

NCC Tender File #	AL1433
Project Description	Confederation Boulevard Esplanade Rehabilitation
Site Visit	n/a
Closing date and time	Thursday, August 8, 2013 at 3pm Ottawa time

RETURN TENDERS TO: National Capital Commission 40 Elgin Street, 3rd Floor, Service Centre Ottawa, ON K1P 1C7	NCC Tender File # AL1444
	NCC Contract Number
TENDER CLOSING DATE AND TIME: Thursday, August 8, 2013 at 3pm Ottawa time	

DESCRIPTION OF WORK: Confederation Boulevard Esplanade Rehabilitation
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1. BUSINESS NAME AND ADDRESS OF BIDDER

Name: _____

Address: _____

Telephone number: _____ **Fax number:** _____

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 \$ _____

GST/QST – _____

14,975% \$ _____

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The tender shall not be withdrawn for a period of 60 days following the date and time of tender closing.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) Fair Wages and Hours of Labour – Labour Conditions;
 - (h) Occupational Health and Safety Requirements;
 - (i) Addenda
 - (j) Schedules of Wage Rates for Federal Construction Contracts;
 - (k) Any amendments issued or any allowable tender revision received before the date and time set for tender closing;
 - (l) Any amendment incorporated by mutual agreement between the NCC and the Contractor before acceptance of the tender; and
 - (m) Any amendment or variation of the contract documents that is made in accordance with the General Conditions;
 - (n) Security Requirements.
2. Schedules of Wage Rates for Federal Construction contracts are included by reference and may be accessed from the Website: <http://www.hrsdc.gc.ca/asp/gateway.asp?hr=en/lp/lo/lswf/fw/schedule.shtml&hs=cgp>.
3. The language of the contract documents shall be the language of the Invitation to Tender & Acceptance Form submitted.

NCC Tender File # AL1444

NCC Contract Number

5. APPENDICES

The tender includes Appendix(ces) Nos 1 and 11 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 of Phase I between September 2013 and early winter 2013-2014 and the work of Phase II between August 2014 and early winter of 2014-2015. In the event that construction is not complete by early winter, the contractor is responsible to grade the pedestrian Esplanade with granular 'A' as a temporary measure

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 and the Estimated Total Price must be entered for each item listed;
- (c) the Price per Unit as tender governs in calculating the Total Estimated Amount, and any errors in the extension of the Price per Unit 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: Transmit the estimated total of the unit price table, under item 2, The Offer of this Invitation to Tender & Acceptance Form.

ITEM#	SUB-ITEM#	DESCRIPTION	UOM	QTY	UNIT PRICE	LS price or total for item
1.0		PHASE 1				
1.1		General Conditions				
	.1	Site organization	global	1		
	.2	Site preparation	global	1		
	.3	Construction fencing and temporary signage	global	1		
1.2		Preparation and demolition				
	.1	Removal and reinstallation of base covers and lampposts	global	1		
	.2	Removal, storage et reinstallation of existing bus shelter	global	1		
	.3	Removal, storage et reinstallation of existing signage	global	1		
	.4	Removal, storage et reinstallation of existing attraction signs	global	1		
	.5	Tree removal	units	28		
	.6	Decommissioning of water service	global	1		
	.7	Recovery and cutting of existing granite slabs for installation (items 1.3.1 et 1.3.2)	global	1		
	.8	Stripping, shaping and rough grading	m ²	1729		
	.9	Grade cuts and transport off-site	m ³	918		
	.10	Removal, transport and disposal of dry waste materials off-site (wood, brick, plastic, etc.)	m ³	40		
	.11	Demolition of asphalt surface and transport off-site	m ²	1400		
	.12	Demolition of concrete slab and transport off-site	m ²	49		
	.13	Removal, storage on palettes and transport off-site of non-recycled granite slabs	global	1		
1.3		Site Enhancements				

	.1	Backfill with structural soil	m ³	42		
	.2	Backfill with granular material «A»	m ³	150		
	.3	Backfill with granular material «B»	m ³	906		
	.4	Install recovered granite pavers 400 mm	m	197		
	.5	Install recovered granite pavers 154 mm	m	43		
	.6	Concrete slab for bus shelter	m ²	6		
	.7	Concrete slab with curb for bike trail	m ²	51		
	.8	Precast concrete pavers, 100 mm d'épaisseur	m ²	1034		
	.9	Granite curb (100 mm x 300 mm)	m	77		
	.10	Granite curb (300 mm x 300 mm)	m	37		
	.11	Granite curb (200 mm x 300 mm x 1200mm) for curve	m	109		
	.12	Granite plinth (1200 mm x 1200 mm) for lamppost in planters	units	2		
	.13	Granite plinth (1200 mm x 1600 mm) for lamppost in planters	units	2		
	.14	Granite plinth (1200 mm x 1800 mm) for lamppost in planters	unit	1		
	.15	Granite plinth (800 mm x 1600 mm) for planter	units	2		
	.16	Granite plinth (800 mm x 1800 mm) for lamppost in planters	unit	1		
	.17	Granite bench (375 mm shaped x 750 mm)	m	37		
	.18	Wood seat for granite bench	units	14		
	.19	Lighting modules embedded in pavement	units	42		
	.20	Installation of markers for snow removal	units	10		
1.4		Plantation (nursery-grown plants, including planting soil)				
	.1	Ginko biloba, 70 mm (planter)	units	6		
	.2	Gleditsia triacanthos 'Shademaster', 70mm (planter)	units	12		

	.3	Rhus aromatica 'Grow Low', 60 cm	units	233		
	.4	Calamagrostis aculiflora 'Karl Foerster', pot 4"	units	355		
	.5	Leymus Arenarius, pot 4"	units	692		
	.6	Hemerocallis 'ruby de oro', pot 1 L	units	224		
	.7	Warranty and plant maintenance (trees and sod)	global	1		
1.5		CMC Garage Wall Repairs				
		Unit price work:				
	.1	Excavation and disposal	m ³	100		
	.2	Shoring	global	12		
	.3	Preparation of the existing wall, including the removal of the existing membrane	m	7		
	.4	Concrete repair (5/S200)	m ²	2		
	.5	New expansion joint	m	7		
	.6	Backfill	m ³	100		
		Hourly Rates :				
	.7	Hourly Rate (daily)	\$/hrs			
	.8	Hourly Rate (roofer)	\$/hrs			
2.0		PHASE 2				
2.1		General Conditions				
	.1	Site organization	global	1		
	.2	Site preparation	global	1		
	.3	Construction fencing and temporary signage	global	1		
2.2		Preparation and demolition				
	.1	Removal and reinstallation of base covers and lampposts	global	1		

	.2	Removal, storage et reinstallation of existing signage	global	1		
	.3	Removal, storage et reinstallation of existing attraction signs	global	1		
	.4	Tree removal	units	34		
	.5	Decommissioning of water service	global	1		
	.6	Recovery and cutting of existing granite slabs for installation (items 2.3.1 et 2.3.2)	global	1		
	.7	Stripping, shaping and rough grading	m ²	1886		
	.8	Grade cuts and transport off-site	m ³	2000		
	.9	Removal, transport and disposal of dry waste materials off-site (wood, brick, plastic, etc.)	m ³	90		
	.10	Demolition of asphalt surface and transport off-site	m ²	1886		
	.11	Removal, storage on palettes and transport off-site of non-recycled granite slabs	global	1		
2.3		Site Enhancements				
	.1	Backfill with structural soil	m ³	134		
	.2	Backfill with granular material «A»	m ³	164		
	.3	Backfill with granular material «B»	m ³	1146		
	.4	Install recovered granite pavers 400 mm	m	229		
	.5	Install recovered granite pavers 154 mm	m	43		
	.6	Precast concrete pavers, 100 mm d'épaisseur	m ²	1433		
	.7	Recovered granite pavers (150 mm x 250 mm) for planting pits, including 20 mm spacers	m ²	90		
	.8	Removal and reinstallation of recovered granite pavers for the circle	m ²	12		
	.9	Granite curb (100 mm x 300 mm)	m	117		

	.10	Granite curb (300 mm x 300 mm)	m	87		
	.11	Granite plinth (1200 mm x 1600 mm) for lamppost base	units	8		
	.12	Granite plinth (1200 mm x 1850 mm) for lamppost base	unit	1		
	.13	Granite plinth (800 mm x 1600 mm) for planter	units	8		
	.14	Granite plinth (800 mm x 1850 mm) for planter	units	7		
	.15	Granite plinth (375 mm profilé x 750 mm)	m	37		
	.16	Wood seat for granite bench	units	14		
	.17	Lighing modules embedded in pavement	units	42		
	.18	Tree planting well	units	9		
	.19	Metal frame for tree well	units	9		
	.20	Recovered granite pavers and gravel for tree well	units	9		
	.21	Installation of markers for snow removal	units	18		
2.4		Plantation (nursery-grown plants, including planting soil)				
	.1	Ginko biloba, 70 mm (planter)	units	12		
	.2	Gleditsia triacanthos 'Shademaster', 70mm (tree well)	units	9		
	.3	Calamagrostis aculiflora 'Karl Foerster', pot 4"	units	130		
	.4	Leymus Arenarius, pot 4"	units	294		
	.5	Hemerocallis 'ruby de oro', pot 1 L	units	517		
	.6	Warranty and plant maintenance (trees and sod)	global	1		
					SUB-TOTAL	

9. The basis of award is low total cost to the Commission including all taxes.
10. I/We acknowledge receipt of the following addenda and have included for the requirement of it/them in my/our tendered price: _____ (Bidder to enter number of addenda issued, if any).

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.

12. 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

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 Contract number.

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

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

INVITATION TO TENDER & ACCEPTANCE FORM	APPENDIX 1
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- 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:

NON-MANDATORY REQUIREMENT:

- (a) Any other work not listed below

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: _____

~~**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) **n/a**~~

~~Sub contractor: _____~~

~~Address: _____~~

- ~~(b) **n/a**~~

~~Sub contractor: _____~~

~~Address: _____~~

- ~~(c) **n/a**~~

~~Sub contractor: _____~~

~~Address: _____~~

- ~~(d) **n/a**~~

~~Sub contractor: _____~~

~~Address: _____~~

SUPPLIER – DIRECT PAYMENT AND TAX INFORMATION FORM
FOURNISSEUR – FORMULAIRE DE PAIEMENT DIRECT ET RENSEIGNEMENTS POUR FINS D'IMPÔT

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, ou 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. / No. de ☐elephone :	Fax no. / No. 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) / No de l'entreprise (NE)	
GST/HST / TPS et de 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 / No de la succursale	Institution no. / No de l'institution :	Account no. / No de compte :
Institution name / Nom de l'institution :	Address / Adresse :	
	Postal Code / Code postal :	

PART 'D' – PAYMENT NOTIFICATION / PARTIE 'D' – AVIS DE PAIEMENT

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 » (for verification purposes).	Veillez 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 » (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 PAYMENT AND TAX
INFORMATION FORM**

**FOURNISSEUR – FORMULAIRE DE PAIEMENT DIRECT
ET RENSEIGNEMENTS AUX FINS D'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 : Marcel Sanscartier, Manager, Accounts Payable and Receivable – (613) 239-5241.

Direct 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.

Until we process your completed form, we will still pay you by check.

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 payment

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

There is less risk of direct payment being lost, stolen, or damaged as may happen with cheques.

Funds made by direct payment will be available in your bank account on the same day that we would have mailed your cheque.

Renseignements sur les fournisseurs aux fins d'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 : Marcel Sanscartier, Gestionnaire, comptes fournisseurs et comptes clients – (613) 239-5241.

Renseignements sur le paiement 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 vous sera envoyé par courriel.

Nous continuerons à vous payer par chèque jusqu'à ce que nous ayons traité votre formulaire.

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 direct

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

Avec les paiements direct, il y a moins de risques de perte, de vol ou de dommage, comme cela peut se produire dans le cas des chèques.

Les paiements effectués par paiement direct sont versés dans votre compte le jour même où nous aurions posté votre chèque.

- 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, telephone number - 613-239-5678 ext. 5051, facsimile number - 613-239-5007 or e-mail address - 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) n/a.

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.

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.

**SPECIAL INSTRUCTIONS TO
BIDDERS**

- 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 on August 8, 2013 shortly after 3pm Ottawa time at 40 Elgin Street, Ottawa, Ontario in room 306.**

- 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			
NCC representative / Représentant de la CCN			
Name / Nom	Telephone no. / N°. de téléphone	E-mail address / Adresse électronique	
Contract information / Information sur le contrat			
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	
Quality of workmanship / Qualité des travaux exécutés			
<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: 80px; margin: auto;"></div>
	Not satisfactory / Non-satisfaisant	6 – 10	
	Satisfactory / Satisfaisant	11 – 16	
	Superior / Supérieur	17 – 20	
Time / Délai d'exécution			
<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: 80px; margin: auto;"></div>
	Late / En retard	6 – 10	
	On time / À temps	11 – 16	
	Ahead of schedule / En avance sur le calendrier	17 – 20	
Project management / Gestion de projet			
<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: 80px; margin: auto;"></div>
	Not satisfactory / Non-satisfaisant	6 – 10	
	Satisfactory / Satisfaisant	11 – 16	
	Superior / Supérieur	17 – 20	
	Criteria not applicable / Critère non-applicable		
Contract management / Gestion de contrat			
<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: 80px; margin: auto;"></div>
	Not satisfactory / Non-satisfaisant	6 – 10	
	Satisfactory / Satisfaisant	11 – 16	
	Superior / Satisfaisant	17 – 20	
	Criteria not applicable / Critère non-applicable		
Health and safety / Santé et sécurité			
<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: 80px; margin: auto;"></div>
	Not satisfactory / Non-satisfaisant	6 – 10	
	Satisfactory / Satisfaisant	11 – 16	
	Superior / Satisfaisant	17 – 20	
Total points / Pointage total			/100
Comments / Commentaires			
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
- to clean up deficiencies in a reasonable time / de corriger les vices dans un délai raisonnable

▶	<input type="checkbox"/>	Yes Oui	<input type="checkbox"/>	No Non
▶	<input type="checkbox"/>	Yes Oui	<input type="checkbox"/>	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?

▶	<input type="checkbox"/>	Yes Oui	<input type="checkbox"/>	No Non
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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
 - GC1.2.1 General
 - GC1.2.2 Order of Precedence
 - GC1.2.3 Security and Protection of Documents and Work
- GC1.3 STATUS OF THE CONTRACTOR
- GC1.4 RIGHTS AND REMEDIES
- GC1.5 TIME OF THE ESSENCE
- GC1.6 INDEMNIFICATION BY CONTRACTOR
- GC1.7 INDEMNIFICATION BY the NCC
- 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 AND FAIR WAGES
- 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 AND FAIR WAGES

- 1) The Labour Conditions and the Schedules of Wage Rates form part of these General Conditions.
- 2) To the extent to which they are available, consistent with proper economy and the expeditious carrying out of the Work, the Contractor shall, in the performance of the Work, employ a reasonable number of persons who have been on active service with the Armed Forces of the Canada and have been honourably discharged therefrom.
- 3) 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;
 - (iii) 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;

.../2

- (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

CONTRACT / MARCHÉ					
Description and location of work / Description et endroit des travaux				Contract no. / N° de contrat	
INSURER / ASSUREUR					
Name / Nom					
Address / Adresse					
No., Street / N°, rue					
City / Ville		Province		Postal code / Code postal	
BROKER / COURTIER					
Name / Nom					
Address / Adresse					
No., Street / N°, rue					
City / Ville		Province		Postal code / Code postal	
INSURED / ASSURÉ					
Name of contractor / Nom de l'entrepreneur					
Address / Adresse					
No., Street / N°, rue					
City / Ville		Province		Postal code / Code postal	
ADDITIONAL INSURED / ASSURÉ ADDITIONNEL					
The National Capital Commission / La Commission de la capitale nationale					
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.					
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					
POLICY / POLICE					
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		

- 01 Interpretation
- 02 General Fair Wage Clause
- 03 Hours of Work
- 04 Labour Conditions to be Posted
- 05 The Contractor to Keep Records which are to be Kept Open for Inspection
- 06 NCC Requirements before Payment made to Contractor
- 07 Authority to pay Wages in the Event of Default by the Contractor
- 08 Conditions of Subcontracting
- 09 Non-discrimination in Hiring and Employment of Labour

01 Interpretation

1. In these Conditions

"Act" means the Fair Wages and Hours of Labour Act;

"Regulations" means the Fair Wages and Hours of Labour Regulations made pursuant to the Act;

"Contract" means the contract of which these Labour Conditions are part;

"the NCC" means the National Capital Commission;

"Contractor" means the person who has entered into the contract with the NCC ;

"Regional Director" means the director of a regional office of the Department of Human Resources and Skills Development or the director's designated representative;

"Inspector" has the meaning assigned to the term by Part III of the Canada Labour Code;

"Minister" means the Minister of Labour of Canada;

"persons" means those workers employed by the contractor, subcontractor or any other person doing or contracting to do the whole or any part of the work contemplated by the contract;

02 General Fair Wage Clause

- 1. All persons in the employ of the Contractor, subcontractor, or any other person doing or contracting to do the whole or any part of the work contemplated by the Contract, shall during the continuance of the work:
 - (a) be paid fair wages that is, such wages as are generally accepted as current for competent workers in the district in which the work is being performed for the character or class of work in which such workers are respectively engaged; and
 - (b) in all cases, be paid no less than the minimum hourly rate of pay established by the Labour Program of the Department of Human Resources and Social Development in the Schedules of Wage Rates which form a part of this Contract and these labour conditions; and
 - (c) for contracts covering work performed in the province of Quebec, be paid at least the wage rates established by that province for the purposes of the Quebec "Construction Decree".
- 2. Where there is no wage rate in the schedules referred to in paragraph 1 for a particular character or class of work, the Contractor shall pay wages for that character or class of work at a rate not less than the rate for an equivalent character or class of work.

3. Where during the term of the Contract, the Contractor receives notice from the NCC of any change in wage rates, the Contractor shall pay not less than the changed wage rate beginning on the first day after receipt, by the Contractor, of the notice of the change in wage rates.

03 Hours of Work

1. The hours of work in a day and in a week of persons employed in the execution of the Contract, including the hours of work in excess of which a person shall be paid overtime at a rate at least equal to one and one half times the fair wage, are the hours of work for the province in which the work is being performed as set out from time to time in an Act of that province.
2. The daily or weekly hours of work referred to in paragraph 1 may be exceeded in accordance with the applicable provincial law.

04 Labour Conditions to be Posted

1. For the information and the protection of all persons, the Contractor agrees to post and keep posted, in a conspicuous place on the premises where work contemplated by the Contract is being carried out or on premises occupied or used by persons engaged in carrying out such work, a copy of these Labour Conditions, and a copy of the applicable Schedules of Wage Rates along with any subsequent changes.

05 The Contractor to Keep Records which are to be Kept Open for Inspection

1. The Contractor agrees to keep books and records showing the names, addresses, classifications of employment and work of all workers employed under the Contract, the rate of wages to be paid, the wages paid and the daily hours worked by the workers.
2. The Contractor also agrees that the Contractor's books, records and premises will be open at all reasonable times for inspection by an Inspector.
3. The Contractor also agrees to furnish the Inspector and the NCC, on request, with such further information as is required to ascertain that the requirements of the Act, the Regulations and the Contract with respect to wages, hours of work and other labour conditions have been complied with.

06 NCC Requirements before Payment made to Contractor

1. The Contractor agrees that the Contractor will not be entitled to payment of any money otherwise payable under the Contract until the Contractor has filed with the NCC in support of a claim for payment a sworn statement:
 - (a) that the Contractor has kept the books and records required by these Regulations;
 - (b) that there are no wages in arrears in respect of work performed under the Contract; and
 - (c) that to the Contractor's knowledge, all the conditions in the Contract required by the Act and the Regulations have been complied with.
2. The Contractor also agrees that, where fair wages have not been paid by the Contractor to persons employed under the Contract, the NCC shall withhold from any money otherwise payable under the Contract to the Contractor the amount necessary to ensure that fair wages are paid to all employees until fair wages are paid.

07 Authority to pay Wages in the Event of Default by the Contractor

1. The Contractor agrees that where the Contractor is in default of payment of fair wages to an employee, the Contractor will pay the NCC the amount the Contractor is in default.
2. The Contractor agrees that where the Contractor fails to comply with paragraph 1, the NCC will pay to the Receiver General, out of any money otherwise payable to the Contractor, the amount for which the Contractor is in default.

08 Conditions of Subcontracting

1. The Contractor and the subcontractor agree that in subcontracting any part of the work contemplated by the Contract, they will place in the subcontract the conditions respecting fair wages, hours of work and other labour conditions set out in the Contract and the requirements set out in Article 4 of the Section. The Contractor further agrees that the Contractor will be responsible for carrying out these conditions in the event the subcontractor fails to carry them out.

09 Non-discrimination in Hiring and Employment of Labour

1. The Contractor agrees that in the hiring and employment of workers to perform any work under the Contract, the Contractor will not refuse to employ and will not discriminate in any manner against any person because:
 - (a) of that person's race, national or ethnic origin, colour, religion, age, sex, sexual orientation, marital status, disability, conviction for which a pardon has been granted, or family status;
 - (b) of the race, national or ethnic origin, colour, religion, age, sex, sexual orientation, marital status, disability, conviction for which a pardon has been granted, or family status of any person having a relationship or association with that person, or;
 - (c) a complaint has been made or information has been given in respect of that person relating to an alleged failure by the Contractor to comply with subparagraph (a) or (b).

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.

Specifications

Confederation Boulevard Esplanade Réhabilitation
(Phase I sector),
Laurier Street, Gatineau

National Capital Commission
Ottawa, Ontario



Groupe
ROUSSEAU LEFEBVRE

Prepared by

Groupe Rousseau Lefebvre

June 2013

SPECIFICATION SECTIONS LIST

SPECIFICATION SECTIONS LIST

<u>Section</u>	<u>Title</u>	<u>No. of Pages</u>
DIVISION 1		
00 10 06	Pay Item Description	3
00 10 92	Abbreviations	2
00 13 40	Shop Drawings, Product Data, Samples and Mock-ups	3
00 21 13	General Instructions	9
01 29 83	Testing Laboratory Services	1
01 35 00.06	Traffic Control	3
01 35 29.06	Health and Safety Requirements	2
01 35 44	Environmental Protection	3
01 51 02	Temporary Facilities	3
01 60 01	Material and Equipment	2
01 72 00	Project Record Documents	1
01 74 11	Cleaning	1
01 74 21	Management and Disposal of Excess Material	3
DIVISION 2		
02 41 13.01	Sitework Demolition and Removal	1
DIVISION 3		
03 10 00	Concrete Forming	2
03 20 01	Steel Reinforcing	4
03 30 00	Cast-in-Place Concrete	6
DIVISION 4		
04 43 17	Granite Curbs/Plinths/Benches	4
04 46 07	Recycled granite for pavers and tree pits	6
DIVISION 5		
05 50 00	Metal Works	2
05 50 10	Pedestrian Light Modifications	2
DIVISION 26		
26 56 19	Electrical Specification	4
DIVISION 31		
31 05 16	Aggregate - General	3
31 14 11	Earthwork	2
31 32 19.01	Geotextiles	2
DIVISION 32		
32 11 16.01	Granular Subbase	2
32 11 23	Aggregate Base Courses	3
32 11 25	Structural soil	4
32 14 13	Concrete Unit Paving	3
32 91 21	Topsoil Placement and Grading	3
32 92 23	Sodding	4
32 93 10	Trees, Shrubs and Groundcover Planting	5
32 93 15	Tree maintenance and monitoring	3

SPECIFICATION SECTIONS LIST

CIVIL ENGINEERING (CMC Garage Wall Repairs)

00 05 00	Scope of work	1
00 41 13	Unit rate price	1
03 32 50	Concrete repairs	2
07 13 52	Modified bituminuous membrane	4
31 00 00	Excavation & shoring	3

1.0 PHASE 1

ITEM 1.1 GENERAL CONDITIONS

Item No. 1.1.1 Site Organisation

- .1 This section includes all site facilities such as storage shed, storage area, temporary toilets, maintenance of access roads and all expenses related to the organization of the site.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be paid on a lump sum basis.

Item No. 1.1.2 Site Preparation

- .1 This section specifies requirements for the preparatory work, the removal of foreign objects in the natural composition of the soil and off-site disposal of materials and waste.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be paid on a lump sum basis.

Item No. 1.1.3 Construction Fencing and Temporary Signage

- .1 Supply and install temporary construction fencing with galvanized lattice 1.8m height type "moduloc" and signs with their steel support. Remove them at the end of construction.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be paid on a lump sum basis.

ITEM 1.2 PREPARATION AND DEMOLITION

Item No. 1.2.1 Removal and Reinstallation of Base Covers and Lampposts

- .1 This includes removal, protection and reinstallation of base covers (28) and light standards (5). This article also includes the supply, installation and anchoring of a protective membrane of 1.8 meter tall non-woven polypropylene geotextile with a weight of 295 g/m² for the protection of light standards left in place. Also included is the adjustment of concrete bases, conduit, anchors, connections and all electrical related works specified on drawings, in order to adjust the projected finished grades as required. This item also includes the supply and installation of a new junction box and a pipe through the plaza on the est side, as specified in the plans and specifications.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be paid on a lump sum basis.

Item No. 1.2.2 Removal, Storage and Reinstallation of Existing Bus Shelters

- .1 This includes removal, protection, storage in a secure warehouse and relocation of the existing bus shelters. Also includes anti-vandal anchors to attach with the new concrete slab under the concrete pavers, depending on the projected finished grades, and all electrical related works and extension of the existing conduits and wires required as specified on drawings and specifications.

PAY ITEM DESCRIPTION

- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents. It is required that the following contractor referred by the STO, is retained under contract to do the work:

Vitrierie Pierre Latreille
7 Nilphas Richer
Gatineau (Quebec)
J8P-2W6
(819) 561-2181

The responsible for the logistics of moving the bus shelter for STO:
Mario Rabouin, foreman network
Mario.rabouin @ sto.ca
819-770-7900 ext 6555

- .3 This will be paid on a lump sum basis.

Item No. 1.2.3 Removal, Storage and Reinstallation of Existing Signage

- .1 This includes removal, protection, storage in a secure warehouse and relocation of signs and information. Also included new support posts if the existing poles are not able to be reinstalled.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be paid on a lump sum basis.

Item No. 1.2.4 Removal, Storage and Reinstallation of Existing Attraction Signage

- .1 This includes removal, protection, storage in a secure warehouse and reinstallation of attraction panels. The attraction signs will be removed by the NCC. The contractor shall provide for the manufacture and installation of temporary signs on plywood. The NCC will provide design files. The Contractor must maintain temporary signs visible to motorists throughout the work which require removable wooden bases. The contractor will install new concrete bases as indicated in the plans and the NCC will be responsible for reinstalling poles and signs on new bases at the end of the work.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be paid on a lump sum basis.

Item No. 1.2.5 Tree Removal

- .1 This includes the removal and off-site disposal of 28 trees. Also to include, grubbing and recovery of hidden concrete bases and steel collars that will be transported to the warehouse of the NCC or other place as designated by the representative of the NCC for recovery.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be measured with payment equal to the number of plants actually removed.

Item No. 1.2.6 Decommissioning of Water Service

- .1 This includes the closing, decommission and removal of existing water intakes on the ground.

PAY ITEM DESCRIPTION

- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be paid on a lump sum basis.

Item No. 1.2.7 Recovery and Cutting of Existing Granite Slabs for Installation (Items 1.3.4 and 1.3.5)

- .1 This fixed price includes the removal and preparation of items indicated on the plans and specifications, including the removal of granite pavers for recovery and sawing and preparation for planned installations on the site.
- .2 The payment of this article to cover all fixed price labor and equipment for:
 - .1 Remove and save the granite pavers required for reuse, clean them, put them on wooden pallets not exceeding a height of 900 mm and deliver instead of cutting and preparation chosen by the contractor.
 - .2 Lift, remove, clean and maintain granite pavers, to reuse as reclaimed granite cobblestones 400mm wide and 154mm granite pavers as wide (see items 1.3.4 and 1.3.5)
- .3 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .4 This will be paid on a lump sum basis.

Item No. 1.2.8 Stripping, Shaping and Rough Grading

- .1 The product price includes site preparation and formatting of background and excavation surfaces for the planned improvements.
- .2 Payment of this product unit price measured in square meters covers all labor, equipment and materials required to complete the work in accordance with the contract documents.

Item No. 1.2.9 Grade Cuts and Transport Off-Site

- .1 This article covers the cost of excavation, transport and disposal in an accredited site of excavation volumes of organic material, sand and granular, necessary for the implementation of planned improvements.
- .2 Payment of this product unit price measured in cubic meters covers all labor, equipment and materials required to complete the work in accordance with the contract documents.

Item No. 1.2.10 Removal, Transport and Disposal of Dry Waste Materials Off-Site (wood, brick, plastic, etc.).

- .1 This article covers the cost for removal, transportation and disposal of dry materials offsite (woody debris, bricks, plastic, etc.).
- .2 Payment of this product unit price measured in cubic meters cover all labor, equipment and materials required to complete the work in accordance with the contract documents.

Item No. 1.2.11 Demolition of Asphalt Surface and Transport Off-Site

- .1 This fixed price includes removal of the items indicated in the drawing of demolition, including the removal of porous asphalt and off-site disposal.
- .2 Payment of this product unit price measured in square meters cover all labor, equipment and materials required to complete the work in accordance with the contract documents.

Item No. 1.2.12 Demolition of Concrete Slab and Transport Off-Site

- .1 This fixed price includes removal of the items indicated in the demolition plan, including

PAY ITEM DESCRIPTION

- the removal of concrete slab and frame and off-site disposal.
- .2 Payment of this product unit price measured in square meters covers all labor, equipment and materials required to complete the work in accordance with the contract documents.

Item No. 1.2.13 Removal, Storage on Pallets and Transport Off-Site of Non-Recycled Granite Slabs

- .1 This fixed price includes removal of the items indicated in the demolition plan, including the removal of granite pavers.
- .2 The payment of this article to cover all fixed price labor and equipment for:
- .1 Remove and save the granite pavers, clean them, put them on wooden pallets not exceeding a height of 900 mm, and then delivered to the storage facility of the NCC, on Woodroffe Avenue and Hunt Club Road, Ottawa.
- .3 This will be paid on a lump sum basis.

ITEM 1.3 SITE ENHANCEMENTS

Item No. 1.3.1 Backfill with Structural Soil

- .1 This section includes the supply, installation and compaction of structural soil.
- .2 Measurement for payment : per cubic meter
- .3 The payment of this article will cover all labor, materials and equipment required to perform the work as specified. This includes the geotextile.

Item No. 1.3.2 Backfill with Granular Material 'A'

- .1 This section includes the supply, installation and compaction of granular material "A"
- .2 Measurement for payment: per cubic meter
- .3 The payment of this articles will cover all labor, materials and equipment required to perform the work as specified. This includes the geotextile.

Item No. 1.3.3 Backfill with Granular Material 'B'

- .1 This section includes the supply, installation and compaction of granular material "B"
- .2 Measurement for payment: per cubic meter
- .3 The payment of this article will cover all labor, materials and equipment required to perform the work as specified. This includes the geotextile.

Item No. 1.3.4 Install Recovered Granite Pavers 400 mm

- .1 This section includes the supply and installation of reclaimed granite cobblestones, cut strip of 400 mm in width as indicated in the plans and specifications. Also included, the compacted granular base, the geotextile, the bedding, spacers, grout joints, cleaning stone and site cleanup.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be done in square meters.

Item No. 1.3.5 Install Recovered Granite Pavers 154 mm

- .1 This section includes the supply and installation of reclaimed granite cobblestones, cut strip of 154 mm in width as indicated on plans and specifications. Also included, the compacted granular base, the geotextile, the bedding, spacers, grout joints, cleaning stone and site cleanup.
- .2 The payment of the contract price includes all costs of labor, equipment and materials

PAY ITEM DESCRIPTION

- .3 necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be done in square meters.

Item No. 1.3.6 Concrete Slab for Bus Shelter

- .1 This section includes the supply and construction of concrete slab as indicated in the plans and specifications for the relocation of the existing bus shelters. Also included, the granular base, geotextile, formwork, reinforcement, sockets, boards and asphalt curing compounds and filling joints.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be done in square meters.

Item No. 1.3.7 Concrete Slab with Curb for Bike Trail

- .1 This section includes the supply and construction of concrete slab as indicated on plans and specifications for the rehabilitation of a section of the existing bike path. Also included, the granular base, geotextile, formwork, reinforcement, bushings, plates and asphalt curing compounds and filling the joints, as well as asphalt repair in the street if necessary, following the work concreting.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be done in square meters.

Item No. 1.3.8 Precast Concrete Pavers, 100mm thick

- .1 This section includes the supply and installation of precast concrete pavers, as indicated in the plans and specifications. Also includes cutting pavers, compacted granular base, the geotextile, the bedding, the joint filling, cleaning pavers and site cleanup.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be done in square meters.

Item No. 1.3.9 Granite Curb (100 mm x 300 mm)

- .1 This section includes the supply and installation of granite curbs 100 mm x 300 mm x var., As indicated in the plans and specifications. Also includes cutting curbs, drilling borders, concrete foundation, anchors, leveling, filling joints, cleaning stone and site cleanup.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be done in linear meters.

Item No. 1.3.10 Granite Curb (100 mm x 300 mm)

- .1 This section includes the supply and installation of granite curbs 300 mm x 300 mm x var., as indicated in the plans and specifications. Also includes cutting curbs, drilling borders, concrete foundation, anchors, leveling, filling joints, cleaning stone and site cleanup.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be done in linear meters.

PAY ITEM DESCRIPTION

Item No. 1.3.11 Granite Curb (200 mm x 300 mm x 1200mm) for Curve

- .1 This section includes the supply and installation of granite curbs 200 mm x 300 mm x 1200mm, as indicated in the plans and specifications. Also includes cutting curbs, drilling borders, concrete foundation, anchors, leveling, filling joints, cleaning stone and site cleanup.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents
- .3 The measurement will be done in linear meters.

Item No. 1.3.12 Granite Plinth (1200 mm x 1200 mm) for Lamppost in Planter

- .1 This section includes the supply and installation of granite plinths of 1200 mm x 1200 mm x 300 mm, as indicated in the plans and specifications. Also includes drilling slabs, the concrete foundation, anchors, the leveling, filling joints, cleaning stone and site cleanup.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be per unit.

Item No. 1.3.13 Granite Plinth (1200 mm x 1600 mm) for Lamppost in Planter

- .1 This section includes the supply and installation of granite plinths of 1200 mm x 1600 mm x 300 mm, as indicated in the plans and specifications. Also includes drilling slabs, the concrete foundation, anchors, the leveling, filling joints, cleaning stone and site cleanup.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be made per unit.

Item No. 1.3.14 Granite Plinth (1200 mm x 1800 mm) for Lamppost in Planter

- .1 This section includes the supply and installation of granite plinth of 1200 mm x 1800 mm x 300 mm, as indicated in the plans and specifications. Also includes drilling slabs, the concrete foundation, anchors, the leveling, filling joints, cleaning stone and site cleanup.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be made per unit.

Item No. 1.3.15 Granite Plinth (800 mm x 1600 mm) for Planter

- .1 This section includes the supply and installation of granite plinths of 800 mm x 1600 mm x 300 mm, as indicated in the plans and specifications. Also includes drilling slabs, the concrete foundation, anchors, the leveling, filling joints, cleaning stone and site cleanup.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be made per unit.

Item No. 1.3.16 Granite Plinth (800 mm x 1800 mm) for Lamppost in Planter

- .1 This section includes the supply and installation of granite plinths of 800 mm x 1800 mm x 300 mm, as indicated in the plans and specifications. Also includes drilling slabs, the concrete foundation, anchors, the leveling, filling joints, cleaning stone and site cleanup.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be made per unit.

PAY ITEM DESCRIPTION

Item No. 1.3.17 Granite Bench (375 mm x 750 mm shaped)

- .1 This section includes the supply and installation of monolithic granite bench 375 mm x 750 mm x profile var., as indicated in the plans and specifications. Also included is the concrete foundation, drilling benches, anchors, the leveling, filling joints, cleaning stone and site cleanup.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be done in linear meters.

Item No. 1.3.18 Wooden Seat for Granite Bench

- .1 This section includes the supply and installation of wooden seats model MLB720BLW IPE, custom made by Coy Maglin or approved equivalent for the granite benches, as indicated in the plans and specifications. Also includes hardware and anti-vandals anchors.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be made per unit.

Item No. 1.3.19 Lighting Module Embedded in Pavement

- .1 This section includes the supply and installation of solar lighting model SH-170 modules with anchor base, distributed by Coy METEOR or other approved equivalent as indicated in the plans and specifications.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be made per unit.

Item No. 2.3.20 Installation of Markers for Snow Removal

- .1 This section includes the supply and installation of flexible removable tags R-6, green (International # 14852) with permanent anchorage provided by PSB Gesma inc., (418) 775-8787, or approved equivalent.
- .2 Measurement for payment: single
- .3 The payment of this article will cover all labor, materials and equipment required to perform the work as specified.

ITEM 4 PLANTATION (NURSERY-GROWN PLANTS, INCLUDING PLANTING SOIL)

Items No. 1.4.1 to 1.4.2 Tree Planting

- .1 These items specify the requirements for the installation and supply of trees, including the provision and installation of soil and any adjustment to the required levels.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be measured with payment equal to the number of plants actually installed.

Item No. 1.4.3 Shrubs

- .1 This section specifies requirements for the installation and supply of shrubs, including the provision and installation of soil and any adjustment to the required levels.

PAY ITEM DESCRIPTION

- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be measured with payment equal to the number of plants actually installed.

Items No. 1.4.4 to 1.4.6 Perennials

- .1 These items specify the requirements for the installation and supply of trees, including the provision and installation of soil and any adjustment to the required levels.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be measured with payment equal to the number of plants actually installed.

Item No. 1.4.7 Warranty and Plant Maintenance (Trees and Sod)

- .1 This section covers the requirements and obligations for maintenance and monitoring the plant material. (trees, shrubs and perennials) for a period of two years.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be paid on a lump sum basis.

ITEM 5 CMC GARAGE WALL REPAIRS

Item No. 1.5.1 Excavation and disposal

- .1 This article covers the cost of excavation, transport and disposal in an accredited site of excavation volumes of organic material, sand and granular, necessary for the implementation of planned improvements.
- .2 Payment of this product unit price measured in cubic meters covers all labor, equipment and materials required to complete the work in accordance with the contract documents.

Item No. 1.5.2 Shoring

- .1 This article covers the support and stabilization of excavated walls to secure the site and to minimize the extent of excavation required for the implementation of planned improvements.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be paid on a lump sum basis.

Item No. 1.5.3 Preparation of the existing wall, including the removal of the existing membrane

- .1 This item unit price covers the preparation of the existing wall, including the removal of the existing membrane.
- .2 Payment of this product measured in linear meter price will cover all labor, equipment and materials required to complete the work in accordance with the contract documents.

Item No. 1.5.4 Concrete repair (5/S200)

- .1 This item unit price covers the repair of concrete section of the existing wall as specified in the plans and specifications.
- .2 Payment of this product measured in square meters price will cover all labor, equipment and materials required to complete the work in accordance with the contract documents.

PAY ITEM DESCRIPTION

Item No. 1.5.5 New expansion joint

- .1 The product price includes installation of a new expansion joint as specified in plans and specifications.
- .2 Payment of this product unit price will be measured in linear meters and will cover all labor, equipment and materials required to complete the work in accordance with the contract documents.

Item No. 1.5.6 Backfill

- .1 This section includes the supply, installation and compaction of granular material "B" to backfill the excavated areas.
- .2 Measurement for payment: per cubic meter
- .3 The payment of this article will cover all labor, materials and equipment required to perform the work as specified.

Item No. 1.5.7 Hourly Rate (daily)

- .1 This includes providing an hourly rate for the services of labor for a «daily» for the execution of works carried out on a hourly basis as needed..
- .2 Measurement for payment: at hourly rate
- .3 The payment of this article will cover the labor of a «daily».

Item No. 1.5.8 Hourly Rate (roofer)

- .1 This includes providing an hourly rate for the services of labor for a «roofer» for the execution of works carried out on a hourly basis as needed..
- .2 Measurement for payment: at hourly rate
- .3 The payment of this article will cover the labor of a «roofer».

2.0 PHASE 2

ITEM 2.1 GÉNÉRAL CONDITIONS

Item No. 2.1.1 Site Organisation

- .1 (see item 1.1.1 of this specification section)

Item No. 2.1.2 Site Preparation

- .1 (see item 1.1.2 of this specification section)

Item No. 2.1.3 Fencing and Temporary Signage

- .1 (see item 1.1.3 of this specification section)

Item 2.2 PREPARATION AND DEMOLITION

Item No. 2.2.1 Removal and Relocation of Base Covers and Lampposts

- .1 This includes removal, protection and reinstallation of bases covers (35) and light standards (8). This article also includes the supply, installation and anchoring of a protective membrane of 1.8 meter tall non-woven polypropylene geotextile, a weight of

PAY ITEM DESCRIPTION

- 295 g/m² for the protection of light standards left in place. Also included is the adjustment of concrete bases, conduit anchors and connections in order to adjust the projected finished grades as required.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
 - .3 This will be paid on a lump sum basis.

Item No. 2.2.2 Removal, Storage and Reinstallation of Existing Signage

- .1 (see item 1.2.3 of this specification section)

Item No. 2.2.3 Removal, Storage and Reinstallation of Existing Signage

- .1 (see item 1.2.4 of this specification section)

Item No. 2.2.4 Tree Removal

- .1 This includes the removal and off-site disposal of 34 trees. Also includes grubbing and recovery of hidden concrete bases and steel collars that will be transported to the warehouse of the NCC or other place as designated by the representative of the NCC for recovery.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 This will be measured with payment equal to the number of plants actually removed.

Item No. 2.2.5 Decommissioning of Water Service

- .1 (see item 1.2.6 of this specification section)

Item No. 2.2.6 Recovery and Cutting of Existing Granite Slabs for Installation (Items 2.3.4 and 2.3.5 and 2.3.20)

- .1 (see item 1.2.7 of this specification section)

Item No. 2.2.7 Stripping, Shaping and Rough Grading

- .1 (see item 1.2.8 of this specification section)

Item No. 2.2.8 Grade Cuts and Transport Off-Site

- .1 (see item 1.2.9 of this specification section)

Item No. 2.2.9 Removal, Transport and Disposal of Dry Waste Materials Off-Site (wood, brick, plastic, etc.).

- .1 (see item 1.2.10 of this specification section)

Item No. 2.2.10 Demolition of Asphalt Surface and Transport Off-Site

- .1 (see item 1.2.11 of this specification section)

Item No. 2.2.11 Removal, Storage on Pallets and Transport Off-Site of Non-Recycled Granite Slabs

- .1 (see item 1.2.13 of this specification section)

ITEM 2.3 SITE ENHANCEMENTS

Item No. 2.3.1 Backfill with Structural Soil

- .1 (see item 1.3.1 of this specification section)

Item No. 2.3.2 Backfill with Granular Material 'A'

- .1 (see item 1.3.2 of this specification section)

Item No. 2.3.3 Backfill with Granular Material 'B'

- .1 (see item 1.3.3 of this specification section)

Item No. 2.3.4 Install Recovered Granite Pavers 400 mm

- .1 (see item 1.3.4 of this specification section)

Item No. 2.3.5 Install Recovered Granite Pavers 154 mm

- .1 (see item 1.3.5 of this specification section)

Item No. 2.3.6 Precast concrete pavers, 100mm thick

- .1 (see item 1.3.8 of this specification section)

Item No. 2.3.7 Recovered Granite Pavers (150 mm x 250 mm) for Planting Pits, including 20 mm spacers

- .1 This section covers the supply and installation of reclaimed granite cobblestones, cut into pieces of 150 mm width x 250 mm length, as indicated in the plans and specifications. Also included is the preparation of the foundation of structural compacted soil, the bedding, spacers, the filling of the joints with gravel and cleaning the site.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be made per unit.

Item No. 2.3.8 Removal and Reinstallation of Recovered Granite Pavers for the Circle

- .1 This article seeks the removal, storage and installation of recovered granite pavers, as indicated in the plans and specifications. Also includes the preparation of the compacted granular base, the bedding, filling and cleaning the site. The Contractor shall ensure fully reconstructing the existing pattern in the same place on the new granular base.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be made per unit.

Item No. 2.3.9 Granite Curb (100 mm x 300 mm)

- .1 (see item 1.3.9 of this specification section)

Item No. 2.3.10 Granite Curb (300 mm x 300 mm)

- .1 (see item 1.3.10 of this specification section)

Item No. 2.3.11 Granite Plinth (1200 mm x 1600 mm) for lamppost

- .1 (see item 1.3.12 of this specification section)

Item No. 2.3.12 Granite Plinth (1200 mm x 1850 mm) for lamppost

- .1 (see item 1.3.14 of this specification section)

Item No. 2.3.13 Granite Plinth (800 mm x 1600 mm) for planting tray

- .1 (see item 1.3.15 of this specification section)

Item No. 2.3.14 Granite Plinth (800 mm x 1850 mm) for planting tray

- .1 (see item 1.3.16 of this specification section)

Item No. 2.3.15 Granite Bench (375 mm x 750 mm profile)

- .1 (see item 1.3.17 of this specification section)

Item No. 2.3.16 Wooden Seat for Granite Bench

- .1 (see item 1.3.18 of this specification section)

Item No. 2.3.17 Lighting Module Embedded in Pavement

- .1 (see item 1.3.19 of this specification section)

Item No. 2.3.18 Tree Planting Well

- .1 This article aims to achieve the tree wells, preparing the pit with structural compacted soil and cleaning the site.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be made per unit.

Item No. 2.3.19 Metal Frame for Tree Well

- .1 This section covers the supply and installation of a metal frame for tree wells.
- .2 The payment of the contract price includes all costs of labor, equipment and materials necessary to complete the work in accordance with the contract documents.
- .3 The measurement will be made per unit.

Item No. 2.3.20 Recovered Granite Pavers and Gravel for Tree Well

- .1 This section covers the supply and installation of reclaimed granite pavers, cut strip of 154 mm in width as indicated on plans and specifications. Also included is the preparation of the foundation of structural compacted soil, the bedding, spacers, filling the joints with gravel and cleaning the site.
- .2 The payment of the contract price includes all costs of labor, equipment and materials

PAY ITEM DESCRIPTION

- .3 necessary to complete the work in accordance with the contract documents.
The measurement will be made per unit.

Item No. 2.3.21 Installation of Markers for Snow Removal

- .1 (see item 1.3.20 of this specification section)

ITEM 4 PLANTATION (NURSERY-GROWN PLANTS, INCLUDING PLANTING SOIL)

Items No. 2.4.1 to 2.4.2 Tree Planting

- .1 (see item 1.4.1 of this specification section)

Items No. 2.4.3 to 2.4.5 Perennials

- .1 (see item 1.4.4 of this specification section)

Item No. 2.4.6 Warranty and Plant Maintenance (Trees and Sod)

- .1 (see item 1.4.7 of this specification section)

END OF SECTION

ABBREVIATIONS

PART 1 - GENERAL

1.1 Abbreviations

- .1 ANSI American National Standards Institute 1430 Broadway New York, New York U.S.A. 10018
- .2 ASTM American Society for Testing and Materials 1916 Race Street Philadelphia, Pennsylvania U.S.A. 19103
- .3 AWS American Welding Society 2501 N.W. 7th Street Miami, Florida U.S.A. 33125
- .4 CGA Canadian Gas Association 55 Scarsdale Road Don Mills, Ontario M313 2R3
- .5 CGSB Canadian General Standards Board Place du Portage, Phase III, 9C1 11 Laurier Street Hull, Quebec KIA 1G6
- .6 CISC Canadian Institute of Steel Construction 201 Consumers Road, Suite 300 Willowdale, Ontario M2J 4G8
- .7 CMB Construction Materials Board 101 Colonel By Drive, 8NT MGen George R. Pearkes Bldg. Ottawa, Ontario KIA OK2
- .8 CSA Canadian Standards Association 178 Rexdale Blvd. Rexdale, Ontario M9W 1 R3
- .9 CSC Construction Specification Canada 100 Lombard Street, Suite 200 Toronto, Ontario M5C 1M3
- .10 CSPI Corrugated Steel Pipe Institute 201 Consumers Road, Suite 306 Willowdale, Ontario M2J4G8
- .11 EEMAC Electrical and Electronic Manufacturers' Association of Canada 1 Yonge Street, Suite 1608 Toronto, Ontario M5E 1R1
- .12 IEEE Institute of Electrical and Electronics Engineers 345 East 47th Street New York, New York U.S.A. 10017
- .13 MSS Manufacturers Standardization Society of the Valve and Fittings Industry 127 Park Street, N.E. Vienna, Virginia U.S.A. 22180
- .14 NEMA National Electrical Manufacturers Association 2101 L. Street N.W. Washington, D.C., U.S.A. 20037
- .15 NFPA National Fire Protection Association Batterymarch Park Quincy, Massachusetts U. S. A. 02269
- .16 NRC National Research Council Montreal Road Ottawa, Ontario KIA OS2
- .17 QPL Qualification Program List c/o Canadian General Standards Board Ottawa, Ontario KIA 1G6

ABBREVIATIONS

- .18 SCC Standards Council of Canada 1200-45 O'Connor Street Ottawa, Ontario K1P 6N7
- .19 ULC Underwriters' Laboratories of Canada 7 Crouse Road Scarborough, Ontario M1R 3A9
- .20 UL Underwriters Laboratories 333 Pfingsten Road Northbrook, Illinois U.S.A. 60062

END OF SECTION

PART I - GENERAL

1.1 General

- .1 This section specifies general requirements and procedures for contractor's submissions of shop drawings, product data, samples and mock-ups to NCC Representative for review. Additional specific requirements for submissions are specified in individual sections of Divisions 2 to 16.
- .2 Do not proceed with work until relevant submissions are reviewed by NCC Representative.
- .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 Contractor's responsibility for errors and omissions in submission is not relieved by NCC Representative's review of submissions.
- .6 Notify the NCC Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by NCC Representative's review of submission, unless NCC Representative gives written acceptance of specific deviations.
- .8 Make any changes in submissions that the NCC Representative may require consistent with Contract Documents and resubmit as directed by NCC Representative.
- .9 Notify the NCC Representative, in writing, when resubmitting, of any revisions other than those requested by NCC Representative.

1.2 Submission Requirements

- .1 Submit shop drawings, product data, samples, and mock-ups within 30 days of award of Contract.
- .2 Co-ordinate each submission with requirements of work and Contract Documents. Individual submissions will not be reviewed until all related information is available.
- .3 Allow 5 days for NCC Representative's review of each submission.
- .4 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.

- .5 Submissions shall include: 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 Contractors authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
- .6 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 Single line and schematic diagrams.
 - .9 Relationship to adjacent work.
- .7 After NCC Representative's review, distribute copies.

1.3 Shop Drawings

- .1 Shop drawings: original drawings, or modified standard drawings provided by Contractor, to illustrate details of portions of Work, which are specific to project requirements.
- .2 Sheet size: 850 x 1050 (A0 size).
- .3 Submit shop drawings as follows:
 - .1 Print 8 copies.
- .4 Cross-reference shop drawing information to applicable portions of Contract Documents.

1.4 Product Data

- .1 Product data: manufacturers catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products.
- .2 Submit 8 copies of product data.
- .3 Sheet size: 215 x 280 mm, maximum of 3 modules.
- .4 Delete information not applicable to project.
- .5 Supplement standard information to provide details applicable to project.
- .6 Cross-reference product data information to applicable portions of Contract Documents.

1.5 Samples

- .1 Samples: examples of materials, equipment, quality, finishes, workmanship.
- .2 Where colour, pattern or texture is criterion, submit full range of samples.

- .3 Reviewed and accepted samples will become standard of workmanship and material against which installed work will be verified.

1.6 Mock-ups

- .1 Mock-ups: field-erected example of work complete with specified materials and workmanship.
- .2 Erect mock-ups at locations acceptable to NCC Representative.
- .3 Reviewed and accepted mock-ups will become standards of workmanship and material against which installed work will be verified.

1.7 Shop Drawings Review

- 1 The review of shop drawings by the NCC Representative is for the sole purpose of ascertaining conformance with the general concept. This review shall not mean that the NCC Representative approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the construction and contract documents. Without restricting the generality of the foregoing, the Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of the work of all sub-trades.

END OF SECTION

1. Time of Completion

1. Commence work only upon notification by the NCC.
2. Complete the construction of Phase I between September 2013 and early winter 2013-2014 and the work of Phase II between August 2014 and early winter of 2014-2015.
3. In the event that construction is not complete by early winter, the contractor is responsible to grade the pedestrian Esplanade with granular 'A' as a temporary measure.

2. Description of Work

1. Provide all materials, labour, equipment, and services necessary to complete all work described in the plans and specifications including, but not limited to:
 1. Remove and dispose of all excess materials where new materials will be placed.
 2. Remove from site and dispose of all the following materials, except if advised otherwise: trees, granite sidewalks and surfaces and asphalt base layer. Return to the NCC Representative all components of furniture and equipment which can be recycled. Remove from site all items which the NCC Representative does not want to keep. Salvage materials to be returned to the NCC Representative include: granite pavers, tree surrounds.
 3. Construct new sidewalks in concrete unit pavers, granite curbs, and plinths, and related work.

3. Work in Stages

1. Carry out the work in stages and sub-stages to allow for vehicular and pedestrian traffic to flow.
2. The Contractor shall prepare a construction staging plan to clearly identify the staging of all the proposed works and traffic management of each stage of the works to the approval of the NCC Representative.

4. Laws and Regulations

1. Contractor must conform to all federal, provincial, and municipal laws and regulations which apply to the work of the present project, as if the works were completed for an entity other than Her Majesty. The Contractor must require the same degree of conformity from all the sub-contractors.
2. The Contractor must present a certificate of conformity to the laws and regulations at the request of the NCC Representative.

5. Documents Required

1. Maintain at job site, one copy each of following:
 1. Contract drawings. (A1 size)
 2. Specifications.
 3. Addenda.
 4. Reviewed shop drawings.
 5. Change orders.
 6. Other modifications to Contract.

7. Field test reports and approved samples.
8. Copy of approved current work schedule.
9. Manufacturers' installation and application instructions.
10. Copy of approved on site traffic and equipment operation plans.

6. Site Conditions

1. During the tender period, the NCC Representative will conduct a project review of the site. All bidders will be advised of the date and time of the visit. This site visit is recommended to all bidders.
2. In addition to the above site review, parties intending to submit tenders on the Work must visit the site and obtain, for themselves, all information pertaining to existing conditions affecting the proper execution and completion of the work. The submission of a tender shall be deemed as proof that the tenderer and his sub-trades have complied with this requirement. Claim for additional compensation will not be entertained for any items or labour or material that is required to complete the work that could have been reasonably ascertained by a site examination.

7. Contractor's Use of Site

1. Do not unreasonably encumber site with materials or equipment.
2. Move stored products or equipment, which interferes with operations of NCC or other contractors.
3. Contractor may not operate any equipment outside of the limits of work area as identified in the contract drawings.
4. Use designated areas indicated on *Construction staging* for work, for site office (and sanitary facilities) and for material holding. All construction material is to be kept within the material holding area until required. Unused construction material must be removed from the work site at the end of each work day and returned to the material holding area. All construction equipment, machinery, and vehicles are to be removed at the end of the work day. No privately owned motor vehicles shall park within the work site at any time.
5. Obtain and pay for use of additional storage or work areas needed for operations.
6. All areas used for work, site office and material holding shall be maintained by the contractor and any asphalt, sod, curb, trees, etc. that are damaged due to the contractor's use of the area shall be repaired/ reinstated at the contractor's cost.

8. Project Meetings

1. NCC will arrange project meetings and assume responsibility for setting times, recording and distributing minutes.

9. Setting Out of Work

1. Provide all line and grade and site layout from the information provided on the contract drawings.
2. Contractor shall verify all grades, lines, levels and dimensions on the drawings and on the ground prior to construction, and shall be responsible for performing all survey layouts for the work to ensure that the works are constructed in accordance with the Contract.
3. Supply such materials, devices, and equipment for surveying required to facilitate the NCC Representative's inspection of work.

10. Primary and Secondary Control Survey Monuments

1. In order to preserve original City and Township surveys and to provide a precise grid into which may be tied all future control surveys, the City of Ottawa in co-operation with the Federal Department of Energy, Mines and Resources together with the National Capital Commission and Provincial Authorities have installed in the City and National Capital Area, a system of permanent control survey monuments, some of which were unavoidably placed in high traffic density areas.
2. Contractor shall make every effort to maintain these monuments in their present undisturbed position. Detailed locations of all monuments are available from the Surveys Branch of the City of Ottawa and the National Capital Commission, and will be supplied on the Contractor's request where the locations are pertinent to the work to be done under this contract.
3. In the event that the work involves the unavoidable disturbance of any of these monuments, it is the Contractor's responsibility to advise the Surveys Branch in order that arrangement can be made to construct a satisfactory system of satellite stations before the original is destroyed.

11. Legal Survey Bars and Monuments

1. Contractor shall be responsible for protecting and maintaining all legal survey bars and monuments. If any survey bars or monuments are disturbed by the Contractor's operations, they shall be replaced by an Ontario Land Surveyor at the Contractor's expense.

12. Existing Utilities and Services

1. The location and depth of utilities and services and the location of aerial utilities shown on the drawings are based on information made available to the NCC Representative. However, no responsibility will be assumed for the correctness or completeness of the drawings with respect to existing public utilities and services whether underground or on the surface. The Contractor shall contact the appropriate governmental agencies or Utility Companies for further information in regard to the exact location of these utilities and services.

2. Contractor shall not make any claim for damages or extra work or delay caused or occasioned by his relying upon such records, reports, or information, either as a whole or in part, furnished by any governmental agency, private company, or individual.
 3. Contractor shall exercise care in construction operations and take such other precautions as are necessary, or, where directed, modify his method of construction, to safeguard the utilities and services from damage and shall co-operate with Municipal Authorities or Utility Companies relocating or altering their plants. No claim for any loss, delay, extra work or expense occasioned by these requirements shall be made against the NCC Representative.
 4. Contractor shall not become entitled to claim any damage or extra compensation from or on account of the presence of such structure or on account of any delay due to removal or rearrangement of the same.
 5. Give NCC Representative 48 hours notice related to each necessary interruption of any mechanical or electrical service throughout the course of the work. Keep duration of these interruptions to a minimum. Carry out all interruptions after normal working hours of the occupants, preferably at nights and weekends.
13. Cutting, Fitting and Patching
1. Execute cutting (including excavation), core drilling, fitting, and patching required to properly integrate the various works.
 2. Where new work connects with existing and where existing work is altered, cut, patch and adjust and make a good match to existing work.
 3. Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.
14. Pedestrian Traffic Signs
1. Install and maintain bilingual signs indicating alternate routes to pedestrians.
15. Damages
1. Existing plant material, landscaping, roadways, pathways, structures, finishes and public utilities damaged during the execution of the work of this contract, shall be restored to their original condition, replaced, or adequate compensation made to affected parties by the Contractor at no cost to the NCC.
 2. Restoration or replacement work includes labour, equipment and material costs.
16. Permits and By-Laws
1. Contractor shall make himself fully acquainted with all provincial, municipal, and other by-laws relating to the work of this contract, as he will be required to comply with such by-laws without extra compensation of any nature.

2. The Contractor shall obtain and pay for permits, factory inspector's approval, and other licenses required for this project and also pay any other charges incidental to such permits.
 3. The Contractor shall be responsible for obtaining a work entry permit from NCC Environment Capital Lands and Parks Branch and construction permit from City of Ottawa.
17. Taxes
1. Pay all taxes properly levied by law (including Federal, Provincial, and Municipal).
18. Compaction of Materials
1. The thickness of asphalt and granular materials shown on the drawings shall be the real thickness after the materials have been compacted as specified.
19. Protection
1. Provide and maintain guard-rails, 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.
20. Disturbance of Adjacent Tenants and Lands
1. Ensure that safe and clean access is maintained to the buildings and adjacent parking areas occupied by owners or tenants of nearby buildings and do not infringe on such parking areas for purposes of material storage or parking.
 2. Interruption of services, access, and present operations in the adjacent buildings or vicinity will not be permitted unless the prior approval and permission of the NCC Representative is obtained.
21. Temporary Structures and Weather Protection
1. Provide all necessary temporary structures such as weather barriers, stairs, chutes, hoists, scaffolding, and temporary shoring required for the execution of the work.
22. Pre-Construction and Post-Construction Surveys
1. Retain the services of a consulting firm to conduct pre-construction and post-construction surveys of adjacent structures.
 2. Carry out pre-construction survey before start of demolition. Carry out post-construction survey after completion of any demolition, excavation, or any other activity that is liable to cause damage to adjacent buildings and their contents.
 3. Be responsible for any damages caused to the above noted buildings and their contents.

23. Minimum Standards

1. Materials shall be new and work shall conform to the minimum applicable standards of the Canadian General Standards Board, the National Building Code of Canada, 1995 and all applicable supplements. In case of conflict or discrepancy, the most stringent requirement shall apply.

24. Noise

1. The work associated with this project will generate significant noise, and therefore this section outlines the minimum noise management activities that the contractor shall follow, in order to minimize the possibility of disturbance.
 1. The following requirements are in addition to those of all applicable Municipal, Provincial and Federal regulations respecting noise.
 2. The following sections are not intended to identify all noise control activities that will need to be undertaken by the contractor, as these will depend on the work methods chosen. Noise impact shall be considered by the contractor throughout the project.
2. Designated Person: designate one member from the Contractor to be the key point of contact for all noise issues. The person will be responsible for the overall noise performance of the contract for its entire duration, and will make and report on airborne noise measurements as required to ensure that all applicable criteria are being met. It is expected that this person will attend all relevant project meetings.
3. Construction Equipment: Select all equipment, in part, based on its noise characteristics. Low-noise or noise reduced equipment shall be specified and used wherever possible. A noise evaluation shall be undertaken by the contractor for each specific type of noise producing equipment, including measurements and reporting.
4. Noise Control: The contractor shall schedule and undertake the noisiest of the work activities at times selected to minimize the impact on the adjacent spaces. During 0800 to 1400 hours, noise levels at any location in the occupied space areas exposed to the work area shall not rise, due to the construction noise, by more than 10 dBA over unoccupied levels, when measured and averaged over any thirty minute period, using an instrument meeting at least the Type 2 requirements of ANSI S14 and capable of measuring a 30 minute LEQ.

25. Dust Control

1. Provide dust tight screens or partitions 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.

26. Interpretation of Bilingual Tenders

1. In cases where the two versions of specifications and drawings are different, the English version will prevail over the French version.

27. Codes

1. Perform work in accordance with National Building Code of Canada (NBC) and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
2. Meet or exceed requirements of: contract documents.
3. Specified standards, codes and referenced documents.

28. 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 masonry work, etc.
3. Work unsatisfactorily completed by unqualified tradesmen shall be redone and paid for by the Contractor.

29. Additional Drawings

1. NCC Representative may furnish additional drawings for clarification. These additional drawings have same meaning and intent as if they were included with plans referred to in Contract documents.

30. Scheduling of Work and Restrictions

1. Construction must be complete and cleaned up by early winter 2013-2014 for phase I and by early winter 2014-2015 for phase II.
2. Provide, in form acceptable to NCC Representative, within 5 working days after Contract award, schedule showing dates for:
 1. Submission of shop drawings, material lists and samples.
 2. Commencement and completion of work of each Section of Specification.
 3. Final completion date within time period required by Contract documents.
3. 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.
4. The contractor shall update the schedule as requested by the NCC Representative. The contractor shall adhere to the approved schedule and cash flow charts.
5. The contractor shall schedule the work activities to minimize any disruption to the existing building occupants and their operations. Disruptive work activities and their scheduling

shall be done in co-ordination with the NCC Representative. The contractor shall coordinate commencement of work on site in a manner that material delivery will not hold up the construction process.

6. Shop drawing submittal: To accommodate long delivery dates on specific items, contractor shall submit shop drawings of such long delivery items within 5 days of receipt of letter of intent to award from the Owner. Refer to section 00 13 40 Shop Drawings, Product Data, Samples and Mock-Ups.

7. Scheduling Constraints:

1. Standard authorized hours of work are Monday to Friday, 07:00 hours to 19:00 hours. Obtain prior permission through NCC Representative for work outside of the standard authorized time frame. Assume any extra costs for labour, material or equipment associated with work performed outside of the standard time frame unless specifically required (in writing) by the NCC Representative.
2. Anticipate SIX (6), two (2) hour selective activity restrictions (ie. Interrupt noisy activity in particular location). Expect minimum six (6) hours advance notice of two hour restriction demands.

31. Weighting of Materials

1. Unit Price Items, measured by cubic meter for payment purposes, must be accompanied by delivery tickets issued by the supplier of the material, indicating what type of material and net weight in cubic meters. Upon arrival at the site and before off loading, the loads must be approved and delivery ticket signed by the commissions on site representative. A duplicate copy of the signed ticket will be retained by the commission's representative, the original of which shall be retained by the contractor for submission with invoices at the time of payment.
2. Weight shown on the delivery ticket must be the net weight of the materials only as weighed on a scale, which is tested and approved by the weight inspectors of the Government of Canada at least once per year. The NCC Representative retains the right to require the Contractor to provide on-site scales without additional charge to the Commission if, in his opinion, he considers the method being followed unsatisfactory.
3. NO work shall take place during the Canada Day Festivities.

32. Addenda's

1. Answers to questions directed to the NCC Representative, 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. Such Addenda is to be considered as and read as part of the specifications, and thereby included in the Contract Documents.

33. Co-ordination

1. Co-ordinate the operations of those involved in the work so that it progresses effectively and efficiently.
2. Contractor shall notify and get approval from the NCC Representative to work during non-normal working hours.

3. Ensure, before any trade or operation starts, that preceding or preparatory work is completed, and that conditions are appropriate to receive work of such trade or operation.
4. Ensure that sub-contractors provide properly qualified superintendents on site to supervise trades involved in work. Do not permit change of personnel, except when approved.

34. Record Drawings

1. As work progresses, maintain, accurate records to show deviations from contract documents.
2. Survey, using Total Station Co-ordinates, all underground utilities and any major deviation of layout of project. This information is to be provided to NCC Representative Survey and Mapping Section on ASCII diskette.
3. Just prior to NCC Representative's inspection for issuance of final certificate of completion, supply one (1) set of white prints with all major and minor deviations neatly inked in. The NCC. Representative will provide two (2) sets of clean white prints for this purpose.

35. Guarantees and Warranties

1. Before completion of work, collect all manufacturer's guarantees and warranties, and deposit to NCC. Representative.

36. Storage

1. Storage of materials will be restricted to the area of work. No storage of supplies, vehicles or equipment is permitted within Canadian Civilization Museum.
2. Should the work not be completed at the beginning of the winter, all stored materials on site will be removed before the first snowfall.

END OF SECTION

PART 1 - GENERAL

1.1 Related Requirements Specified Elsewhere

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

1.2 Appointment and Payment

- .1 NCC Representative will appoint and pay for services of testing laboratory except for the following:
 - .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 Mill tests and certificates of compliance.
 - .4 Tests specified to be carried out by Contractor under the supervision of NCC Representative.
 - .5 Additional tests specified in paragraph 1.2.2.
- .2 Where tests or inspections by designated testing laboratory reveal work not in accordance with contract requirements, Contractor shall pay costs for additional tests or inspections as NCC Representative may require to verify acceptability of corrected work.

1.3 Contractor's Responsibilities

- .1 Furnish labour and facilities to:
 - .1 Provide access to work to be inspected and tested.
 - .2 Facilitate inspections and tests.
 - .3 Make good work disturbed by inspection and test.
 - .4 Provide storage for laboratories 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 quantities to testing laboratory.
- .3 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

PART 1 - GENERAL

1.1 References

- .1 Uniform Traffic Control Devices for Canada, (UTCD) 1998 (distributed by Transportation Association of Canada).

1.2 Protection of Public Traffic

- .1 Comply with requirements of Ontario Traffic Book 7 – Temporary Conditions, March 2001 (Book 7) for regulation of traffic or use of roadways upon or over which it is necessary to carry out work or haul materials or equipment.
- .2 When working on a travelled way:
 - .1 Place equipment in position to present minimum of interference and hazard to travelling public.
 - .2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.
 - .3 Do not leave equipment on travelled way overnight.
- .3 Provide detour plans that have been stamped by a qualified NCC Representative, for approval by an NCC Representative prior to closing traffic lanes. Before re-routing traffic erect suitable signs and devices in accordance with instructions contained in Book 7, specifically for a long-term duration, and include concrete New Jersey Barriers to separate work areas from traffic lanes.
- .4 Keep travelled way graded, free of pot holes and of sufficient width for required number of lanes of traffic.
 - .1 Provide minimum 3.0 m wide traffic lanes plus clearance offsets.
- .5 As indicated, provide paved detours to facilitate passage of traffic around restricted construction area.
- .6 Provide and maintain road access and egress to property fronting along work under Contract and in other areas as indicated, unless other means of road access exist that meet approval of NCC Representative.

1.3 Information and Warning Devices

- .1 Provide and maintain signs, temporary traffic signals and other devices required to indicate construction activities or other temporary and unusual conditions resulting from project work which requires road user response.
- .2 When working on a travelled way Supply and erect signs, delineators, barricades and miscellaneous warning devices as specified in Ontario Traffic Manual – Book 7 – Temporary Conditions.
- .3 Two weeks prior to commencing any work affecting traffic, the Contractor shall submit to the NCC Representative for review and approval, a Traffic Control Plan identifying the signing, staging, and delineation work proposed for traffic control and construction operations including a proposed schedule.

TRAFFIC CONTROL

The Traffic Control Plan shall include the Contractor's proposed traffic control and traffic staging plans for construction of the specified works designated on the contract drawings. The Contractor shall also be responsible for all submissions and approvals required by the Ontario Ministry of Labour.

Before re-routing traffic erect suitable signs and devices in accordance with instruction contained in Book 7 specifically for long-term duration, and include concrete New Jersey Barriers to separate work areas from traffic lanes.

- .4 Keep travelled way graded, free of pot holes and of sufficient width for required number of lanes of traffic.
 - .1 Provide minimum 3 m wide traffic lanes plus clearance offsets.
- .5 Meet with NCC Representative prior to commencement of work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of NCC Representative.
- .6 Continually maintain traffic control devices in use by:
 - .1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
 - .2 Removing or covering signs which do not apply to conditions existing from day to day.

1.4 Control of Public Traffic

- .1 Provide flag persons, trained in accordance with, and properly equipped as specified in Ontario Traffic Manual - Book 7 in following situations:
 - .1 When public traffic is required to pass working vehicles or equipment which block all or part of travelled roadway.
 - .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.
 - .3 When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
 - .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
 - .5 For emergency protection when other traffic control devices are not readily available.
 - .6 In situations where complete protection for workmen, working equipment and public traffic is not provided by other traffic control devices.
 - .7 Delays to public traffic due to contractor's operations:

6:30 am to 9:00 am	No Delays
3:30 pm to 6:00 pm	No Delays
all other times	Maximum 10 minutes delay

1.5 Operational Requirements

- .1 Maintain traffic conditions as shown on construction staging drawings throughout.
- .2 Pedestrian facilities such as sidewalks, access to buildings and street crossings shall remain in operation until immediate construction operations dictate their closure. The Contractor shall inform the NCC Representative two weeks in advance of any such closures; provide and install all necessary signing for alternate routes for pedestrians; and ensure the pedestrians have a safe and smooth surface acceptable for use by physically challenged individuals. Erection of temporary fencing and/or hoarding shall be required to separate pedestrians from construction operations or hazards and is subject to the approval of the NCC Representative.

END OF SECTION

PART 1 - GENERAL

1.1 References

- .1 Government of Canada
 - .1 NBC Part 8
 - .2 Canada Labour Code, 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.
- .3 Province of Quebec
 - .1 An Act Respecting Occupational Health and Safety, R.S.Q. 1997
 - .2 Safety Code for the Construction Industry 1997.
- .4 Canadian Standards Association (CSA)
 - .1 CSA S350-M1980, Code of Practice for Safety in Demolition of Structures

1.2 Submittals

- .1 Health and Safety Plan
 - .1 Submit site-specific plan after confirmation bid has been retained and prior to and as a condition of contract award.
 - .2 NCC Representative will review Plan and provide comments to Contractor within seven (7) days after receipt of plan.
 - .3 Revise Plan as appropriate and resubmit to NCC Representative within seven (7) days after receipt of comments from NCC Representative.
 - .4 Submit two (2) copies of Contractor health and safety inspection reports at least once every two (2) weeks.
 - .5 NCC Representative's review of Plan or inspection reports does not provide an approval and does not diminish Contractor responsibility for health and safety.
- .2 Submit immediately upon receipt or completion:
 - .1 construction safety checklists,
 - .2 reports or directions issued by health and safety inspectors,
 - .3 incident and accident reports,
 - .4 Material Safety Data Sheets (MSDS), and health and safety training records including names of personnel and alternates responsible for site safety and health, hazards present on site, and use of personal protective equipment.
- .3 Certification of medical surveillance for site personnel
 - .1 Where prescribed by legislation, regulation or safety program, submit Certification within seven (7) days after date of Notice to Proceed and prior to site mobilization.
 - .2 Update and submit Certification as personnel are sent to site.
- .4 On-site Contingency and Emergency Response Plan: Address standard operating procedures to be implemented during emergency situations.

1.3 Project/Site Conditions

- .1 Some areas of existing paint have been identified as containing lead. See Appendix 1 – Lead Paint Report.

1.4 General Requirements

- .1 In general: see GC 26.
- .2 Health and Safety Plan
 - .1 Perform site-specific hazard assessment.
 - .2 Attend health and safety pre-construction meeting.
 - .3 Develop written site-specific Plan based on hazard assessment prior to commencing any site Work.
 - .4 Include in Plan safety and health risk or hazard analysis for site tasks and operations.
 - .5 Plan must address project specifications.
 - .6 File required health and safety notices with Provincial authorities prior to commencement of Work.
 - .7 Continue to implement, maintain, and enforce Plan until final demobilization from site.
- .3 Responsibility
 - .1 Be responsible for safety of persons and property on site and for protection of persons off site and environment to extent that they may be affected by conduct of Work.
 - .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
- .4 Compliance requirements
 - .1 Applicable legislation, regulations
 - .1 NBC Part 8, WHMIS, FC 301, FC 302
 - .2 Canada Labour Code, Canada Occupational Safety and Health Regulations
 - .3 For work in Ontario: Ontario Health and Safety Act
 - .4 For work in Québec: Occupational Health and Safety Act, Industrial and Commercial Establishments Regulation, R.R.Q.
 - .5 Specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.
 - .2 Document postings and availability
 - .1 Comply with provincial general posting requirements and other safety-related postings as the NCC Representative may direct.
 - .2 Maintain one copy of each applicable health and safety standard at job site.
 - .5 Designated substances, volatile compounds, unforeseen hazards
 - .1 Notify NCC Representative 48 hours in advance of work in occupied areas involving designated substances (under applicable provincial legislation), hazardous substances (Canada Labour Code Part II Section 10), and before painting, installing carpet, or using volatile compounds.
 - .2 Asbestos: Stop work and notify NCC Representative immediately if a material resembling asbestos is encountered. Do not proceed at such locations without written instructions from NCC Representative.

- .3 Silica: Use appropriate respiratory protection and ventilation during the demolition and/or modification of structures with products that contain silica. Silica is a crystalline component of concrete and cement. Silica dust is created by blasting, grinding, crushing and sandblasting silica-containing materials.
- .4 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, immediately stop work immediately and advise NCC Representative verbally and in writing.
- .6 Smoking is prohibited within 10 metres of all structures.

1.5 Health and Safety Co-ordinator

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Coordinator must:
 - .1 Have minimum two (2) years' site-related working experience specific to activities associated with **site work and landscape construction**.
 - .2 Have basic working knowledge of specified occupational safety and health regulations,
 - .3 Be responsible for completing health and safety training session and ensuring that personnel not successfully completing the required training are not permitted to enter site to perform Work,
 - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Health and Safety Plan, and
 - .5 Be on site during execution of Work.

1.6 Construction Safety Checklist

- .1 Obtain Construction Safety checklist from NCC Representative.
- .2 Review and implement applicable health and safety checklists provided by NCC Representative in collaboration with NCC Representative.

1.7 Correction of Non-compliance

- .1 Immediately address health and safety non-compliance issues identified 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.

1.8 Blasting and Power Activated Fasteners

- .1 Blasting
 - .1 Blasting or other use of explosives is permitted only after receipt of written instruction by NCC Representative.
 - .2 Blasting operations: to CSA S350.
- .2 Power-activated fasteners
 - .1 Use power actuated devices only after receipt written permission from NCC Representative.

1.9 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 Assign responsibility and obligation to Health and Safety Coordinator to stop or start Work when, at Health and Safety Coordinator's discretion, it is necessary or advisable for reasons of health or safety. NCC Representative may also stop Work for health and safety considerations.

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION (not applicable)

END OF SECTION

PART 1 - GENERAL

1.1 Fires

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

1.2 Disposal of Wastes

- .1 Do not bury rubbish and waste materials on site unless approved by NCC Representative.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm, or sanitary sewers.

1.3 Drainage

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.4 Site Clearing and Plant Protection

- .1 Protect trees and plants on site and adjacent properties where indicated.
- .2 Wrap in burlap, trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m.
- .3 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping, and storage of materials over root zones.
- .4 Minimize stripping of topsoil and vegetation.
- .5 Restrict tree removals to areas indicated or designated by NCC Representative.

1.5 Pollution Control

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local authority's emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

1.6 Dust Control

- .1 The Contractor shall take such steps as may be required to prevent dust nuisance resulting from his operations either within the right of way or elsewhere or by public traffic where it is the Contractor's responsibility to maintain a roadway through the work.
- .2 Where the work requires the sawing of asphalt or the sawing or grinding of concrete, blades and grinders of the wet type shall be used together with sufficient water to prevent the incidence of dust, wherever dust would affect traffic or wherever dust would be a nuisance to residents of the area where the work is being carried out.

1.7 Spills reporting

- .1 Be financially responsible to ameliorate the adverse effects of a spill. The discharger is expected to contain and clean up the spilled contaminant or arrange for the contaminant to be contained and cleaned up. He is also expected to restore the spill site to essentially pre-spill conditions where this can reasonably be expected. To achieve this, the discharger may have to remove the contaminated soil and debris and dispose of these materials in an acceptable manner at an approved disposal site.
- .2 The person in charge of a pollutant, at the time of a spill, is considered to have taken a foreseeable risk for which he can prepare himself.
- .3 Prior to commencing construction, the Contractor is to prepare and submit for approval a contingency plan for the control and clean up of a spill. Said submission must adhere to the requirements and regulations of the WHMIS (Work Hazardous Material Information System) and shall include the applicable MSDS (Material Safety Data Sheet) for each substance.
- .4 Any equipment utilized by the contractor that develops a fluid leak, shall be immediately removed from the site by the contractor.
- .5 In the event of a spill or other emission of a pollutant into the natural environment, every person responsible for the emission or who causes or permits it must forthwith notify:
 - .1 The Ministry of the Environment Spills Action Centre (SAC)
Tel: 1-800-268-6060.
 - .2 The City of Ottawa.
 - .3 The Owner of the pollutant, if known.
 - .4 The person having control of the pollutant, if known, of the spill, of the circumstances thereof, and of the action taken or intended to be taken with respect thereto.

1.8 Watercourse Protection

- .1 The Contractor shall ensure that no contamination, waste or other substances which may be detrimental to marine life or quality of water shall enter any watercourse as either a direct or indirect result of construction and the Contractor shall meet the requirements of Government authorities or agencies with respect to environmental protection.

- .2 The Contractor shall be prepared to immediately clean up any spills of contamination, waste or other substances which may be either detrimental to marine life or quality of water. In the event of a spill, the Contractor shall immediately commence a clean up operation. The Contractor shall be liable for all damages and/or charges laid, which result, directly or indirectly, either from the spill, or contamination of any kind resulting from this construction operations.
- .3 The Contractor shall exercise reasonable care to ensure that sediment run-off does not enter watercourses. Berms, silt screens and other works, as required, shall be constructed at appropriate locations to ensure that turbidity shall be kept to a minimum as determined by the Government authorities and agencies.
- .4 Run-off from construction materials and any stockpiles shall be contained and discharged in a manner that will prevent entry of sediment to watercourses.
- .5 Where dewatering is required, effluent shall be discharged in a manner that will prevent entry of sediment to watercourses.
- .6 Where the Contractor requires work in watercourses or on the banks of watercourses, operation of equipment within such areas shall be kept to a minimum necessary to perform the specified work and proceed in a continuous manner that will minimize the duration of such work.
- .7 The Contractor shall submit a plan indicating how he intends to provide for securing the site against erosion and watercourse siltation problems for the full duration of the construction period, i.e. from start of construction to final completion. The Contractor shall not proceed with excavation of watercourse banks until approval of the sediment control plan is received from the NCC Representative.
- .8 Various concerned Government agencies will likely be on site during construction and the Contractor shall provide easy access and meet the requirements of those agencies without delay.
- .9 The Contractor shall immediately clean up and dispose of any floating debris which accumulates on the watercourse bed or banks as a result of construction.
- .10 The Contractor shall not make any claim for extra compensation for the cost of fulfilling the obligations set out herein.

END OF SECTION

1.1 Access

- .1 Provide and maintain adequate access to project site for vehicular traffic, pedestrian traffic to a standard suitable for wheel chair access and cyclists.
- .2 Provide snow removals during period of work on roads and sidewalks.
- .3 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract, and make good damage resulting from Contractors' use of roads.

1.2 Contractor's Site Office

- .1 NCC Representative will establish areas for site office and storage of material.
- .2 Provide office that is heated and cooled to 22 °C, lighted 750 Lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table and telephone, pay telephone not acceptable.
- .3 These facilities will be supplied equipped and maintained by the Contractor at no additional cost to the contract.

1.3 Storage Sheds

- .1 Provide adequate weather tight sheds with raised floors, for storage of materials, tools, and equipment which are subject to damage by weather.

1.4 Sanitary Facilities

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

1.5 Site Enclosures

- .1 Temporary site enclosures must be erected to separate pedestrians and the work.
- .2 In areas around the work site, erect temporary site enclosure using new open mesh fencing. Maintain fence in good repair.

1.6 Power

- .1 Arrange for payment and maintenance of temporary electrical power supply in accordance with governing regulations and ordinances.
- .2 Install temporary facilities for power such as pole lines and underground cables to approval of local power supply authority.
- .3 Connect to existing power supply in accordance with Canadian Electrical Code.

- .4 Contractor must maintain street lighting or provide equivalent temporary street lighting at all times. Electrical power and lighting systems installed under this Contract may be used for construction requirements with prior approval of NCC Representative provided that guarantees are not affected. Make good damage. Replace lamps which have been used over period of 3 months.

1.7 Heating and Ventilating

- .1 Pay for costs of temporary heat and ventilation used during construction, including costs of installation, fuel, operation, maintenance and removal of equipment. Use of direct-fired heaters discharging waste products into work areas will not be permitted unless prior approval is given by NCC Representative.
- .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.
 - .6 Reduce noise due to construction activities.
- .3 Maintain minimum temperature of 10°C or higher where specified as soon as finishing works commenced and maintain until acceptance of structure by NCC Representative.
- .4 Ventilating:
 - .1 Prevent accumulations of dust, fumes, mists, vapours, or gases in areas occupied during construction.
 - .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
 - .3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
 - .4 Ventilate storage spaces containing hazardous or volatile materials.
 - .5 Ventilate temporary sanitary facilities.
 - .6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
- .5 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.

1.8 Drainage

- .1 Refer to Section 01 35 44 - Environmental Protection for site drainage and pumping requirements.

TEMPORARY FACILITIES

1.9 Site Signs and Notices

.1 Safety and Instruction Signs and Notices:

.1 Signs and notices for safety and instruction shall be in both official languages
Graphic symbols shall conform to CAN3-Z321-96 (R2006).

.2 Maintenance and Disposal of Site Signs:

.1 Maintain approved signs and notices in good condition for duration of project,
and dispose off-site on completion of project or earlier if directed by NCC
Representative.

1.11 Removal of Temporary Facilities

.1 Remove temporary facilities from site when directed by NCC Representative.

END OF SECTION

PART 1 - GENERAL

1.1 General

- .1 Use new material and products unless otherwise specified.
- .2 Within 7 days following a request by the NCC Representative, submit the following information for the supply of proposed materials and products:
 - .1 Name and address of manufacturer.
 - .2 Product name, model and catalogue number.
 - .3 Performance, description and test data.
 - .4 Installation or application instructions from the manufacturer.
 - .5 Proof of arrangements to purchase materials or products.
- .3 Provide material and equipment of the design and specified quality, performing to published ratings and for which replacement parts are readily available.
- .4 Use products from one manufacturer for material and equipment of [the](#) same type or classification unless otherwise specified.

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1.2 Manufacturer's Instructions

- .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.
- .2 Notify the NCC Representative in writing of any conflict between these specifications and manufacturer's instructions. The NCC Representative will designate which document is to be followed.

1.3 Delivery and Storage

- .1 Transport deliver, and store material and equipment in its original packaging with manufacturer's seals and labels intact.
- .2 Prevent damage, falsification and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected material and equipment from the site.
- .3 Store material and equipment in accordance with suppliers instructions.
- .4 Touch-up damaged surfaces to the NCC Representative's satisfaction. Use primer or enamel to match original finish. Do not paint over name plates.

1.4 Substitution

- .1 No substitutions will be permitted without prior written approval from the NCC Representative.
- .2 Proposals for substitution may only be submitted after award of contract. Such requests must include statements of respective costs of items originally specified and the proposed substitution.
- .3 Proposals will be considered by the NCC Representative only if:
 - .1 materials selected by the tenderer are not available;

- .2 delivery date of select materials from the materials specified would unduly delay completion of the contract, or;
- .3 Alternative materials to those specified, are brought to the attention of and considered by the NCC Representative as equivalent to the materials specified and will result in a credit to the Contract amount.
- .4 Should proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on the project. Pay for design or drawing changes required as a result of substitution.
- .5 Amounts of all credits arising from approval of substitutions will be determined by the NCC Representative and the Contract Price will be reduced accordingly.

1.5 Construction and Jobsite Equipment

- .1 Upon request, prove to the satisfaction of the NCC Representative that the construction and jobsite equipment are adequate to manufacture, transport, place and finish the work according to the specified quality and timeframe specified. If inadequate, replace or provide additional equipment as directed.
- .2 Maintain construction equipment and the jobsite in good operating order.

END OF SECTION

PART 1 - GENERAL

1.1 Record Drawings

- .1 NCC Representative will provide two sets of white prints for record drawing purposes.
- .2 Maintain project record drawings and record accurately deviations from Contract documents.
- .3 Record changes in red. Mark on one set of prints and at completion of project and prior to final inspection, neatly transfer notations to second set and submit both sets to NCC Representative.
- .4 Record following information:
 - .1 Depths of various elements of foundation in relation to survey datum.
 - .2 Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvement.
 - .3 Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by Change Order or Field Order.

END OF SECTION

PART 1 - GENERAL

1.1 General

- .1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution.
- .2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .3 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

1.2 Materials

- .1 Use only cleaning materials recommended by manufacturer or surface to be cleaned, and as recommended by cleaning material manufacturer.

1.3 Cleaning During Construction

- .1 Provide on-site containers for collection of waste materials and debris.
- .2 Dispose of waste materials and debris off site.
- .3 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.4 Final Cleaning

- .1 Remove grease, dust dirt, stains, labels, fingerprints, and other foreign materials, from interior and exterior finished surfaces including glass and other polished surfaces.
- .2 Clean lighting reflectors, lenses, and other lighting surfaces.
- .3 Broom clean paved surfaces; rake clean other surfaces of grounds.

END OF SECTION

PART 1 - GENERAL

1.1 General Conditions

- .1 The requirements of this specification take precedence over the requirements of any other specification for the management and disposal of excess material.

1.2 Section Includes

- .1 Requirements for management and disposal of excess materials.
- .2 Specific Site Selection Notification and Property Owner's Release forms necessary for certain excess materials handling.

1.3 Definitions

- .1 Bituminous pavements: any combination of asphaltic material and aggregate, excluding asbestos modified asphaltic material.
- .2 Concrete: concrete mixtures produced with Portland cement, which may include blended hydraulic cement, supplementary cement materials, spent debris and silica sand abrasive blasting media from abrasive cleaning of concrete and reinforcing steel, concrete brick, block and associated mortar. Can include embedded steel, and excludes asbestos modified Portland cement concrete mixtures.
- .3 Disposable fill: excess material, other than that disposed of at a certified disposal site, that is managed in berms and mounds, and as fill, other than in road embankments.
- .4 Earth: all soils except those defined as rock, and exclude stone masonry, concrete and other manufactured materials.
- .5 Excess material: Material removed as a result of Work outlined in the Contract, for which management is not specified. Includes surplus and unsuitable materials.
- .6 Fabricated metal and plastic products: metal and plastic products such as culverts, fence materials, and guide rails. Does not include containers, other packing materials, storage tanks, septic tanks, and ancillary equipment associated with sanitary sewage systems, septic systems, and fuel/lubricant dispensing and storage systems.
- .7 Groundwater: subsurface water and water that occurs beneath the water table in soils and rock formations that are fully saturated.
- .8 Masonry: clay brick, stone and associated mortar.
- .9 Natural wood: stumps, trunks, branches, and debris, from tree and shrub removal, and wood products that are not treated, coated or glued.
- .10 Re-use: utilization, processing, re-processing or recycling of excess material into a construction material or other useful product, and management by these means for the Contract and other work.

- .11 Rock: natural beds or massive fragments, of the hard, stable, cemented part of the earth's crust, igneous, metamorphic, or sedimentary in origin, which may or may not be weathered, and includes boulders having a volume of 1 m or greater.
 - .12 Swamp material: materials within the swamp excavation limits, except those defined as rock, and excludes stone masonry, natural wood and manufactured materials.
 - .13 Waste: excess material managed by re-use or as disposable fill.
 - .14 Waterbody: any body of water or watercourse or wetland, or a portion thereof, and excludes ditches other than those functioning as natural watercourses.
- 1.4 Submission Requirements
- .1 Copy of Site Selection Notification form shall be submitted to NCC Representative when property is to be used for:
 - .1 Stockpiling for re-use and for disposable fill.
 - .2 Management as disposable fill.
 - .2 Notification shall be submitted prior to commencement of such work.
 - .3 After work is complete, copy of Property Owner's Release form shall be provided to NCC Representative.
 - .4 Where excess material audit or inventory is imposed by statute, or is condition of the Contract, copy of document shall be provided to NCC Representative.

PART 2 - PRODUCTS (Not applicable)

PART 3 - EXECUTION

3.1 Construction

- .1 Management of excess material shall be as described below:
 - .1 Earth, aggregate, swamp material, rock and natural wood: Manage by re-use or disposal off-site.
 - .2 Bituminous pavement, concrete, masonry, fabricated metal and plastic products: Manage by disposal off-site.
 - .3 Where excess materials are suspected of being contaminated or if types of materials are encountered which are not addressed in this specification, direction on management shall be obtained from NCC Representative.
 - .4 Excess material that is mixture of materials shall be disposed of according to most stringent conditions associated with any one of individual constituents.
 - .5 Excess materials shall be managed using methods which prevent their entry into waterbodies and other sensitive areas. These may be identified in Contract. Exceptions may be made when materials are re-used in accordance with requirements specified elsewhere in Contract.
 - .6 Notification requirements shall be complied with and approvals, releases, and agreements shall be obtained that are necessary for management of excess material.

- .2 Management by-re-use shall be as specified. When not specified, management by re-use shall be outside Commission's property.
 - .1 Distance separations described in Table 1 do not apply for:
 - .1 Re-use of excess materials for same purpose.
 - .2 Re-use of bituminous pavement, concrete and masonry within road right-of-way.
 - .3 Re-use of concrete as aggregate in bituminous pavement.
 - .4 Re-use of concrete as rip rap, gabion stone or rock protection in compliance with requirements specified elsewhere in this contract.
- .3 Management as disposable fill, within Commission's property and on other property designated in Contract, shall be as specified.
- .4 Management by open burning is not permitted.
- .5 Stockpiling on the Commission's property and on other property designated in contract shall be as specified, otherwise it shall be outside Commission's property.
 - .1 Stockpiles of bituminous pavement, concrete and masonry shall be located minimum of 30 m from waterbodies and minimum of 100 m from residences unless:
 - .1 Stockpiles are located within the road right-of-way or on property with boundary common to right-of-way. Both must be within Contract limits and be for period not exceeding one hundred and twenty calendar days..
 - .2 Stockpiles are located within provincial or municipal works yards or commercially licensed pit or quarry.
 - .2 Stockpiling of natural wood is subject to management conditions in Table 1. These conditions only apply to stockpiles to be in place for period exceeding one hundred and twenty calendar days.

**TABLE 1: EXCESS MATERIAL MANAGEMENT
DISTANCE SEPARATION REQUIREMENTS**

ADJACENT FEATURE	MINIMUM DISTANCE SEPARATION
Groundwater	2 m (above)
Waterbodies	30 m
Water Wells	100 m
Residences	100 m

END OF SECTION

PART 1 - GENERAL

1.1 Related Sections

- .1 Section 01 35 44 Environmental Protection

PART 2 - PRODUCTS (not applicable)

PART 3 - EXECUTION

3.1 Preparation

- .1 Inspect site with NCC Representative and verify extent and location of items designated for removal and 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.

3.2 Sequences of Operation

- .1 Remove items as indicated.
 - .1 Do not disturb items designated to remain in place.
 - .2 In removal of granite pavers:
 - .1 Lift and stack pavers on wood pallets. Discard broken pavers. Do not stack higher than 900 mm. Wrap palletized pavers with plastic wrap sufficient to prevent damage or movement during transport or storage.
 - .2 Deliver salvaged granite to NCC warehouse facilities in the Ottawa area.
 - .3 Cut salvaged granite pavers to make pavers type "F", "G", "H", to width and length for use as granite borders. Safely store and stack cut pavers to prevent damage.
 - .3 In removal of trees:
 - .1 Salvage tree collars and deliver to NCC warehouse facilities. Protect against damage during transport.
 - .2 Remove trees from site.
 - .3 Remove from site precast concrete tree cover.
 - .4 Remove from site concrete cover support.
 - .5 Remove rootball and soil medium from tree pit area.
 - .6 Remove drainage tile within tree pit area.
 - .7 Compact undisturbed subsoil materials.
 - .4 Clear Granular:
 - .1 Salvage clear granular stone by stockpiling on site.
 - .2 Following removal of planting soil medium, place stockpiled clear granular stone in 200 mm lifts in trench, compact to 95% SPD.
 - .3 Evenly spread remaining clear granular cross width of sidewalk area, compact in 200 mm lifts.

3.3 Light poles protection

- .1 Remove and store in a safe place the base of light poles to be repositioned at the end of construction.

- .2 Cover the first 1.8 meters with a geotextile 295gr/m², attached with metal straps.
 - .3 Remove protection and replace the base when all the work has been completed and no other damage would be done to light poles during the present contract.
- 3.4 Restoration
- .1 Restore areas and existing works outside areas of demolition to match condition of adjacent, undisturbed areas.
- 3.5 Cleanup
- .1 Upon completion of work, remove debris, trim surfaces and leave work site clean.
- 3.6 Salvage
- .1 All the materials and equipment owned by the NCC. must be maintained in good shape and transported to NCC storage facilities.

END OF SECTION

PART 1 - GENERAL

1.1 Related Work

- .1 Section 03 20 01 Steel Reinforcing
- .2 Section 03 30 00 Cast-In-Place Concrete

1.2 Reference Standards

- .1 Do concrete formwork to CSA A23.1-09/A23.2-09 and supplements except where indicated otherwise.

1.3 Shop Drawings

- .1 Submit shop drawings in accordance with Section 00 13 40. Reproduction of the contract drawings is not permitted.
- .2 Clearly indicate the method of construction, arrangement of joints, ties, shores, liners, and locations of embedded structural items.
- .3 Each shop drawing submitted to bear the stamp and signature of a Professional Engineer registered in Quebec.

PART 2 - PRODUCTS

2.1 Materials

- .1 Formwork lumber: forming plywood and wood formwork materials to CSA-A23.1-09/A23.2-09 . Use new materials throughout except for rough concrete.
- .2 Falsework materials: to CSA S269.1 1975 (R 2003). Materials shall bear grade marks or be accompanied with certificates, test reports or other proof of conformity.
- .3 Form release agent: chemically active release agents containing compounds that react with free lime present in concrete to provide water insoluble soaps, preventing set of film of concrete in contact with form.
- .4 Form ties: removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25 mm dia. in concrete surface. Ties for exposed locations shall be threaded internal disconnecting type fitted with plastic cones 25 mm x 50 mm deep.
- .5 Plugs for holes left by disconnecting type ties: PVC plastic with 6 mm set back and same color as concrete.
- .6 Grooves, chamfers: white pine selected for straightness and accurately dressed to size.

PART 3 – EXECUTION

3.1 Erection

- .1 Verify lines, and levels before proceeding with formwork and ensure dimensions agree with drawings.
- .2 Construct forms to produce Finished Concrete conforming to shape dimension locations and levels indicated within tolerances required by CSA-A23.1-09/A23.2-09.
- .3 Align form joints and make watertight. Keep form joints to minimum.
- .4 Locate horizontal form joints for exposed walls to approval of NCC Representative.
- .5 Use chamfer strips on external corners, as indicated on drawings.
- .6 Form chases, slots, openings, drips, recesses, expansion and control joints as detailed..
- .7 Leave form work in place for the following minimum period of time after placing concrete:
 - .1 Three days for walls.
- .8 Formwork, shoring and re-shoring shall be reviewed on site by the Professional NCC Representative whose stamp appears on the formwork drawings.

3.2 Finishing

- .1 Finish formed concrete in accordance with Clause 24 CSA-A23.1-09/A23.2-09. See architectural drawings for location and type of finishes.
- .2 All concrete surfaces not exposed to views shall be rough form finish. All surfaces exposed to public view shall be smooth-form finish.
- .3 Prepare surfaces to be damp-proofed or waterproofed in accordance with Clause 25 of CSA-A23.1-04/A23.2-09.
- .4 Concrete surfaces exposed to view shall be built in accordance with Clause 28 of CSA-A23.1-04/A23.2-09.
- .5 Sand-blasting: see landscape drawings for location.
- .6 Finish surface as required for smooth rubbed finish and arrange for review by NCC Representative before sand-blasting. After concrete is at least 21 days old and thoroughly cured, sand-blast using a hard sharp sand until coarse aggregate is in uniform relief and a light texture is achieved.

END OF SECTION

PART 1 - GENERAL

1.1 Description

- .1 This Section specifies the work required for preparation of existing reinforcing steel prior to coating, installation of new steel and splicing of existing steel.

1.2 Related Work

- .1 Section 03 10 00 Concrete Formwork
- .2 Section 03 30 00 Cast-in-place Concrete

1.3 Reference Standards

- .1 Do reinforcing steel work in accordance with CSA-A23.1-09/A23.2-09 and supplements and CSA S413-07.

1.4 Environmental Conditions

- .1 Further to Division 1 of specification, protect all building components and equipment, including air intakes for generators, hydro vaults, building air supply from dust generated by the work.
- .2 Contain sandblast materials and debris within the work area. Do not generate or allow dust to migrate from work area.
- .3 Do not apply epoxy at relative humidity above 80 %, or to damp surfaces.

1.5 Submittals / Mock-Ups Shop Drawings

- .1 Submit shop drawings including placing of reinforcement in accordance with Section 00 13 40 - Shop Drawings, Product Data and Mock-Ups.
- .2 Prepare shop drawings to Reinforcing Steel Manual of Standard Practice published by reinforcing Steel Institute of Canada 1996 edition.

1.6 Inspection and Testing

- .1 Inspection of welding of reinforcing steel by an independent agency will include:
 - .1 Checking of certification of firm employed for welding under CSA W186-M 1990 (R 2012).
 - .2 Checking of welder's C.W.B. Certification.
 - .3 Visual checking of welded connection including checking of joint preparation and fit up.
- .2 Notify the NCC Representative for final review of preparation and placement of steel.
- .3 Notify the NCC Representative for final review of all epoxy coating.
- .4 Provide 24 hour notice for review.

PART 2 - PRODUCTS

2.1 New Reinforcing Steel

- .1 New material, billet steel, grade 400R, deformed bars to CSA-G30-18-09 unless otherwise indicated. Welded steel grade 400W.. Welded steel grade 400 W. Welded wire fabric to CSA G30.5-M1983 (R1998) galvanized.
- .2 All bars must be supplied by plants certified by the concrete Reinforcing Steel Institute for epoxy coated steel.
- .3 Fabricate reinforcement to the requirements of CSA-A23.1-09/A23.2-09.
- .4 All new reinforcement shall have factory applied fusion bonded epoxy coating. Coating shall conform to the requirements of ASTM D3963/D3963M-01(2007), Standard Specification for Epoxy Coated Reinforcing Steel. The epoxy coating shall be of a color which contrasts sharply with reinforcing steel and rust colors. Brown is not acceptable.
- .5 Where existing reinforcing is replaced, new factory coated reinforcing steel shall be 20 % greater in length than existing. Alternatively, the existing steel can be replaced with 20 % more steel as directed by NCC Representative.

2.2 Accessories

- .1 Provide epoxy coated bar supports conforming to the requirements of Manual of Standard practice of the Reinforcing Steel Institute of Canada. IN exposed concrete locations, supports shall be plastic, precast concrete or plastic protected steel, all of the same color as the concrete. Use coated tie wire.

2.3 Field Coating Existing Steel

- .1 The approved product for field coating existing reinforcement is a High-Solids Epoxy with a minimum solids content of 80% and which is recommended by the manufacturer for coating existing steel. Submit manufacturer data for approval prior to use. The color shall contrast sharply with steel and rust colors.

PART 3 - EXECUTION

3.1 General

- .1 Do not remove any existing reinforcing steel without prior review by NCC Representative.
- .2 Where corrosion has resulted in a significant reduction of the cross-sectional area of the existing reinforcing, NCC Representative may require the replacement or repair of the reinforcing steel.
- .3 As instructed by NCC Representative, remove deteriorated reinforcing steel and replace with new epoxy coated bars of equal or larger area. New reinforcing steel is to be 20 % greater in length than existing.

3.2 Preparation of Existing Steel

- .1 Remove all existing exposed tie-wire and bar supports.
- .2 Straighten all bent reinforcing bars to their original shape. Do not heat the steel.
- .3 Clean existing reinforcing which is to remain of all concrete, corrosion products and dirt by abrasive blast cleaning. Produce a Brush-off-Blast profile in accordance with NACE No. 4 - SSPC-SP7.
- .4 Where existing steel extends into columns, walls, beams, portions of slab which are to remain or other structures, and new steel will need to be connected to the existing to maintain development, take care to ensure steel is cut to maintain sufficient lap lengths. Leave sufficient steel projecting to enable lap splicing new steel to the existing in accordance with CSA A23.3-04. Alternatively, only if directed by NCC Representative, cut steel to allow for weld splicing of the new steel.

3.3 Welding of Reinforcement

- .1 When designated by NCC Representative, splice weld new reinforcing steel to the existing steel.
- .2 Conform to CSA W186-M 1990 (R 2012) and to CSA W59-03 (R 2008).
- .3 All welding shall be done by firms certified by Canadian Welding Bureau for type of Work specified.
- .4 Do not weld when temperature is below 0°C.
- .5 Do not weld when surfaces are wet or damp.
- .6 Preheat reinforcing bars at locations to be welded immediately before welding.
- .7 Chip off slag and clean all welds prior to sandblasting.

3.4 Epoxy Coating Existing reinforcing

- .1 The cleaned reinforcement shall be coated before oxidation of the surface discernible to the unaided eye occurs, or else the procedure shall be repeated.
- .2 Apply epoxy in accordance with the manufacturer's written instructions to completely cover all steel which does not have a factory applied coating. After curing, the coating shall be free of holes, voids, cracks, damaged areas, contamination, and deficient areas that are discernible without magnification. Dry thicknesses of coating to be between 0.20 mm and 0.35 mm.
- .3 Apply epoxy in advance of placing concrete so as to achieve the manufacturers written recommended curing time.

3.5 New Steel

- .1 Unprotected on-site storage shall not exceed 30 days, and total on-site storage time shall not exceed 120 days.
- .2 When protection is required, bars shall be covered with opaque polyethylene sheeting or other equivalent protective material. For stacked bundles, the protective covering shall be draped over the sides of the bundles around the perimeter of the stack. The covering shall be adequately secured, with provisions for adequate air circulation around the bars to prevent condensation under the protective covering.

The bars shall be stored clear of the ground on timbers or other suitable protective cribbing spaced to prevent sags in the bundles.

Stacks of bundles of straight bars shall have adequate blocking to prevent contact between the layers of bundles.

- .3 When the exposure time is expected to exceed or exceeds 30 days, exposed bars installed in the structure, including bars partially embedded in concrete, shall be protected and adequately supported and secured in place.

This protection shall be maintained until its removal is required for preparation for subsequent concrete placement.

- .4 Tie reinforcement securely together to prevent displacement during concrete placing and vibrating. Turn the ends of ties towards the interior of the concrete.
- .5 If factory applied epoxy coating is damaged, touch-up with epoxy recommended by new steel supplier. Do not use epoxy coating specified for existing steel.

3.6 Review of Construction

- .1 Review of construction by the NCC Representative and inspection and testing by an independent inspection and Testing Agency, is to ascertain general conformity with contract documents. It does not relieve the Contractor of his contractual responsibilities. The review is based on representative samples of the work and does not relieve the Contractor from carrying out his own quality control and making the work in conformity with the drawings and specifications.

END OF SECTION

PART 1 - GENERAL

1.1 Description

- .1 This Section specifies materials and methods for placement of concrete in new structures.

1.2 Related Work

- .1 Section 03 10 00 Concrete Forming
- .2 Section 03 20 01 Steel Reinforcing

1.3 Reference Standards

- .1 Do cast-in-place concrete work in accordance with CSA A23.1-09 and supplements and testing in accordance with CSA A23.2-09 and supplements, except where specified otherwise.

1.4 Quality Assurance

- .1 Minimum 2 weeks prior to starting concrete work, submit proposed quality control procedures for NCC Representative's Approval for following items:
 - .1 Finishing, curing and protection;
 - .2 Hot weather concreting;
 - .3 Cold weather concreting.
- .2 Obtain concrete from a Ready-Mix Plant that has been issued a seal of Special Quality Concrete attesting that its coefficient of variation is less than 12 percent.

1.5 Project Records

- .1 Concrete Pour Records: keep concrete delivery slips on site until building is completed. Record where each concrete pour was placed including time and date.
- .2 Record drawings: record on a set of structural drawings extent of each pour including pour date and falsework removal date. Also record all changes to that shown on drawings including footing elevations.
- .3 Keep records up to date and make available to NCC Representative at all times.

1.6 Submittals

- .1 Minimum 2 weeks prior to starting concrete work, submit certification that plant, equipment, and materials to be used in concrete comply with requirements of CSA-A23.1-09 and clause 1.3.2.
- .2 Minimum 2 weeks prior to starting concrete work, submit all concrete mix designs including pump mixes, and indicate where each concrete mix is to be used.
- 3 Minimum 4 weeks prior to placing any slabs, submit drawings showing proposed locations of control joints in protection slab.

PART 2 - PRODUCTS

2.1 Materials

- .1 Portland cement: to CSA A8/A5/A362-98 Type 10.
- .2 Waters, fine aggregates, normal weight coarse aggregates: to CSA-A23.1-09. Use Granite aggregate at locations indicated on L-series of drawings.
- .3 Air entraining admixture: to ASTM C260/C260M-10a.
- .4 Chemical admixtures: to ASTM C494/C494M-12.
- .5 Supplementary Cementing Materials: to CAN/CSA-A23.5-M86.
- .6 Cementitious hydraulic slag to: CAN/CSA-A363-03.
- .7 Flyash : to CAN/CSA-A23.5, Type C
- .8 Non-shrink grout: premixed compound consisting of non-metallic aggregate, cement, water reducing and plastizing agents, of pouring consistency, capable of developing compressive strength of 50 MPa at 28 days.
- .9 Premoulded joint fillers:
 - .1 Bituminous impregnated fibreboard: to ASTM D1751-04(2008).
 - .2 Polystyrene joint filler to CAN/CGSB-51.20.
- .10 Corrosion inhibitor : provide corrosion inhibitor manufactured by a Firm with a minimum of five years infield experience in the use of corrosion inhibitors in concrete and shall contain $4\pm 30\% \pm 2\%$ calcium nitrite by weight of solution.
- .11 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.

2.2 Admixtures

- .1 Obtain approval of NCC Representative before using admixtures.
- .2 Use only compatible admixtures.
- .3 Use of calcium chloride or admixtures containing calcium chloride not permitted.

2.3 Air Entraining

- .1 Comply with CSA-A23.1-04 Tables 7, 8 and 10 for use of air entrainment.

2.4 Concrete Mixes

- .1 Use ready mix concrete. Proportion normal density concrete to CSA-A23.1-04, Clause 16, Table 11, Alternative I to produce 28-day compressive strength as shown on drawings or noted herein. Use water reducing agent in all concrete.

- .2 Type of cement: Type 10.
- .3 Supplementary cementing materials: conform to the directions of the slag manufacturers for the proportioning and mixing of concrete. Use supplementary cementing materials as follows:
 - .1 Slag 20 % of total cementitious content.
 - .2 Flyash 10 % of total cementitious content.
- .4 All concrete in different building elements shall have the following classification:
 - .1 Structural foundations, walls, footings, footings for lighting and traffic poles: classification C1, Table 7 of CSA-A23.1-09.
 - .2 Sidewalks, curbs and medians, classification C2, Table 7 of CSA-A23.1-09
- .5 Maximum size of coarse aggregate 20 mm.
- .6 Slump shall be in accordance with Table 6 of CSA-A23.1-09 within the tolerances specified in Clause 14.2.3.2.
- .7 Provide certification that mix proportions selected will produce concrete of specified quality yield and strength.
- .8 Corrosion inhibitor: add in concrete for Protection Slab only. Add 15 litres/cubic metre of concrete. Add to concrete at ready-mix plant.
- .9 Provide certification that plant, equipment and all materials to be used in concrete comply with requirements of CSA-A23.1-09.

PART 3 - EXECUTION

3.1 Workmanship

- .1 Obtain review of caissons and bearing surfaces by Geotechnical Engineer before placing concrete.
- .2 Place concrete in accordance with CSA-A23.1-09
- .3 Ensure reinforcement and inserts are not disturbed during concrete placement.
- .4 Maintain accurate record of poured concrete items to indicate date, location of pour, quality, air temperature and test samples taken.
- .5 Use internal vibrators whenever practicable for consolidating concrete.

3.2 Inserts

- .1 Set sleeves, ties, anchor bolts, pipe hangers and other inserts, openings and sleeves, in concrete floors and walls, as required by other trades. Sleeves, openings, etc., not indicated on structural drawings must be approved by NCC Representative.
- .2 No sleeves ducts, pipes or other openings shall pass through beams, except where detailed on structural drawings or approved by NCC Representative.

- .3 Check locations and sizes of sleeves, openings, etc., shown on structural drawings with architectural, mechanical and electrical drawings.

3.3 Defective Concrete

- .1 Remove and replace excessive honeycomb or embedded debris in concrete as directed by NCC Representative.

3.4 Joint Fillers

- .1 Locate and form isolation and expansion joints as indicated. Install joint filler.

3.5 Concrete in Footings

- .1 When it is specified in the Contract that the concrete is to be placed against undistributed soil, any over excavation shall be filled with concrete of the same strength as the footing concrete.

3.6 Dowels in Existing Concrete

- .1 Before placing new concrete against existing, holes shall be drilled or core drilled to the specified dimensions, anchoring agent placed and the dowels properly placed into the holes. The anchoring agent shall be an epoxy grout. The placement of the anchoring agent and the dowels shall conform to the manufacturer's instructions and as follows:
 - .2 The holes shall be cleaned of dust and debris immediately prior to placing the anchoring agent. Additional anchoring agent shall be added to fill the hole after insertion of the dowel. Holes that are started but cannot be completed because of encountering reinforcing steel shall be cleaned and filled with an epoxy or cement based non-shrink grout.
 - .3 The holes shall be dry prior to the application of the epoxy grout.
 - .4 Where dowels are inserted into horizontal or inclined holes in a vertical face, the Contractor shall maintain the dowels in position during the setting of the anchoring agent and shall prevent the loss of anchoring agent from the holes.
 - .5 Percussion drilling equipment shall not be used for drilling holes greater than 26 mm diameter when the depth of concrete is 250 mm or less. Percussion drilling equipment shall not be used for drilling holes greater than 26 mm diameter within 150 mm of any free edge of concrete.
 - .6 Only holes less than 26 mm in diameter shall be drilled within 50 mm of any free edge of concrete. Only electric percussion drilling equipment is permitted to drill these holes.
 - .7 Drilling or coring through reinforcing steel is not permitted unless approved by the NCC Representative.

3.7 Construction Joints

- .1 The Contractor shall form construction joints at the locations shown on the contract drawings.

- .2 A straight 20 mm V groove shall be formed at the exposed face of the concrete at all construction joints.
- .3 A bulkhead shall be used to form vertical or inclined construction joints.

3.8 Hot Weather Concreting

- .1 Comply with the requirements of CSA-A23.1-09. Take the necessary precautions whenever the air temperature exceeds + 25 degrees Celsius or the rate of evaporation approaches 0.5 kg per square metre per hour. Make preparations in advance of placing concrete.
- .2 Sprinkle all formwork, steel deck, reinforcing, subgrade and the general area around the work with water just before placing concrete to reduce temperatures and increase humidity. Place concrete as quickly as possible. Do not place concrete whose temperature exceeds + 32 degrees Celsius. Shelter exposed surfaces from direct sun and wind by erecting appropriate sunshades and windbreaks. Apply fog sprays as soon as possible after placing in order to guard against plastic shrinkage cracks.

3.9 Cold Weather Concreting

- .1 Provide on site and ready for operation between at least October 15th and April 30th, temporary plant and equipment heating materials and forms and for maintaining the proper temperature and humidity of the concrete during curing. Consult CSA-A23.1-09 and comply with its requirements.
- .2 Ensure that any surface against which concrete is to be placed, including soil but excluding surfaces which receive finished slabs, is at a temperature of at least + 5 degrees Celsius. Ensure that the surface on which finished slabs and toppings are placed is at a temperature of at least + 13 degrees Celsius.
- .3 Ensure that before concreting commences in any part of the Work, it is protected in such a manner that all sections of the concrete and the surrounding air will remain continuously at a temperature of not less than + 10 degrees Celsius for 5 days, or + 15 degrees Celsius for 3 days, after placing. Gradually reduce the temperature at the end of the period of protection, at a rate not greater than + 10 degrees Celsius per day until the outside air temperature is reached. Add moisture to the air within enclosures so that proper conditions for curing are maintained. Exhaust heaters producing carbon dioxide directly to the outside. Keep covering clear to the tops of slabs to allow for the free circulation of warm air.

3.10 Field Quality Control

- .1 Inspections and testing of concrete and concrete materials will be carried out by a testing laboratory designated by the NCC Representative.
- .2 Submit samples of fine and coarse aggregate with proposed mix design to designated laboratory in accordance with CSA-A23.2-09.
- .3 Testing laboratories will take three test cylinders for each test. Submit test cylinders to designated laboratory. The frequency of the test will be in accordance with CSA-A23.1-09.

Cast-in-Place Concrete

- .4 Testing laboratories will take one additional test cylinder during cold weather concreting. Cure cylinder on job site under same conditions as concrete it represents.
- .5 Testing laboratories will make at least one slump test for each set of test cylinders taken.
- .6 Inspections and testing by designated testing laboratory will not augment or replace Contractor quality control nor relieve him of his contractual responsibilities.
- .7 Cost of inspection and testing shall be paid by the Owner.

3.11 Review of Construction

- .1 Review of construction by the NCC Representative and inspection and testing by an independent inspection and Testing Agency, is to ascertain general conformity with contract documents. It does not relieve the Contractor of his contractual responsibilities. The review is based on representative samples of the work and does not relieve the Contractor from carrying out his own quality control and making the work in conformity with the drawings and specifications.

END OF SECTION

**GRANITE CURBS, PLINTHS
AND BENCH**

PART 1 - GENERAL

1.1 Related work

- .1 Section 00 13 40 Shop Drawings, Product Data, Samples and Mock-Ups
- .2 Section 03 10 00 Concrete Formwork
- .3 Section 03 20 01 Steel Reinforcing
- .4 Section 03 30 00 Cast-in-Place Concrete
- .5 Section 04 46 07 ~~Granite Curbs/Plinths/Benches~~ Recycled granite for pavers and tree wells
- .56 Section 32 11 23 Aggregate Base Courses

1.2 Supply of Materials

- .1 All granite for curbs, plinths and benches is to be supplied by the Contractor.
- .2 All granite for borders and tree wells granite pavers is to be salvaged from the site. Refer to section 04 46 07 – Recycled granite pavers and tree wells.
- .3 Provide forklifts or other equipment as required to load and unload granite.
- .4 Define adequate areas for storing delivered granite on-site or in the storage area.
- .5 Inspect all delivered granite on-site or in the storage area with the NCC Representative and the Supplier at the time of delivery.
- .6 Concrete base for granite is included in the curbs, plinths and benches items.
- .7 Supply all other materials required to complete the installation.

1.3 Quality Assurance

- .1 The Contractor or their granite subcontractor must provide only skilled stone masons, supervised by foremen experienced in type of work specified.
- .2 The Contractor or their granite subcontractor must demonstrate that they have completed similar work within the last five (5) years.
- .3 Provide sufficient labour and equipment to complete the work quickly.
- .4 Only granite installations matching the approved samples will be acceptable for the project.

1.5 Delivery and Storage

- .1 Carefully pack finished granite, taking all necessary precautions to prevent damage during

**GRANITE CURBS, PLINTHS
AND BENCH**

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loading, transit and storage before installation.

- .2 Correctly place the granite together in manageable volumes using slatted hardwood crates or another appropriate packing system approved by the NCC Representative.
- .3 Use no blocking or packing material that may cause staining or discolouration of the granite.
- .4 Before shipping, store packed granite in a location where it will not be subject to accidental shock, staining or other damage.
- .5 Provide the necessary protection for granite stored for prolonged periods to prevent staining or damage.
- .6 Establish an inventory of granite pavers to permit delivery upon request by the NCC Representative, with a notice of seven days.
- .7 Load granite carefully using all necessary precautions to prevent damage during transit.
- .8 Coordinate shipping schedules with the NCC Representative and installation Contractor(s) to ensure uninterrupted timely deliveries and that the product is available on-site as needed.
- .9 Determine the exact location for unloading on-site with the NCC Representative and the installation Contractor(s).
- .10 Unload the granite only onto stable and safe ground.
- .11 Ensure that the granite ~~slabs~~ pieces are stored in a location(s) where they will not be subject to accidental shock, staining or other damage.

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PART 2 - PRODUCTS

2.1 Materials

- .1 Granite: refer to ASTM C615/C615M-11.
- .2 The type and origin of granite supplied by the Contractor to be the following:
 - .1 Colour: Beluro or Acajou.
 - .2 Confirm granite type and origin with the NCC Representative before placing order.
- .3 Granite Characteristics:
 - .1 Colour and variegation: in accordance with the typical colour for each type of granite, according to the official list of the Quebec Association of Granite Producers.
 - .2 Texture: medium to moderately coarse grained.
 - .3 Finish: all finishes saw-cut, split face, flame or thermal are:
 - .1 Curbs and Plinths
Top saw-cut /flamed surface
Bottom saw-cut

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GRANITE CURBS, PLINTHS AND BENCH

Exposed Sides - saw-cut/flamed surface
 Ends - saw-cut
 Chamfer - saw-cut with flamed surface

- .4 Flame or Thermal Finish: flat face and upper curb surfaces with a thermal finish produced by burning the granite surface with a mechanically controlled flame. Ensure uniform coarseness of finish texture on the granite surfaces and throughout individual pieces of granite. Ease all edges slightly to prevent chipping. Ensure maximum surface deviation of 4 mm.
- .4 Concrete: Refer to Section 03 30 00 and produce a compressive cylinder strength of 30 MPA at 28 days.
- .5 Reinforcement: Refer to Section 03 20 01.
- .6 Joint Filler: Refer to ASTM D1751-04(2008) 12 mm performed non-extruding, resilient, bituminous type.
- .7 Caulking: polyurethane, one-part moisture curing, CAN/CGSB-19.13-M87, Type II, Class 'A' (Tremco Vulkem 116), black and dark bronze colour (submit samples). Colour to match stone. Primer: Tremco, Vulkem Primer No. 171
- .8 Epoxy Grout: submit manufacturer's product data for review by the NCC Representative.
- .9 Salvaged Granite Border: granite pavers recuperated from site, sawcut down using sizes indicated on the drawings. Refer to Section 04 46 07
- .10 Joint Sand: polymeric sand for salvaged granite border only. Refer to Section 04 46 07

PART 3 - EXECUTION

3.1 Granular Base

- .1 Restore existing granular base where disturbed by the removal of existing pavement. Add or remove granular base material as necessary to meet specified depths under the curbs.
- .2 Obtain the NCC Representative's approval of sub-grade before placing the granular base.
- .3 Place granular base material according to specified alignment, widths, and depths or as directed.
- .4 Compact the granular base to at least 100% of the maximum dry density, in accordance with ASTM D698-12, Method C.

3.2 Layout and Approval

- .1 Layout work and have the NCC Representative approve the alignment and profile of the curbs and plinths before the installation of the granite.

GRANITE CURBS, PLINTHS AND BENCH

- .2 Erect string-lines for assistance in alignment and making minor adjustments if required.

3.3 Granite Curbing

- .1 Install granite curbs with string-lines and bricks or concrete blocks to adjust grade.
- .2 Supply brick spalls or other approved material for minor adjustments to line and grade. The use of timber wedges will not be permitted.
- .3 Trim curbs to require lengths so that they join at the locations specified in the drawings.
- .4 Clean all sawn faces to remove rust stains and iron particles.

3.4 Concrete Gutter

- .1 Obtain the NCC Representative's approval of granular base before placing formwork, reinforcing steel or concrete.
- .2 For reinforcement, refer to Section 03 20 01.
- .3 For concrete work, refer to Section 03 30 00 and as specified.
- .4 Ensure that curbs are not disturbed during concreting.
- .5 Protect the top and face of granite curb from abrasion and concrete spills with securely fastened plastic sheeting or other approved material. Clean up splashes immediately to leave all exposed granite in perfect condition.

3.5 Joints

- .1 Granite:
 - .1 Minimum width of joint between the granite curbs: 6 mm (except for permeable granite pavers area: larger joints).
 - .2 Prepare the ends of the granite curbs and plinth— approximately at right angles to the tangent of the top and front face of the curb. For curved alignments, the ends must be exactly at right angles so that when placed end to end with the specified 6-mm minimum spacing, no more than 10 mm shall show in the joint for the full width of the top surface and entire exposed front face.
 - .3 Provide a spacing of 100 mm between the curbs and granite benches for the infiltration openings, as shown on the drawings.

3.6 Caulking

- .1 Prime surfaces mix and apply caulking in accordance with Manufacturer's directions.
- .2 All joints between curbs to be caulked flush with surface.

~~Confederation Boulevard Esplanade
Rehabilitation
(Phase I sector) Rehabilitation,
Laurier Street, Gatineau
Project No.: DC4820-
02 Confederation Boulevard
Laurier Street Esplanade
Rehabilitation
Project No.: RD-583874~~

Section 04 43 17

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Page 5 of 5
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**GRANITE CURBS, PLINTHS
AND BENCH**

- .3 Clean up spills to the NCC Representative's approval.
- .4 Caulk around catchbasin frames as specified.
- .5 Caulking must be applied to dry surfaces.

3.7 Curing

- .1 Curing of concrete and mortar to be in accordance with Clause 21 of CSA Standard CAN-A23.1-09/A23.2-09, with the exception of curing compounds. This will not be permitted.

3.8 Allowable Tolerances

- .1 Curbs and plinths shall be within 12 mm of established alignment and elevation.

END OF SECTION

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PART 1 - GENERAL

.1 Related Work

- | | | |
|----|------------------------------------|---------------------|
| .1 | Shop drawings, Product Data (etc.) | Section 00 13 40 |
| .2 | Sitework Demolition and Removal | Section 02 41 13.01 |
| .3 | Aggregate – General | Section 31 05 16 |
| .4 | Geotextiles | Section 31 32 19.01 |
| .5 | Concrete Unit Pavers | Section 32 14 13 |
| .6 | Structural Soil | Section 32 11 25 |
| .7 | Metal Works | Section 05 55 00 |

.2 Scope of Work

- .1 Provide all materials, labor, equipment and services necessary to complete the work of this section, including the cutting of natural stone to sizes, shapes and dimensions indicated on the drawings. This includes the following items:
- .1 Cut and place recycled granite pavers for front border
 - .2 Cut and place recycled granite pavers for tree wells
 - .3 Provide and place pea gravel, crushed granite, steel collar, and spacers for tree wells
 - .4 Supply all other materials required to complete the installation of the pavers and borders.

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.3 References

- .1 CAN/CSA A23.1-M90, Concrete Materials and Methods of Concrete Construction.
- .2 CSA A283-1980, Qualification Code for Concrete Testing Laboratories.
- .3 CAN3-A231.2-M85, Precast Concrete Pavers.
- .4 ASTM C979-82(1986), Standard Specification for Pigments for Integrally Colored Concrete.
- .5 ASTM C131-89, Standard Test Method for Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

.4 Supply of Materials

- .1 Reuse the recycled granite removed from the site.

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.2 Supply all other materials and equipment required to complete the work.

.5 Mock-ups

Mock-up : A mock-up area shall be provided on site at the time of paver installation. This mock-up will be the on-site reference for installation and workmanship. The linear length of the sample should be 5 metres, including the band along the edge of the granite curb, as well as the periphery of the tree wells. Coordinate the granite paver mock-up with a unit paver mock-up, as stipulated in the relevant section 00 13 40. Only paver installations matching the approved final mock-up area will be acceptable. The mock-up location to be determined by the NCC Representative.

.6 Product Samples

- .1 Provide samples of the cut pavers following the requirements of section 00 13 40.
- .2 Provide full size samples for each paver type.

.7 Quality Assurance

- .1 The Contractor or their subcontractor to provide only skilled stone masons, supervised by foremen experienced in type of work specified.
- .2 The Contractor or their subcontractor must demonstrate that they have completed similar work within the last five (5) years.
- .3 Provide sufficient labour and equipment to complete the work quickly.
- .4 Only granite installations matching the approved sample will be acceptable for the project.

.8 Delivery and Storage

- .1 Carefully pack finished granite taking all necessary precautions to prevent damage during loading, transit and storage before installation.
- .2 Correctly place granite together in manageable volumes using slatted hardwood crates or another appropriate packing system approved by the NCC Representative.
- .3 Use no blocking or packing material that may cause staining or discolouration of the granite.
- .4 Before shipping, store packed granite in a location where it will not be subject to accidental shock, staining or other damage.
- .5 Provide the necessary protection for granite stored for prolonged periods to prevent staining or damage.
- .6 Establish an inventory of granite pavers to permit delivery upon request by the NCC Representative with a notice of seven days.
- .7 Load granite carefully using all necessary precautions to prevent damage during transit.
- .8 Coordinate shipping schedules with the NCC Representative and installation Contractor(s) to ensure uninterrupted timely deliveries and that the product is available on-site as needed.
- .9 Determine the exact location for unloading on-site with the NCC Representative and the installation Contractor(s).

- .10 Unload the granite only onto stable and safe ground.
- .11 Ensure that granite pavers are stored in location(s) where they will not be subject to accidental shock, staining or other damage.

PART 2 - PRODUCTS

.1 Materials

.1 Granite for tree wells (Type F):

- .1 All pavers are recycled granite from granite slabs scheduled for removal from the site. The slabs must be thoroughly cleaned with a jet of water at high pressure.
- .2 Recycled paver size (nominal) :
 - .1 250 x 150 x 50 mm
- .3 Finish
 - .1 Top : saw-cut/flamed surface
 - .2 Bottom : saw-cut
 - .3 Sides : split face
- .4 Split face finish (type F) : Surface to be broken along a fault. Maximum variation along split face : 6mm.
- .2 Setting Bed for pavers and front borders: Clean sand conforming to CSA A23.1-06, section 5.3.2.
- .3 Setting Bed for tree wells : Crushed granite, 6 mm.
- .4 Provide a sample for approval before installation.
- .5 Non-woven geotextile, "Texel" type no. 7609 or approved equivalent.
- .6 Crushed granite, 3-6 mm diameter to fill joints with similar color to granite pavers. Provide a sample for approval.

.7 Granite for front border (Type G) :

- .1 Granite border pavers must be recycled from existing granite. They are to be cleaned with a jet of water at high pressure.
- .2 Dimensions
 - .1 Dimension : 750 x 400 x 50 mm
- .3 Finish :
 - .1 Top : saw-cut, flamed and chamfered esplanade side
 - .2 Bottom : saw-cut
 - .3 Sides : saw-cut
 - .4 Ends : saw-cut

.4 Joint Filler for granite border: In accordance with section 31 05 16.

.8 Granite for paver lights border (Type H) :

.1 Granite border pavers must be recycled from existing granite. They are to be cleaned with a jet of water at high pressure.

.2 Dimensions

.1 Dimension : length varies x 154 x 50 mm

.3 Finish :

.1 Top : saw-cut, flamed and chamfered esplanade side

.2 Bottom : saw-cut

.3 Sides : saw-cut

.4 Ends : saw-cut

.4 Joint Filler for granite border: In accordance with section 31 05 16.

.4

.8.9 Granite for tree grids:

.1 Granite pieces for tree grids must be recycled from existing granite. The granite pieces should be assembled following specifications and steel collar installation.

.2 Nominal dimensions

.1 Dimensions : 250 x 65 x 50 mm

.3 Finish :

.1 Top : saw-cut/flamed surface

.2 Bottom : saw-cut

.3 Sides : split face

.4 Natural pea gravel 10 mm diameter to fill joints with color similar to granite pavers. Provide a sample for approval.

.2 Material for Setting Bed and Joint Filler

.1 Hardness : In accordance with ASTM C 131, « A » caliber. 50% maximum mass loss.

.2 Concrete sand : Clean, related to silica, not plastic, free of foreign or harmful material, stabilized with cement powder.

.3 Granulometry : Selon CAN/CS-23.1, Tableau 1 – « Grading Limits for Fine Aggregate », comme suit :

Sieve	% passing
Designation	
10 mm	100
5 mm	90 – 100

2.5 mm	80 – 100
1.25 mm	50 – 85
630 microns	25 – 60
315 microns	10 – 30
160 microns	5 – 15
75 microns	0 – 8

4 Cleaning Product:

5.4 Colourless organic solvent, designed and recommended by the manufacturer for cleaning granite pavers from incurred contamination.

PART 3 - EXECUTION

.1 Allowable Tolerances

- .1 Finish pavement surfaces within 6mm of established elevations, within 1.5mm of adjacent surfaces at joints between pavers, manholes and other features within paved areas, and within 3mm under a 3m long straightedge.
- .2 Tolerance for filling granite paver joints around trees wells to comply with relevant drawing details.

.2 On-site conditions

- .1 Start the work of this section only when the surface temperature is at least 2 degrees C and is on the rise.
- .2 Interrupt paving when the temperature falls below the prescribed minimum.

.3 Granular Base

- .1 Ensure that the granular base complies with the grading and compaction requirements for installing pavers. If there is a discrepancy, notify the NCC Representative and do not start work without approval.
- .2 Verify that the surface does not exceed structural differences of ± 10 mm-, measured on a rule of three (3) meters.
- .3 Do not install on a frozen structural surface.

.4 Cutting Granite on the Jobsite

- .1 The conversion of existing granite pavers, slabs and edging strips must be performed off-site at an appropriate facility.
- .2 Provide appropriate equipment for cutting granite pavers with precision so that they blend well with the existing conditions and layout patterns prescribed for pavers.

- .3 Perform all required cuts to on-site adjustments, nearby or within the paved areas.
 - .4 Make all circular or other cuts as required in an approved manner.
 - .5 When the granite pavers cut on-site are in place, there should be no more than a 6 mm gap between the pavers and adjacent surfaces.
 - .6 Clean all sawn faces to remove rust stains and iron particles.
 - .7 Cut only what is prescribed or required so that the stones can be arranged according to prescribed patterns and adjusted to existing structures. Unnecessary cuts are prohibited.
- .5 Sand Setting Bed
- .1 Place and tamp the sand using approved methods while respecting specified depths and tolerances.
 - .2 Install a geotextile directly on the ground before installing the setting bed.
- .6 Granite pavers installation around tree wells
- .1 Place, lightly tamp and carefully level the crushed granite setting bed, to the specified depth.
 - .2 Install spacers strips 20 mm, as specified on drawings.
 - .3 Install recycled granite pavers for tree wells as indicated on the drawings, taking care to install the spacers correctly before. A sample tree wells is to be submitted to the NCC Representative for approval.
 - .4 Place a 50 mm thick layer of crushed granite 3 – 6 mm diameter inside the paver gaps as shown in the detail and following the instructions of the NCC Representative.
 - .5 Install recycled granite tree grids for tree wells as indicated on the drawings after tree installation, taking care to install the steel collar correctly before. A sample tree grid is to be submitted to the NCC Representative for approval.
 - .6 Place a 50 mm thick layer of natural pea gravel 10 mm diameter inside the tree grid gaps as shown in the detail and following the instructions of the NCC Representative.
 - .7 Install pavers as indicated on the drawings making sure they fit well.-
- .7 Placing granite edge borders
- .1 Place the pavers by hand, following the patterns and alignment, according to the directions of the NCC Representative.
 - .2 Use appropriate pavers for the ends, edges and corners. Sawcut the pavers to adjust for obstacles or adjacent structures.
 - .3 Inspect, remove and replace chipped, broken or damaged pavers.
 - .4 Sweep joint filler material until joints are full and pass the plate tamper over the pavers.
 - .5 Continue applying the joint filling material and passing the plate tamper until joints are full.

- .6 Sweep and rid the site of joint filling material when the installation is complete.
- .8 Filling joints for granite edge border pavers
 - .1 Use sand filler: polymer sand, in accordance with manufacturer's instructions.
 - .2 Fill joints to the level indicated on the drawings, tamping the premixed filler in the joints.
 - .3 Add the required amount of material until the joints are filled to the prescribed level.
- .9 Cleaning
 - .1 Perform cleaning at the time and conditions recommended by the manufacturer of the cleaning product and as directed by the NCC Representative.
 - .2 Remove materials from the cleaning surface and dispose of the excess material.
 - .3 Apply a cleaner suitable for removing various contaminants encountered, in accordance with the manufacturer's recommendations.
 - .4 The final surface must be free of contamination.

END OF SECTION

PART 1 - GENERAL

- .1 Related work
 - .1 Tree, shrubs and ground cover planting Section 32 93 10
- .2 Scope of work
 - .1 Examine the plans and specifications and provide all metal works specified or required to complete the work, including traffic signs and collars and other steel when necessary to complete this work.
- .3 References
 - .1 ASTM A53, Specification for Pipe, Steel, Black and Hot Dipped, Zinc Coated Welded and Seamless.
 - .2 ASTM A307, Specification for Carbon Steel Bolts and Studs, 60 000 psi Tensile.
 - .3 ASTM A780-80, Repair of Damaged Hot-Dip Galvanized Coatings.
 - .4 CAN/CSA G40.21, Structural Quality Steels.
 - .5 CAN/CSA G164, Hot Dip Galvanising of Irregularly Shaped Articles.
 - .6 CAN/CSA S16.1, Limit States Design of Steel Structures.
 - .7 CSA W59, Welded Steel Construction (Metal Arc Welding).
 - .8 All welds shall be made in accordance with the latest edition of CAN/CSA-1059.
- .4 Shop drawings
 - .1 Submit shop drawings as referred to Section 00 13 40.
 - .2 Shop drawings shall indicate or show materials, heights, finishes, connections, joints, method of anchorage and the number of anchors, supports, reinforcements, details and accessories.
- .5 Protection

PART 2 - PRODUCTS

- .6 Materials
 - .1 Profiles and steel plates: as referred to CAN3-G40.21-M81, shade 300 W.
 - .2 Welding material : as referred to CSA W59-1982.
 - .3 Bolts and anchor bolts: as referred to ASTM A325 & ASTM A307-82A.
 - .4 Hardware: All hardware (bolts, washers, nuts, etc.). should be galvanized.
 - .5 Zinc-rich primer: Galvicon or ZRC type primer, or equivalent to Can/CGSB-1.181.

.6 Galvanized metal cleaner: Sico 771-104 or Rust-Oleum 3599 industrial pure strength.

.7 Structures

.1 The construction works must be square and aligned as prescribed size, the joints must be tight and properly secured.

.2 Structures should be adjusted and assembled in the workshop and delivered ready to install.

.3 Visible welds shall be continuous over the entire length of the joint and shall be filed down or ground so as to present a smooth and even surface.

.8 Finish

.1 Galvanizing: hot dipped galvanizing with zinc cover 600g/m², according CAN/CSA-G164.

.9 Steel collard

.1 Steel collars must be shaped according to the shape and dimensions specified.

.2 Galvanize after fabrication collars.

PART 3 - EXECUTION

.10 Installation

.1 Weld material as referred to CSA W59.

.2 The construction works must be square and aligned as prescribed size, the joints must be tight and properly secured.

.3 Supply and install suitable anchoring devices approved by the NCC Representative.

.4 Fix articles on the site with bolts in accordance with the latest edition of CSA and CSA S16 S1653.

.5 Place items to be fixed in concrete with their templates.

.6 Take care not to damage the galvanized steel on the site. Prevent nicks, dents or scratches. If galvanizing is damaged, apply a coat of zinc rich paint on bare metal.

.7 Once the installation is completed, do the welds on the site, bolts and burnt or scratched surfaces with a primer.

END OF SECTION

PART 1 - GENERAL

1.1 Related Work

- .1 Section 04 43 17 – Granite Curbs, Borders, Plinths

1.2 References

Unless specified otherwise, all welding must be done in compliance with the latest edition of:

- .1 Canadian Standards Association
CSA W59-03(R2008) 'Welded Steel Construction (Metal Arc Welding)'.
.2 Canadian General Standards Board
CAN/CGSB 1.181-99 'Ready-Mixed Organic Zinc-Rich Coating'

1.3 Shop Drawings

- .1 Submit shop drawings as referred to Section 00 13 40.
- .2 Submit a shop drawing for the work covered by this section clearly indicating the cutting of the existing light pole, welding, connections, and finishes.

1.4 Painting

- 1. Paint all light pole components to match original finish

PART 2 - PRODUCTS

2.1 Materials

- .1 Welding material as per W59.
- .2 Zinc-rich primer: Galvicon or ZRC type primer, or equivalent to Can/CGSB-1.181.
- .3 Galvanized metal cleaner: Sico 771-104 or Rust-Oleum 3599 industrial per strength.

PART 3 - EXECUTION

3.1 Installation

- .1 Disconnect and remove twelve (12) Confederation Boulevard pedestrian lights. Disassemble light fixture as required to carry out work described in this section. Protect components.
- .2 Enhance basic streetlights with cement grout as indicated on plans and details. Provide expansion anchors and lines with the same specifications as the existing. Caulk openings with duct sealant

- .3 Following completion of granite plinths, reassemble, install and reconnect light fixtures to original concrete bases. Use anchor bolt extensions to anchor light poles to base.
- .4 Reconnect wiring.
- .5 Adjust pole to plumb position.
- .6 Install base shroud.

END OF SECTION

PART 1 – GENERAL PROVISIONS

1.1. DEFINITIONS

- .1 "Provide" means supply and install.
- .2 "Approval" means approval in writing from the Consultant or authorities having jurisdiction.
- .3 "Consultant" means the Engineer or the consulting engineering firm.
- .4 "Owner" means the owner or owner representative.

1.2. GENERAL CONDITIONS

- .1 Conform to requirements of the General Conditions. Provide all labour, materials, products, equipment, services and all incidentals required to complete, test and commission all electrical work shown on the drawings and/or noted hereunder.
- .2 Electrical work shall be carried out by a contractor holding a valid Contractor's license and qualified electricians who hold valid Quebec Certificates of Qualification.

1.3. CODES AND STANDARDS

- .1 Do complete installation in accordance with applicable codes, including but not necessarily limited to current electrical code CSA C22.1, pertinent Canadian Electrical Code bulletins and the requirements of all authorities having jurisdiction.

1.4. PERMITS AND FEES

- .1 Obtain permits necessary for the execution of the electrical work. On completion of the work furnish copies of the Certificates of Acceptance from the Inspection Authority and pertinent authorities having jurisdiction. Pay all associated costs and fees, including any premiums associated with work schedule.

1.5. WARRANTY

- .1 Warrantee all work, materials, equipment and installations to be free of all defects, for 12 months from date of acceptance by the Owner or Owner's representative.

1.6. SITE VISIT

- .1 Acquire full working knowledge of building site and any existing conditions which may affect the work. Visit site prior to Tender submission.

1.7. CONTRACT DRAWINGS

- .1 Contract drawings for electrical work, are in part diagrammatic, intended to convey the scope of work and general arrangement of equipment, conduit and outlets. Before installation, verify the physical location of all electrical equipment with all other installations and report any obstructions or interferences. No extra payments arising from failure to make this verification will be considered.
- .2 Drawings indicate the general layout of the complete electrical system, arrangement of feeders, circuits, outlets, switches, controls, panelboards, distribution centres, light fixtures and other work.

- .3 The drawings indicate the general location and routes to be followed, but do not show all conduit and/or wiring or all the structural, mechanical and architectural details. Plan and install conduit runs respecting all applicable conditions including structural, architectural and mechanical details. Bring obvious discrepancies or omissions to the attention of the Consultant during the Tender Period, at least five working days prior to Tender Closing.

1.8. SHOP DRAWINGS

- .1 Submit six (6) copies of shop drawings, stamped by the electrical contractor, to the Consultant with transmittal for review. Review of shop drawings indicates only that the quality and general design of the equipment is acceptable. Verification of detailed design compliance, dimensions and quantities, or the location of connections to equipment, shall be the responsibility of the Contractor. Contractor shall verify shop drawings prior and after review by consultant to ensure proposed equipment suitable with proposed installation by the contractor.
- .2 Show details of construction, dimensions, capacities, weights, all electrical data and performance characteristics, on shop drawings. All wiring diagrams, control schematics and descriptions of operation must also be included. Submit shop drawings for:
 - .1 - Distribution equipment, including Panelboards, breakers, disconnect switches, receptacles, switches etc. and hand holes and infrastructure equipment.
 - .2 - Lighting fixtures with complete information on dimensions, weights, etc. photometric data, lamps, ballasts, voltage, sound ratings and internal wiring diagrams.
 - .3 - Details of interconnecting wiring.

1.9. DEMONSTRATION AND INSTRUCTION

- .1 Provide demonstration and instruction sessions to familiarize facility operation and maintenance personnel with electrical systems and their operation and maintenance.

1.10. COMMISSIONING

General Electrical Installation:

- .1 Inspect, test and commission all equipment and work provided under this contract to demonstrate and verify correct operation. Rectify and replace, at no cost to the Owner, any faulty operation and faulty equipment.
- .2 Prior to energising, megger all feeders using a 500V instrument for up to 347V systems, and record results on approved verification forms. Check insulation resistance to ground before energizing.
- .3 Perform ground continuity and resistance tests using method appropriate to site conditions and to approval of Engineer and local authority having jurisdiction over installation.
- .4 Inspect, test and commission all motor controls.
- .5 Inspect, test and commission all lighting fixtures, lighting components e.g. ballasts, lamps etc., related switching and operation of emergency and exit lights.

1.11. OPERATION AND MAINTENANCE MANUAL

- .1 Submit one manual to the Consultant for approval prior to formal submission of three copies to the Owner. Include in manuals, information based on the requirement listed under shop drawings. Operation and maintenance data to be sufficiently detailed with respect to design elements, operational procedures, technical data, construction features, component functions and

maintenance requirements to permit effective start-up, operation, maintenance, repair, modification, extension and expansion of any portion of the system. Include also all updated panel schedules, testing and commissioning results, certificate of acceptance by authorities having jurisdiction.

1.12. AS BUILT DRAWINGS

- .1 Submit to the Owner one complete set of prints of drawings showing accurate as-built electrical installations including all conduit and wiring. Revisions shall be noted in red ink. Provide neatly typed updated panel directories for all panels affected including existing panel information.

1.13. PROTECTION

- .1 Take precautions to protect the occupants and personnel from injury due to live circuits. Protect all finished and unfinished work from damage due to carrying out this work. Also provide full dust protection during construction. Keep equipment dry and clean at all times. Protect all existing services to remain in and around the areas of renovations.

1.14. EXISTING SERVICES

- .1 Give the Owner ample notice of each necessary interruption of electrical service during the course of the work. Unavoidable interruptions to existing systems/installations, if any, shall be of the shortest possible duration and each such interruption shall require the specific approval of the Owner. Submit a schedule of all anticipated interruptions, identifying exactly what the interruption is, how long it will be, when it is planned to occur and which area(s) will be affected. Give the Owner a minimum of two weeks notice related to each necessary interruption. The Owner reserves the right to deny approval for an interruption on any specific date or time. In this case, coordinate the electrical isolation of the equipment with the Owner at the applicable source: electrical kiosk K399, K318, or K319.

1.15. DEMOLITION AND RECUPERATION

- .1 Refer to Notes on drawing AP02. Render safe the installations at locations from which the existing installations and equipment has been removed as part of this work.
- .2 Remove from the site all existing equipment and materials, which becomes obsolete as a result of this work except where specifically noted otherwise.

1.16. CUTTING AND PATCHING

- .1 Arrange for the General contractor to do all cutting/core drilling and patching required for the electrical installations. Before carrying out any cutting, obtain written approval from the Owner.

1.17. CLEAN UP AND REPAIR

- .1 Carry out the required cleanup at the end of each day in work areas. Remove all tools, equipment, ladders and empty cardboard boxes etc. and leave the premises clean.
- .2 The Electrical Contractor shall also be responsible for making good any damage to walls, floors, ceilings, woodwork, finishes, etc. caused directly or indirectly as a result of his work.

PART 2 – GENERAL MATERIALS

2.1. MATERIALS AND EQUIPMENT

- .1 Equipment and material supplied as part of the electrical work shall be new and CSA approved for the application.

2.2. CONDUIT

- .1 Wiring shall be in conduit unless specifically indicated otherwise. Provide Rigid PVC throughout c/w watertight coupling and connectors except where specified otherwise. Install Polypropylene, minimum 180 kg pull strength pull cords in empty raceways and fasten cords at each end. Duct size to match existing installation.

2.3. FASTENING AND SUPPORTS

- .1 Use lead anchors to secure equipment to solid masonry, tile and plaster surfaces. Use expandable inserts to secure equipment to poured concrete.

2.4. CONDUIT AND CABLE IDENTIFICATION

- .1 Colour code conduits, boxes and metallic sheathed cables. For boxes, identify the cover as well as inside each box. Follow base building system of identification. Otherwise agree on identification system with the Consultant.

2.5. WIRING

- .1 Type RWU-90 copper, 600V to maximum #10 AWG and 1000V #8 and larger, XLPE insulation. Solid conductors to #10 AWG, stranded conductors #8 AWG and larger. Minimum branch circuit conductors shall be #12 AWG except for 120V control circuits, minimum size of wire shall be #14 AWG. Cables sized to match existing installation.
- .2 Cable extensions using heavy duty copper compression lug sealed with shrink tubing rated for direct burial use.

2.6. WIRING IDENTIFICATION

- .1 Identify wiring with permanent indelible identifying markings either numbered or coloured plastic tapes, on both ends of phase conductors of feeders and branch circuit wiring. Colour code: to CSA C22.1.

2.7. GROUNDING / BONDING

- .1 Bond to ground all equipment with approved fittings and bond conductors of ample capacity as required by Grounding to CSA C22.1, "Electrical Safety Code".
- .2 Install complete permanent, continuous, system and circuit, equipment, grounding/bonding systems including, electrodes, conductors, connectors, accessories, as indicated, to conform to requirements of Consultant, and local authority having jurisdiction over installation. Provide insulated ground wires for all branch circuits and motor circuits by running the bonding wires in the same conduit as follows:
- .3 For branch circuits using shared neutrals, install one bonding wire per neutral.
- .4 For circuits using individual neutrals for each circuit, use one bonding wire per circuit.

- .5 Minimum size of bonding wire to be #12 AWG copper. Install continuous bonding conductors through all conduits/raceways for systems operating above 50 volts, bond at each box and device. Bond to ground all metallic raceways for systems, i.e. security, telephone etc.

End of section

PART 1 - GENERAL

1.1 Related Work

- .1 Section 00 13 40 Shop Drawings, Product Data, Samples and Mock-ups
- .2 Section 32 11 16.01 Granular Sub-base
- .3 Section 32 11 23 Aggregate Base Courses

1.2 References

- .1 ASTM D4791-10, Test Method for Flat or Elongated Particles in Coarse Aggregate.

1.3 Samples

- .1 Submit samples in accordance with Section 00 13 40 - Shop Drawings, Product Data, Samples and Mock-ups.
- .2 Provide NCC Representative with access to source and processed material for sampling.
- .3 Pay cost of sampling and testing of aggregates which fail to meet specified requirements.

PART 2 - PRODUCTS

2.1 Materials

- .1 Aggregate quality: sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material, clay lumps or minerals, or other substances that would act in deleterious manner for intended use.
- .2 Flat and elongated particles of course aggregate: to ASTM D4791-10.
 - .1 Greatest dimension to exceed five times least dimension.
- .3 Fine aggregates satisfying requirements of applicable section to be one, or blend of following:
 - .1 Natural sand.
 - .2 Manufactured sand.
 - .3 Screenings produced in crushing of quarried rock, boulders and gravel.
- .4 Coarse aggregates satisfying requirements of applicable section to be one of or blend of following:
 - .1 Crushed rock.
 - .2 Gradations to be within limits specified when tested to ASTM C136-06 and ASTM C117-04. Sieve sized to CAN/CGSB-8.1-88.

AGGREGATES - GENERAL

GRADATION REQUIREMENTS***

MTO SIEVE DESIGNATION	PERCENTAGE PASSING	
	GRANULAR 'A'	GRANULAR 'B' TYPE II ****
150 mm	-	100
37.5 mm	-	-
26.5 mm	100	50-100
19 mm	85-100 87-100*	-
13.2 mm	65-90 75-95*	-
9.5 mm	50-73 60-83*	-
4.75 mm	35-55 40-60*	20-55
1.18 mm	15-40	10-40
300 um	5-22	5-22
50 um	-	-
75 um	2-8 2-10**	0-10

.3 Type 3 fill: selected material from excavation or other sources, approved by NCC Representative for use intended, unfrozen and free from rocks larger than 200 mm, cinders, ashes, sods, refuse or other deleterious materials.

.5 Clear Granular: 18 mm diameter clear crushed limestone, no fines.

2.2 Source Quality Control

.1 Inform NCC Representative of proposed source of aggregates and provide access for sampling at least 4 weeks prior to commencing production.

.2 If, in the opinion of NCC Representative, materials from proposed source do not meet, or cannot reasonably be processed to meet, specified requirements, locate an alternative source or demonstrate that material from source in question can be processed to meet specified requirements.

.3 Advise NCC Representative 4 weeks in advance of proposed change of material source.

.4 Acceptance of material at source does not preclude future rejection if it fails to conform to requirements specified, lacks uniformity, or if its field performance is found to be unsatisfactory.

PART 3 - EXECUTION

3.1 Preparation

- .1 Handling:
 - .1 Handle and transport aggregates to avoid segregation, contamination and degradation.
- .2 Stockpiling:
 - .1 Stockpile aggregates only where directed by NCC Representative. Do not stockpile on completed pavement surfaces.
 - .2 Stockpiling sites to be level, well drained, and of adequate bearing capacity and stability to support stockpiled materials and handling equipment.
 - .3 Except where stockpiled on acceptably stabilized areas, provide compacted sand base not less than 300 mm in depth to prevent contamination of aggregate. Stockpile aggregates on ground but do not incorporate bottom 300 mm of pile into work.
 - .4 Separate different aggregates by strong, full depth bulkheads, or stockpile far enough apart to prevent intermixing.
 - .5 Do not use intermixed or contaminated materials. Remove and dispose of rejected materials as directed by NCC Representative within 48 h of rejection.
 - .6 Stockpile materials in uniform layers of thickness as follows:
 - .1 Max 1.0 m for coarse aggregate and base course materials.
 - .2 Max 1.0 m for fine aggregate and sub-base materials.
 - .3 Max 1.0 m for other materials.
 - .7 Uniformly spot-dump aggregates delivered to stockpile in trucks and build up stockpile as specified.
 - .8 Do not cone piles or spill material over edges of piles.
 - .9 Do not use conveying stackers.
 - .10 During winter operations, prevent ice and snow from becoming mixed into stockpile or in material being removed from stockpile.

3.2 Cleaning

- .1 Leave aggregate stockpile site in tidy, well drained condition, free of standing surface water.
- .2 Dispose of any unused aggregates as directed by NCC Representative.

END OF SECTION

PART 1 - GENERAL

- | | | |
|---------------------------|----|---|
| 1.1 Related Work | .1 | Section 02 41 13.01 –Sitework Demolition and Removal |
| | .2 | Section 31 05 16 – Aggregate - General |
| | .3 | Section 32 11 25 – Structural soil |
| | .2 | Section 32 91 19.13 - Topsoil Placement and Grading |
| 1.2 Regulations | .1 | Shore and brace excavations, protect slopes and banks, and perform all work in accordance with current federal, provincial and municipal regulations, whichever is more stringent. |
| 1.3 Tests and Inspections | .1 | The results of the soil survey carried out are included in the documents of tender. |
| | .2 | Before commencing work, conduct, with the NCC Representative, a condition survey of structures, trees and other plants, turf, fences, service poles, wires and hard surfaces, barrier posts and existing survey marks that may be affected by work. |
| 1.4 Underground Services | .1 | Before commencing work, verify and establish the location of all underground services on and adjacent to the site. |
| | .2 | If necessary, make arrangements with the appropriate authorities for relocation of underground services that interfere with execution of work. Pay costs of relocating services. |
| | .3 | Remove obsolete underground services within 2 m of foundations. Cap cut-offs. |
| 1.5 Protection | .1 | Protect excavations from freezing. |
| | .2 | Keep excavations clean, free of standing water and loose soil. |
| | .3 | Where soil is subject to significant volume change due to a change in moisture content, cover and protect to the NCC Representative's satisfaction. |
| | .4 | Protect natural and man-made elements that are to remain undisturbed. Unless otherwise indicated, protect all existing trees from damage. |
| | .5 | Protect underground services that are to remain undisturbed. |

EARTHWORK

PART 2 – PRODUCTS

- 2.1 Materials
- .1 Backfilling: Use on-site excavated material for fill material that is permeable and construction debris.
 - .2 Granular materials from excavation may be used for backfilling.
 - 1. Structural soil. Reference to Section 32 11 25.
 - 2. Crushed stone. Reference to Section 31 05 16.
 - 3. Granular type “A” material. Reference to Section 31 05 16.
 - 4. Granular type “B” material. Reference to Section 31 05 16.

PART 3 – EXECUTION

- 3.1 Excavation
- .1 Strip topsoil in accordance with Section 32 91 19.13.
 - .2 Excavate as required to carry out earthwork as indicated. Do not disturb soil or rock below bearing surfaces. Notify the NCC Representative when excavations are completed.
 - .3 Excavate trenches to provide uniform continuous bearing and support for rock fill on solid undisturbed ground.
- 3.2 Backfilling
- .1 Inspection: do not commence backfilling until fill material and spaces to be filled have been inspected and approved by the NCC Representative.
 - .2 Harmful Material: remove snow, ice, construction debris, organic soil and standing water from spaces to be filled.
 - .3 Lateral Support: maintain even levels of backfill around structures as work progresses, to equalize earth pressures.
 - .4 Compaction of subgrade: compact existing subgrade under hard covered surfaces until compacted to prescribed density (95% P.M.). Fill excavated areas with acceptable fill material, compacted to prescribed density (95% P.M.).
 - .5 Compaction: compact each layer of material.
- 3.3 Grading
- .1 Grade by creating natural contour lines and eliminating depressions and protrusions, so as to promote drainage.
- 3.4 Surplus Material
- .1 Dispose of all surplus material off site to the approved location.

END OF SECTION

PART 1 - GENERAL

1.1 Related Work

- .1 Section 00 13 40 - Shop drawings/Products

1.2 References

- .1 CAN/CGSB-4.2-M (COMPLETE SET), Textile Test Methods.
- .2 CAN/CGSB-148.1(COMPLETE SET), Methods of Testing Geotextiles and Geomembranes.
 - .1 No. 3-85, Thickness of Geotextiles.
 - .2 No. 7.3-92, Grab Tensile Test for Geotextiles.
 - .3 No. 6.1-93, Bursting Strength of Geotextiles
 - .4 No. 10-94, Filtration Opening Size
 - .5 No. 4-94, Normal Water Permeability

1.3 Samples

- .1 Submit samples in accordance with Section 00 13 40.
- .2 Submit following samples to contract Administrator at least 1 week prior to commencing work. Minimum length of 2 m of roll width of geotextile

1.4 Mill Certificates: Submit to Contract Administrator one copy of mill test data and certificates at least 1 week prior to start of work.

1.5 Delivery and Storage: During delivery and storage, protect geotextile from direct sunlight, ultraviolet rays, excessive heat, mud, dirt, dust, debris and rodents.

1.6 Measurement for Payment: Geotextiles shall be paid for as part of granular material.

PART 2 - PRODUCTS

2.1 Geotextile

- .1 Non-woven geotextile LINQ 150 EX or approved equivalent, supplied in rolls:
 - .1 Width: 4.57 m minimum.
 - .2 Length: 100 m minimum.
 - .3 Tensile strength: 734 N minimum when wet.
 - .4 Filtration Opening Size (FOS) 70 to 100 micrometers.

PART 3 - EXECUTION

3.1 Installation

- .1 Place geotextile material by unrolling onto graded surface
- .2 Place geotextile material smooth and free of tension stress, folds, wrinkles and creases.
- .3 Overlap each successive strip of geotextile at least 450 mm over previously laid strip.

GEOTEXTILES

- .4 Protect installed geotextile material from displacement, damage, or deterioration before and during placement of stones.
- .5 Cover with granular material within 4 hours of placement.
- .6 Replace damaged or deteriorated geotextile to approval of contract Administrator.

3.2 Protection

- .1 No vehicles permitted directly on geotextile.

END OF SECTION

PART 1 - GENERAL

1.1 Related Work

- .1 Section 31 05 16 Aggregate – General
- .2 Section 32 11 23 Aggregate Base Courses

1.2 References

- .1 ASTM D698-12, Test Method for Moisture Density Relation of Soils and Soil Aggregate Mixture Using 2.49 kg Rammer and 304.8 mm Drop.
- .2 ASTM D1557-12, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN-m/M³).

PART 2 - PRODUCTS

2.1 Materials

- .1 Granular sub-base material to Section 31 05 16 - Aggregates - General and following requirements:
 - .1 Granular 'B' Type II per OPSS 1010.

PART 3 - EXECUTION

3.1 Placing

- .1 Place granular sub-base after subgrade is inspected and approved by NCC Representative.
- .2 Construct granular sub-base to depth and grade in areas indicated. Place and compact granular subbase in tree pits.
- .3 Ensure no frozen material is placed.
- .4 Place material only on clean unfrozen surface, free from snow and ice.
- .5 Place granular sub-base materials using methods which do not lead to segregation or degradation.
- .6 Place material to full width in uniform layers not exceeding 150 mm compacted thickness. NCC Representative may authorize thicker lifts (layers) if specified compaction can be achieved.
- .7 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
- .8 Remove and replace that portion of layer in which material becomes segregated during spreading,

3.2 Compaction

- .1 Compaction equipment to be capable of obtaining required material densities.

GRANULAR SUBBASE

- .2 Compact to density not less than 100% maximum dry density in accordance with ASTM D698 and ASTM D1557.
- .3 Shape and roll alternately to obtain smooth, even and uniformly compacted sub-base.
- .4 Apply water as necessary during compacting to obtain specified density.
- .5 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by NCC Representative.
- .6 Correct surface, removing material until surface is within specified tolerance.

3.3 Site Tolerances

- .1 Finished sub-base surface to be within plus or minus 15 mm of established grade and cross section but not uniformly high or low.

3.4 Protection

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

END OF SECTION

PART 1 - GENERAL

1.1 Related Work

- .1 Section 02 41 13.01 Sitework Demolition and Removal
- .2 Section 31 05 16 Aggregate - General
- .3 Section 31 32 19.01 Geotextiles
- .4 Section 32 14 13 Concrete Unit Paving

1.2 References

- .1 ASTM C117-13, Test Method for Material Finer Than 0.075 mm. In Mineral Aggregates by Washing.
- .2 ASTM C131-06, Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
- .3 ASTM C136-06, Method for Sieve Analysis of Fine and Coarse Aggregates.
- .4 ASTM D698-12, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN- M/M³).
- .5 ASTM D1557-12, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN_M/M³).
- .6 ASTM D1883-07e2, Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.
- .7 ASTM D4318-10, Test Method for liquid limit, Plastic limit and Plasticity Index Soils.
- .8 CAN/CGSB-8.1-88, Sieves Testing Woven Wire, Itech Series.
- .9 CAN/CGSB-8.2-M88, Sieves Testing Woven Wire, Metric.

1.3 Delivery, Storage and Handling

- .1 Deliver and stockpile aggregates in accordance with Section 31 05 16 - Aggregates - General.

PART 2 - PRODUCTS

2.1 Materials

- .1 Granular base: materials to Section 31 05 16 – ‘Aggregates – General’ and following requirements:
 - .1 Granular ‘A’ per OPSS 1010

PART 3 - EXECUTION

3.1 Sequence of Operation

- .1 Place granular base after sub-base surface is inspected and approved by NCC Representative.
- .2 Placing
 - .1 Construct granular base to depth and grade in areas indicated.
 - .2 Ensure no frozen material is placed.
 - .3 Place material only on clean unfrozen surface, free from snow and ice.
 - .4 Place material using methods which do not lead to segregation or degradation of aggregate.
 - .5 Place material to full width in uniform layers not exceeding 150 mm compacted thickness. NCC Representative may authorize thicker lifts (layers) if specified compaction can be achieved.
 - .6 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
 - .7 Remove and replace that portion of layer in which material becomes segregated during spreading.
- .3 Compaction Equipment
 - .1 Compaction equipment to be capable of obtaining required material densities.
 - .2 Equipped with device that records hours of actual work, not motor running hours.
- .4 Compacting
 - .1 Compact to density not less than 100% maximum dry density in accordance with ASTM D698 and ASTM D1557.
 - .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 by NCC Representative.
 - .5 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.
- .5 Proof rolling
 - .1 For proof rolling use standard roller of 45400 kg gross mass with four pneumatic tires each carrying 11350 kg and inflated to 620 kPa. Four tires arranged abreast with center spacing of 730 mm.
 - .2 Obtain approval from NCC Representative to use non-standard proof rolling equipment.
 - .3 Proof roll at level in granular base as indicated. If use of non-standard proof rolling equipment is approved, NCC Representative to determine level of proof rolling.
 - .4 Make sufficient passes with proof roller to subject every point on surface to three separate passes of loaded tire.

AGGREGATE BASE COURSES

- .5 Where proof rolling reveals areas of defective subgrade:
 - .1 Remove base, sub-base and subgrade material to depth and extent as directed by NCC Representative.
 - .2 Backfill excavated subgrade with sub-base material and compact in accordance with Section 32 11 16.01 - Granular Sub-base.
 - .3 Replace sub-base material and compact in accordance with Section 32 11 16.01 - Granular Sub-base.
 - .4 Replace base material and compact in accordance with this section.
 - .6 Where proof rolling reveals defective base or sub-base, remove defective materials to depth and extent as directed by NCC Representative and replace with new material in accordance with Section 32 11 16.01 - Granular Sub-base and this section at no extra cost.
- 3.2 Site Tolerances
- .1 Finished base surface to be within plus or minus 10 mm of established grade and cross section but not uniformly high or low.
- 3.3 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

PART 1 - GENERAL

- .1 Related Sections
 - .1 Section 00 21 13 – General Instructions.
 - .2 Section 31 32 19.01 – Geotextile.
 - .3 Section 32 14 13 –Concrete Unit Paving.
 - .4 Section 32 93 10 – Planting of Trees, Shrubs and Ground Covers.
 - .5 Section 04 46 07 –Recycled granite for pavers and tree wells
- .2 Outline of Work
 - .1 Provide all supervision, labour, equipment, tools, materials, consumables, transportation and other services necessary for undertaking and completing the work detailed and specified herein including but not limited to: installing of structural soil as a planting medium or intended as a foundation base for pavers intended for pedestrian use, as indicated on Contract drawings or established by the NCC Representative.
- .3 References
 - .1 American Society for Testing and Materials (ASTM):
 - .1 ASTM C 136-01, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .2 ASTM C97-02, Standard Test Methods for Absorption and bulk Specific Gravity of Dimension Stone.
 - .3 ASTM C99-87 (2000), Standard Test Method for Modulus or Rupture of Dimension Stone.
 - .4 ASTM C170-90 (1999), Standard Test Method for Compressive Strength of Dimension Stone.
 - .5 ASTM D698-00a, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN-m/m³).
- .4 Product Data (non applicable if provided by the NCC)
 - .1 Submit following sampling and testing data:
 - .1 Sieve analysis for the structural soil material.
 - .2 Chemical analysis of the clay loam determining all macro and micro nutrients and all qualities listed under 2.1.1.2.
- .5 Acceptance of Materials (non applicable if provided by the NCC)

- .1 The conditional acceptance of materials based on a sample or product data does not preclude the possibility of their subsequent refusal if they do not meet the specified requirements, are inconsistent or their performance on site is unsatisfactory.

.6 Waste Management and Disposal

- .1 Remove all extraneous materials from the site that will not be used as well as all waste material. The General Contractor is responsible for transportation of those materials in approved disposal sites.

PART 2 - PRODUCTS

.1 Structural soil

- .1 Soil patented under the commercial name of CU Soil (Cornell University Soil) and distributed only by local accredited supplier, product Earth-Stone Mixture 3152 by Savaria Limited (1-877-728-2742 - www.savaria.ca) or approved equivalent, consisting of a mixture of the following components:

- .1 19-38 mm calibre crushed granite, highly angular and free of fines.
- .2 Clay loam with an organic content between 2% and 5% and to pH 5,5 to 6.5.

<u>Mechanical Analysis</u>	<u>Percentage of Total Weight</u>
Gravel	Maximum of 5%
Sand	25 - 30 %
Silt	20 - 40 %
Clay	25 - 40 %

- .1 Soluble salt less than 1.0 Millimho per cm.
- .2 Cation Exchange Capacity (CEC) greater than 10.
- .3 Carbon/ Nitrogen Ratio less than 33:1.
- .3 Gelscape brand hydrogel - potassium propenoate-propenamide copolymer
- .4 Proportions of these components in the structural soil mixture:
 - 300 g/ mt hydrogel
- .5 It shall be free of stones greater than one-half inch, lumps, plants and their roots, debris and other extraneous material over one inch in diameter or excess of smaller pieces of the same materials as determined by the Engineer
- .6 It shall not contain toxic materials harmful to plant growth.
- .7 Optimum water content of the mixture 7.5 %.
- .8 The gradation of the structural soil mixture is indicated in the following table:

<u>Sieve Designation</u>	<u>% Passing</u>
56 mm	100

40 mm	80 – 100
31.5 mm	60 - 85
20 mm	20 - 35
14 mm	10 - 25
10 mm	10 - 25
5 mm	10 - 20
2.5 mm	8 - 20
1.25 mm	8 - 20
630 microns	7 - 20
315 microns	5 - 18
160 microns	5 – 15
80 microns	4 – 10

.2 Preparation and storage of structural soil

- .1 All Structural Soil mixing shall be performed at the Producer's yard or locally at a confined and protected area.
- .2 Prepare the structural soil in a manner that results in a homogeneous mixture. Use means to prevent contamination and degrading in quality.
- .3 Ensure that the structural soil retains the minimum percentage of humidity specified in order to maintain the hydrogel's properties during handling and transport.
- .4 The mixture must be prevented from drying before its use or during any storage period. Storage on site may not exceed three (3) consecutive days. Ensure that all amounts of structural soil stored in place are covered with a tarp.

PART 3 - EXECUTION

.1 Technical Assistance

- .1 The Contractor must retain the services of a technician recognised by an accredited supplier (Savaria Limited) in order to ensure quality control during the preparation of the mixture and its use during the execution of work.
- .2 The aforementioned technician will submit a written report regarding the installation of structural soil to the NCC Representative for approval.

.2 Sub Base

- .1 Verify that the sub base conforms to levels and compaction required for installation of structural soil. Surfaces should be mechanically compacted to 95 % Proctor density. If discrepancies occur, notify the NCC Representative and do not commence work until instructed by the NCC Representative.

.3 Drainage Layer

- .1 Install filter fabric on sub base to Section 31 32 19.01.
- .2 Install 20mm clean stone to depth specified and to section 31 05 16.

.4 Structural Surface

- .1 Install the structural soil in layers not exceeding 200 mm. Compact each layer to 95% Proctor density.
 - .2 Verify that top of structural surface does not exceed plus or minus 10 mm over 3 meters straightedge.
 - .3 Ensure that structural surface is not frozen or standing water is present during installation.
 - .4 Level structural soil before placing the bedding layer.
 - .5 Level and even out surface to respect the final levels.
- .5 Field Quality Control
- .1 Retain concrete testing laboratory accredited in accordance with CSA A238.
 - .2 Sample and test in accordance with CSA-A231.2 and ASTM D698.
 - .3 Submit test results to the Consultant for approval of installed structural soil.

End of section

PART 1 - GENERAL

1.1 Related Work

- .1 Section 00 13 40 Shop Drawings, Product Data, Samples and Mock-Ups
- .2 Section 04 43 17 Granite Curbs, Borders, Plinths
- .3 Section 04 46 07 Recycled granite for pavers and tree pits
- .4 Section 32 11 23 Aggregate Base Courses

1.2 Reference Standards

- .1 Do precast concrete work in accordance with CSA A231.1-06/A231.2-06(R2010).
- .2 Precast concrete unit pavers to NQ 2624-120/87.

1.3 Qualifications of Manufacturer

- .1 Manufacturer of precast concrete units must be certified by CSA regarding CSA Standard CSA A23.4-09, Category AC.

1.4 Allowable Tolerances

- .1 Manufacturer to follow CSA A23.4-09.

1.5 Mock-ups

- .1 Mock-up: A mock-up area shall be provided on site at the time of paver installation. This mock-up will be the on-site reference for installation and workmanship. The mock-up area to be approximately 4 m² and shall include straight and round paver cutting conditions. Only paver installations matching the approved final mock-up area will be acceptable. The mock-up location to be determined by the NCC Representative.
- .2 Co-ordinate unit paver mock-up with granite paving mock-up.

1.6 Delivery and Storage

- .1 Store units on a level area, on pallets, in order to obtain air flow around units.
- .2 Protect against staining.

PART 2 - PRODUCTS

2.1 Materials

- .1 Precast Concrete Pavers:
 - .1 Grey Portland Cement, granulates, water and admixtures: to CSA-A231.2.
 - .2 Compressive strength: 45 Mpa minimum: to NQ 2624-120.
 - .3 Resistance to freeze/thaw cycles in a 3% NaCl solution: loss of mass inferior to 1% after 50 continuous cycles; to NQ 2624-120.
 - .4 Absorption: 4% maximum.

- .5 Paver Sizes (nominal):
 - .1 400 mm length by 400 mm width by 100 mm depth; 300 x 300 x 100; 300 x 400 x 100; 300 x 600 x 100; and 500 x 500 x 100.
- .6 All pavers to be supplied from same production run to ensure uniformity of coloration, finish and other mix characteristics.
- .7 Colour and finish to match: "Megapaver", colour: "Confederation Boulevard Red" finish: "Roc Art", as supplied by Permacon Inc., 6775 Hazeldean Road, Stittsville, Ontario, (836-6194). Supplier has stockpiled mega paver product to insure timely delivery.
- .2 Setting Bed: Concrete Sand conforming to CSA A23.1-09. gradation for fine aggregate.
- .3 Joint Filler: Fine granular jointing sand in accordance with grading requirements of ASTM C144-11.

PART 3 - EXECUTION

- 3.1 Inspection
 - .1 Notify NCC Representative at the completion of setting bed.
- 3.2 Curbs
 - .1 Build granite and other type of curbs according to detail.
- 3.3 Setting Bed
 - .1 Place sand setting bed over granular base, as indicated on drawings to obtain a thickness of 12 - 20 mm after paver installation and compaction.
- 3.4 Allowable Tolerances
 - .1 Finish paving with surfaces within 6mm of established elevations, cross-sections and locations, within 1.5mm of other surfaces at joints between pavers, manholes and other features within paved areas, and with 3mm under a 3m long straightedge.
- 3.5 Surface Course
 - .1 Install paving units true to grade and in a manner which will make them perfectly stable.
 - .2 Install units with uniform butt joints, see 3.4.1.
 - .3 Where required, use the necessary machinery and equipment including special claws or suction-cup handles for placing units.
 - .4 Tamp or vibrate pavers into bed ensuring full contact on bottom surfaces. Use only rubber hammers or vibration equipment with rubber plates.
 - .5 All work within 1m of the laying face must be left fully compacted with sand filled joints at the completion of each day.
 - .6 Lay to pattern shown on drawings.
- 3.6 Cutting
 - .1 All cuttings to be done with diamond blade saw. Allowable tolerances not to exceed 5mm.
 - .2 Make all circular cuts required in an approved manner.
 - .3 Cut only where specified or required to fit existing features. Unnecessary cuts will not be accepted.
 - .4 Concrete pavers cut on site shall, when set in position, not have a gap between adjacent surfaces of more than 6mm.
 - .5 Grind chamfer on all top face edges where pavers have been cut to match precast

CONCRETE UNIT PAVERS

- .6 chamfer. Roughen ground chamfer to match finish of precast chamfer.
Remove, by saw, spacer bars from pavers as required to eliminate conflict with spacer bars of adjacent pavers.

- 3.7 Joint Filler
 - .1 Fill joints by sweeping joint sand into joints.
 - .2 Vibrate the pavers, sweeping dry sand into the joints and vibrating until they are full. This will require at least two or three passes with the vibrator, see 3.5.5.

- 3.8 Replacement
 - .1 Replace any unit showing visible flaws.

- 3.9 Cleaning
 - .1 With approved method, clean all dirty paving units to NCC Representative's entire satisfaction.
 - .2 Leave site clean to NCC Representative's satisfaction.

END OF SECTION

PART 1 - GENERAL

1.1 References

- .1 Canadian Council of Ministers of the Environment (CCME).
CCME PN 1340 'Guidelines for Compost Quality' issued January 1996 (Revision 2005),
Category (A) unrestricted, Category (B) restricted.'
- .2 Section 32 92 23 – Sodding
- .3 Section 32 93 10 – Trees, Shrubs and Groundcover Planting

1.2 Source Quality Control

- .1 An independent testing laboratory will carry out inspection and testing of topsoil.
Landscape Contractor will pay for costs of tests.
- .2 Test topsoil from source for clay, sand, and silt, Nitrogen (N), phosphorous (P),
potassium (K) and magnesium (Mg), (N, P, K, Mg,) soluble salt content, pH value, growth
inhibitors, soil sterilants organic matter, and conductivity. Submit 0.5 kg a sample of
topsoil to a testing laboratory and indicate present use, intended use, type of subsoil and
quality of drainage. Prepare and ship the sample in accordance with provincial
regulations and testing laboratory requirements.
- .3 Determine required limestone treatment to bring pH value of soil ranges between 5.5 to
7.5 levels.
- .4 Submit two copies of soil analysis and recommendations for corrections to Consultant.

1.3 Definitions

- .1 Compost: should be a mixture of soil and decomposing organic matter, for use as a
fertilizer, mulch, or soil conditioner. Compost should be processed organic matter,
containing 40% or more organic matter. The product must be sufficiently decomposed
(i.e. stable) so that any further decomposition does not adversely affect plant growth (a
carbon and nitrogen (C:N) ratio below 25 or 50) and contain no toxic or growth inhibiting
contaminates. Composed bio-solids must meet the requirements of the Waste
Management CCME PN 1340.
- .2 Friable: Soil, which is easily crumbled through fingers when held by hand.

PART 2 - PRODUCTS

2.1 Topsoil

- .1 All topsoil supplied by the Contractor will be fertile, friable, natural sandy loam containing
not less than 4% of organic matter for sandy loams with an acidity value ranging from pH
6.0 to pH 7.5 and capable of sustaining vigorous plant growth. It will be free of stems or
roots, stones and clods more than 50mm diameter or other extraneous matter.
Screening of topsoil will be required if designated by the Contractor Administrator.
Topsoil will not be supplied in a frozen state.
- .2 Topsoil to be imported:

- .1 Friable, neither heavy clay nor very light sandy nature consisting of 45% sand, 35% silt, 20% clay and pH value of 5.5 to 7.5. Free from subsoil, roots, vegetation, debris, toxic materials, and stones.
- .2 Organic Matter should be 4% for clay loams, and 2% for sandy loams too maximum of 20% by volume.
- .3 Contain no toxic elements or growth inhibiting materials.
- .4 Finished surface free from:
 - .1 Debris and stones more than 50mm's diametre.
 - .2 Course vegetative material, 10mm diametre, and 100 mm length, occupying more than 2% of soil volume.
 - .3 Consistency: friable when moist.

2.2 Soil Amendments

- .1 Fertilizer:
 - .1 Complete commercial synthetic fertilizer with minimum 65% insoluble nitrogen.
 - .2 Formulation ratio - 10-6-4, 10% nitrogen, 6% phosphoric acid, 4% potash.
 - .3 Adjust fertilizer as per soil test recommendations.
- .2 Peatmoss:
 - .1 Derived from partially decomposed fibrous or cellular stems and leaves of species of Sphagnum Mosses.
 - .2 Elastic and homogeneous, brown in colour.
 - .3 Free of wood and deleterious material, which could prohibit growth.
 - .4 Shredded particle minimum size 5 mm.
- .3 Sand: washed course silica sand, medium to course textured.
- .4 Limestone:
 - .1 Ground agricultural limestone containing minimum calcium carbonate equivalent of 85%.
 - .2 Gradation requirements: percentage passing by weight, 90% passing 1.0 mm sieve, 50% passing 0.125 mm sieve.
- .5 Bonemeal: finely ground with a minimum analysis of 20% phosphoric acid.

2.3 Source Quality Control

- .1 Advise Contract Administrator topsoil sources to be utilized with sufficient lead-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 A testing laboratory designated by the NCC Representative will carry out testing of topsoil. Soil sampling, testing, and analysis are to be in accordance with Provincial standards.

PART 3 - EXECUTION

3.1 Preparation of Existing Grade

- .1 Verify that grades are correct. If discrepancies occur, notify the Contract Administrator and do not commence work until instructions have been received.

- .2 Grade the soil, eliminating uneven areas and low spots, ensuring positive drainage. Remove soil contaminated with toxic materials. Dispose of removed materials as directed by Consultant.
- .3 Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials. Remove soil contaminated with calcium chloride, toxic materials, and petroleum products. Remove debris, which protrudes more than 75 mm above surface. Dispose of removed material off site.
- .4 Planting soil for planting of shrubs, and ground covers: mix 4 parts topsoil with 1 part peatmoss. Incorporate bonemeal into planting soil at rate of 0.5 kg/m³ of soil mixture.

3.2 Place and Spreading of Topsoil - Planting Soil

- .1 Spread topsoil after sub-grade has been approved. Refer to Drawings for direction of surface drainage.
- .2 Spread topsoil with adequate moisture in uniform layers not exceeding 150 mm, over approved, unfrozen sub-grade, where sodding, seeding, and planting is indicated.
- .3 Fill planters to levels indicated on drawings.

3.3 Soil Amendments

- .1 Apply soil amendments at rate as specified and as determined from soil sample test.
- .2 Mix soil amendments into full depth of topsoil prior to application of fertilizer.

3.4 Acceptance

- .1 Contract Administrator will inspect and test topsoil in place and determine acceptance of material, depth of topsoil and finish grading.

3.5 Surplus Material

- .1 Dispose of materials, except topsoil off site or as directed by the NCC Representative.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 01 74 11 – Cleaning.
- .2 Section 32 91 21 - Topsoil Placement and Grading.

1.2 SCHEDULING

- .1 Schedule sod laying to coincide with preparation of soil surface.
- .2 Schedule sod installation when frost is not present in ground.

1.3 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 11 – Cleaning.
- .2 Divert unused fertilizer from landfill to official hazardous material collections site approved by NCC Representative.
- .3 Do not dispose of unused fertilizer into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

Part 2 Products

2.1 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 Number One Kentucky Bluegrass Sod: Nursery Sod grown solely from seed of cultivars of Kentucky Bluegrass, containing not less than 50% Kentucky Bluegrass cultivars.
 - .2 Number One Kentucky Bluegrass Sod - Fescue Sod: Nursery Sod grown solely from seed mixture of cultivars of Kentucky Bluegrass and Chewing Fescue or Creeping Red Fescue, containing not less than 40% Kentucky Bluegrass cultivars and 40% Chewing Fescue or Creeping Red Fescue cultivar[s].
 - .3 Number One Named Cultivars: Nursery Sod grown from certified seed.
 - .2 Turf Grass Nursery Sod quality:
 - .1 Not more than 2 broadleaf weeds or 10 other weeds per 40 square metres.
 - .2 Density of sod sufficient so that no soil is visible from height of 1500 mm when mown to height of 50 mm.
 - .3 Mowing height limit: 50 to 65 mm.

SODDING

- .4 Soil portion of sod: 15 mm in thickness.
- .2 Commercial Grade Turf Grass Nursery : sod that has not been grown as Turf Grass Nursery Sod crop.
 - .1 Mow sod at height directed by NCC Representative within 36 hours prior to lifting, and remove clippings.
- .3 Sod establishment support:
 - .1 Wooden pegs: 17 x 8 x 200 mm.
- .4 Water:
 - .1 Supplied by NCC Representative at designated source.
- .5 Fertilizer:
 - .1 To Canada "Fertilizers Act" and "Fertilizers Regulations".
 - .2 Complete, synthetic, slow release with 65 % of nitrogen content in water-insoluble form.

Part 3 Execution

3.1 PREPARATION

- .1 Verify that grades are correct and prepared in accordance with Section 32 91 21 - Topsoil Placement and Grading. If discrepancies occur, notify NCC Representative and do not commence work until 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 elevations indicated, to tolerance of 15 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.

3.2 SOD PLACEMENT

- .1 Lay sod within 24 hours of being lifted if air temperature exceeds 20 degrees C.
- .2 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.
- .3 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.

3.3 SOD PLACEMENT ON SLOPES AND PEGGING

- .1 Install and secure geotextile fabric in areas indicated, in accordance with manufacturer's instructions.
- .2 Start laying sod at bottom of slopes.
- .3 Peg sod on slopes steeper than 3 horizontal to 1 vertical, within 1 m of catch basins and within 1 m of drainage channels and ditches to following pattern:
 - .1 100 mm below top edge at 200 mm on centre for first sod sections along contours of slopes.
 - .2 Not less than 3-6 pegs per square metre.
 - .3 Not less than 6-9 pegs per square metre in drainage structures. Adjust pattern as directed by NCC Representative.
 - .4 Drive pegs to 20 mm above soil surface of sod sections.

3.4 MAINTENANCE DURING ESTABLISHMENT PERIOD

- .1 Perform following operations from time of installation until acceptance.
- .2 Water sodded areas in sufficient quantities and at frequency required to maintain optimum soil moisture condition to depth of 100 mm.
- .3 Cut grass to 60 mm when or prior to it reaching height of 80 mm. Remove clippings which will smother grassed areas as directed by NCC Representative.
- .4 Maintain sodded areas 95% weed free.

3.5 ACCEPTANCE

- .1 Turf Grass Nursery Sod 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 60 mm.
 - .4 Sodded areas have been cut minimum 2 times prior to acceptance.
- .2 Sodded Commercial Grade Turf Grass Nursery Sod areas will be accepted by NCC Representative provided that:
 - .1 Sodded areas are properly established.
 - .2 Extent of surface soil visible when grass has been cut to height of 60 mm is acceptable.
 - .3 Sod is free of bare or dead spots and extent of weeds apparent in grass is acceptable.
 - .4 Sodded areas have been cut minimum 2 times prior to acceptance.
 - .5 Fertilizing in accordance with fertilizer program has been carried out at least once.

SODDING

- .3 Areas sodded in fall will be accepted in following spring one month after start of growing season provided acceptance conditions are fulfilled.

3.6 CLEANING

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

PART 1 - GENERAL

- .1 Related Work
 - .1 Metal structures Section 05 55 00
 - .2 Excavation and backfilling Section 31 14 11
 - .3 Geotextile Section 31 32 19.01
 - .4 Structural Soil Section 32 11 15
 - .5 Concrete Unit Pavers Section 32 14 13
- .2 Supply of Plant Material
 - .1 The nursery where the Contractor proposes to buy his plants must be approved in writing by the NCC Representative.
 - .2 Plants approved at the nursery plants may be refused at the site before or after planting if the rootballs, branches, bark or other plant parts were damaged by the Contractor after leaving the nursery.
- .3 Quality Control at the Source
 - .1 Obtain approval for the plants from the NCC Representative at the supply source.
 - .2 Inform the NCC Representative of the supply source, for plants provided by the Contractor, at least 14 days before the plant shipment date. Do not begin work under this section without first obtaining permission to do so from the NCC Representative.
 - .3 Plants approved at the supply source may be refused at the site before or after planting.
 - .4 Imported plants must be accompanied by all the necessary permits, including import permits. Comply with federal and provincial government regulations.
 - .5 Plants must conform to varieties specified in the plant list and identified by labels that clearly indicate their name and size. No substitutions will be accepted without the written consent of the NCC Representative.
- .4 Warranty
 - .1 For work of this section, the warranty period is twenty-four (24) months.
 - .2 The plants will be inspected at the end of the warranty period.
 - .3 The NCC Representative reserves the right to extend the responsibility of the Contractor for another year if, at the end of the original warranty period, foliage and development does not seem sufficient to ensure a healthy future growth.
 - .4 Spring plantations will be accepted at the end of June after 24 months of warranty.

- .5 Replacement
 - .1 Replace all damaged plants, the cause of the damage can be attributed to one or more of the following points:
 - .1 During loading and unloading;
 - .2 During transport from the nursery;
 - .3 During planting;
 - .4 During other works performed by the Contractor and trades.
 - .2 During the warranty period, rid the site of any plant that is dead will not have developed to the satisfaction of the NCC Representative.
 - .3 Plants from the approved supply source that have been damaged must be replaced immediately, if possible, or during the next planting season.
 - .4 The warranty period for replacement plants must be equal to the warranty period granted for the original plants.
 - .5 Continue maintenance of all replacement materials until the end of the warranty period.
 - .6 Replace and guarantee the plants until they are accepted.

PART 2 - PRODUCTS

- .1 Materials
 - .1 Water. Natural and untreated water from the Ottawa River or other trusted source.
 - .2 Filter cloth. According to Section 31 32 19.01.
 - .3 Burlap, used to wrap around the roots. 'Hessian' burlap, 150 g.
 - .4 Material for wrapping trees. New and clean material. This is common burlap in strips of 150 mm wide, with a mass of at least 2.5 kg/m².
 - .5 Anti-drying agent. Waxy emulsion forming a film on the surface of plants, the particle must reduce the effect of evaporation, but should be sufficiently permeable to allow perspiration.
 - .6 Insecticide. Long-lasting residual lindane or equivalent, depending on the nature of the parasite species. The choice of insecticides should be established jointly with the NCC Representative.
- .2 Plants
 - .1 Quality and supply source. Comply with the latest edition of "Canadian Standards for Nursery Stock" (1994 edition) of the Canadian Nursery Landscape Association (CNLA) in regards to the size and development of plants and roots. Measure the plants when the branches are in their normal position.

- .2 The dimensions for tree height and branch development are derived from the size of the main part of the plant and not the distance between the ends of the branches. Use trees and shrubs category number 1.
 - .3 Additional plant characteristics :
 - .1 To the extent possible, supplied plants must come from a climate zone corresponding to that of the Ottawa-Carleton region.
 - .2 Use trees and shrubs that have firm and fibrous roots, are free of disease, insects, defects and injuries, and are well developed. Use trees with a straight trunk and uniform branching characteristic to the species. Plant roots must be pruned regularly later in the growing season previous to delivery of plants to the planting site.
 - .3 The roots of large trees must be cut in half over two consecutive growing seasons, the last pruning being as late as possible during the growing season previous to delivery of trees to the planting site.
 - .4 Plants that have completed their dormancy period and are in a too advanced stage of development will not be accepted without prior approval.
 - .4 Cold storage. Plants from cold storage must first be approved.
 - .5 Plants grown in pots. The plants will be accepted only if the pots are large enough to allow root development. Trees and shrubs must be grown in pots for at least one growing season and for no more than two years. The roots must remain covered with soil when planting pots are removed. No plant whose roots are clumped will be accepted. Plants grown in pots should be fertilized with a slow-release fertilizer.
 - .6 Plants balled and burlapped. Conifers and broadleaf evergreen trees, more than 500 mm in height, must be provided with a rootball. The deciduous trees whose height is more than 3 meters shall be provided with a large closed rootball. The rootballs must be composed of 75% nutritious and fibrous roots. This does not apply to native trees grown in a very sandy or rocky soil. Wrap rootballs in two layers of burlap tied with rope at least 10 mm in diameter. Do not expose the rootballs to sudden changes in temperature or torrential rains.
 - .7 Plants dug by mechanical shovel, at the supply source. Use hydraulic spades or clamshells for digging. Rootballs must comply with CNLA standards or be approved by the NCC Representative. Remove the rootballs from the tree pit and place them in a wire metal basket intended for this purpose, then wrap in burlap. Position the rootballs in place, then tie the basket mesh with heavy rope. Take care not to damage the trunk of the tree with the rope or fasteners used to secure the mesh.
 - .8 Plants transplanted with mechanical spade, at the planting site. Use hydraulic spades or clamshells for digging. Remove the rootballs from the tree pit, then place them in prepared holes at the final transplanting site.
- .3 Structural soil
 - .1 In accordance with Section 32 11 25.

PART 3 - EXECUTION

3.1 Workmanship

- .1 Indicate, using stakes, the location of trees and planting beds, according to the planting plan. Planting locations to be approved by the NCC Representative before digging.
- .2 Apply anti-desiccant agent in accordance with the manufacturer's instructions.
- .3 Coordinate the work. Keep the site clean and thoroughly dry pits. Immediately remove any dirt and debris from the road.

3.2 Shipping and care

- .1 Coordinate plant shipment and digging, so that the digging and planting takes place at about the same time.
- .2 Securely attach the branches of trees and shrubs and protect plants against abrasion, exposure to weather and temperature fluctuations during transport. Avoid tightly tying or pinching plants with rope or wire, which could damage the bark, break branches or destroy the natural shape of the plant. Support the rootball of large trees during lifting.
- .3 Cover plant foliage with waxed cloth and protect bare roots with wet straw, peat moss, sawdust, wood or any other suitable material so as to prevent loss of moisture during transportation and storage.
- .4 Remove broken or damaged roots with a pruning knife. Prune roots carefully.
- .5 Keep the roots moist and protected from the sun and wind. Trees and shrubs that cannot be planted immediately are to be placed in shaded areas and thoroughly watered.

3.3 Planting Season

- .1 Perform deciduous tree and shrub planting during the dormant period before budding. Plants that as indicated, should be planted in spring, must be during the dormancy period, as directed by the NCC Representative.
- .2 Plants that come from regions with a warmer climate can only be planted in early spring, to the approval of the NCC Representative.
- .3 If a special permission for planting after budding is granted, spray an anti-desiccant agent on trees and shrubs to slow moisture loss before transplanting.
- .4 Conifer planting must be in the spring before budding. Planting balled and burlapped trees can begin after mid-August. Spray an anti-desiccant agent on conifers before removing them from the ground.
- .5 If the authorities agree, the planting of trees, shrubs and ground cover plants grown in pots can occur during the growing season.
- .6 Perform planting only while conditions are conducive to health and good plant growth.
- .7 No extensions to the duration of planting work due to insufficient manpower will be accepted.
- .8 Ensure the availability of irrigation facilities. Use an anti-desiccant agent when planting work is done during hot summer weather.

3.4 Excavation

- .1 Trees and shrubs. Dig pits the width and depth shown on the drawings.
- .2 Protect the bottom of the pits against frost.

- .3 Before planting, remove accumulated water from planting pits. Make sure there is no groundwater.
- .4 Avoid digging too deep in structural soil.

3.5 Plantation

- .1 Plant trees and shrubs vertically in the pits, after installing structural soil, directing them so that they produce the best effect with the neighboring structures such as buildings, roads and sidewalks.
- .2 In the nursery, the plants grew at a certain depth, and they will need to be replanted at the same depth.
- .3 Compact the structural soil around the roots in layers of 150 mm. Compact to 95% SPD.

End of section

PART 1 - GENERAL

.1 Related Work

- .1 Trees, Shrubs and Groundcovers Section 32 92 10

.2 Description

- .1 The work in this section includes the supply of all labour, materials and equipment required for the full maintenance of all trees (new and existing) within the project limits and for the period as required herein.
- .2 Tree maintenance shall begin on the day trees are planted and shall continue for a period of two (2) years from Final Acceptance.
- .3 Maintenance schedule shall be approved by the NCC Representative.

.3 Delivery and Storage

- .1 Deliver and store fertilizer, pesticides and other products in clearly labelled waterproof bags showing mass, analysis and name of manufacturer.
- .2 Do not store materials or equipment on site except as is required for immediate use.

.4 Reporting

- .1 Detailed written reports will be submitted to the NCC Representative at the end of June and at the end of September of each year.
- .2 Reports will indicate the date, frequency and nature of all maintenance measures undertaken, as well as weather conditions throughout the period and the condition and progress of all plants covered by this section.
- .3 Notwithstanding the required written reports, immediately inform the NCC Representative of any condition or circumstance that will prevent the implementation of necessary maintenance procedures.
- .4 Inform the NCC Representative of any condition or circumstance including but not limited to drought, flooding, pests, diseases or other problems that will necessitate procedures not specified in this section but which are deemed necessary for the survival and well-being of the plants.

PART 2 - PRODUCTS

.1 Materials

- .1 Water: from the Ottawa River or another approved natural source.

- .2 Fertilizer: 100% natural

PART 3 - EXECUTION

- .1 General Workmanship
 - .1 Program timing of operations to growth, weather conditions and use of site.
 - .2 Notify NCC Representative at least 7 days in advance of start of operations.
 - .3 Do each operation continuously and complete within reasonable period of time.
 - .4 Obtain acceptance in writing from NCC Representative with detailed description of work prior to submission of progress claims.
 - .5 No motorized vehicles shall be permitted on paved sidewalk areas without the written approval of the NCC Representative.
 - .6 Protect all paved surfaces and other structures from damage by equipment or spills of oil, chemicals or other substances. Contractor is responsible for all damage.
 - .7 Carry all materials by hand wheeled rubber tired carts or barrows.
- .2 Watering
 - .1 Apply water using a soft spray nozzle to avoid packing of the soil.
 - .2 Ensure that water penetrates the soil to a depth of 300 mm in the area from the trunk to the outer extent of the dripline.
 - .3 Watering (All Trees):
 - .1 Water weekly from first leaf until August 30.
 - .2 Water bi-weekly from September 1 until leaf fall.
 - .3 During drought conditions (no rain for 2 consecutive days), water trees on the third day.
 - .4 After August 30, during drought conditions (no rain for 5 consecutive days), water trees on the 6th day.
 - .4 Replace and repair any materials disturbed by watering procedures.
- .3 Fertilizing
 - .1 Carry out soil tests each Spring, or when nutrient deficiency is observed. Also carry out soil tests if and when required by the NCC Representative.
 - .2 Implement a fertilizing program designed to correct the problems found in the test results and approved by the NCC Representative.

.4 Insect and Disease Control

- .1 Report immediately to the NCC Representative any evidence of insect infestation or disease that could be deleterious to plant health.

.5 Litter Control

- .1 Pick up and remove from around trees during operations all foreign material including but not limited to paper, wood, glass, plastic, metal and animal carcasses.

.6 Restoration and Clean-up

- .1 At the completion of all operations, remove from site all debris resulting from work under this section.
- .2 All areas disturbed or damaged by the execution of this work shall be restored to their original condition.

End of section

PART 1 - GENERAL**1.1 PROJECT BACKGROUND**

As part of the National Capital Commission project to rehabilitate the Confederation Blvd. sidewalks, the Canadian Museum of Civilization is taking this opportunity to repair the waterproofing and expansion joints on their parking garage foundation wall below the sidewalk.

1.2 SCOPE OF WORK

The scope of work associated with the waterproofing repairs include:

1.2.1 Phase I

- Excavate carefully around existing conduits and provide temporary supports.
- Excavate down to 600mm below upper garage level using shoring to minimize extent of excavation.
- Provide new expansion joint as indicated on drawings.
- Backfill and remove shoring to underside of new paver base.
- Cost for Phase I work to be included on the unit rate tender form.

1.2.2 Phase II

- Waterproofing repairs in phase II to be confirmed subject to results of phase I work.
- Cost of phase II work to be covered under a change order.

1.3 LIST OF SPECIFICATIONS & DRAWINGS**Specifications:**

- 00 05 00 Scope of Work
- 00 41 00 Unit Rates
- 03 32 50 Concrete Repairs
- 07 13 52 Modified Bitumous Membrane
- 31 00 00 Excavation & Shoring

Drawings:

- S100 Partial Plans
- S200 Sections & Details

END OF SECTION

UNIT RATE PRICES

PART 1 - GENERAL

1.1 UNIT PRICES

Provide Unit Prices for the following work. Based on agreed measured quantities between the Consultant and the Contractor, the Contract will be revised to include the additional measured quantities by Change Order. Each unit price shall include the labour, products, services and mark-ups necessary for the performance of that portion of the work in accordance with the Drawings and Specifications. Include all overhead and profit. The unit rate is to be used for additions and deletions.

A) Unit Rate Work

		Unit Price	
.1	Excavation & disposal	100 m ³ at \$_____/m ³	= \$_____
.2	Shoring boxes	Install/Remove lump sum	= \$_____
.3	Clean existing wall ready for new joint down to sound membrane or concrete	7 LM at \$_____/LM	= \$_____
.4	Concrete Repairs (5/S200)	2 m ² at \$_____/m ²	= \$_____
.5	New expansion joint	7 LM at \$_____/LM	= \$_____
.6	Backfill	100 m ³ at \$_____/m ³	= \$_____
			Total = \$_____

B) Hourly Rates

Unit Rate

Labourer \$_____/Hour

Roofer \$_____/Hour

END OF SECTION

PART 1 - GENERAL

- 1.2 RELATED STANDARDS .1 CSA Standards A23.1, A23.2, A23.3 2000.
- 1.3 SUBMITTALS .1 Submit two copies of Manufacturer's specifications for patching mortar.
- 1.4 CONDITIONS .1 All conditions of the general contract apply to work of this section.
- .2 Examine work upon which this section depends, check dimensions on drawings with existing structure. Report all discrepancies to the Engineer, in writing.
- .3 Examine site conditions prior to commencement of work. Absence of written refusal implies acceptance of all existing conditions and shall constitute a waiver of all claims for extras, regarding the quality or quantities of work in this section.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 1 component, rapid hardening, early strength, patching mortar. Sikaquick 1000 or equivalent.

PART 3 - EXECUTION

- 3.1 CONCRETE REPAIRS .1 Remove deteriorated concrete to a depth of 25mm minimum and 25mm minimum behind all exposed reinforcing steel. Use lightweight (6.8 Kg. maximum) chippers. Sawcut edges of repairs to 12mm deep. Trim behind all bars with electric chipper.
- .2 Reinforcing steel damaged during concrete removal operations will be replaced by the General Contractor at no cost to the Owner, as directed by the Engineer.
- .3 Protect and retain all reinforcing steel for examination by the Engineer. Discard and replace only those bars as directed by the Engineer.
- .4 Clean all exposed reinforcing steel to a white metal condition using sandblasting method.
- .5 Clean all repair areas to sound concrete.

- .6 Rebuild repair areas to original dimensions using patching mortar in conformance with the manufacturer written procedure.
- .7 Finish surfaces using steel trowelling.
- .8 Protect for 48 hours before waterproofing.

3.2 SITE REVIEW & TESTING

- .1 Ensure review and acceptance by the Engineer of concrete prior to application of waterproofing.

END OF SECTION

MODIFIED BITUMINOUS MEMBRANE

PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Canadian General Standards Board (CGSB)
 - .1 CGSB 37-GP-9Ma-[83], Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing.
 - .2 CGSB 37-GP-56M-[80(1985)], Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing.
 - .2 Canadian Roofing Contractors Association (CRCA)
 - .1 CRCA Roofing Specifications Manual-[1997].
 - .3 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-A123.3-[05], Asphalt Saturated Organic Roofing Felt.
 - .2 CAN/CSA-A123.4-[04(R2009)], Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems.
- 1.2 FIRE PROTECTION
- .1 Fire Extinguishers:
 - .1 Maintain one cartridge operated type or stored pressure rechargeable type with hose and shut-off nozzle,
 - .2 ULC labelled for A, B and C class protection.
- 1.3 STORAGE, AND HANDLING
- .1 Provide and maintain dry, off-ground weatherproof storage.
 - .2 Store rolls of felt and membrane in upright position.
 - .1 Store membrane rolls with salvage edge up.
 - .3 Remove only in quantities required for same day use.
 - .4 Store sealants at +5 degrees C minimum.
- 1.4 ENVIRONMENTAL CONDITIONS
- .1 Do not install waterproofing when temperature remains below -18°C for application. Install to manufacturer's recommendations for application.
 - .2 Minimum temperature for solvent-based adhesive is -5°C.
 - .3 Install waterproofing on dry surface and apply only during weather that will not introduce moisture into waterproofing system.
- 1.5 WARRANTY
- .1 Contractor hereby warrants that modified bituminous membrane will stay in place and remain leakproof for five years.
- 1.6 COMPATIBILITY
- .1 Compatibility between components of membrane is essential. Provide written declaration from manufacturer stating that materials and components, as assembled in system, meet this requirement.
- 1.7 CONTRACTOR QUALIFICATIONS
- .1 The contractor-roofer and its subcontractor will need to have a license of operation as the contractor-roofer, and to be recognized officially as contractors authorized by the manufacturer of sealing

MODIFIED BITUMINOUS MEMBRANE

materials.

- .2 Only a qualified manpower and certified as roofer will be able to execute the work, with the use of a company having the equipment adequate and necessary to do such work.
- .3 The roofing employees must have at least five (5) years of recognized experience in this field.

PART 2 - PRODUCTS**2.1 MEMBRANE**

- 1 Membrane and flashing base sheet: SBS modified bituminous membrane having a non-woven needle-punched polyester reinforcing mat, coated on both sides with SBS polymerised asphalt with thermofusible plastic film on both sides. Nominal characteristics:
 - .1 Minimum of 3.0 mm thick
 - .2 Reinforcing non-woven polyester mat: 180 g/M2
 - .3 Meeting CGSB specification 37-GP-56M Grade 2 Class C.
 - .4 Acceptable material: Sopralene FLAM 180 g/m² of Soprema or other product accepted by the Consultant.
- .2 Membrane and flashing cap sheet: SBS modified bituminous membrane bended with a root repellent agent, having a polyester reinforcement, coated on both sides with SBS polymerised asphalt. The under face is covered with thermofusible plastic film. Nominal characteristics:
 - .1 Minimum of 4.0 mm thick
 - .2 Reinforcing non-woven polyester mat: 250 g/m²
 - .3 Meeting CGSB specification 37-GP-56M.
 - .4 Acceptable material: Sopralene FLAM JARDIN of Soprema or other product accepted by the Consultant.
- .3 Elastomeric composite expansion joint: in accordance with specifications ONGC 37GP56M, combining a polyester tissue with SBS modified bitumen with a root repelling agent and with a silicone paper to be removed during application. Nominal 4.0 mm thickness, 3,8 mm minimum. Reinforcing polyester tissue: 70 g/m² Nominal characteristics:
 - .1 Strength at 10 % elongation : 5 N/cm
 - .2 Strength at rupture: 50 N/cm
 - .3 Elongation at rupture + 20 °C : 120
 - .4 Elongation at rupture - 20 °C: 100 %
 - .5 Low temperature flexibility : -30 °C
 - .6 Acceptable products: Soprajoint of Soprema or other product accepted by the Consultant.

2.2 PROTECTION, FILTER FABRIC AND DRAINAGE MAT

- .1 Hydro-shield protection board, flexible corrugated panel, made with polypropylene
 - .1 Dimension: 910mm x 1300mm, thickness 2.5mm.
 - .2 Acceptable material: Hydro-shield by Hydroteck manufacture or other product accepted by the Consultant.

MODIFIED BITUMINOUS MEMBRANE

- .2 Drainage mat: Miradrain 9900 or other product accepted by the Consultant.
- 2.3 SEALERS .1 Sealing compound: in accordance with specifications CAN/CGSB-37.29, rubber asphalt type.

PART 3 - EXECUTION

- 3.1 WORKMANSHIP .1 Do roofing work in accordance with applicable standard Roofing Manufacturer's Specification Manual, CRCA Roofing Specification Manual, and Provincial/Territorial Roofing Association Manual.
- .2 Do priming in accordance with CGSB 37-GP-1 5M.
- 3.2 PROTECTION .1 Cover walls, walks, waterproofing membrane and adjacent work where materials hoisted or used.
- .2 Use warning signs and barriers. Maintain in good order until completion of Work.
- .3 Clean off drips and smears of bituminous material immediately.
- .4 Protect membrane from traffic and damage. Comply with precautions deemed necessary by Departmental Representative.
- .5 At end of each day's work or when stoppage occurs due to inclement weather, provide protection for completed Work and materials out of storage.
- 3.3 EXAMINATION OF WALL .1 Examine wall and immediately inform Consultant in writing of defects.
- .2 Prior to commencement of work ensure:
 - .1 Substrate is firm, straight, smooth, dry, and clean of dust and debris.
- 3.4 PROTECTED MEMBRANE APPLICATION .1 Base sheet application:
 - .1 Unroll base sheet, align and reroll from both ends.
 - .2 Unroll and torch base sheet onto substrate taking care not to burn membrane or its reinforcement or substrate.
 - .3 Lap sheets 75 mm for side and 150 mm for end laps.
 - .4 Application to be free of blisters, wrinkles and fishmouths.
 - .5 Do membrane application in accordance with manufacturer's recommendations.
- .2 Cap sheet application:
 - .1 Starting at low point, unroll cap sheet, align and reroll from both ends.
 - .2 Unroll and torch cap sheet onto base sheet taking care not to burn membrane or its reinforcement.
 - .3 Lap sheets 75 mm minimum for side laps and 150 mm

MODIFIED BITUMINOUS MEMBRANE

- minimum for end laps. Offset joints in cap sheet 300 mm from those in base sheet.
- .4 Application to be free of blisters, fishmouths and wrinkles.
 - .5 Do membrane application in accordance with manufacturer's recommendations.

.3 Flashings:

- .1 Complete installation of flashing base sheet stripping prior to installing membrane cap sheet.
- .2 Torch base and cap sheet onto substrate in 1 metre wide strips.
- .3 Lap flashing base sheet to membrane base sheet minimum 100 mm and seal by mopping or torch welding.
- .4 Lap flashing cap sheet to membrane cap sheet 150 mm and torch weld.
- .5 Provide 75 mm side lap and seal.
- .6 Properly secure flashings to their support, without sags, blisters, fishmouths or wrinkles.
- .7 Do work in accordance with manufacturer's recommendations.

.4 Drainage matt application:

- .1 Apply drainage matt over protection board over membrane.
- .2 Overlap edges 400 mm minimum.

3.5 MANUFACTURER
INSPECTION

- .1 A representative of the manufacturer has to be present at the project site to:
 - .1 Examine the site before the commencement of work, during the application of the membrane and at completion of the work.
 - .2 Provide technical assistance and advice to ensure that membrane is installed correctly.
 - .3 The presence of the manufacturer's representative is obligatory. Inform the manufacturer at least 48 hours prior to the beginning of work.
 - .4 A report on the manufacturer's letterhead is to be provided at the completion of the project confirming acceptability of the work

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 American Society for Testing and Materials International (ASTM).
 - .1 ASTM D698 07e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft lbf/ft³) (600kN m/m³).
- .2 Cahier des charges et devis généraux/Gouvernement du Québec/Ministère des Transports
 - .1 CCDG, Cahier des charges et devis généraux.

1.2 SUBMITTALS

- .1 Provide the following for review before commencement of work.
 - .1 Submit to designated testing agency, 23kg sample of backfill for material proposed for use, no later than one week before backfilling or filling work.
- .2 Submit erosion and sedimentation control plan.
- .3 Submit proposed shoring details certified by an engineer licensed in the province of Quebec.

1.3 QUALITY ASSURANCE/REGULATORY REQUIREMENTS

- .1 Shore and brace excavations, protect slopes and banks and perform work in accordance with Provincial and Municipal regulations whichever is more stringent.
- .2 Health and Safety Requirements: do construction occupational health and safety in accordance with provincial regulations.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Dispose of all excavated materials off site (do not re-use).

1.5 EXISTING CONDITIONS

- .1 Buried services:
 - .1 Before commencing work verify & establish location of buried services on and adjacent to site.
 - .2 Temporary support and protect buried electrical conduits running through excavation.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Imported Crushed Granular 56-0 to CCDG14.02.

PART 3 - EXECUTION

3.1 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. 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.

3.2 PREPARATION/PROTECTION

- .1 Protect excavations from freezing.
- .2 Keep excavations clean, free of standing water, and loose soil.
- .3 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.
- .4 Protect buried services that are required to remain undisturbed.

3.3 EXCAVATION

- .1 Excavate as required to carry out work.
 - .1 Do not disturb soil around and below area to be waterproofed.
 - .2 Notify Engineer when excavations are complete.
 - .3 Dispose of material off site (Do not stock pile).

3.4 BACKFILLING

- .1 Inspection: do not commence backfilling until waterproofing and fill material and spaces to be filled have been inspected and approved by Engineer.
- .2 Remove snow, ice, construction debris, organic soil and standing water from spaces to be filled.
- .3 Lateral support: maintain even levels of backfill around structures as work progresses, to equalize earth pressures.

EXCAVATION & SHORING

- .4 Placing:
 - .1 Place backfill, fill and basecourse material in 150 mm lifts: add water as required to achieve specified density.
- .5 Compaction: compact each layer of material to following densities for material to ASTM D698 to 98% minimum.

3.5 FIELD QUALITY CONTROL

- .1 Testing of materials and compaction of backfill will be carried out by testing laboratory designated by Engineer.
- .2 Not later than one week before backfilling or filling, provide to designated testing agency, samples of backfill as described in PART 1 - SUBMITTALS.
- .3 Do not begin backfilling or filling operations until material has been approved for use by Engineer.
- .4 Not later than 48 hours before backfilling or filling with approved material, notify Engineer so that compaction tests can be carried out by designated testing agency.

END OF SECTION