2015	Excavating 34H56A	N	Ben Mortimer (161H)	34H56A
34H102E	04/12/2015	Excavating 34H56A	N	Ben Mortimer (161H)	34H56A
34H103E	04/12/2015	Excavating 34H56A	E	Ben Mortimer (161H)	34H56A
34H104E	07/12/2015	34H56A North profile	N	Ben Mortimer (161H)	34H56A
34H105E	07/12/2015	34H56A North profile	N	Ben Mortimer (161H)	34H56A
34H106E	07/12/2015	34H56A North profile	N	Ben Mortimer (161H)	34H56A
34H107E	07/12/2015	34H56A planview	W	Ben Mortimer (161H)	34H56A
34H108E	07/12/2015	Removing sod of 34H56A	S	Ben Mortimer (161H)	34H56B
34H109E	07/12/2015	Removing sod of 34H56A	NE	Ben Mortimer (161H)	34H56B
34H110E	07/12/2015	Removing sod of 34H56A	NE	Ben Mortimer (161H)	34H56B
34H111E	07/12/2015	Removing sod of 34H56A	N	Ben Mortimer (161H)	34H56B
34H112E	09/12/2015	34H56B8 planview	SW	Ben Mortimer (161H)	34H56B
34H113E	09/12/2015	34H56B8 planview	SW	Ben Mortimer (161H)	34H56B
34H114E	09/12/2015	34H56B SW profile	SW	Ben Mortimer (161H)	34H56B
34H115E	09/12/2015	34H56B SW profile	SW	Nadine Kopp (186H)	34H56B
34H116E	09/12/2015	34H56B planview	W	Nadine Kopp (186H)	34H56B





○ FHTS (47.0)  
 1 x 1 m Units

**References:**  
 Projection: Transverse Mercator Datum NAD 83, UTM Zone 18  
 Left - Plan of Upper Bytown c. 1845 (NMC 40694)

<p style="font-size: small;">154 Colonnade Road South, Ottawa, Ontario K2E 7J5</p>	Scale See Map Des BM Drawn BM Chkd BM	Project <b>PA1066</b> Borden <b>none</b>	National Capital Commission Archaeological Assessments Rideau Canal Promenade Rideau Canal, Ottawa	<h2 style="margin: 0;">OTTAWA LOCKS</h2>	File: PA1064 - MAP 01 Locations Date: 11/12/2015 Map:
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**Appendix B: Artifact Inventory**

PCA REC#	Provenience	#	Function	Material	Decorative Pattern	Dec. Colour	Primary Diagnostic	Portion	Condition	Comment
14652	34H56A11	1	Asphalt	Asphalt						
14649	34H56A11	1	brick	Brick						
14650	34H56A11	1	Clinker (spent fuel)	Clinker						
14651	34H56A11	1	Pane glass	Colourless Glass						
14653	34H56A11	1	Wire / drawn nail	Iron					Concretion / corroded	
14654	34H56A11	4	Nail unidentified	Iron					Concretion / corroded	
14656	34H56A13	1	Bottle unidentified	Blue/Green Glass (aqua)			BLOWN BOTTLE	neck		
14655	34H56A13	2	Mammal bone	Bone						
14657	34H56A13	2	Cut nail	Iron					Concretion / corroded	
14662	34H56A3	3	Pane glass	Colourless Glass						
14665	34H56A3	1	wire	Copper Alloy						
14663	34H56A3	1	Soda / mineral water bottle	Green/Yellow Glass (20th Century pop)						
14664	34H56A3	1	wire	Iron						
14666	34H56A3	2	Wrought / forged nail	Iron						
14667	34H56A3	2	Nail unidentified	Iron						
14668	34H56A3	5	Cut nail	Iron						
14669	34H56A3	3	Unidentifiable (corroded lump etc.)	Iron						
14660	34H56A3	1	button	Porcelain unspecified			Prosser			
14658	34H56A3	1	Tableware unspecified	Refined White Earthenware	Edged ware unidentified	blue				
14659	34H56A3	1	Tableware unspecified	Refined White Earthenware	Plain					
14661	34H56A3	1	Mollusc shell	shell						
14680	34H56A4	4	Mammal bone	Bone					Butchered	
14681	34H56A4	13	Mammal bone	Bone						
14688	34H56A4	1	Holloware	Coarse Earthenware		Brown	Glazed			
14670	34H56A4	4	Pane glass	Colourless Glass						

PCA REC#	Provenience	#	Function	Material	Decorative Pattern	Dec. Colour	Primary Diagnostic	Portion	Condition	Comment
14672	34H56A4	1	Bottle unidentified	Colourless Glass						
14673	34H56A4	1	Bottle unidentified	Colourless Glass						
14675	34H56A4	1	grommet	Copper Alloy						
14671	34H56A4	2	Wine bottle	Green Glass						
14676	34H56A4	1	Nail unidentified	iron					Concretion / corroded	
14677	34H56A4	4	Wire / drawn nail	Iron						
14678	34H56A4	3	Cut nail	Iron						
14679	34H56A4	3	Unidentifiable (corroded lump etc.)	Iron					Concretion / corroded	
14682	34H56A4	1	plaster	Plaster						
14685	34H56A4	1	Tableware unspecified	Porcelain unspecified	Plain					
14683	34H56A4	4	Tableware unspecified	Refined White Earthenware	Plain					
14686	34H56A4	2	Tableware unspecified	Refined White Earthenware	moulded					
14687	34H56A4	1	Tableware unspecified	Refined White Earthenware	moulded				Burned / Melted	
14674	34H56A4	4	Roof tile	slate						
14684	34H56A4	1	Tableware unspecified	Vitrified White Earthenware	moulded					
14696	34H56B5	1	brick	Brick						
14698	34H56B5	1	Clinker (spent fuel)	clinker						
14693	34H56B5	1	Straight pin	Copper Alloy						
14701	34H56B5	1	Cut nail	Iron						
14702	34H56B5	5	Nail unidentified	Iron					Concretion / corroded	
14711	34H56B5	5	Unidentifiable (corroded lump etc.)	Iron					Concretion / corroded	
14694	34H56B5	2	plaster	plaster						
14704	34H56B5	1	plaster	plaster						
14700	34H56B5	1	Tableware	Porcelain unspecified	Plain					

PCA REC#	Provenience	#	Function	Material	Decorative Pattern	Dec. Colour	Primary Diagnostic	Portion	Condition	Comment
			unspecified							
14699	34H56B5	1	Tableware	Refined White	Plain					
			unspecified	Earthenware						
14697	34H56B5	2	Mollusc shell	shell						
14695	34H56B5	1	Roof tile	slate						
14691	34H56B6	1	Mammal bone	Bone						
14689	34H56B6	4	Pane glass	Colourless Glass						
14690	34H56B6	1	Soda / mineral water bottle	Green/Yellow Glass (20th Century pop)						
14703	34H56B8	1	Mammal bone	Bone						
14705	34H56B8	1	Bottle	Colourless Glass						
			unidentified							
14707	34H56B8	1	Unidentifiable (corroded lump etc.)	Copper Alloy						
14708	34H56B8	2	Cut nail	Iron					Concretion / corroded	one nail is concreted to a large piece of mica
14709	34H56B8	6	Wire / drawn nail	iron					Concretion / corroded	
14710	34H56B8	17	Nail unidentified	iron					Concretion / corroded	
14706	34H56B8	1	Bottle unidentified	White Glass opaque (milk)					Burned / Melted	
14734	34H56B9	1	Bottle unidentified	Blue Glass						
14730	34H56B9	27	Pane glass	Blue/Green Glass (aqua)						
14733	34H56B9	3	Bottle unidentified	Blue/Green Glass (aqua)						
14737	34H56B9	1	Panel bottle	Blue/Green Glass (aqua)						
14714	34H56B9	6	Mammal bone	bone					Calcined	
14715	34H56B9	1	Mammal bone	Bone					Calcined	and butchered
14717	34H56B9	2	Mammal bone	Bone					Butchered	
14718	34H56B9	3	Bird bone	bone						

PCA REC#	Provenience	#	Function	Material	Decorative Pattern	Dec. Colour	Primary Diagnostic	Portion	Condition	Comment
14719	34H56B9	51	Mammal bone	bone						
14720	34H56B9	2	brick	brick						
14764	34H56B9	1	Clinker (spent fuel)	clinker						
14762	34H56B9	1	Holloware	Coarse Earthenware buff		black	Glazed			
14763	34H56B9	1	Holloware	Coarse Earthenware red		Green	glazed			
14731	34H56B9	4	Lamp chimney	Colourless Glass						
14732	34H56B9	1	Container unspecified	Colourless Glass						
14736	34H56B9	3	Bottle unidentified	Colourless Glass						
14740	34H56B9	1	key	Copper Alloy					Incomplete	
14716	34H56B9	2	Tooth / teeth unspecified	Dentine (Tooth)						
14729	34H56B9	3	Wine bottle	Green Glass						
14738	34H56B9	5	Wine bottle	Green Glass						
14739	34H56B9	1	Wine bottle	Green Glass			BLOWN BOTTLE	finish / rim		
14728	34H56B9	2	Wine bottle	Green Glass (dark olive)						
14727	34H56B9	2	button	Iron			shank			
14765	34H56B9	1	wire	iron						
14766	34H56B9	1	strap	Iron						
14767	34H56B9	4	Unidentifiable (corroded lump etc.)	Iron					Concretion / corroded	one piece attached to a pipe bowl
14768	34H56B9	26	Cut nail	Iron					Concretion / corroded	
14769	34H56B9	19	Nail unidentified	Iron					Concretion / corroded	
14753	34H56B9	1	Tableware unspecified	Pearlware	Plain			footring		
14721	34H56B9	2	plaster	plaster						
14722	34H56B9	1	plaster	plaster						with pink paint
14725	34H56B9	1	button	Porcelain unspecified			Prosser			painted red

PCA REC#	Provenience	#	Function	Material	Decorative Pattern	Dec. Colour	Primary Diagnostic	Portion	Condition	Comment
										stripe around exterior
14726	34H56B9	1	button	Porcelain unspecified			2 hole			
14760	34H56B9	1	Teacup	Porcelain unspecified			Lithograph			
14742	34H56B9	1	Plate unspecified	Refined White Earthenware	Chicken Foot Pattern	blue				
14743	34H56B9	3	Teacup	Refined White Earthenware	Sponged	Blue				
14744	34H56B9	2	Holloware	Refined White Earthenware	banded	Brown				
14745	34H56B9	2	Tableware unspecified	Refined White Earthenware	banded	Brown				
14746	34H56B9	1	Tableware unspecified	Refined White Earthenware				handle		
14747	34H56B9	1	Soup plate	Refined White Earthenware	Floral generic central	Blue				
14748	34H56B9	1	Tableware unspecified	Refined White Earthenware	Unspecified Transfer	Blue				
14749	34H56B9	2	Tableware unspecified	Refined White Earthenware	Willow	Blue				
14750	34H56B9	1	plate	Refined White Earthenware	Scalloped rim					moulded and painted black
14751	34H56B9	4	Tableware unspecified	Refined White Earthenware	Painted unspecified	Blue				
14752	34H56B9	1	Tableware unspecified	Refined White Earthenware	Painted unspecified	blue				
14756	34H56B9	1	Tableware unspecified	Refined White Earthenware	Plain				Burned / Melted	
14757	34H56B9	2	Tableware unspecified	Refined White Earthenware	Plain			base		
14758	34H56B9	1	Tableware unspecified	Refined White Earthenware	Floral generic	green				
14759	34H56B9	2	Tableware unspecified	Refined White Earthenware					Exfoliated	
14761	34H56B9	18	Tableware	Refined White	Plain					

PCA REC#	Provenience	#	Function	Material	Decorative Pattern	Dec. Colour	Primary Diagnostic	Portion	Condition	Comment
			unspecified	Earthenware						
14712	34H56B9	1	Mollusc shell	shell						
14713	34H56B9	1	Oyster	shell						
14723	34H56B9	3	Clay smoking pipe bowl	White Clay						
14724	34H56B9	2	Clay smoking pipe stem	White Clay						
14741	34H56B9	1	Bottle unidentified	White Glass opaque (milk)						
14754	34H56B9	1	Tableware unspecified	Yellowware			Rockingham			
14755	34H56B9	1	Holloware	Yellowware	Plain					
14735	36H54B9	1	Bottle unidentified	Blue/Green Glass (aqua)						

## **APPENDIX D**

### **INTERPRETIVE ELEMENTS INSTALLATION SPECIFICATIONS**



FOR INFORMATION ONLY

**DYMECH ENGINEERING INC. - 2380PCH**  
RIDEAU CANAL PROMENADE - INTERPRETIVE EXHIBIT METALS  
VERTICAL SIGNAGE  
REVISION 1 - JAN 4, 2018

REVISIONS		
REV.	DESCRIPTION	DATE
0	DESIGN ALTERATIONS MADE FOR MANUFACTURABILITY. SUBMITTED FOR REVIEW	10/18/2017
1	ALTERED DESIGN PER CORRESPONDENCE, INCLUDING ICON LOCATION, QUANTITIES, AND BASE PLATE DESIGN.	1/4/2018



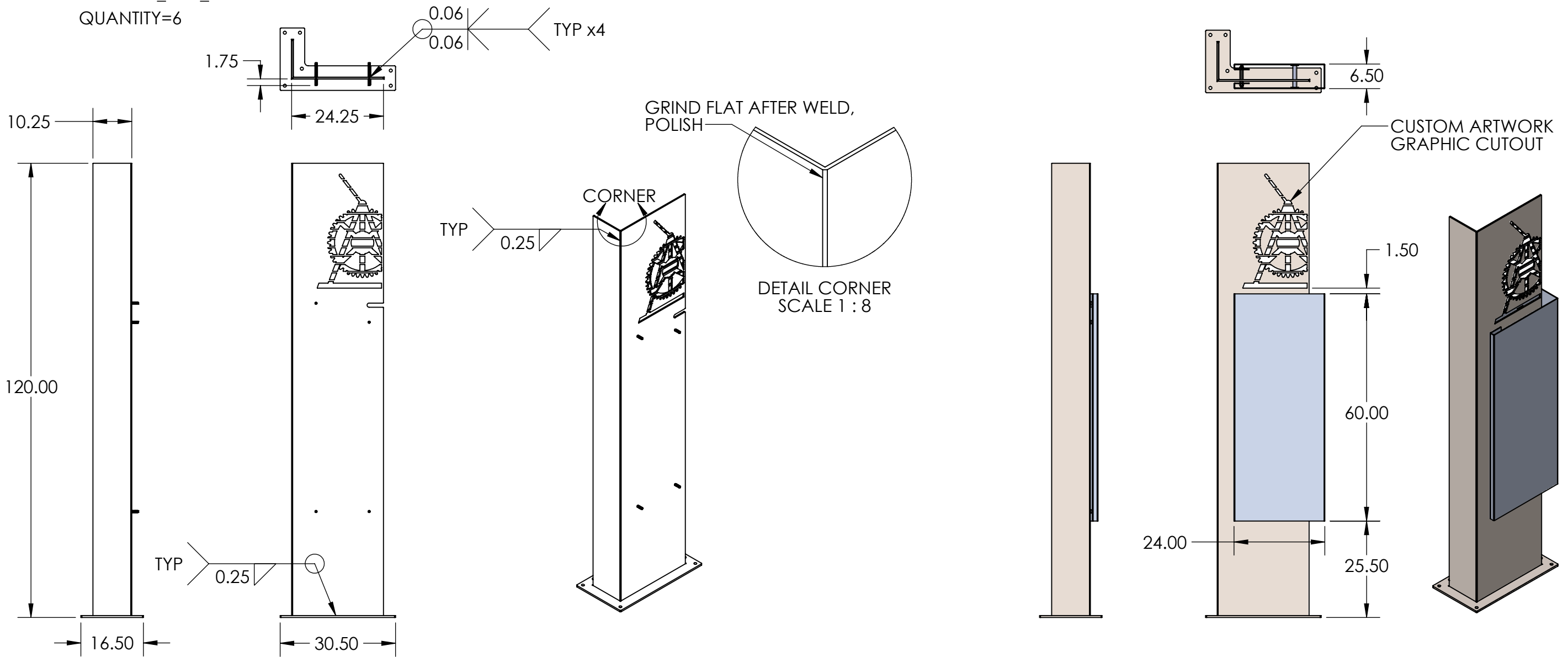
FOR INFORMATION ONLY

ITEM NO.	PART/ASSEMBLY NO.	DESCRIPTION	NoAltoSign/QTY.
1	2380PCH_VSA_0011	Vertical Signage, Large Panel	1
2	2380PCH_VSA_0020	Vertical Signage, Small Panel	1
3	2380PCH_VS_0031	Vertical Signage, Base Plate	1
4	2380PCH_VS_ThreadedRod0010	Vertical Signage, Fasteners	4

\*QUANTITY PER WELDED ASSEMBLY. SEE FASTENER DETAIL FOR ADDITIONAL HARDWARE

WELDED ASSEMBLY  
2380PCH\_VSA\_0000  
QUANTITY=6

FULL ASSEMBLY WITH ALTO PANEL GRAPHIC



NOTES:

- UNLESS OTHERWISE NOTED, ALL MATERIAL: AISI 316 STAINLESS STEEL
- APPROX WEIGHT: 535.019 LBS.
- ALL WELDS IN ACCORDANCE WITH CSA-W59 (STEEL)
- DEBURR AND REMOVE ALL SHARP EDGES, 0.050" X 45° UNLESS OTHERWISE NOTED

ENGINEERING STAMP:	PRIMARY UNITS: INCHES	SECONDARY UNITS: [MILLIMETRES]	<b>DYMECH</b> ENGINEERING INC. 1359 COKER ST GREELEY ON CANADA - 613 821 2917	PROJECT DESCRIPTION: RIDEAU CANAL PROMENADE METALS		PROJECT NUMBER: 2380PCH	
	GENERAL TOLERANCE NOTE			SHEET DESCRIPTION: VERTICAL SIGNAGE, 10 FOOT SIGN		DRAWING NO.: 2380PCH_VS_0001	
	DECIMAL X.X ± 0.063" X.XX ± 0.010" X.XXX ± 0.005" X.XXXX ± 0.001"	FRACTION X'-X" ± 1/16"		ANGLE X° ± 0.5°	DRAWN BY: OLIVER RICHARDS	REVIEWED BY: MIKE SUROWIEC	APPROVED BY:
SURFACE FINISH √ SURFACE FINISH OF 250 MICROINCHES UNLESS OTHERWISE SPECIFIED	PROPERTY OF DYMECH ENGINEERING INC. INFORMATION INCLUDED IN THIS DRAWING IS PROPRIETARY AND CONFIDENTIAL. DRAWING ARE TO BE USED ONLY WITH REFERENCE TO CONTRACTS OR PROPOSALS OF THIS CORPORATION. DRAWING IS NOT TO BE COPIED, REPRODUCED, DISTRIBUTED OR EXHIBITED TO OUTSIDE PARTIES EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY DYMECH ENGINEERING INC.			DATE: 10/18/2017	DATE: 10/18/2017	DATE:	
	THIRD ANGLE PROJ.	DO NOT SCALE DRAWING	SHEET SCALE: 1:28	SHEET SIZE: B	PRINTED DATE: 1/4/2018	SHEET: 2 OF 7	

8 7 6 5 4 3 2 1

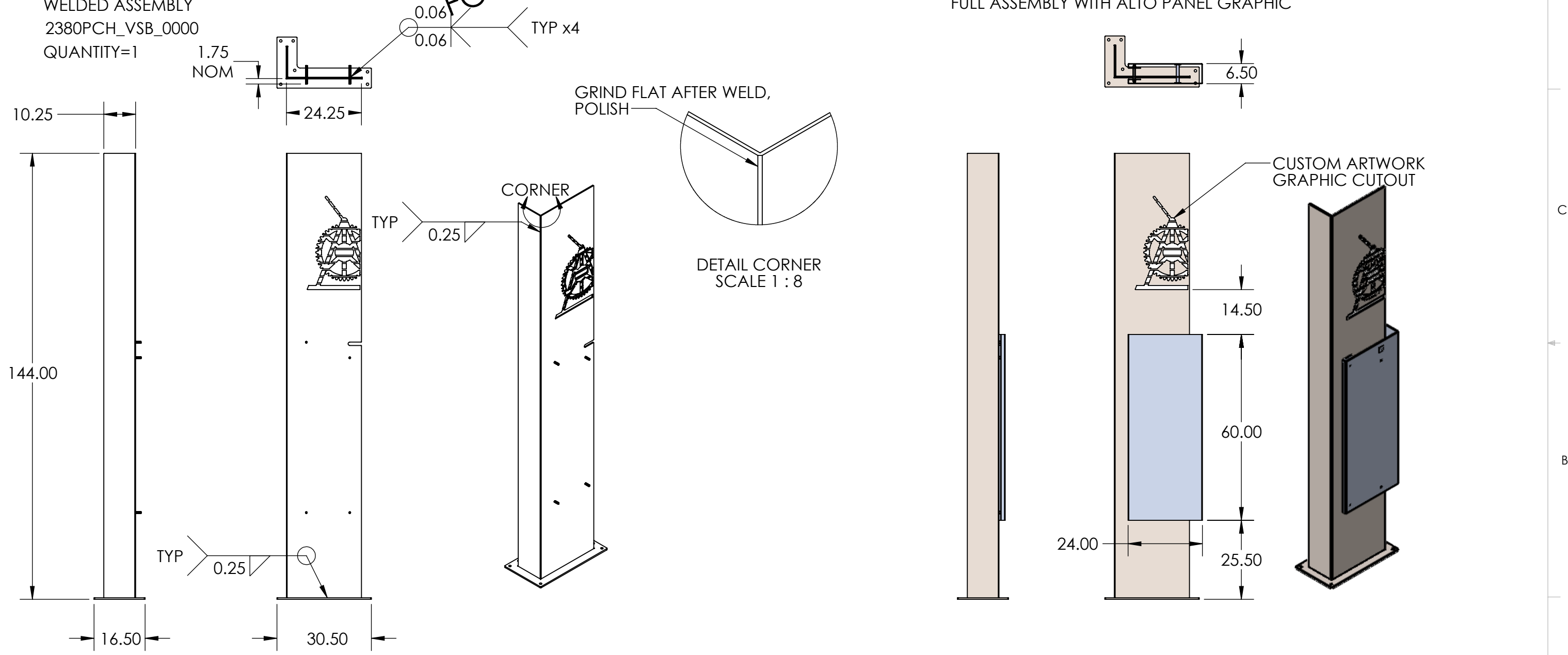
ITEM NO.	PART/ASSEMBLY NO.	DESCRIPTION	NoAltoSign/QTY.
1	2380PCH_VSB_0011	Vertical Signage, Large Panel	1
2	2380PCH_VSB_0020	Vertical Signage, Small Panel	1
3	2380PCH_VS_0031	Vertical Signage, Base Plate	1
4	2380PCH_VS_ThreatedRod0010	Vertical Signage, Fasteners	4

\*QUANTITY PER WELDED ASSEMBLY. SEE FASTENER DETAIL FOR ADDITIONAL HARDWARE

FOR INFORMATION ONLY

WELDED ASSEMBLY  
2380PCH\_VSB\_0000  
QUANTITY=1

FULL ASSEMBLY WITH ALTO PANEL GRAPHIC



- NOTES:**
- UNLESS OTHERWISE NOTED, ALL MATERIAL: AISI 316 STAINLESS STEEL
  - APPROX WEIGHT: 624.086 LBS.
  - ALL WELDS IN ACCORDANCE WITH CSA-W59 (STEEL)
  - DEBURR AND REMOVE ALL SHARP EDGES, 0.050" X 45° UNLESS OTHERWISE NOTED

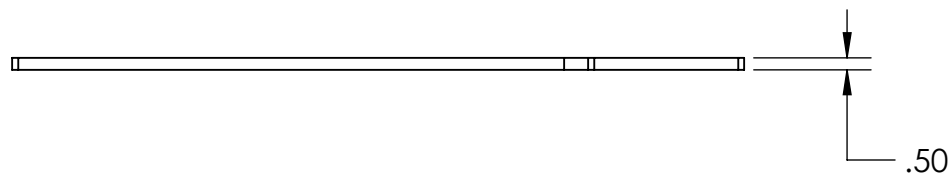
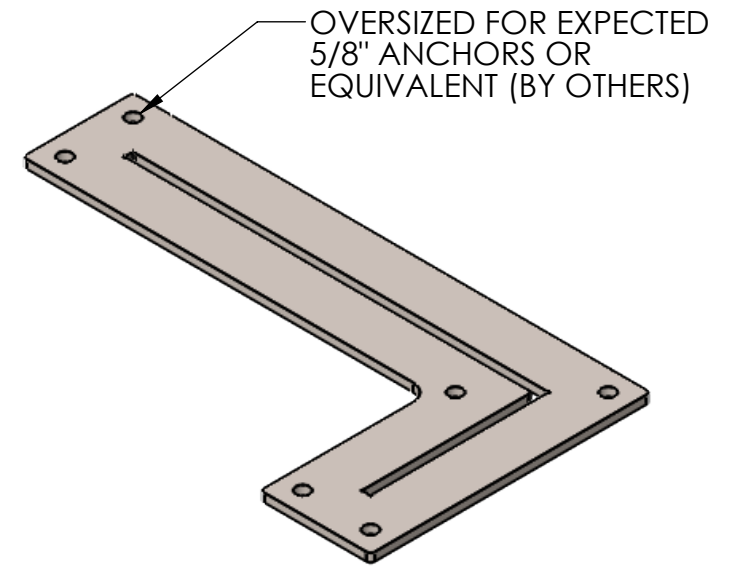
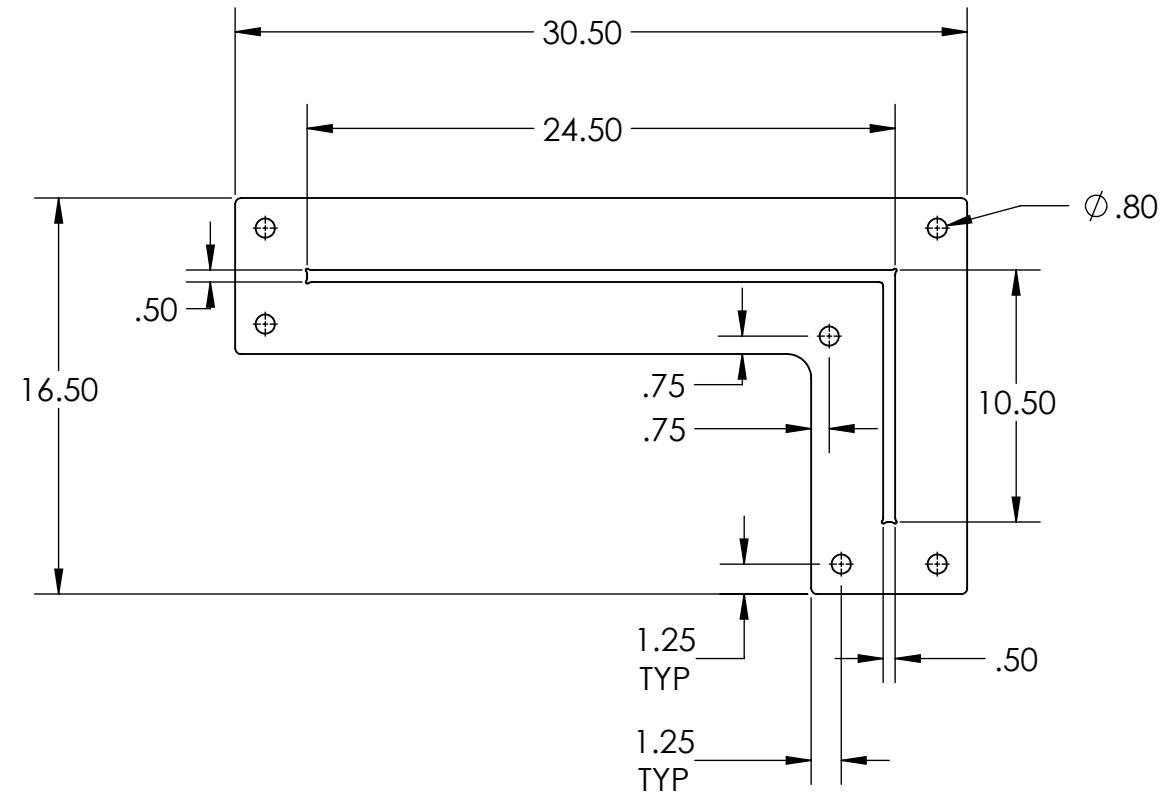
ENGINEERING STAMP:	PRIMARY UNITS: INCHES	SECONDARY UNITS: [MILLIMETRES]	 1359 COKER ST GREELEY ON CANADA - 613 821 2917		PROJECT DESCRIPTION: RIDEAU CANAL PROMENADE METALS		PROJECT NUMBER: 2380PCH	
	GENERAL TOLERANCE NOTE				SHEET DESCRIPTION: VERTICAL SIGNAGE, 12 FOOT SIGN		DRAWING NO.: 2380PCH_VS_0001	
	DECIMAL X.X ± 0.063" X.XX ± 0.010" X.XXX ± 0.005" X.XXXX ± 0.001"	FRACTION X'-X" ± 1/16"	ANGLE X° ± 0.5°	DATE: 10/18/2017	DATE: 10/18/2017	APPROVED BY:		
	SURFACE FINISH SURFACE FINISH OF 250 MICROINCHES UNLESS OTHERWISE SPECIFIED			THIRD ANGLE PROJ.	DO NOT SCALE DRAWING	SHEET SCALE: 1:32	SHEET SIZE: B	PRINTED DATE: 1/4/2018

8 7 6 5 4 3 2 1

2380PCH\_VS\_0031

QUANTITY=7

FOR INFORMATION ONLY

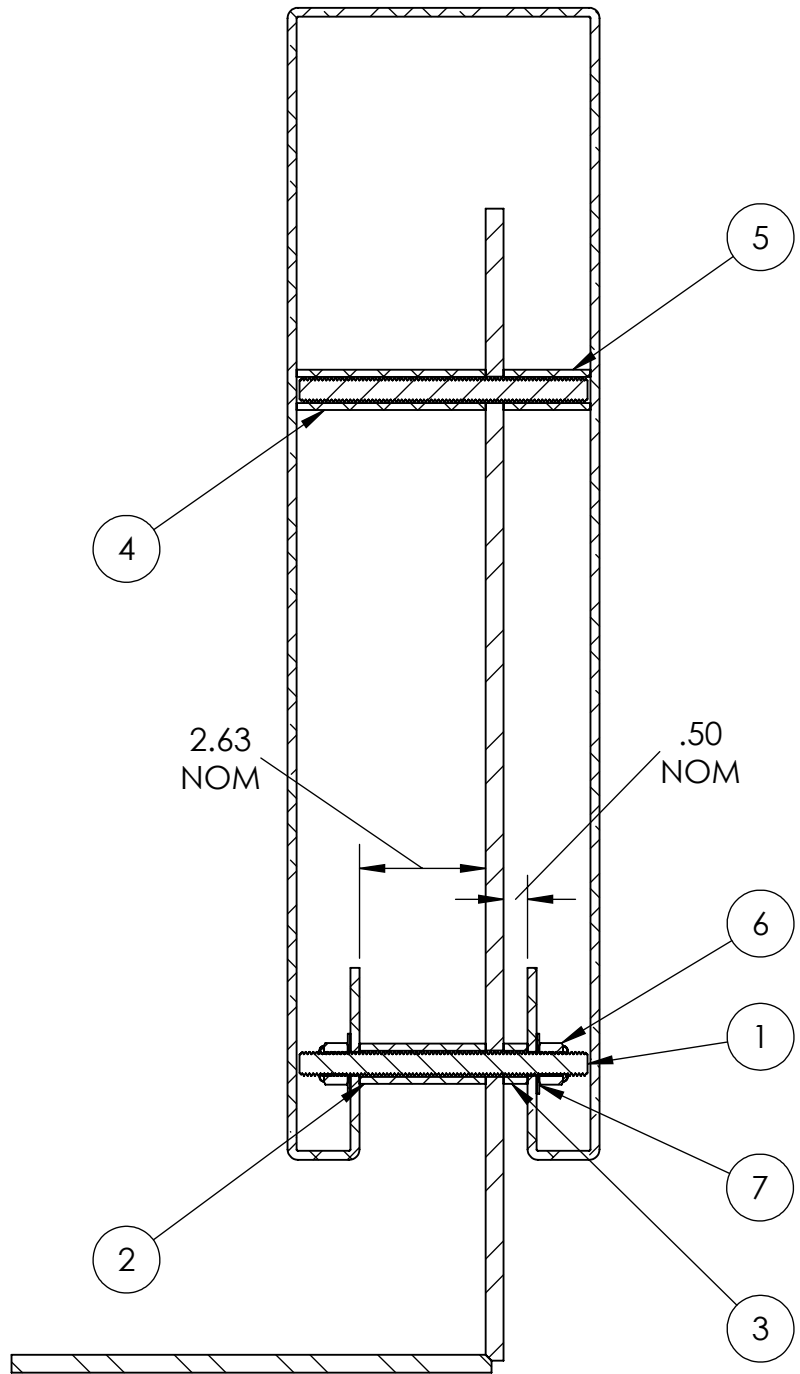


- NOTES:**
- UNLESS OTHERWISE NOTED, ALL MATERIAL: AISI TYPE 316L STAINLESS STEEL
  - APPROX WEIGHT: 35.244 LBS.
  - FINISH: MILL

ENGINEERING STAMP:	PRIMARY UNITS: INCHES	SECONDARY UNITS: [MILLIMETRES]	<b>DYMECH</b> ENGINEERING INC. 1359 COKER ST GREELEY ON CANADA - 613 821 2917		PROJECT DESCRIPTION: RIDEAU CANAL PROMENADE METALS		PROJECT NUMBER: 2380PCH			
	GENERAL TOLERANCE NOTE				SHEET DESCRIPTION: VERTICAL SIGNAGE, BASE PLATE		DRAWING NO.: 2380PCH_VS_0001			
	DECIMAL X.X ± 0.063" X.XX ± 0.010" X.XXX ± 0.005" X.XXXX ± 0.001"	FRACTION X'-X" ± 1/16 ANGLE X° ± 0.5°	PROPERTY OF DYMECH ENGINEERING INC. INFORMATION INCLUDED IN THIS DRAWING IS PROPRIETARY AND CONFIDENTIAL. DRAWING ARE TO BE USED ONLY WITH REFERENCE TO CONTRACTS OR PROPOSALS OF THIS CORPORATION. DRAWING IS NOT TO BE COPIED, REPRODUCED, DISTRIBUTED OR EXHIBITED TO OUTSIDE PARTIES EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY DYMECH ENGINEERING INC.		DRAWN BY: OLIVER RICHARDS	REVIEWED BY: MIKE SUROWIEC	DATE: 10/18/2017	DATE: 10/18/2017	APPROVED BY:	DATE:
	SURFACE FINISH √ SURFACE FINISH OF 250 MICROINCHES UNLESS OTHERWISE SPECIFIED		THIRD ANGLE PROJ.	DO NOT SCALE DRAWING	SHEET SCALE: 1:8	SHEET SIZE: B	PRINTED DATE: 1/4/2018	SHEET: 6 OF 7		

ITEM NO.	PART/ASSEMBLY NO.	Default/QTY.
1	2380PCH_VS_ThreatedRod0010	4
2	2380PCH_VS_Spacer0010	2
3	2380PCH_VS_Spacer0020	2
4	2380PCH_VS_Spacer0030	2
5	2380PCH_VS_Spacer0040	2
7	2380PCH_VS_Washer0010	4
6	2380PCH_VS_Locknut0010	4

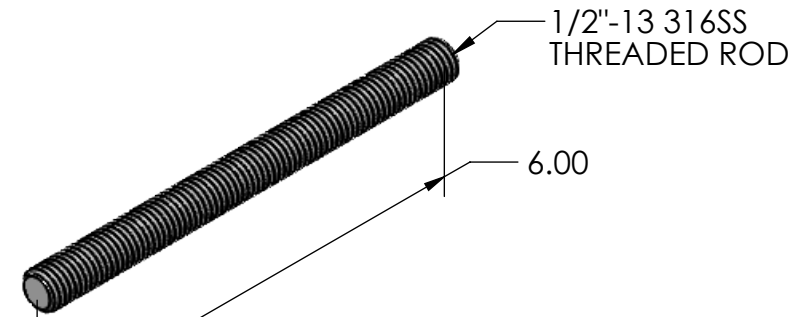
\*QUANTITY PER VERTICAL SIGN.



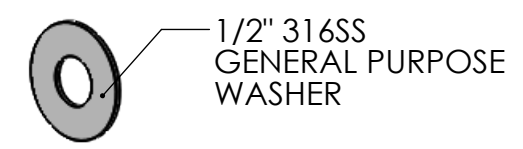
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NOM

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NOM

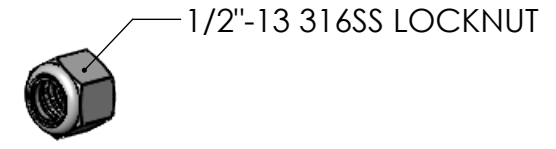
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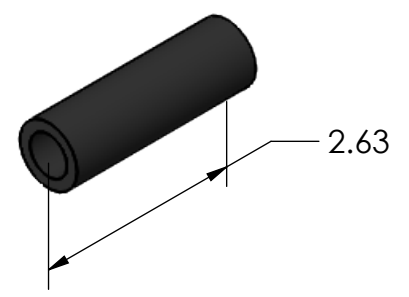
2380PCH\_VS\_Washer0010



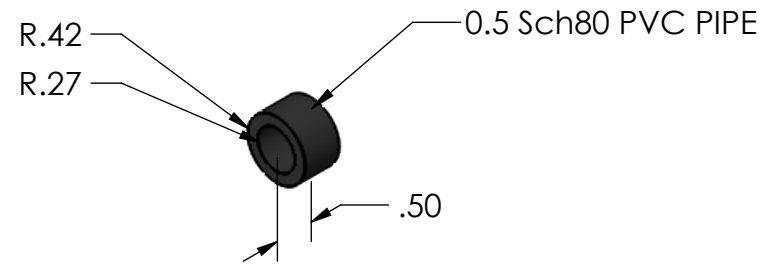
2380PCH\_VS\_Locknut0010



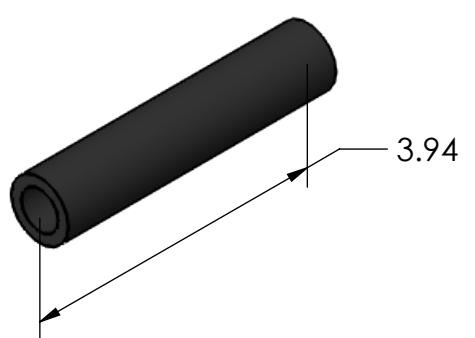
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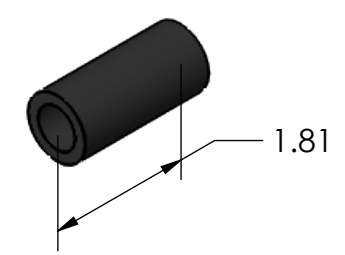
2380PCH\_VS\_Spacer0020



2380PCH\_VS\_Spacer0030



2380PCH\_VS\_Spacer0040



FOR INFORMATION ONLY

ENGINEERING STAMP:	PRIMARY UNITS: <b>INCHES</b>	SECONDARY UNITS: <b>[MILLIMETRES]</b>	<b>DYMECH</b> <b>ENGINEERING INC.</b> 1359 COKER ST GREELEY ON CANADA - 613 821 2917	PROJECT DESCRIPTION: <b>RIDEAU CANAL PROMENADE METALS</b>	PROJECT NUMBER: <b>2380PCH</b>		
	<b>GENERAL TOLERANCE NOTE</b>			SHEET DESCRIPTION: <b>VERTICAL SIGNAGE, FASTENERS</b>	DRAWING NO.: <b>2380PCH_VS_0001</b>		
	DECIMAL X.X ± 0.063" X.XX ± 0.010" X.XXX ± 0.005" X.XXXX ± 0.001"	FRACTION X'-X" ± 1/16 ANGLE X° ± 0.5°	PROPERTY OF DYMECH ENGINEERING INC. INFORMATION INCLUDED IN THIS DRAWING IS PROPRIETARY AND CONFIDENTIAL. DRAWING ARE TO BE USED ONLY WITH REFERENCE TO CONTRACTS OR PROPOSALS OF THIS CORPORATION. DRAWING IS NOT TO BE COPIED, REPRODUCED, DISTRIBUTED OR EXHIBITED TO OUTSIDE PARTIES EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY DYMECH ENGINEERING INC.	DRAWN BY: <b>OLIVER RICHARDS</b>	REVIEWED BY: <b>MIKE BRAVO</b>	APPROVED BY:	
	SURFACE FINISH √ SURFACE FINISH OF 250 MICRONS UNLESS OTHERWISE SPECIFIED		DATE: <b>10/18/2017</b>	DATE: <b>10/18/2017</b>	DATE:	DATE:	
		THIRD ANGLE PROJ.	DO NOT SCALE DRAWING	SHEET SCALE: <b>1:2</b>	SHEET SIZE: <b>B</b>	PRINTED DATE: <b>1/4/2018</b>	SHEET: <b>7 OF 7</b>

FOR INFORMATION ONLY

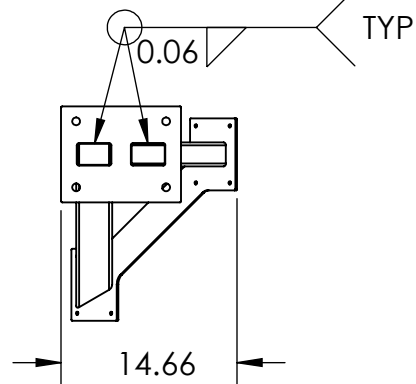
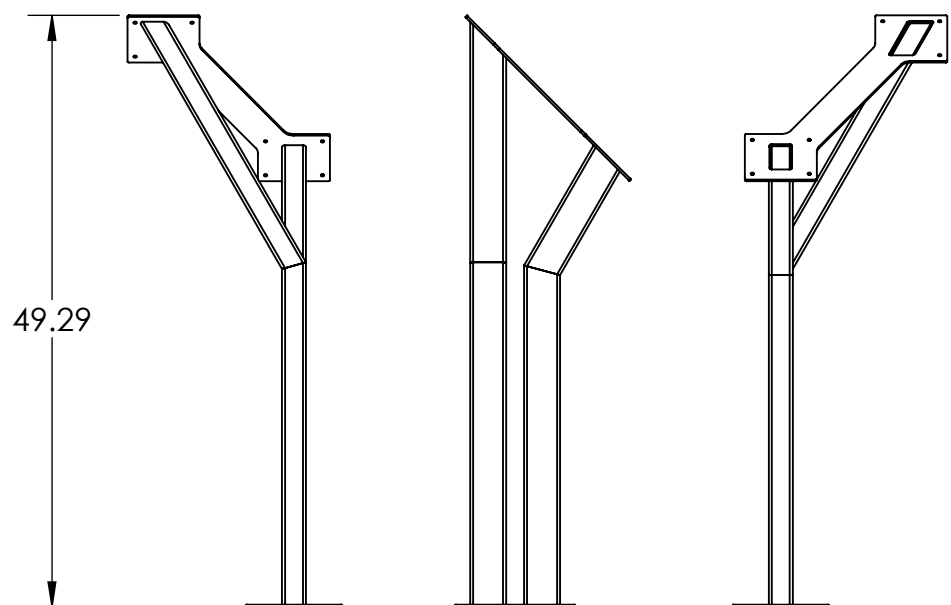
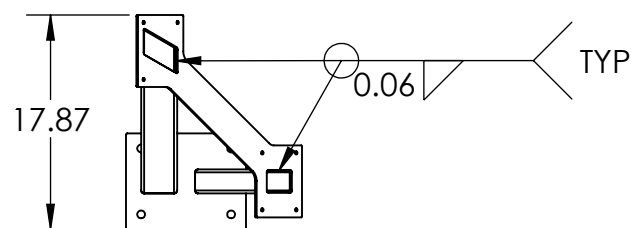
**DYMECH ENGINEERING INC. - 2380PCH**  
RIDEAU CANAL PROMENADE - INTERPRETIVE EXHIBIT METALS  
INTERPRETIVE STANDS  
REVISION 0 - OCTOBER 18 2017

REVISIONS		
REV.	DESCRIPTION	DATE
0	DESIGN ALTERATIONS MADE FOR MANUFACTURABILITY. SUBMITTED FOR REVIEW	10/18/2017



ITEM NO.	PART/ASSEMBLY NO.	DESCRIPTION	LEFT POST/QTY.*
1	2380PCH_IS_0010	Interpretive Stand, Base Plate	1
2	2380PCH_IS_0020	Interpretive Stand, Front Leg	1
3	2380PCH_IS_0030	Interpretive Stand, Back Leg (Left)	1
4	2380PCH_IS_0061	Interpretive Stand, Face Plate Bracket	1

\*COMPONENT QUANTITY PER ASSEMBLY



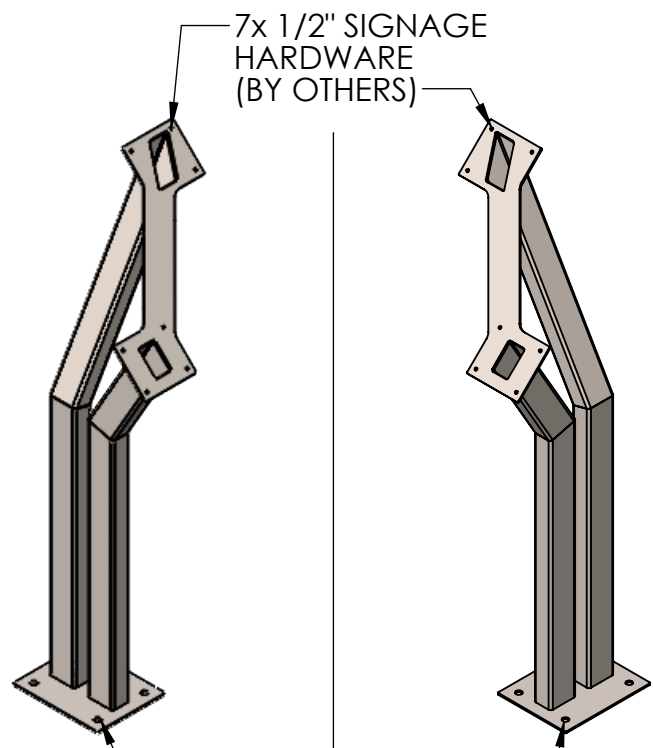
FOR INFORMATION ONLY

LEFT POST  
QUANTITY=22

RIGHT POST  
QUANTITY=22

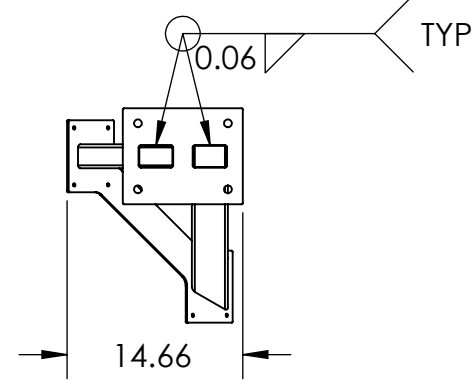
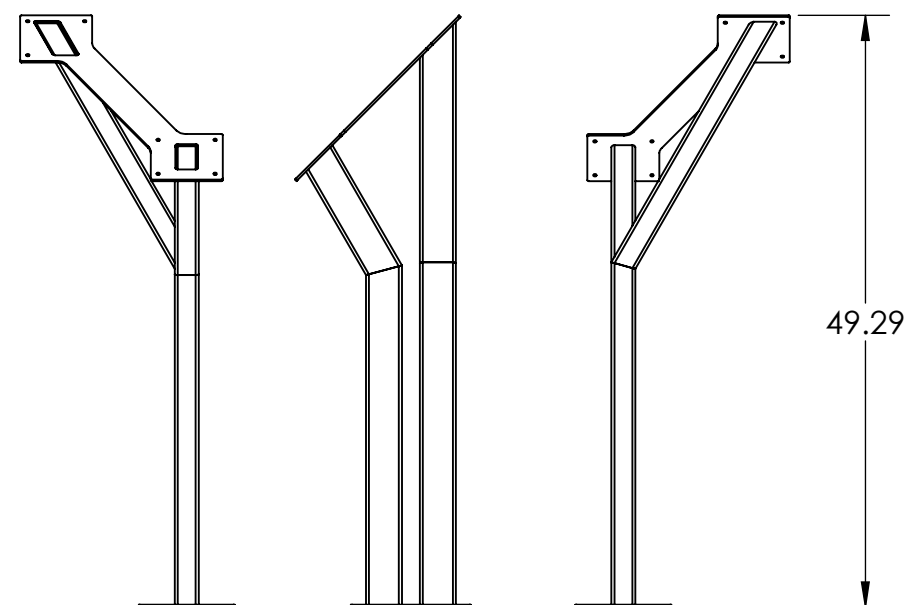
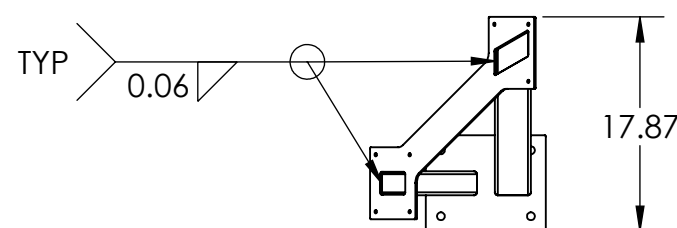
7x 1/2" SIGNAGE  
HARDWARE  
(BY OTHERS)

4 x 1/2" ANCHOR  
HARDWARE  
(BY OTHERS)



ITEM NO.	PART/ASSEMBLY NO.	DESCRIPTION	RIGHT POST/QTY.*
1	2380PCH_IS_0010	Interpretive Stand, Base Plate	1
2	2380PCH_IS_0020	Interpretive Stand, Front Leg	1
3	2380PCH_IS_0040	Interpretive Stand, Back Leg (Right)	1
4	2380PCH_IS_0061	Interpretive Stand, Face Plate Bracket	1

\*COMPONENT QUANTITY PER ASSEMBLY



**NOTES:**

- UNLESS OTHERWISE NOTED, ALL MATERIAL: AISI 316 STAINLESS STEEL
- APPROX WEIGHT: 37.583 LBS.
- ALL WELDS IN ACCORDANCE WITH CSA-W59 (STEEL)
- DEBURR AND REMOVE ALL EXPOSED EDGES, 0.100" X 45° UNLESS OTHERWISE NOTED
- FINISH: BRUSHED, MILL

ENGINEERING STAMP:	PRIMARY UNITS: INCHES	SECONDARY UNITS: [MILLIMETRES]	<b>DYMECH</b> ENGINEERING INC. 1359 COKER ST GREELEY ON CANADA - 613 821 2917	PROJECT DESCRIPTION: RIDEAU CANAL PROMENADE METALS		PROJECT NUMBER: 2380PCH			
	GENERAL TOLERANCE NOTE			SHEET DESCRIPTION: INTERPRETIVE STAND (LEFT/RIGHT)		DRAWING NO.: 2380PCH_IS_0000			
	DECIMAL X.X ± 0.125" X.XX ± 0.063" X.XXX ± 0.050" X.XXXX ± 0.005"	FRACTION X'-X" ± 1/8" ANGLE X° ± 1.0°	PROPERTY OF DYMECH ENGINEERING INC. INFORMATION INCLUDED IN THIS DRAWING IS PROPRIETARY AND CONFIDENTIAL. DRAWING ARE TO BE USED ONLY WITH REFERENCE TO CONTRACTS OR PROPOSALS OF THIS CORPORATION. DRAWING IS NOT TO BE COPIED, REPRODUCED, DISTRIBUTED OR EXHIBITED TO OUTSIDE PARTIES EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY DYMECH ENGINEERING INC.	DRAWN BY: OLIVER RICHARDS	REVIEWED BY: MIKE SUROWIEC	APPROVED BY:			
	SURFACE FINISH SURFACE FINISH OF 250 MICROINCHES UNLESS OTHERWISE SPECIFIED			DATE: 10/18/2017	DATE: 10/18/2017	DATE:			
				THIRD ANGLE PROJ.	DO NOT SCALE DRAWING	SHEET SCALE: 1:16	SHEET SIZE: B	PRINTED DATE: 10/20/2017	SHEET: 2 OF 7

FOR INFORMATION ONLY

**DYMECH ENGINEERING INC. - 2380PCH**  
RIDEAU CANAL PROMENADE - INTERPRETIVE EXHIBIT METALS  
WALL BRACKETS  
REVISION 0 - OCTOBER 18 2017

REVISIONS		
REV.	DESCRIPTION	DATE
0	DESIGN ALTERATIONS MADE FOR MANUFACTURABILITY. SUBMITTED FOR REVIEW	10/18/2017





ITEM NO.	PART/ASSEMBLY NO.	DESCRIPTION	SOURCE	QTY.*
1	2380PCH_WB_0011	Wall Bracket, Base Plate	DYMECH	2
2	2380PCH_WB_0031	Wall Bracket, Gusset	DYMECH	2

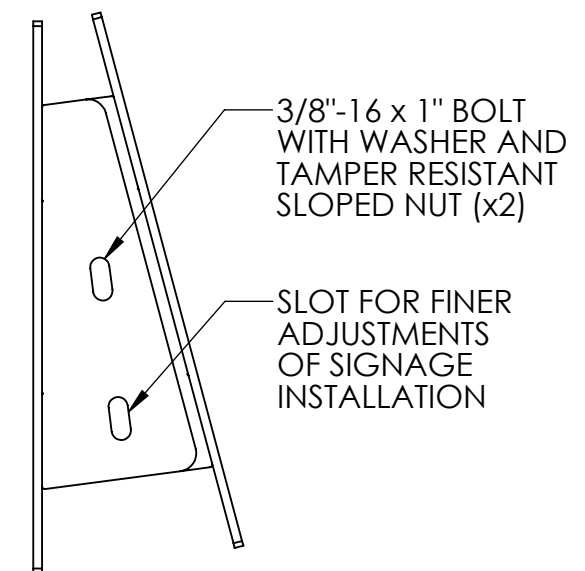
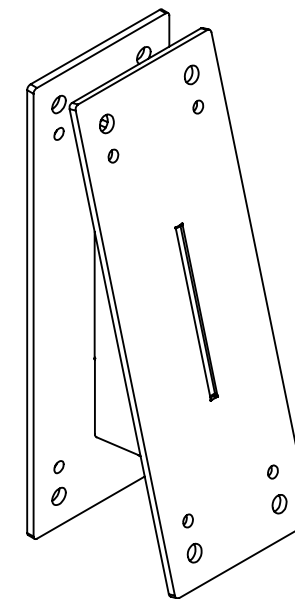
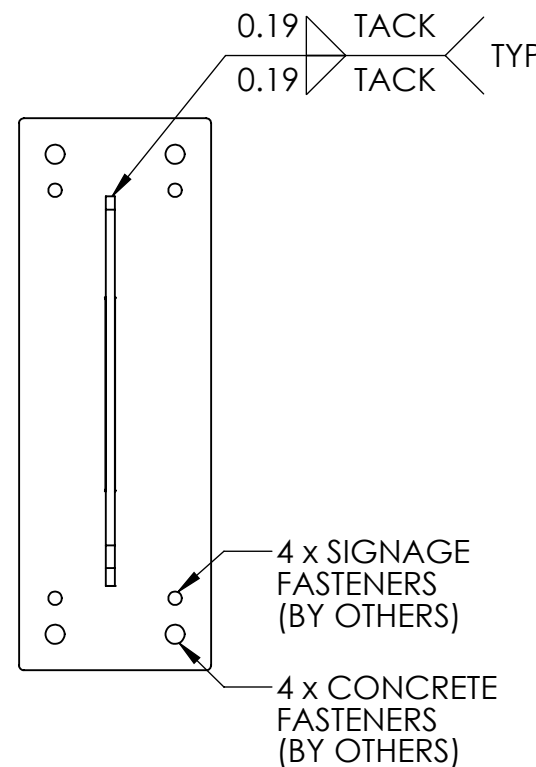
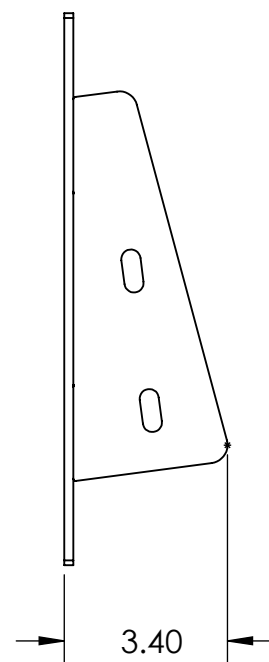
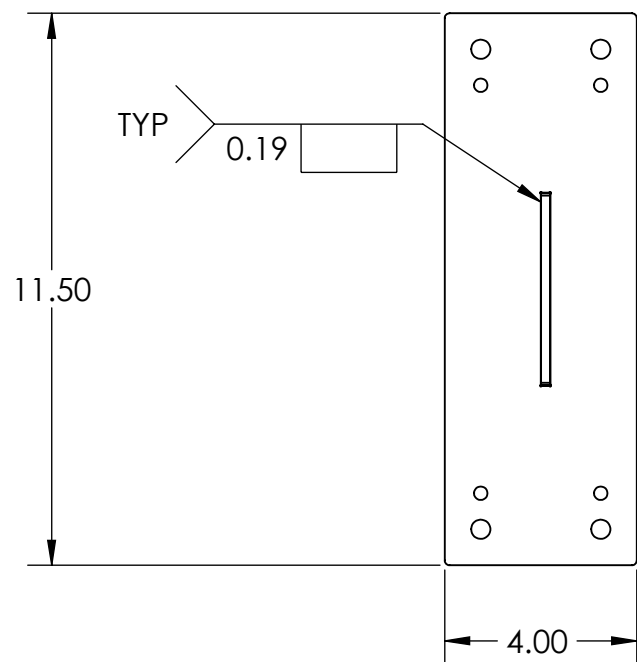
\*COMPONENT QUANTITY PER WALL BRACKET ASSEMBLY

PART NO.: 2380PCH\_WB\_0001

WALL BRACKET ASSEMBLY  
QUANTITY = 10

FOR INFORMATION ONLY

2 PER ASSEMBLY



- NOTES:**
- UNLESS OTHERWISE NOTED, ALL MATERIAL: AISI 316 STAINLESS STEEL
  - ALL WELDS IN ACCORDANCE WITH CSA-W59 (STEEL)
  - DEBURR AND REMOVE ALL SHARP EDGES, 0.050" X 45° UNLESS OTHERWISE NOTED
  - FINISH: PLAIN, TUMBLE MEDIA

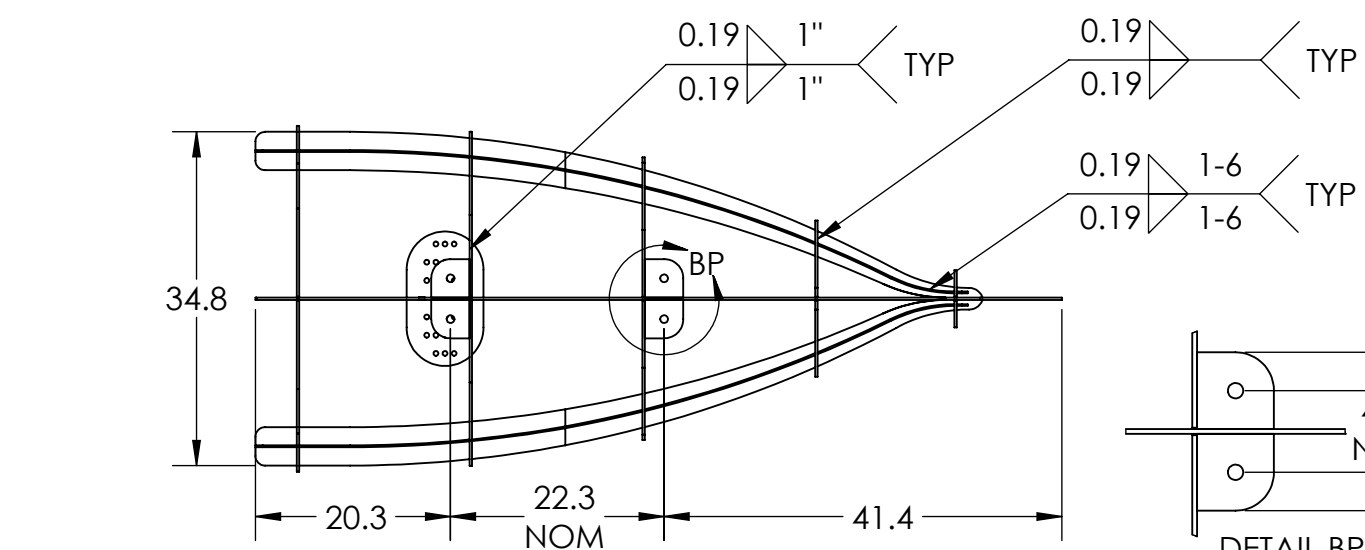
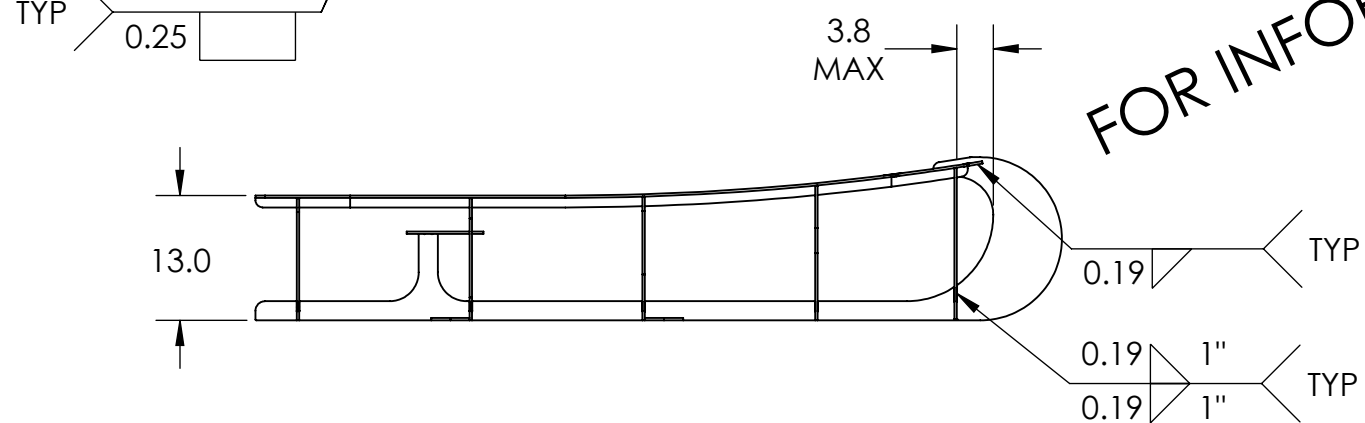
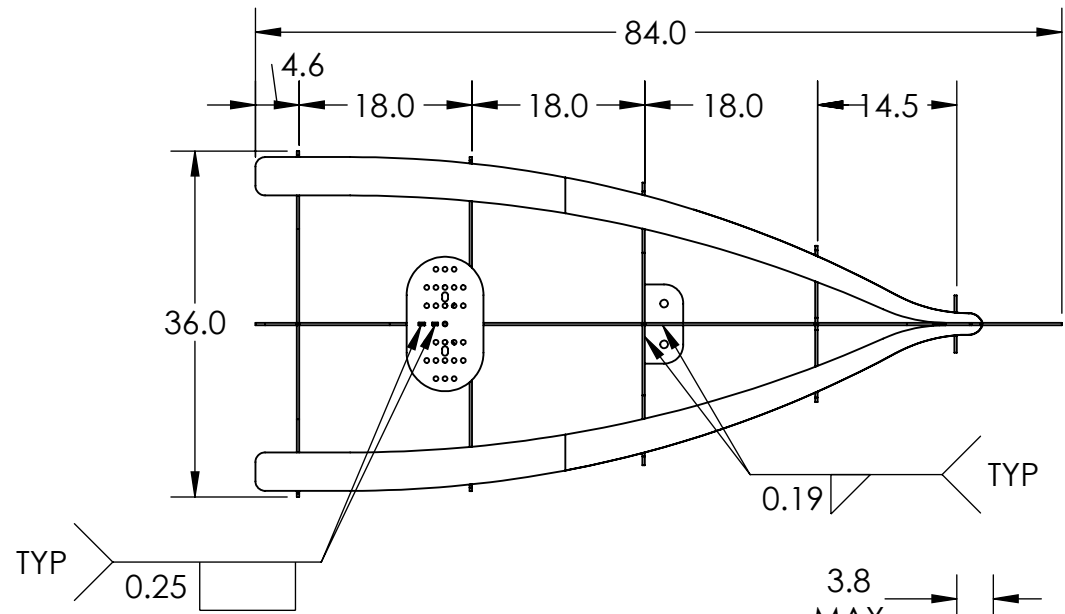
ENGINEERING STAMP:	PRIMARY UNITS: INCHES	SECONDARY UNITS: [MILLIMETRES]	 1359 COKER ST GREELEY ON CANADA - 613 821 2917		PROJECT DESCRIPTION: RIDEAU CANAL PROMENADE METALS	PROJECT NUMBER: 2380PCH	
	GENERAL TOLERANCE NOTE				SHEET DESCRIPTION: WALL BRACKET, SUBASSEMBLY	DRAWING NO.: 2380PCH_WB_0000	
	DECIMAL X.X ± 0.063" X.XX ± 0.010" X.XXX ± 0.005" X.XXXX ± 0.001"	FRACTION X'-X" ± 1/16 ANGLE X° ± 0.5°	DATE: 10/18/2017	REVIEWED BY: MIKE SUROWIEC	APPROVED BY:		
	SURFACE FINISH SURFACE FINISH OF 250 MICROINCHES UNLESS OTHERWISE SPECIFIED		DATE: 10/18/2017	DATE: 10/18/2017	DATE:		
		THIRD ANGLE PROJ.	DO NOT SCALE DRAWING	SHEET SCALE: 1:4	SHEET SIZE: B	PRINTED DATE: 10/19/2017	SHEET: 2 OF 4

FOR INFORMATION ONLY

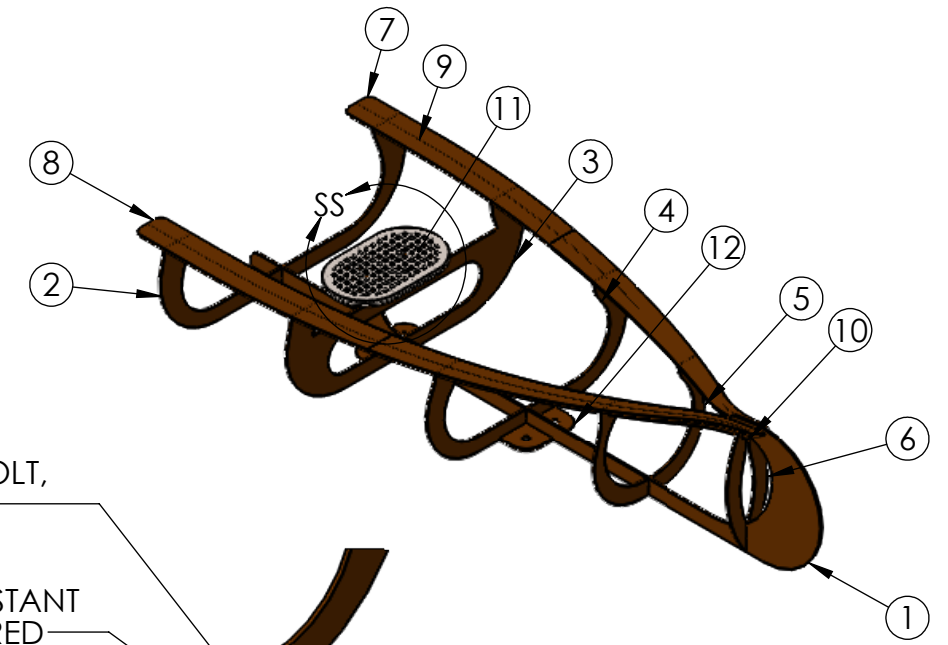
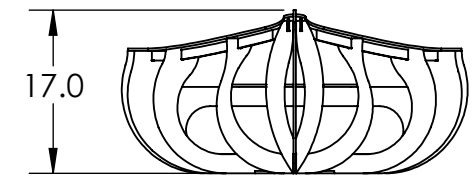
**DYMECH ENGINEERING INC. - 2449PCH**  
RIDEAU CANAL PROMENADE - INTERPRETIVE EXHIBIT METALS  
CORTEN STEEL CANOE  
REVISION 0 - JAN 9, 2018



8 7 6 5 4 3 2 1



FOR INFORMATION ONLY



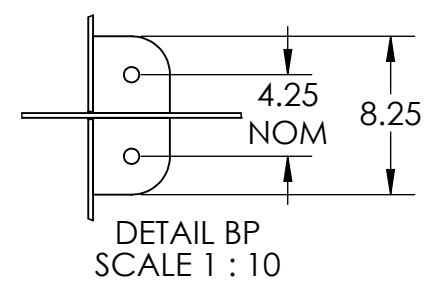
2 x STAINLESS STEEL TAMPER RESISTANT BOLT, FLAT HEAD, 3/8"-16

2 x CORROSION RESISTANT STANDOFF AS REQUIRED

2 x CORROSION AND TAMPER RESISTANT NUT 3/8"-16 WITH ISOLATING WASHER

WEATHER RESISTANT NEOPRENE ISOLATING GASKET BETWEEN STAINLESS STEEL AND CORTEN STEEL (NOT SHOWN)

DETAIL SS SCALE 1 : 8



ITEM NO.	PART/ASSEMBLY NO.	DESCRIPTION	CONFIGURATION	QTY
1	2449PCH_CSC_0010	Corten Steel Canoe - Spine		1
2	2449PCH_CSC_0020	Corten Steel Canoe - Rib A		1
3	2449PCH_CSC_0030	Corten Steel Canoe - Rib B		1
4	2449PCH_CSC_0040	Corten Steel Canoe - Rib C		1
5	2449PCH_CSC_0050	Corten Steel Canoe - Rib D		1
6	2449PCH_CSC_0060	Corten Steel Canoe - Rib E		1
7	2449PCH_CSC_0070	Corten Steel Canoe - Side Rail	LeftSide	1
8	2449PCH_CSC_0070	Corten Steel Canoe - Side Rail	RightSide	1
9	2449PCH_CSC_0080	Corten Steel Canoe - Side Gusset	LeftSide	1
10	2449PCH_CSC_0080	Corten Steel Steel - Side Gusset	RightSide	1
11	2449PCH_CSC_0090	Corten Steel Canoe - Seat Mount		1
12	2449PCH_CSC_0100	Corten Steel Canoe - Mounting Plate		4
13	2449PCH_CSC_0110	Corten Steel Canoe - SS Seat Edge		2
14	2449PCH_CSC_0120	Corten Steel Canoe - SS Seat Weave		1

- NOTES:**
- APPROX WEIGHT: 146.004 LBS.
  - ALL WELDS IN ACCORDANCE WITH CSA-W59 (STEEL)
  - DEBURR AND REMOVE ALL SHARP EDGES, 0.050" X 45° UNLESS OTHERWISE NOTED
  - FINISH: PLAIN (CORTEN), BRUSHED (STAINLES STEEL)

ENGINEERING STAMP:	PRIMARY UNITS: INCHES	SECONDARY UNITS: [MILLIMETRES]	<b>DYMECH</b> ENGINEERING INC. 1359 COKER ST GREELEY ON CANADA - 613 821 2917	PROJECT DESCRIPTION: RIDEAU CANAL PROMENADE METALS		PROJECT NUMBER: 2449PCH
	GENERAL TOLERANCE NOTE			SHEET DESCRIPTION: CORTEN STEEL CANOE		DRAWING NO.: 2449PCH_CSC_0000
	DECIMAL X.X ± 0.125" X.XX ± 0.063" X.XXX ± 0.050" X.XXXX ± 0.005"	FRACTION X'-X" ± 1/8" ANGLE X° ± 1.0°		DRAWN BY: OLIVER RICHARDS	REVIEWED BY: MIKE SUROWIEC	APPROVED BY:
	SURFACE FINISH SURFACE FINISH OF 250 MICROINCHES UNLESS OTHERWISE SPECIFIED		PROPERTY OF DYMECH ENGINEERING INC. INFORMATION INCLUDED IN THIS DRAWING IS PROPRIETARY AND CONFIDENTIAL. DRAWING ARE TO BE USED ONLY WITH REFERENCE TO CONTRACTS OR PROPOSALS OF THIS CORPORATION. DRAWING IS NOT TO BE COPIED, REPRODUCED, DISTRIBUTED OR EXHIBITED TO OUTSIDE PARTIES EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY DYMECH ENGINEERING INC.	DATE: 1/5/2018	DATE: 1/9/2018	DATE:
			THIRD ANGLE PROJ.	DO NOT SCALE DRAWING	SHEET SCALE: 1:20	SHEET SIZE: B
					PRINTED DATE: 1/10/2018	SHEET: 2 OF 14

8 7 6 5 4 3 2 1

FOR INFORMATION ONLY

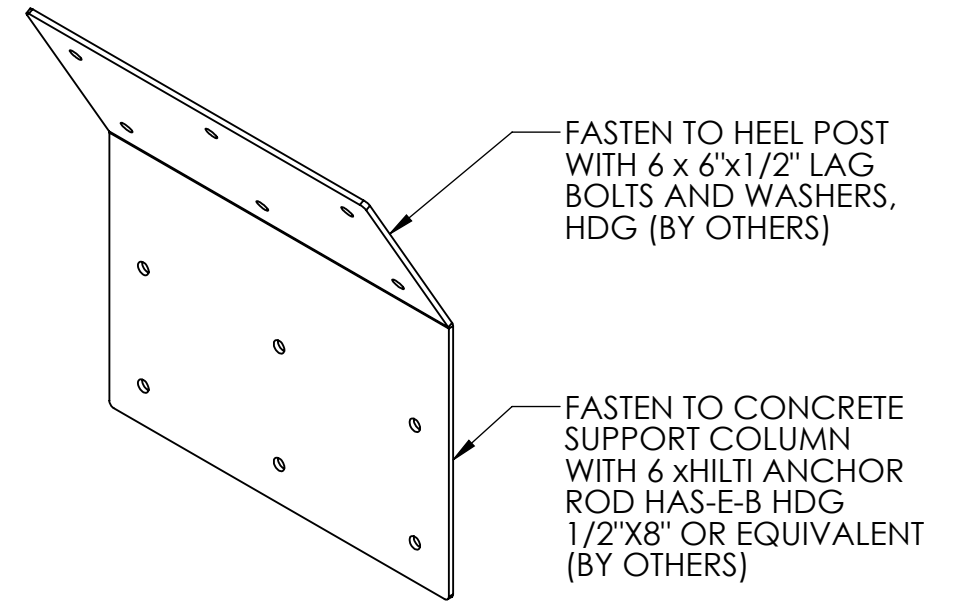
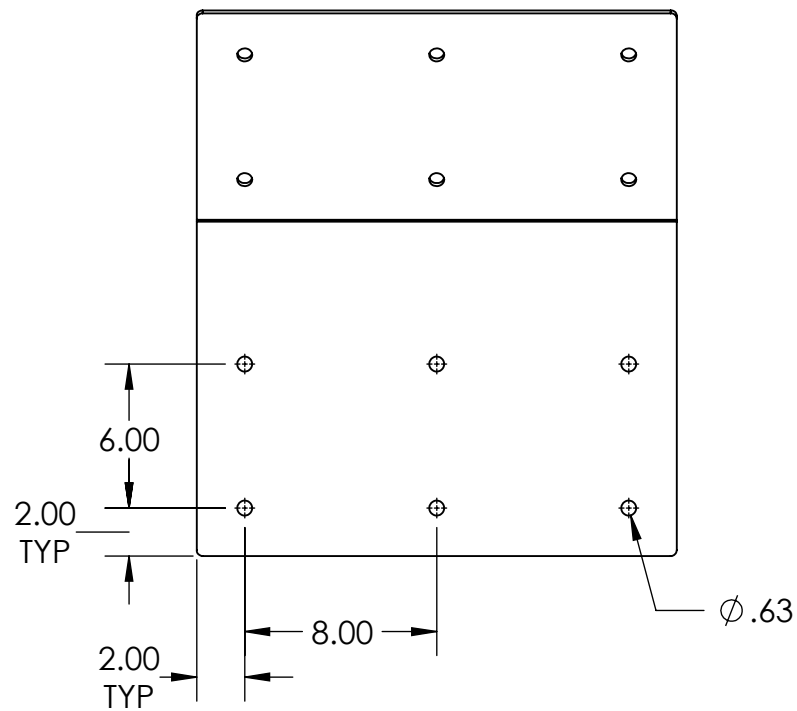
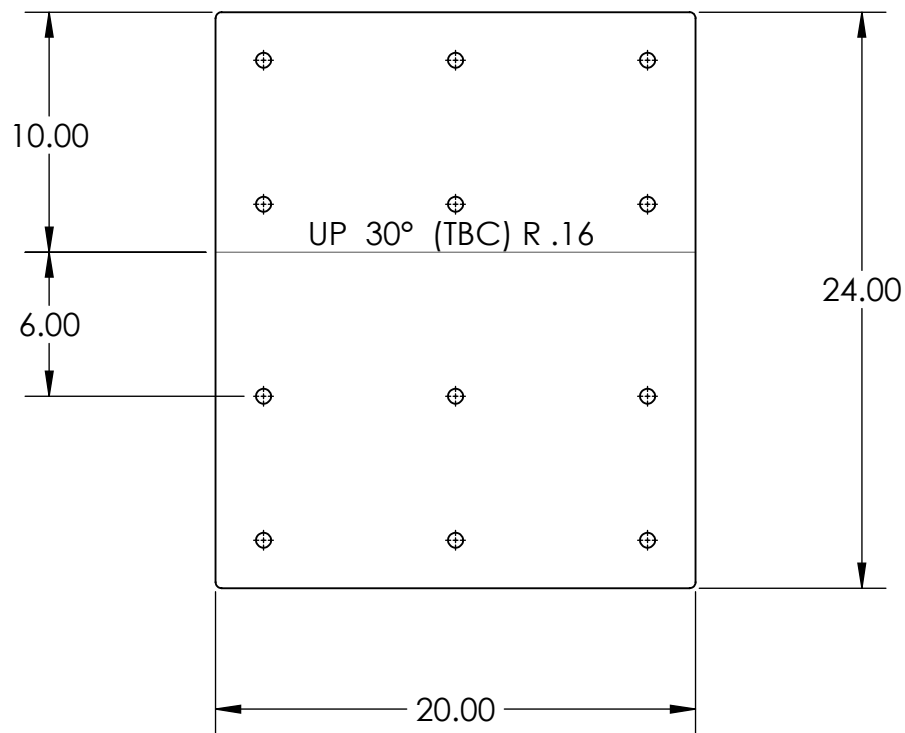
**DYMECH ENGINEERING INC. - 2380PCH**  
RIDEAU CANAL PROMENADE - INTERPRETIVE EXHIBIT METALS  
HEEL POST SUPPORT BRACKETS  
REVISION 0 - JAN 9, 2018



2380PCH\_HP\_B\_0010

QUANTITY = 3

FOR INFORMATION ONLY

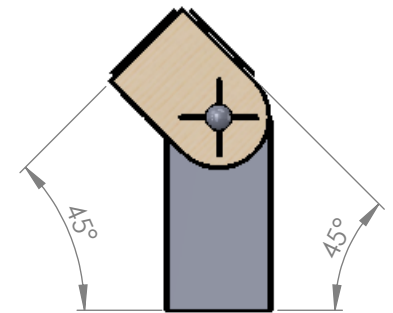
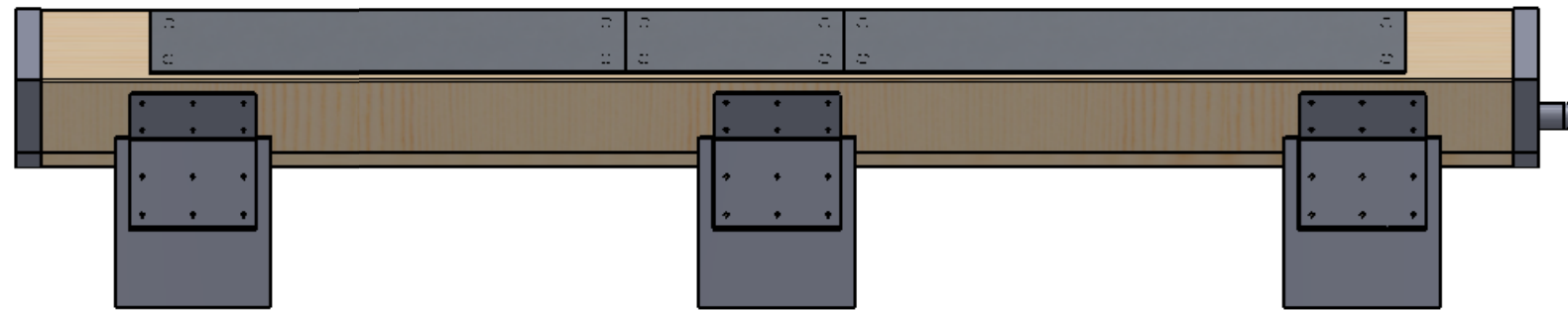
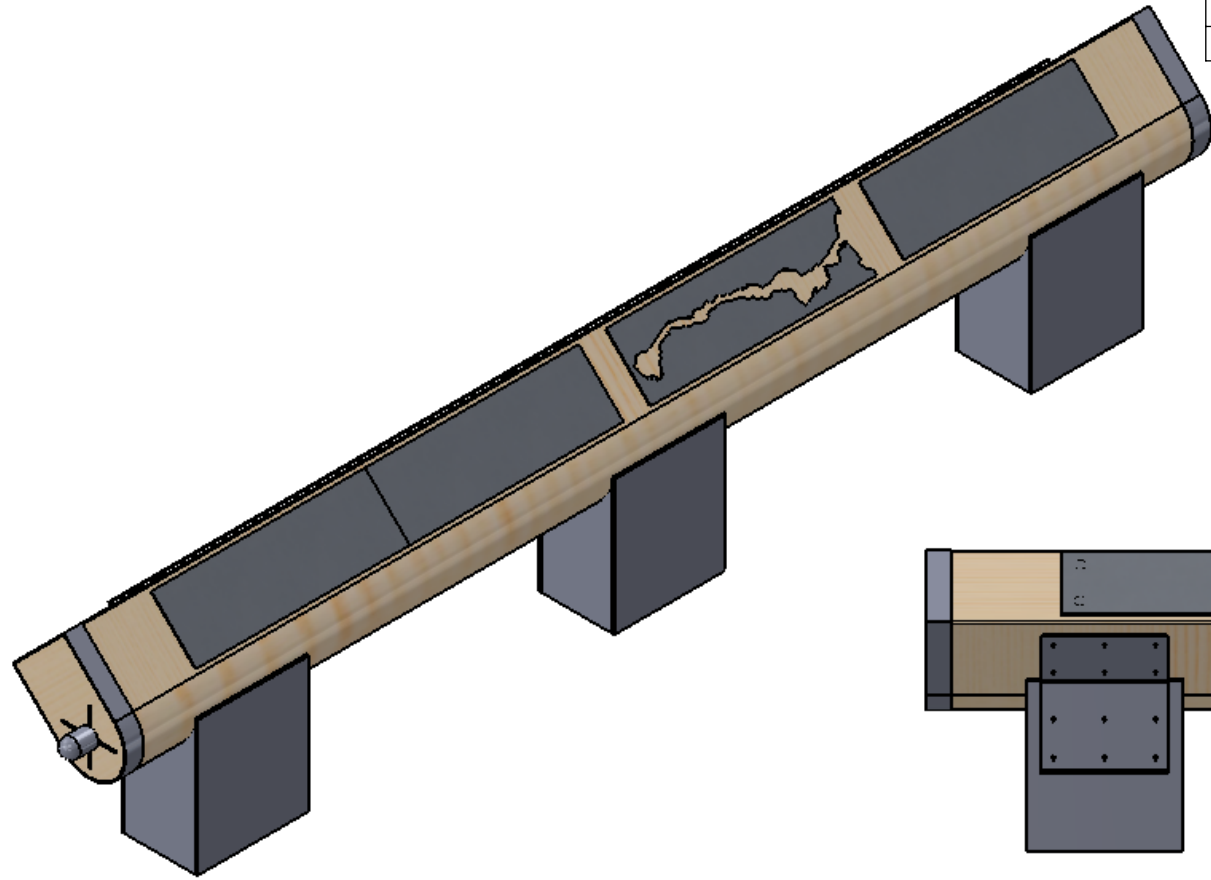


NOTES:

- UNLESS OTHERWISE NOTED, ALL MATERIAL: PLAIN CARBON STEEL
- APPROX WEIGHT: 33.570 LBS.
- DEBURR AND REMOVE ALL SHARP EDGES, 0.100" X 45° UNLESS OTHERWISE NOTED
- FINISH: HOT-DIP GALVANIZE, POWDERCOAT SEMI-GLOSS BLACK
- ALL FINISHING IN ACCORDANCE WITH: ASTM A123

ENGINEERING STAMP:	PRIMARY UNITS: INCHES	SECONDARY UNITS: [MILLIMETRES]	 1359 COKER ST GREELEY ON CANADA - 613 821 2917		PROJECT DESCRIPTION: RIDEAU CANAL PROMENADE METALS		PROJECT NUMBER: 2380PCH			
	GENERAL TOLERANCE NOTE				SHEET DESCRIPTION: HEEL POST SUPPORT BRACKET		DRAWING NO.: 2380PCH_HP_B_0010			
	DECIMAL X.X ± 0.063" X.XX ± 0.010" X.XXX ± 0.005" X.XXXX ± 0.001"	FRACTION X'-X" ± 1/16 ANGLE X° ± 0.5°	PROPERTY OF DYMECH ENGINEERING INC. INFORMATION INCLUDED IN THIS DRAWING IS PROPRIETARY AND CONFIDENTIAL. DRAWING ARE TO BE USED ONLY WITH REFERENCE TO CONTRACTS OR PROPOSALS OF THIS CORPORATION. DRAWING IS NOT TO BE COPIED, REPRODUCED, DISTRIBUTED OR EXHIBITED TO OUTSIDE PARTIES EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY DYMECH ENGINEERING INC.		DRAWN BY: OLIVER RICHARDS	REVIEWED BY: MIKE SUROWIEC	APPROVED BY:			
	SURFACE FINISH SURFACE FINISH OF 250 MICROINCHES UNLESS OTHERWISE SPECIFIED		DATE: 12/20/2017	DATE: 1/9/2018	DATE:	THIRD ANGLE PROJ.	DO NOT SCALE DRAWING	SHEET SCALE: 1:8	SHEET SIZE: B	PRINTED DATE: 1/10/2018

PANEL NAME	PANEL DWG	QUANTITY	WIDTH	HEIGHT	PANEL THICKNESS	STRUCTURE DWG	FOOTING DWG	QUANTITY
<i>NOM DES PANNEAUX</i>	<i>DESSINS DES PANNEAUX</i>	<i>QUANTITÉ</i>	<i>LARGEUR</i>	<i>HAUTEUR</i>	<i>ÉPAISSEUR DU PANNEAU</i>	<i>DESSIN DE STRUCTURE</i>	<i>DESSIN D'ANCRAGE</i>	<i>QUANTITÉ</i>
HW-1-1	SO-PL-A-01	1	75"	14"	0.25"	SO-GA-ASSY-01	N/A / S.O.	N/A / S.O.
HW-1-2	SO-PL-A-02	1	34.5"	14"	0.25"	SO-GA-ASSY-01	N/A / S.O.	N/A / S.O.
HW-1-3	SO-PL-A-03	1	88.5"	14"	0.25"	SO-GA-ASSY-01	N/A / S.O.	N/A / S.O.
HW-2	SO-PL-A-04	1	47.25"	14"	0.25"	SO-GA-ASSY-01	N/A / S.O.	N/A / S.O.
HW-3	SO-PL-A-04	1	47.25"	14"	0.25"	SO-GA-ASSY-01	N/A / S.O.	N/A / S.O.
HW-4	SO-PL-A-05	1	50"	14"	0.25"	SO-GA-ASSY-01	N/A / S.O.	N/A / S.O.
HW-5	SO-PL-A-04	1	47.25"	14"	0.25"	SO-GA-ASSY-01	N/A / S.O.	N/A / S.O.



**NOTE / NOTE:**

**LOCATION NAMES / NOMS DE LIEUX :**

**OL:** OTTAWA LOCKS / ÉCLUSES D'OTTAWA

**OCC:** OTTAWA CONVENTION CENTER / CENTRE DES CONGRÈS D'OTTAWA

**PR:** PRETORIA / PRETORIA

**LD:** LANSDOWNNE / LANSDOWNNE

**DL:** DOW'S LAKE / LAC DOW

**CEF:** CENTRAL EXPERIMENTAL FARM / FERME EXPÉRIMENTALE CENTRALE

**HW:** HARTWELLS LOCKS / ÉCLUSE HARTWELL

**FRAMING TYPES / :**

**SA:** STAND-ALONE / AUTO-PORTANT

**WB:** WALL BRACKET / FIXATION MURALE

**SO:** STAND-OFF / MONTAGE DÉPORTÉ

**RIDEAU CANAL PROMENADE: GENERAL ASSEMBLY PANEL IDENTIFICATION**  
**HARTWELLS LOCKS / PROMENADE DU CANAL-RIDEAU : ASSEMBLAGE GÉNÉRAL**  
**IDENTIFICATION DU PANNEAU ÉCLUSE HARTWELL**



DRAWN BY / DESSIN PAR : CARRIE HURST

DATE: 18OCT17  
DATE : 18OCT17

REVISIONS / RÉVISIONS :  
DATE: 11DEC17      DATE: 31JAN18  
DATE : 11DEC17      DATE : 31JAN18

DRAWING / DESSIN :

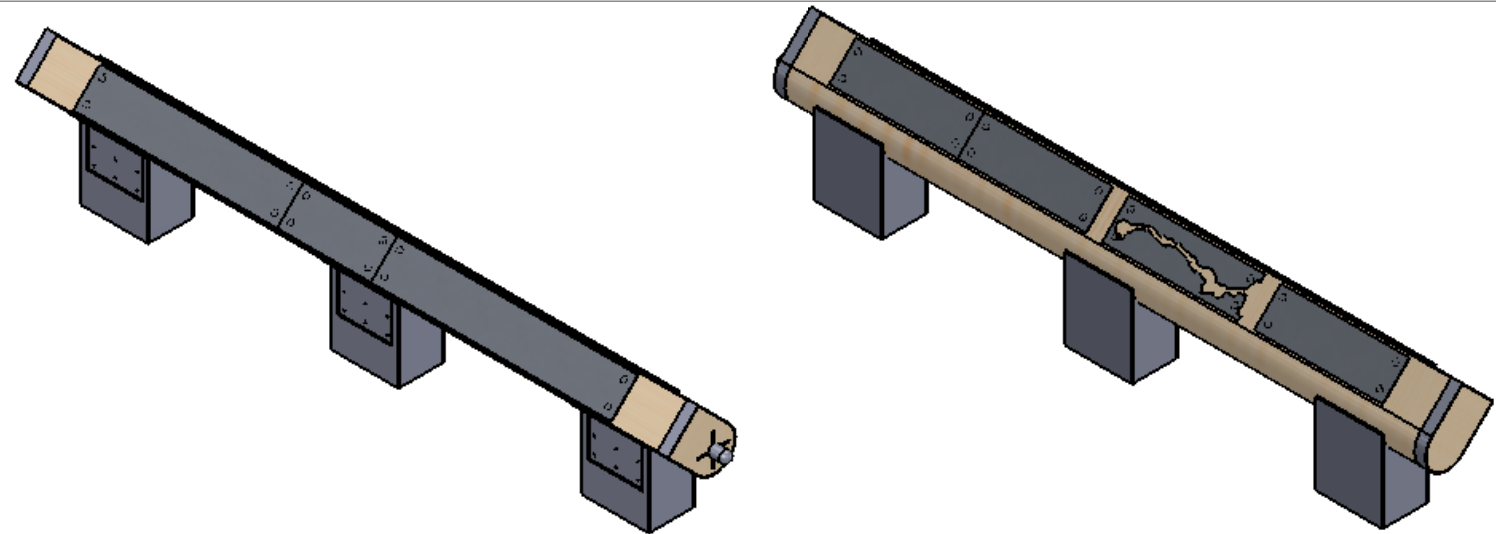
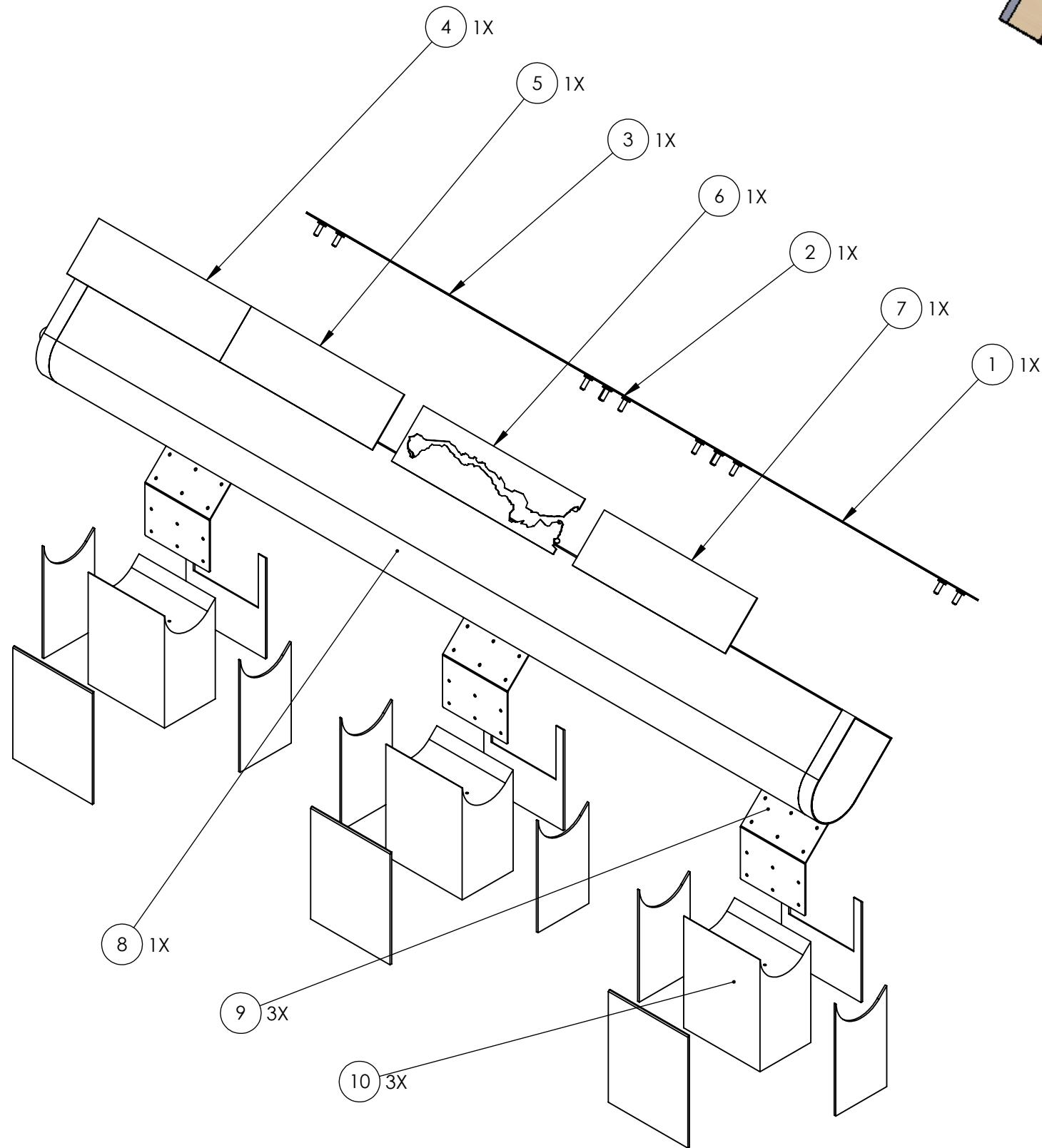
REVISED / RÉVISÉ PAR :

DATE:

UNIT: INCHES [mm]    UNITÉ : POUCES [mm]

SCALE / ÉCHELLE :

SHEET / FEUILLE : 1



ITEM ART.	NAME NOM	DWG DESSIN	QUANTITY QUANTITÉ
1	HW-1-1 GRAPHIC PANEL ASSY - BY OTHERS - INSTALLED BY DYMECH / ASS. HW-1-1 PANNEAU GRAPHIQUE - PAR DES TIERS - INSTALLÉ PAR DYMECH	SO-PL-A-01	1
2	HW-1-2 GRAPHIC PANEL ASSY - BY OTHERS - INSTALLED BY DYMECH / ASS. HW-1-2 PANNEAU GRAPHIQUE - PAR DES TIERS - INSTALLÉ PAR DYMECH	SO-PL-A-02	1
3	HW-1-3 GRAPHIC PANEL ASSY - BY OTHERS - INSTALLED BY DYMECH / ASS. HW-1-3 PANNEAU GRAPHIQUE - PAR DES TIERS - INSTALLÉ PAR DYMECH	SO-PL-A-03	1
4	HW-2 GRAPHIC PANEL ASSY - BY OTHERS - INSTALLED BY DYMECH / ASS. HW-2 PANNEAU GRAPHIQUE - PAR DES TIERS - INSTALLÉ PAR DYMECH	SO-PL-A-04	1
5	HW-3 GRAPHIC PANEL ASSY - BY OTHERS - INSTALLED BY DYMECH / ASS. HW-3 PANNEAU GRAPHIQUE - PAR DES TIERS - INSTALLÉ PAR DYMECH	SO-PL-A-04	1
6	HW-4 GRAPHIC PANEL ASSY - BY OTHERS - INSTALLED BY DYMECH / ASS. HW-3 PANNEAU GRAPHIQUE - PAR DES TIERS - INSTALLÉ PAR DYMECH	SO-PL-A-05	1
7	HW-5 GRAPHIC PANEL ASSY - BY OTHERS - INSTALLED BY DYMECH / ASS. HW-5 PANNEAU GRAPHIQUE - PAR DES TIERS - INSTALLÉ PAR DYMECH	SO-PL-A-04	1
8	HEEL POST ASSY - BY OTHERS - INSTALLED BY NCC LA CONTRACTOR / ASS. PENTURE DE D'ÉCLUSE - PAR DES TIERS - INSTALLÉ PAR FOURNISSEUR EN ARCHITECTURE DE PAYSAGE EMBAUCHÉE PAR LA CCN	N/A	1
9	HEEL POST STRUCTURAL BRACKET - BY OTHERS - INSTALLED BY NCC LA CONTRACTOR / SUPPORT STRUCTURAL POUR PENTURE DE PORTE D'ÉCLUSE - PAR DES TIERS - INSTALLÉ PAR FOURNISSEUR EN ARCHITECTURE DE PAYSAGE EMBAUCHÉE PAR LA CCN	HP-SB-PT-01	3
10	HEEL POST FOOTING ASSY / ASS. ANCRAGE POUR PENTURE DE PORTE D'ÉCLUSE	HP-FT-A-01	3

**RIDEAU CANAL PROMENADE: HEEL POST GENERAL ASSEMBLY /  
PROMENADE DU CANAL-RIDEAU : PENTURE DE PORTE D'ÉCLUSE  
ASSEMBLAGE GÉNÉRAL**

DRAWN BY / DESSIN PAR : CARRIE HURST

DATE: 18OCT17  
DATE : 18OCT17

REVISIONS / RÉVISIONS :  
DATE: 11DEC17      DATE: 31JAN18  
DATE : 11DEC17      DATE : 31JAN18

DRAWING / DESSIN :  
HP-GA-01



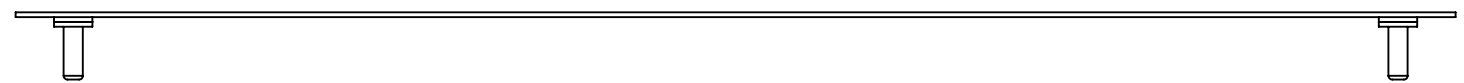
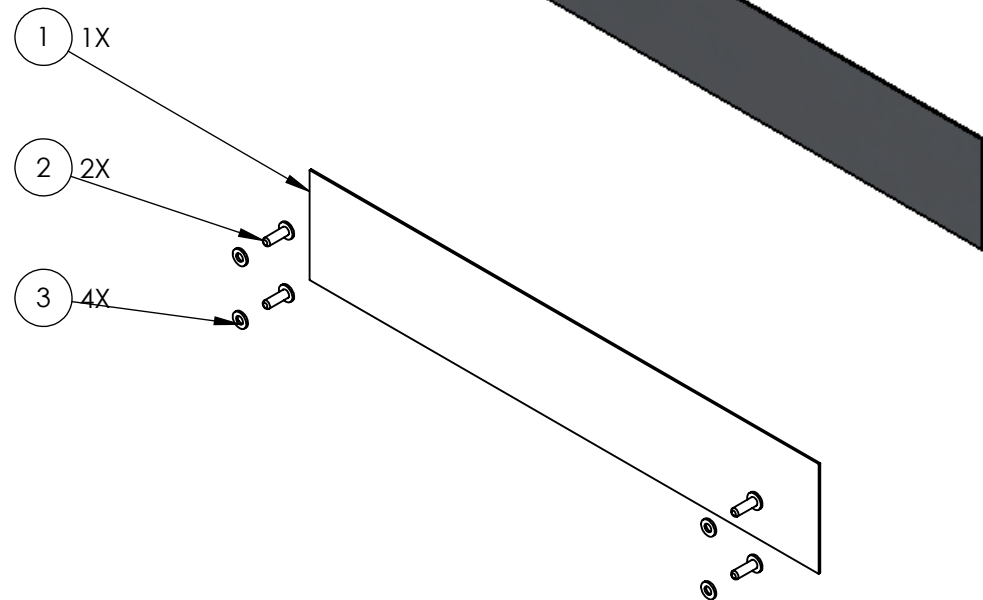
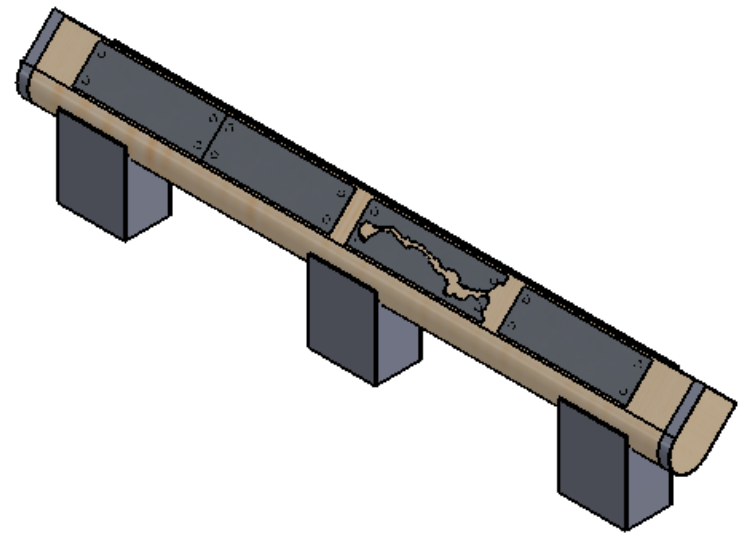
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DATE:

UNIT: INCHES [mm]    UNITÉ : POUCES [mm]

SCALE / ÉCHELLE : 1 : 10

SHEET / FEUILLE : 2



TOP / DESSUS



SIDE / CÔTÉ

BACK / ARRIÈRE

ITEM	NAME	DWG	QUANTITY
ART.	NOM	DESSIN	QUANTITÉ
1	GRAPHIC PANEL / PANNEAU GRAPHIQUE	SO-PL-01	1
2	ALUMINUM ROD / PLAQUE EN ALUMINIUM - 1	SO-BK-01	4
3	ALUMINUM SPACER / PLAQUE EN ALUMINIUM - 1	SO-SP-01	4

RIDEAU CANAL PROMENADE: GRAPHIC PANEL ASSEMBLY  
/ PROMENADE DU CANAL-RIDEAU : ASSEMBLAGE GRAPHIQUE DU PANNEAU



DRAWN BY / DESSIN PAR : CARRIE HURST

DATE: 18OCT17  
DATE : 18OCT17

REVISIONS / RÉVISIONS :  
DATE: 11DEC17      DATE: 31JAN18  
DATE : 11DEC17      DATE : 31JAN18

DRAWING / DESSIN :  
SO-PL-A-01

REVISED / RÉVISÉ PAR :

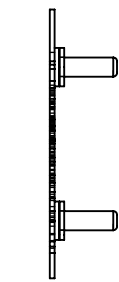
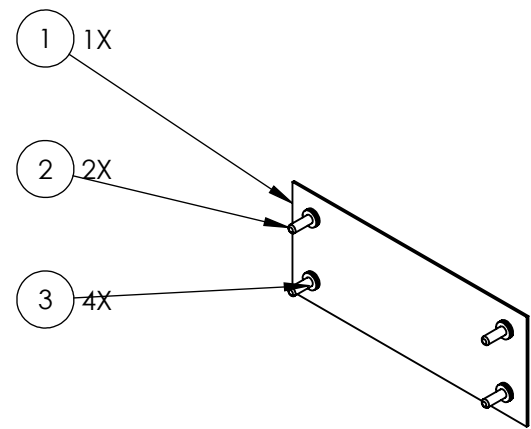
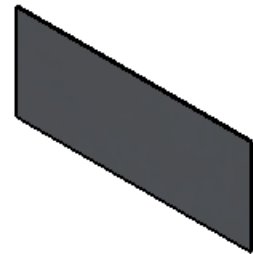
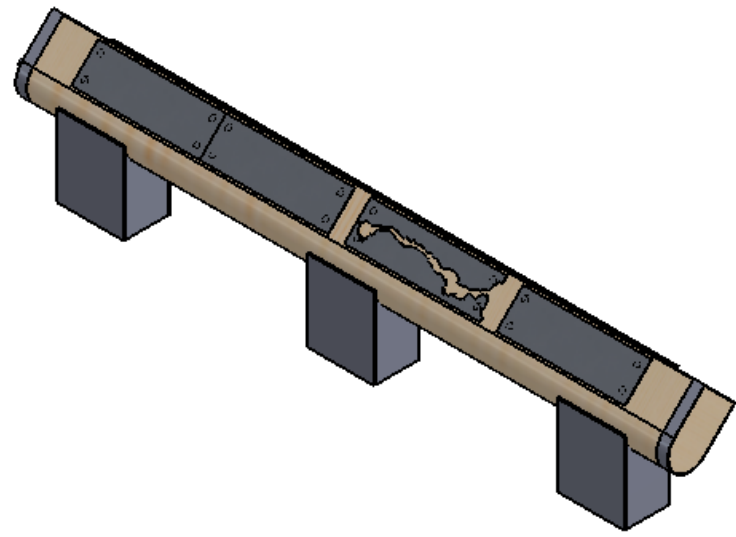
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UNIT: INCHES [mm]    UNITÉ : POUCES [mm]

SCALE / ÉCHELLE : 1 : 10

SHEET / FEUILLE : 3

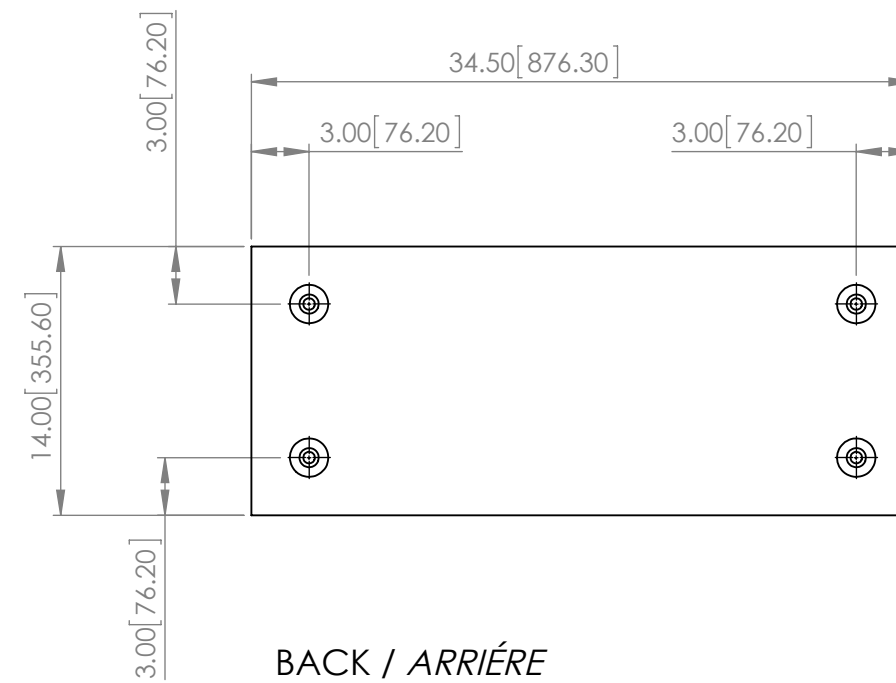




SIDE / CÔTÉ



TOP / DESSUS



BACK / ARRIÈRE

ITEM	NAME	DWG	QUANTITY
ART.	NOM	DESSIN	QUANTITÉ
1	GRAPHIC PANEL / PANNEAU GRAPHIQUE	SO-PL-02	1
2	ALUMINUM ROD / PLAQUE EN ALUMINIUM - 1	SO-BK-01	4
3	ALUMINUM SPACER / PLAQUE EN ALUMINIUM - 1	SO-SP-01	4

RIDEAU CANAL PROMENADE: GRAPHIC PANEL ASSEMBLY  
 / PROMENADE DU CANAL-RIDEAU : ASSEMBLAGE GRAPHIQUE DU PANNEAU



Canadian Heritage  
 Patrimoine canadien



DRAWN BY / DESSIN PAR : CARRIE HURST

DATE: 18OCT17  
 DATE : 18OCT17

REVISIONS / RÉVISIONS :  
 DATE: 11DEC17      DATE: 31JAN18  
 DATE : 11DEC17      DATE : 31JAN18

DRAWING / DESSIN :  
 SO-PL-A-02

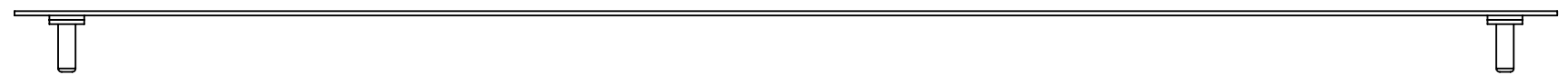
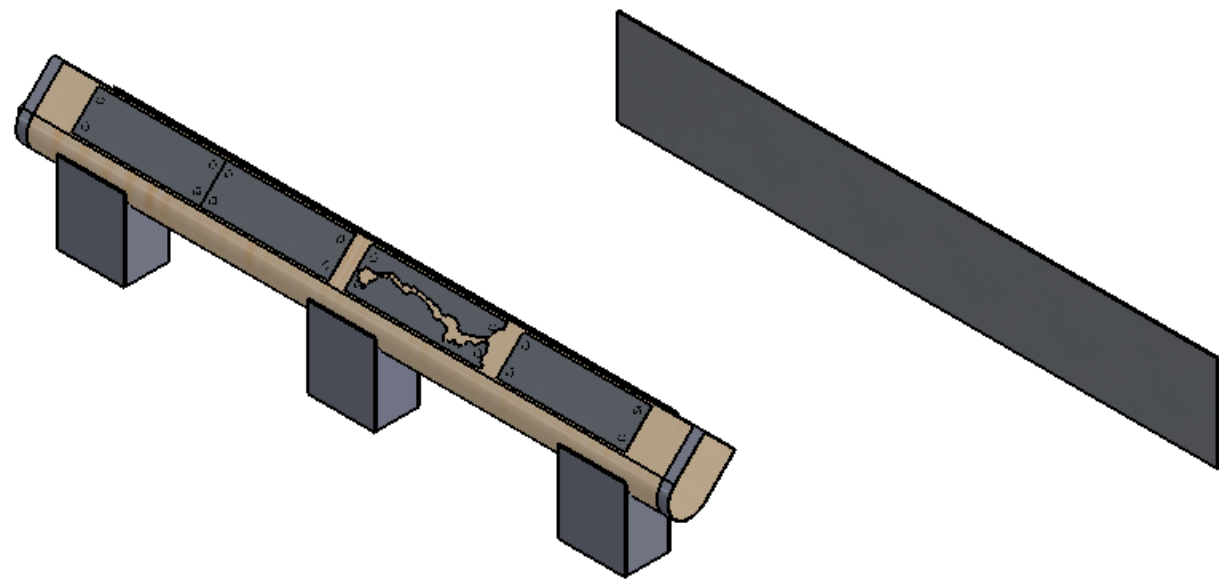
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DATE:

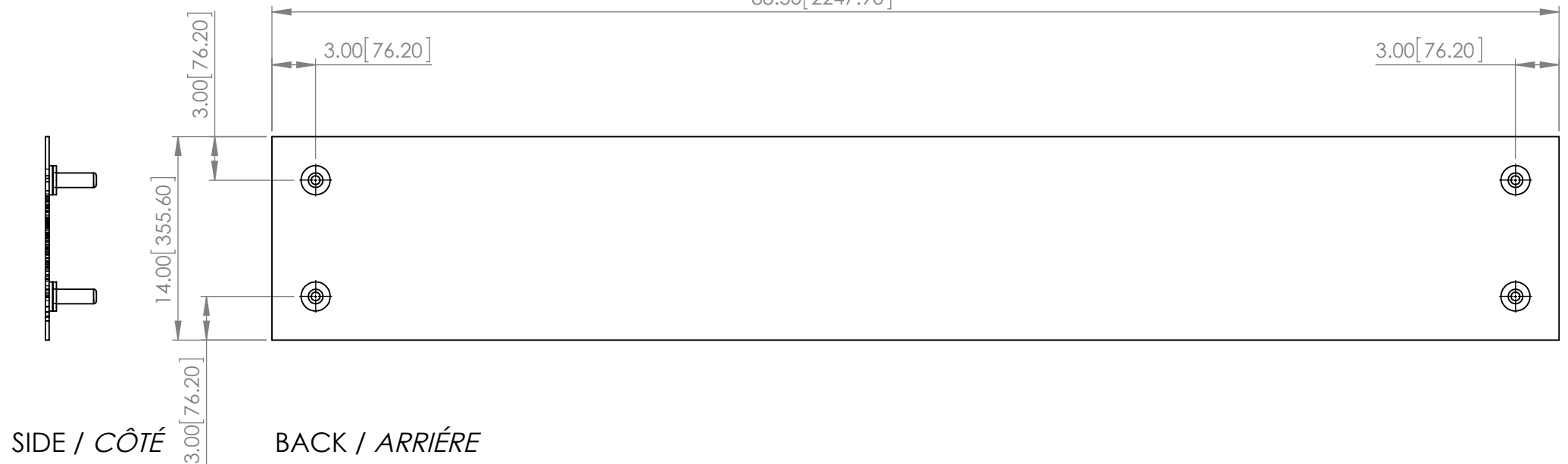
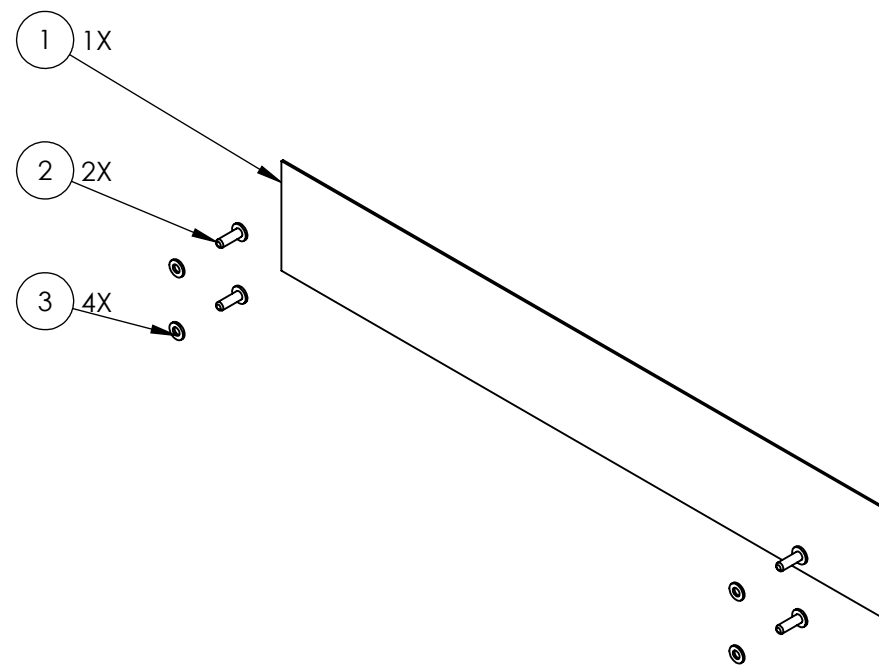
UNIT: INCHES [mm]    UNITÉ : POUCES [mm]

SCALE / ÉCHELLE : 1 : 10

SHEET / FEUILLE : 4



TOP / DESSUS



SIDE / CÔTÉ

BACK / ARRIÈRE

ITEM	NAME	DWG	QUANTITY
ART.	NOM	DESSIN	QUANTITÉ
1	GRAPHIC PANEL / PANNEAU GRAPHIQUE	SO-PL-03	1
2	ALUMINUM ROD / PLAQUE EN ALUMINIUM - 1	SO-BK-01	4
3	ALUMINUM SPACER / PLAQUE EN ALUMINIUM - 1	SO-SP-01	4

RIDEAU CANAL PROMENADE: GRAPHIC PANEL ASSEMBLY  
/ PROMENADE DU CANAL-RIDEAU : ASSEMBLAGE GRAPHIQUE DU PANNEAU



DRAWN BY / DESSIN PAR : CARRIE HURST

DATE: 18OCT17  
DATE : 18OCT17

REVISIONS / RÉVISIONS :  
DATE: 11DEC17      DATE: 31JAN18  
DATE : 11DEC17      DATE : 31JAN18

DRAWING / DESSIN :  
SO-PL-A-03

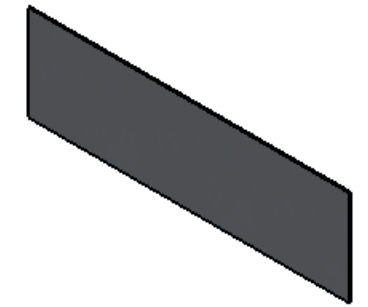
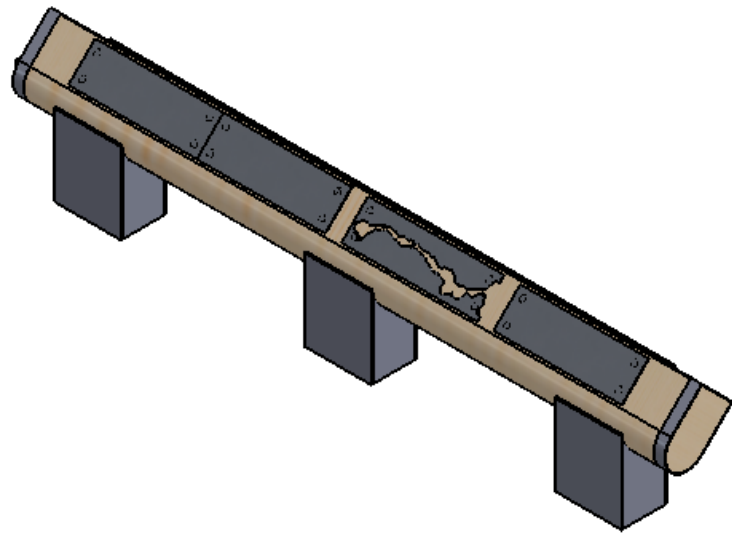
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DATE:

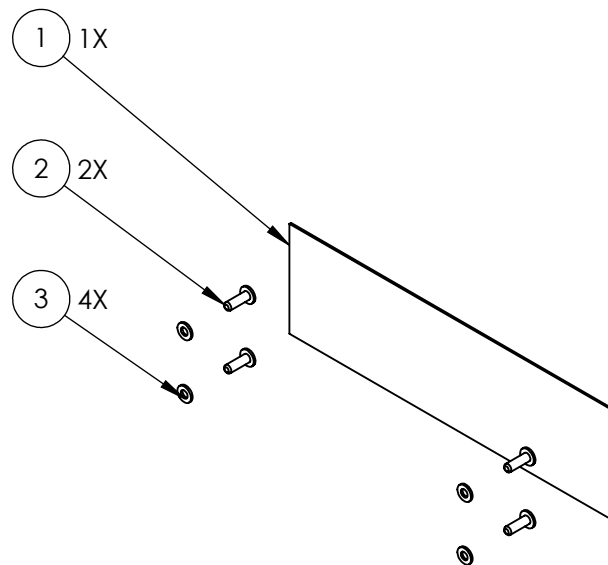
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SCALE / ÉCHELLE : 1 : 10

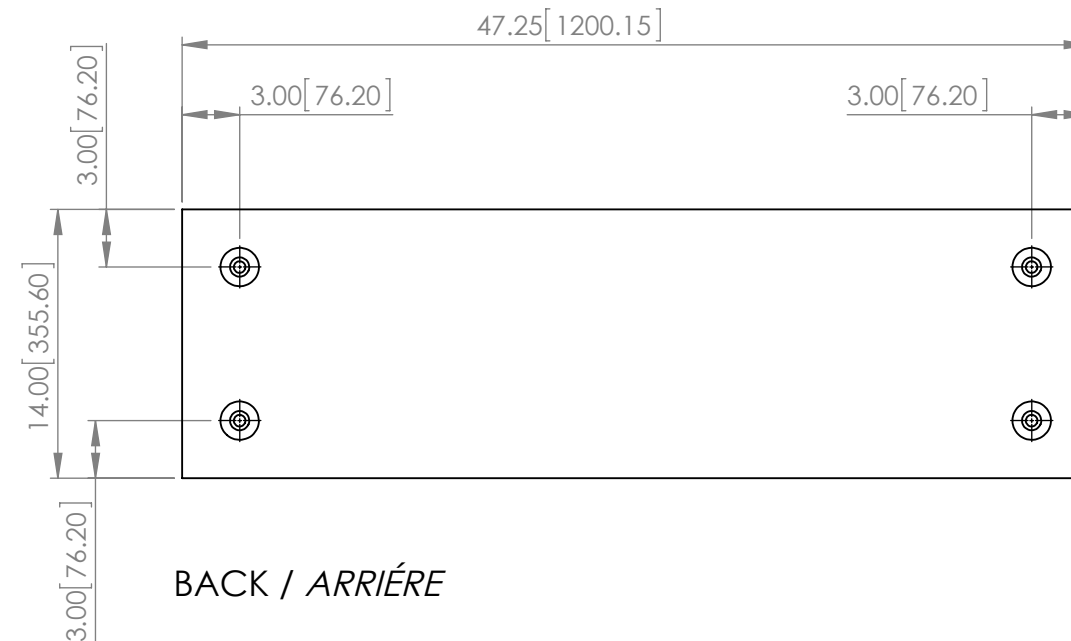
SHEET / FEUILLE : 5



TOP / DESSUS



SIDE / CÔTÉ



BACK / ARRIÈRE

ITEM	NAME	DWG	QUANTITY
ART.	NOM	DESSIN	QUANTITÉ
1	GRAPHIC PANEL / PANNEAU GRAPHIQUE	SO-PL-04	1
2	ALUMINUM ROD / PLAQUE EN ALUMINIUM - 1	SO-BK-01	4
3	ALUMINUM SPACER / PLAQUE EN ALUMINIUM - 1	SO-SP-01	4

RIDEAU CANAL PROMENADE: GRAPHIC PANEL ASSEMBLY  
/ PROMENADE DU CANAL-RIDEAU : ASSEMBLAGE GRAPHIQUE DU PANNEAU



DRAWN BY / DESSIN PAR : CARRIE HURST

DATE: 18OCT17  
DATE : 18OCT17

REVISIONS / RÉVISIONS :  
DATE: 11DEC17 DATE: 31JAN18  
DATE : 11DEC17 DATE : 31JAN18

DRAWING / DESSIN :  
SO-PL-A-04

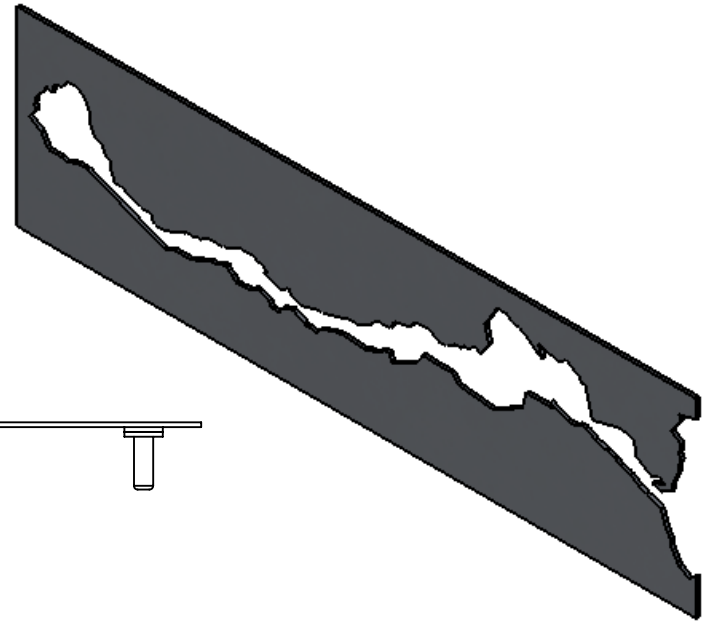
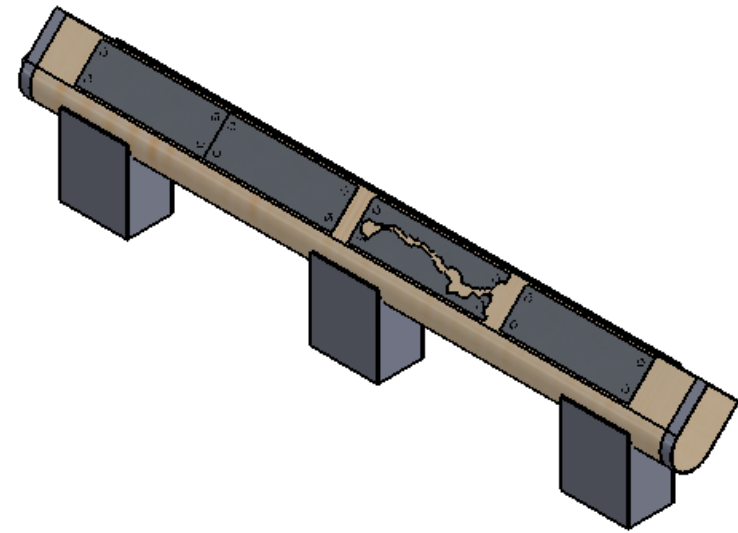
REVISED / RÉVISÉ PAR :

DATE:

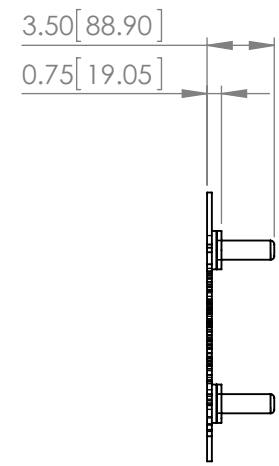
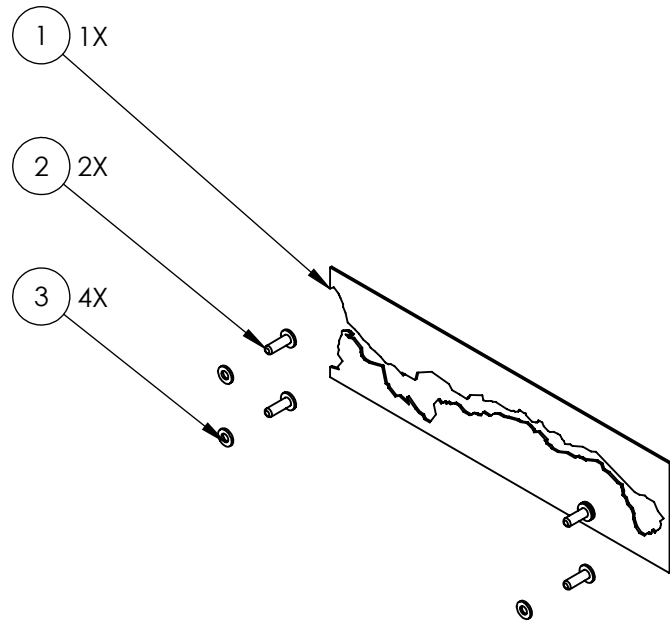
UNIT: INCHES [mm] UNITÉ : POUCES [mm]

SCALE / ÉCHELLE : 1 : 10

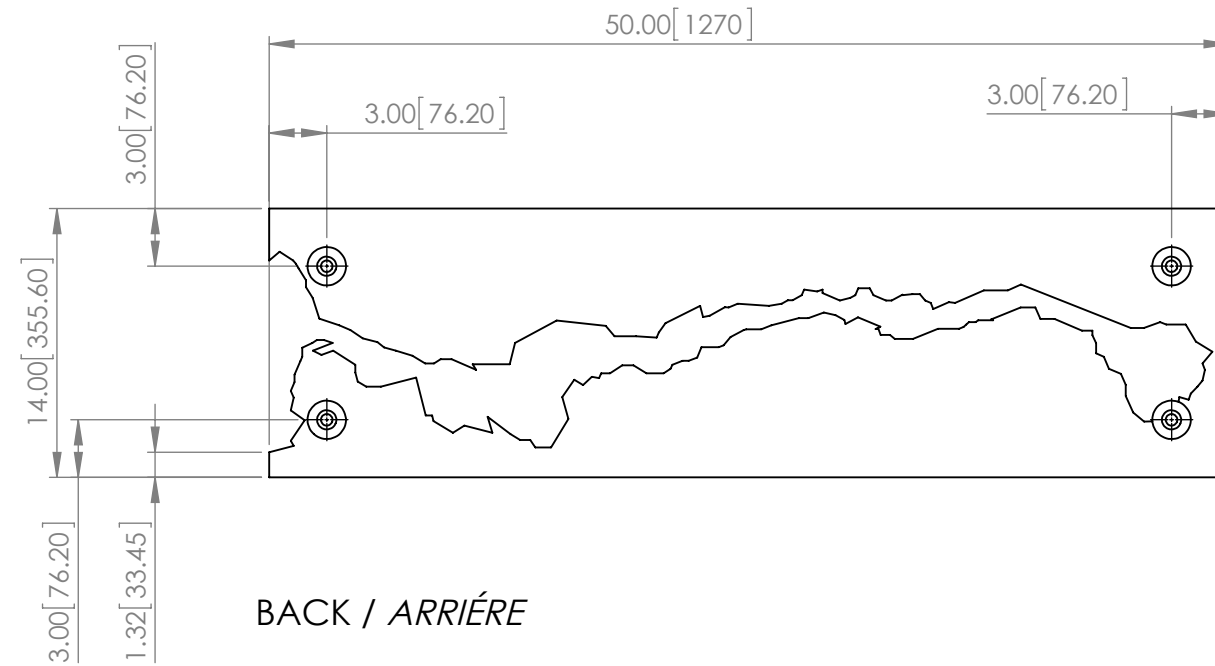
SHEET / FEUILLE : 6



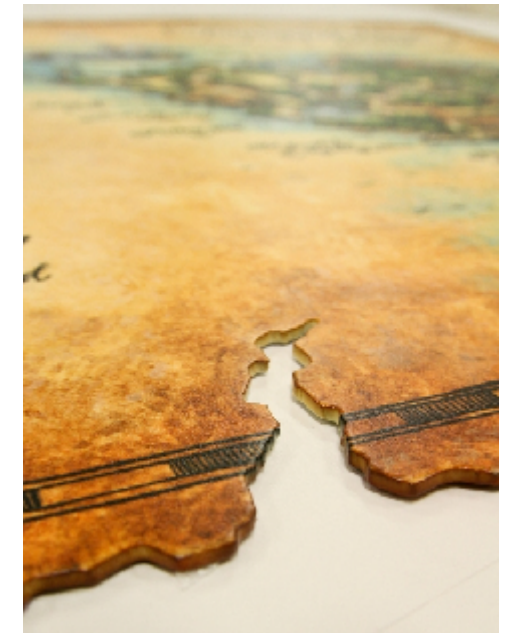
TOP / DESSUS



SIDE / CÔTÉ



BACK / ARRIÈRE



TYPICAL EDGE TREATMENT - ROUTERED PANEL

ITEM	NAME	DWG	QUANTITY
ART.	NOM	DESSIN	QUANTITÉ
1	GRAPHIC PANEL / PANNEAU GRAPHIQUE	SO-PL-05	1
2	ALUMINUM ROD / PLAQUE EN ALUMINIUM - 1	SO-BK-01	4
3	ALUMINUM SPACER / PLAQUE EN ALUMINIUM - 1	SO-SP-01	4

RIDEAU CANAL PROMENADE: GRAPHIC PANEL ASSEMBLY  
/ PROMENADE DU CANAL-RIDEAU : ASSEMBLAGE GRAPHIQUE DU PANNEAU



DRAWN BY / DESSIN PAR : CARRIE HURST

DATE: 18OCT17  
DATE : 18OCT17

REVISIONS / RÉVISIONS :  
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DATE : 11DEC17 DATE : 31JAN18

DRAWING / DESSIN :  
SO-PL-A-05

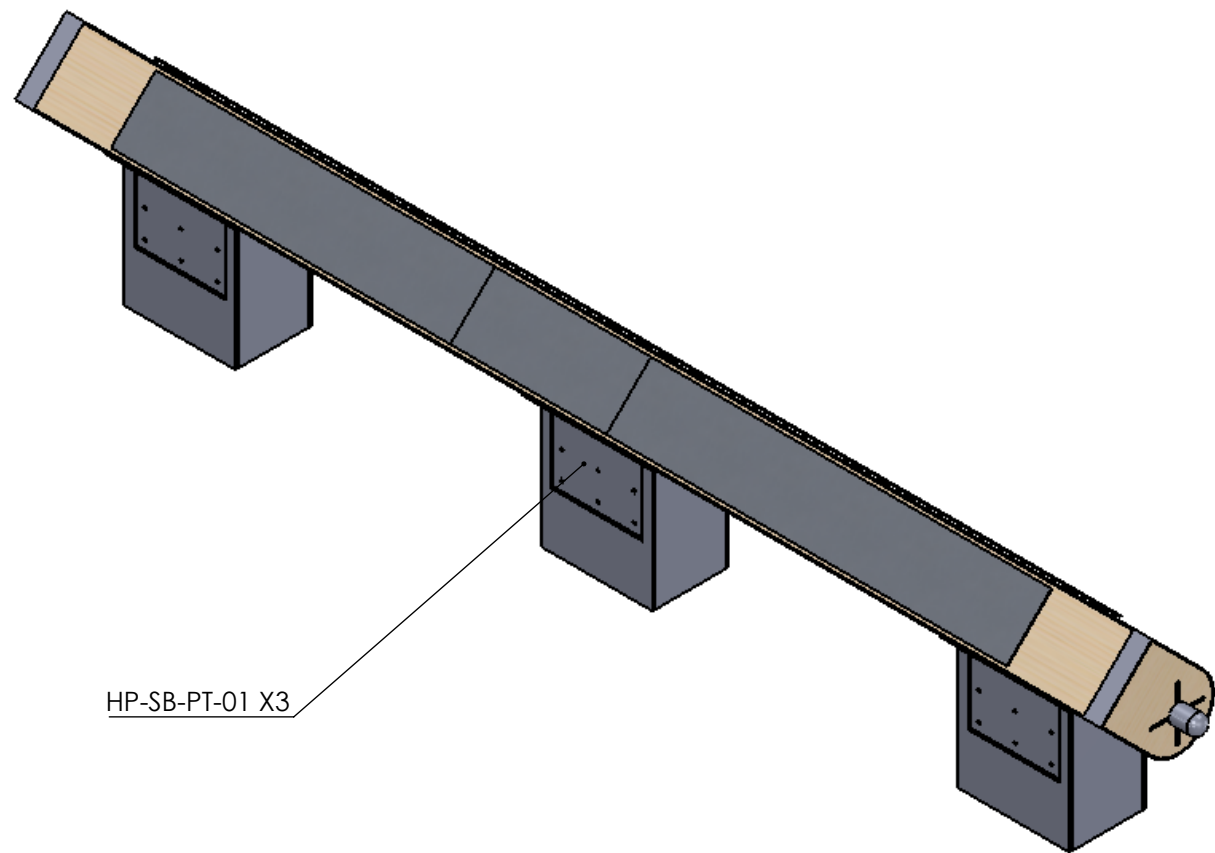
REVISED / RÉVISÉ PAR :

DATE:

UNIT: INCHES [mm] UNITÉ : POUCES [mm]

SCALE / ÉCHELLE : 1 : 10

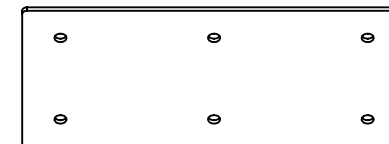
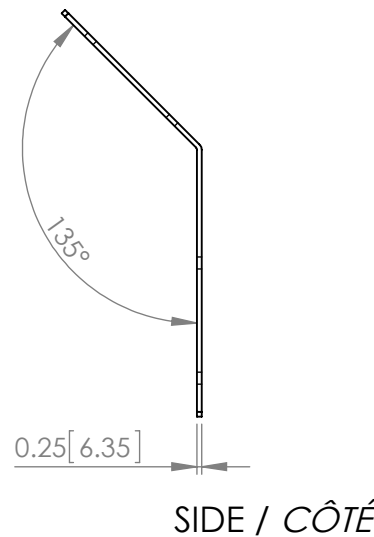
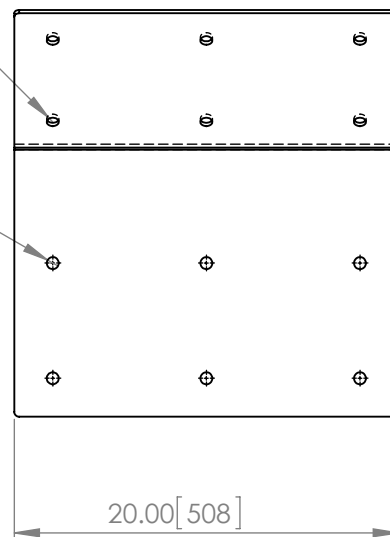
SHEET / FEUILLE : 7



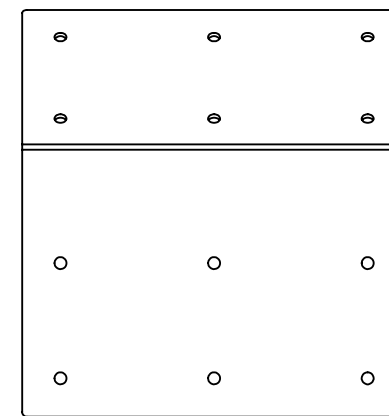
HP-SB-PT-01 X3

6 x Ø 0.63 [15.88] THRU ALL

6 x Ø 0.63 [15.88] THRU ALL



TOP / DESSUS



BACK / ARRIÈRE

- NOTE:
- DIMENSIONS LISTED ARE FOR REFERENCE ONLY, FABRICATION SPEC IS WITH DYMECH
  - UNLESS OTHERWISE NATED ALL MATE3RIAL PLAIN CARBON STEEL
  - DEBURR AND REMOVE ALL SHARP EDGES, 0.100" X 45DEG UNLESS OTHERWISE NOTED
  - FINISH: HOT-DIP GALVANIZE, PEWDERCOAT SEMI-GLOSS BLACK
  - ALL FINISHING IN ACCORDANCE WITH ASTM A123
  - FABRICATED BY DYMECH
  - INSTALLED BY NCC LA CONTRACTOR

**RIDEAU CANAL PROMENADE: GRAPHIC PANEL ASSEMBLY**  
 / **PROMENADE DU CANAL-RIDEAU : ASSEMBLAGE GRAPHIQUE DU PANNEAU**

DRAWN BY / DESSIN PAR : CARRIE HURST

DATE: 18OCT17  
 DATE : 18OCT17

REVISIONS / RÉVISIONS :  
 DATE: 11DEC17      DATE: 31JAN18  
 DATE : 11DEC17      DATE : 31JAN18

DRAWING / DESSIN :  
 HP-SB-PT-01

REVISED / RÉVISÉ PAR :

DATE:

UNIT: INCHES [mm]    UNITÉ : POUCES [mm]

SCALE / ÉCHELLE : 1 : 10

SHEET / FEUILLE : 8



Canadian Heritage  
 Patrimoine canadien



RIDEAU CANAL PROMENADE HARDWARE SUPPLY AND INSTALLATION LIST

Interpretive Element	Attachment Hardware	Drawing Reference	Quantity	Size	Purpose	Supplied by:	Installed by:
Vertical Elements and interpretive graphic panels	Threaded rods	2380PCH_VS_0001 pp 2/3	7 sites x 4 each = 28	see ref dwg.	fastens vertical graphic panels to welded assembly	Dymech	Dymech
	Spacer 0010	2380PCH_VS_0001 pp 7	7 sites x 2 each = 14	see ref dwg.	fastens vertical graphic panels to welded assembly	Dymech	Dymech
	Spacer 0020	2380PCH_VS_0001 pp 7	7 sites x 2 each = 14	see ref dwg.	fastens vertical graphic panels to welded assembly	Dymech	Dymech
	Spacer 0030	2380PCH_VS_0001 pp 7	7 sites x 2 each = 14	see ref dwg.	fastens vertical graphic panels to welded assembly	Dymech	Dymech
	Spacer 0040	2380PCH_VS_0001 pp 7	7 sites x 2 each = 14	see ref dwg.	fastens vertical graphic panels to welded assembly	Dymech	Dymech
	Washer 0010	2380PCH_VS_0001 pp 7	7 sites x 4 each = 28	see ref dwg.	fastens vertical graphic panels to welded assembly	Dymech	Dymech
	Locknut 0010	2380PCH_VS_0001 pp 7	7 sites x 4 each = 28	see ref dwg.	fastens vertical graphic panels to welded assembly	Dymech	Dymech
	Threaded L-shaped anchor bolts	Detail 5/D-01	7 sites x 6 each = 42	5/8"	anchors welded assembly base plate to concrete footing	NCC GC	NCC GC
	Nuts and washers for above	Detail 5/D-01	7 sites x 12 each = 84	to fit anchors	anchors welded assembly base plate to concrete footing	NCC GC	NCC GC
Interpretive graphic panel stands	Signage hardware Hilti heavy duty threaded expansion anchors with washers and nuts	2380PCH_IS_0000 pp 2	36 legs x 7 each = 252	1/2"	fastens interpretive panels to interpretive stand legs	SHI	Dymech
	Hilti heavy duty threaded expansion anchors with washers and nuts	Detail 3/D-01	36 legs x 4 each = 144	HSL-3 M 12 / 25	anchors interpretive stand base plate to concrete slab	NCC GC	NCC GC
Corten Steel Canoe	Hilti heavy duty threaded expansion anchors with washers and nuts	Detail 4/D-01	4	plate hole size: 0.8" dia	anchors canoe assembly base plates to concrete slab	NCC GC	NCC GC
Wall Bracket at OCC for interpretive graphic panels	1/4" or 3/8" stainless steel concrete/stone anchors. Exact specification/ length/etc. are TBD pending an inspection of the site pre-installation	2380PCH_WB_0000 pp 2	2 brackets x 4 each = 8	1/4" or 3/8" stainless steel concrete/stone anchors. Exact specification/ length/etc. are TBD pending an inspection of the site pre-installation	420" of panels. anchoring of wall bracket base plates to limestone wall	Dymech	Dymech
	Interpreteive panel fasteners	2380PCH_WB_0000 pp 2	2 brackets x 4 each = 8	TBD	fastens interpretive panels to wall brackets	SHI	Dymech
	Bolt with washer and sloped nut	2380PCH_WB_0000 pp 2	2 brackets x 2 each = 4	3/8"-16 x 1"	enables adjustment of bracket	SHI	Dymech
Heel Post at HL	Threaded galvanized steel rods as per PCA engineer, x12 1/2"	8/D-01	3 supports x 2 each = 6	5/8"	anchors heel post to concrete supports	NCC GC	NCC GC
	LAG bolt HDG 6" long, x12 HDG washers per bracket (3	2380PCH_HP_B_0010 pp 2	3 brackets x 12 each = 36	1/2" LAG bolt 6" length with washer	affixes heel post structural bracket to heel post and concrete columns	NCC GC	NCC GC
	Interpretive panel spacers	HP-GA-01	7 panels x 4 each = 28	TBD	anchors panels to wood heel post	SHI	Dymech
Cannonball Assembly	Pins	6/D-03	4	according to the assembly provided by PCA	anchors cannonball assembly onto limestone block	supplied and assembled by PCA	NCC GC

## **APPENDIX E**

Photographs of existing conditions at seven (7) future interpretive installation sites along the Rideau Canal



Ottawa Locks / Écluses d'Ottawa





Ottawa Convention Centre / Centre des congrès d'Ottawa



Pretoria Bridge / Pont Pretoria



Lansdowne / Lansdowne



Dows Lake / Lac Dows



Central Experimental Farm / La ferme expérimentale centrale



Hartwells Locks / Écluses Hartwells