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Voir aux présentes - See herein  
Montréal  
Québec  
H5A 1L6

## SOLICITATION AMENDMENT MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

### Comments - Commentaires

Vendor/Firm Name and Address  
Raison sociale et adresse du  
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution  
Travaux publics et Services gouvernementaux Canada  
Place Bonaventure,  
800 rue de la Gauchetière Ouest  
Voir aux présentes - See herein  
Montréal  
Québec  
H5A 1L6

<b>Title - Sujet</b> Réfection murs Canal Lachine-Bief 3	
<b>Solicitation No. - N° de l'invitation</b> EE520-180515/A	<b>Amendment No. - N° modif.</b> 002
<b>Client Reference No. - N° de référence du client</b> R.077223.110	<b>Date</b> 2017-08-31
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$MTC-255-14435	
<b>File No. - N° de dossier</b> MTC-7-40101 (255)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2017-09-14</b>	
<b>Time Zone</b> Fuseau horaire Heure Avancée de l'Est HAE	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Desforges, Julie	<b>Buyer Id - Id de l'acheteur</b> mtc255
<b>Telephone No. - N° de téléphone</b> (514) 496-3413 ( )	<b>FAX No. - N° de FAX</b> (514) 496-3822
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

Instructions: See Herein

Instructions: Voir aux présentes

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

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## Rehabilitation of the Lachine Canal Walls, Reach 3 – Sector 11 Montreal, Quebec

### ADDENDUM 2

This addendum modifies the tender documents as indicated hereafter:

The drawings published in addendum 1 are replaced in by the drawings attached.

Remove Table of prices of Appendix 1 and replace by the one bellow.

### QUESTIONS

#### **Question 1**

For item 1.3.9.7, the specification refers to "... backfilling under the new infrastructure, excluding the new multi-use path ...", rather than "... controlled backfilling behind the wall ...", what is the good title, where is this MG -20 and is this the basis of the different concrete bases?

#### **Answer 1**

YES, IT IS FILL UNDER THE NEW CONCRETE INFRASTRUCTURES, FOR EXAMPLE THE DIFFERENT BASES

#### **Question 2**

Is a site characterization really necessary given that it has already been carried out and submitted in a complete geotechnical report?

#### **Answer 2**

ACTUALLY, AN ADDITIONAL ON-SITE CHARACTERISATION WILL BE REQUIRED PRIOR TO THE START OF THE WORKS.

#### **Question 3**

Does the requirement to use a steel formwork apply only to the new wall or also to the repair without additional thickness and the different concrete bases?

#### **Answer 3**

THE OBLIGATION TO USE STEEL FORMWORKS APPLIES FOR ALL NEW VISIBLE WALLS UP TO 15.300m LEVEL UNLESS SHOTCRETE IS USED. CLARIFICATIONS ARE TO COME

#### **Question 4**

For item 1.3.8.3, the plan mentions mortar in the holes in the rungs, but no mortar will adhere to the steel that is present at the bottom of the hole and around the perimeter. Is it really required?

#### **Answer 4**

ACTUALLY IT WILL BE CONCRETE. MODIFICATION TO COME

#### **Question 5**

Are signalers required at truck entrances?

#### **Answer 5**

YES, AS REFERRED TO IN SECTION 015526, THE SIGNALERS MUST BE PRESENT TO CONTROL THE ENTRIES AND EXITS OF THE WORKSITE, ENSURE THAT CYCLISTS/PEDESTRIANS DO NOT ENTER THE

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WORKSITE BY ACCIDENT, AND TO CONTROL THE MOVEMENT OF USERS OF THE CYCLING PATH DURING PASSAGES (EX: TRUCK CROSSINGS).

**Question 6**

Is the use of a hydraulic hammer (Tramak) authorised for the demolition of the wall? and for repair without additional thickness?

**Answer 6**

YES, THE TRAMAK HYDRAULIC HAMMER IS AUTHORIZED WITH RESPECT TO THE SOUND LEVEL BUT, HOWEVER, DEMOLITION TO THE EDGES MUST BE CARRIED OUT WITH SMALLER EQUIPMENT IN ORDER TO HAVE A BETTER FINISH AND TO AVOID BREAKING TOO MUCH CONCRETE.

**Question 7**

With respect to trucking, is it necessary to use trucks from a trucking station?

**Answer 7**

NO REQUIREMENTS IN TERMS OF BULK TRUCKING.

**Question 8**

We are wondering if the steel formwork is required only on the front of the wall or on both sides?

**Answer 8**

STEEL FORMWORK IS REQUIRED ONLY ON THE VISIBLE FACES. CLARIFICATION TO COME

**Question 9**

Price Schedule, items 1,3,7,2,2,1 and 1,3,7,2,2,2: The 577 m³ of repairs without additional thickness 150 mm divided by 0.150 metres = 3847 m² and the 135 m³ to 450 mm divided by 0.450 meters = 300 m². The sum of the two surfaces gives 4147 m², which is roughly twice the surface shown in drawings SO3 to SO14. Please clarify.

**Answer 9**

QUANTITIES HAVE BEEN MERGED IN A SINGLE ITEM AND HAVE BEEN LOWERED IN ADDENDUM # 1 DUE TO A REVISITED HYPOTHESIS. HOWEVER, QUANTITIES ARE REPRESENTATIVE AS THEY TAKE INTO ACCOUNT THE PRESENCE OF LARGE CRACKS.

**Question 10**

Water Levels: On drawing S18 the water level notes indicate that the water level can be lowered outside the operating period. That the water level can be lowered after the end of the operating period and the first week of December, between October 9 and December 7. That the water level can be lowered before the navigation period, that is May 22 and that the water level must be raised before the last week of April. There seems to be a contradiction between these two constraints. Please clarify.

**Answer 10**

The notes are very clear. There are no contradictions.

**Question 11**

Lowering of the level in fall 2017: Considering that a request for the lowering of the water level must be made a minimum of thirty days before the planned date, that the work cannot start before 16 October and the date awarding of the contract. When can the water level be lowered in the fall of 2017?

**Answer 11**

The notes are very clear.

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**Question 12**

The detour for the bicycle path (drawing MC 39) from the 20 east stops at lock 4. Q: Is it connected to an access other than the footbridge of lock 4 or it ends at the Gadbois Center?

**Answer 12**

THE DETOUR OF THE PLAN 39 APPLIES WHEN THE CYCLING PATH (PASSING UNDER THE BRIDGE OF HIGHWAY 15) LOCATED NORTH OF THE LACHINE CANAL IS OBSTRUCTED BY A NEIGHBORING SITE. THE ENTREPRENEUR MUST INSTALL A DETOUR PATH WHICH GOES OVER THE CYCLISTS' BRIDGE THAT GOES OVER THE LACHINE CANAL IN LINE WITH THE COTE-SAINT-PAUL. STREET. FURTHERMORE, HE MUST MAINTAIN ACCESS TO THE GADBOIS CENTER VIA THE CROSSING NEAR THE LOCK # 4.

**Question 13**

Concerning the excavation work, is the excavation cut shown on section 1 of plan S18 mandatory or suggested? Is the excavation intended to decontaminate the soil or simply to place the concrete blocks and tie-rods there?

**Answer 13**

THE ONLY PURPOSE OF THE EXCAVATION IS TO DO THE WALL REPAIR, THE INSTALLATION OF THE TIE-RODS, THE RECONSTRUCTION OF THE PATH AND THE NEW INFRASTRUCTURE. IT IS NOT FOR THE PURPOSE OF DECONTAMINATING THE SOIL.

**Question 14**

With reference to the notes on the water levels listed in Plan S18: -The water level must be raised no later than the first week of December. Please specify the water level during the winter period, that is after December 1st. A lowering of the water level is possible before the period of navigation and must necessarily be raised before the last week of April. Please specify from what date it is allowed to lower the water level.

**Answer 14**

THE NOTES ON ARE VERY CLEAR. NO OTHER INFORMATION IS AVAILABLE

**Question 15**

With reference to Article 1.17.3 (Section 01 11 01) of the specification, it is mentioned that the contractor would have to minimize the formwork ties. However, with reference to the CCDG, certain restrictions apply to the distance of these ties. (600 mm x 600 mm) Should we disregard this article at CCDG?

**Answer 15**

THE CCDG IS NOT PART OF THE CONTRACT, EXCEPT FOR TRAFFIC MANAGEMENT.

**Question 16**

In the specification, section 1.3.4.8 of section 01 11 01 it specifies that the work must be carried out continuously, without interruption, from the mobilization to the demobilization of the site. The water level during the navigation period does not allow the dry reconstruction and repair of the walls. Do we understand that the contractor must use a cofferdam to carry out the work continuously? If this is the case, at no point in the tender documents it is indicated that the contractor must provide a coffer dam.

**Answer 16**

THE ENTREPRENEUR MUST USE ALL METHODS REQUIRED TO PERFORM THE WORK ACCORDING TO BEST PRACTICES, ALL IN COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACTUAL DOCUMENTS

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Item	DESCRIPTION OF ARTICLES	Units of Measurement	Quantity	Unit Price	Total (\$)
<b>CONTRACTOR GENERAL CONDITIONS</b>					
1.3.1	SITE ORGANISATION	Lump sum	1		\$
1.3.2	TRAFFIC MAINTENANCE AND TEMPORARY SIGNALING	Lump sum	1		\$
1.3.3	SUPPLY AND INSTALLATION OF SPECIAL PANELS FOR THE DEPARMENTAL REPRESENTATIVE'S REQUIREMENTS	m²	20		\$
1.3.4	ENVIRONMENTAL PROTECTION, WATER MANAGEMENT AND CONTAMINATED MATERIALS	Lump sum	1		\$
<b>SUB TOTAL – CONTRACTOR GENERAL CONDITIONS</b>					\$
<b>WALL REHABILITATION – SECTOR 11</b>					
1.3.5	WORK FOR MISCELLANEOUS EQUIPMENT				
1.3.5.1	Removal, return to owner, disposal or temporary storage and reconditioning or reinstallation of existing equipment	Lump sum	1		\$
1.3.5.2	Removal and reinstallation of existing paving blocks	Lump sum	1		\$
1.3.5.3	CANCELLED			-	\$
1.3.5.4	Transportation, supply, preparation and installation of new guardrail rails to replace	linear m.	200		\$
1.3.5.5	Transportation, preparation and installation of new guardrail posts to replace	Unit	35		\$
<b>Sub-total – WORK FOR MISCELLANEOUS EQUIPMENT</b>					\$
1.3.6	DEMOLITION WORKS				
1.3.6.1	Demolition, transportation and disposal of the existing asphalt on the Lachine Canal path, situated within the limits of the works.	m²	2420		\$
1.3.6.2	Demolition, transportation and temporary storage of concrete from bollard bases separated from the wall, as well as bases for existing lampposts, guardrails, poles, monuments and steles	m³	167		\$
1.3.6.3	Demolition, transportation and disposal of concrete from the coping wall and vintage bollard bases built on the wall	m³	3438		\$
1.3.6.4	Partial demolition, transportation and disposal of concrete from the front and top of the existing retaining wall to be repaired	m³	440		\$

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Item	DESCRIPTION OF ARTICLES	Units of Measurement	Quantity	Unit Price	Total (\$)
1.3.6.5	Existing valve chambers, valves, pipes and hydrants to be demolished	Lump sum	1		\$
1.3.6.6	Demolition, Transportation and Disposal of Lamp Posts	Global	1		
<b>Sub-total – DEMOLITION WORKS</b>					<b>\$</b>
<b>1.3.7</b>	<b>CONCRETE AND ASSOCIATED WORK</b>				
1.3.7.1	Supply and installation of concrete for the new coping wall and the bases for bollards attached to the wall	m³	4 350		\$
1.3.7.2	Supply and installation of concrete (cast in place or shotcrete) for concrete repair work without any additional thickness of the front and top of the existing retaining wall to be repaired	m³	495		
1.3.7.3	ARTICLE CANCELLED AND REPLACED BY 1.3.11.2				
1.3.7.4	Re-installation of existing concrete bases for vintage bollards (detached from the wall), monuments, historic posts and steles	Lump sum	1		\$
1.3.7.5	Supply and installation of new concrete bases (if required) to support vintage bollards, monuments, historic posts, steles or other elements	Unit	5		\$
1.3.7.6	Supply and installation of the concrete for the new anchor blocks for tie-rods behind the coping wall	Lump sum	1		\$
<b>Sub-total – CONCRETE AND ASSOCIATED WORK</b>					<b>\$</b>
<b>1.3.8</b>	<b>METAL WORKS</b>				
1.3.8.1	Supply and installation of tie rods and accessories behind the coping wall	Lump sum	1		\$
1.3.8.2	ARTICLE CANCELLED				
1.3.8.3	Supply and installation of the new vintage ladders	Unit	106		\$
<b>Sub-total – METAL WORKS</b>					<b>\$</b>
<b>1.3.9</b>	<b>CIVIL WORK</b>				
1.3.9.1	ARTICLE CANCELLED				\$
1.3.9.2	Excavation, transportation and disposal or temporary storage (if required) of uncontaminated excavated material and excavation material for the repair of the wall	Lump sum	1		\$

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Item	DESCRIPTION OF ARTICLES	Units of Measurement	Quantity	Unit Price	Total (\$)
1.3.9.3	Supplements for disposal and off-site disposal of cut material and contaminated material				
1.3.9.3.1.1	Supplement for disposal/elimination of excavated material, the concentration of contaminants, after characterization, is in range A-B	tonne	23 000		\$
1.3.9.3.1.2	Supplement for disposal/elimination of cut materials with concentration of contaminants, after characterization, in the B-C Range	tonne	17 000		\$
1.3.9.3.1.3	Supplement for disposal/elimination of excavated material with contaminant concentration, after characterization, above criterion C and below the limit value of RESC	tonne	1 000		\$
1.3.9.3.1.4	Supplement for disposal/elimination of large stones or boulders with a volume greater than 1 cubic metre	m³	25		\$
1.3.9.3.1.5	Supplement for disposal/elimination of treated wood contaminated with creosote or lead.	m³	80		\$
1.3.9.4	Controlled backfill behind the wall, excluding the foundation and sub-foundation of the new multi-purpose path, with approved granular materials from cut material characterised on site.	tonne	654		\$
1.3.9.5	Controlled backfill behind the wall, excluding the foundation and the sub-foundation of the new multi-purpose path, with MG-112 type borrow materials	tonne	11 785		\$
1.3.9.6	Controlled backfill behind the wall, excluding the foundation and the sub-foundation of the new multipurpose path, with MG-56 type borrow materials	tonne	24 030		\$
1.3.9.7	Controlled backfill under the new infrastructure, excluding the foundation and sub-foundation of the new multi-purpose path, with MG-20 type borrow materials	tonne	1 580		\$
1.3.9.8	ARTICLE CANCELLED AND REPLACED BY 1.3.12				
1.3.9.9	Work of topsoil and sodding	Lump sum	1		\$
1.3.9.10	Planting work (trees to be resettled if required)	Unit	10		\$
1.3.9.11	Perforated drains, filtering materials and geotextiles	Lump sum	1		\$
<b>Sub-total – CIVIL WORK</b>					\$

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Item	DESCRIPTION OF ARTICLES	Units of Measurement	Quantity	Unit Price	Total (\$)
<b>1.3.10</b>	<b>MISCELLANEOUS EQUIPMENT</b>				
1.3.10.1	Temporary Footbridge to Lock#4	Lump sum	1		\$
1.3.10.2	Repair of connecting brackets for tie-rods and coordination for reinstallation of floating docks at lock # 4	Lump sum	1		\$
<b>Sub-total – MISCELLANEOUS EQUIPMENT</b>					<b>\$</b>
<b>1.3.11</b>	<b>ELECTRICAL</b>				
1.3.11.1	Installation of Lamp Posts	Unit	26		
1.3.11.2	Concrete Bases for Lamp Posts	Unit	26		\$
1.3.11.3	PVC Conduits	linear m.	1980		\$
1.3.11.4	Conductors	linear m.	2 970		\$
1.3.11.5	Ground Level Pull Box	Unit	1		\$
1.3.11.6	Modification of Power Supply and Control Panel	Global	1		\$
1.3.11.7	Electrotechnical Testing	Lump sum	1		\$
1.3.11.8	Anti-Theft Device	Unit	13		\$
<b>Sub-total – ELECTRICAL</b>					<b>\$</b>
<b>1.3.12</b>	<b>MULTI-USE PATH</b>				
1.3.12.1	Granular Sub-Base Layer with MG-56 Borrow Materiel	M. t	4740		
1.3.12.2	Granular Sub-base Layer with Mg-20 Borrow Material	M. t	1540		
1.3.12.3	Asphalt Pavement	M. t	440		
1.3.12.4	Signage and Road Line Marking	Global	1		
<b>Sub-total – MULTI-USE PATH</b>					
<b>1.3.13</b>	<b>TEMPORARY MULTI-USE PATH DETOUR</b>				
1.3.13.1	Preparatory Work	Global	1		
1.3.13.2	Temporary Multi-use Path Detour	m²	680		
1.3.13.3	Site Restoration After Wall Construction	Global	1		
<b>Sub-total – TEMPORARY MULTI-USE PATH DETOUR</b>					<b>\$</b>
<b>SUB TOTAL - WALL REHABILITATION – SECTOR 11</b>					<b>\$</b>
<b>GRAND TOTAL</b>					<b>\$</b>

**All other terms, clauses and conditions remain unchanged**





Travaux publics et  
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Public Works and  
Government Services  
Canada

Région du Québec

Quebec Region

Équipe Service Client du Patrimoine  
3, Passage du Chien-d'Or  
Québec (Québec) G1R 3Z8

Project: R.077223.110

## Rehabilitation of Lachine Canal Walls, Reach 3 – Sector 11 Lachine Canal National Historic Site

Subject : RESPONSES TO QUESTIONS /  
ADDENDUM #2

August 29th, 2017

### **PART 1 Response to Questions, clarifications or general:**

In the French text, the term « bollard ancestral » is replaced by « bollard patrimonial ». (In the English text the term « vintage bollard » will remain the same).

### **PART 2 Addendum #2 – Technical Specification**

#### **2.1 Section « 00 01 07 – Seals and Signature Pages »**

.1 *The following division was forgotten in the list of included divisions :*

«DIVISION 10 – SPECIALTIES ».

#### **2.2 Section « 00 01 10 – Table of Contents and Drawings List »**

.1 *This section has been replaced by the section in the appendix of this document.*

#### **2.3 Section « 01 11 01 – Work Related General Information»**

.1 *The article 1.2 has been modified as follows :*

##### **WORKS BY OTHERS**

1. Work with other contractors and follow instructions from Departmental Representative.
2. Coordinate work with other contractors. If the performance or performance of any part of the work covered by this contract is dependent on the work of another contractor, promptly notify the Departmental Representative in writing of any anomalies or defects likely to of the work.
3. **During the course of the work, the Contractor will have to coordinate with the City Representatives and allow access to the site when they come to work on their land, such as in the area above the St-Rémi Tunnel. During the planned work within the St-Rémi tunnel, City officials may require access to tunnel vent pipes and the Contractor must coordinate with them and allow access in a safe manner.**

.2 The article 1.3.4 has been modified as follows:

Required stages and constraints:

1. The work shall be carried out by linear sections of wall, as shown on plans.
2. Work may not begin before 16 October 2017 and must be completed before the 20th of December 2019, including the final acceptance of the works.
3. Work on floating docks, which allow boaters to dock while waiting for access to lock #4, shall not be carried out when the canal is in operation, ie between (Victoria Day or National Day of Patriots) and Thanksgiving of each year inclusively. The Contractor cannot plan this work before the fall of 2018 and must plan the work in the fall of 2018. Allow 5 to 10 working days for the lowering or raising of the water level.
4. Work in front of dyke #2 should be done and completed when channel level is lowered.
5. Work on the aqueduct that runs through the channel at chainage  $\pm 4 + 274$  must not be carried out until June 2018 or before it has been condemned upstream. Coordinate with the Departmental Representative)
6. Work shall be adjoined to adjacent works and any adjustments to be made to the maintenance of traffic, if any, shall be provided by the Contractor.
7. Work must take into account certain zones identified as "potential archeological site". The contractor must plan for these constraints in a way which will not bother the work sequence.
8. Work must be carried out continuously, without interruption, from mobilization to demobilization of the site. No suspension of work is planned.
9. **The Contractor shall not be permitted to demolish more than 100 meters of walls at a time. Before the demolition of a section adjacent to a 100-meter section can be continued, he must have entirely completed the reconstruction of the coping wall on this first section. Excavated areas may, however, exceed this length by  $\pm 100$  to 120 meters provided that the Contractor demonstrates full control over the management of the waters from the Canal and may drain to neighboring sites during construction.**
10. **The Contractor shall take into account in his scheduling that certain equipment such as the new lamp posts shall not be available until September 2018 and that, beyond that period, he shall be responsible for the storage of such equipment up to the time of their installation.**
11. Refer also to "01 32 16.07 - Work scheduling - Bar graphs (GANTT)"

.3 The article 1.6.2 has been modified as follows

Maintenance of Temporary Bridge over Lock # 4: The Contractor shall assume full responsibility for, and complete maintenance of, this temporary bridge including the **traffic management and snow removal as well as** the maintenance of the entire structure until the completion of the work. This will require inspection of the structure prior to commencement of work, ensuring that the temporary footbridge is functional and accessible throughout the duration of the work. If repairs are required to maintain its use, these must be carried out at the expense of the contractor. **At the end of the works, the temporary bridge becomes the property of the Contractor and he is entirely responsible for its removal and disposal, and for the repairs to the concrete of the approaches, such as the patching of the anchors which supported the bridge and the removal of paving, etc.** If the Contractor so requests, plans for the construction of this temporary structure will be made available to the Contractor.

.4 *The article 1.3.4.9 has been modified as follows:*

Excavated areas may not exceed a length of  $\pm 100$  to 120 meters continuously but more than one area may be provided at the same time provided that they are at least 100 metres distant from one another. **This requirement is intended to prevent having more than 100 metres of wall demolished and not rebuilt at any moment. In this way, the Contractor could excavate the entire site but could not demolish more than 100 linear meters of wall at a time. The Contractor will have to completely rebuild the the coping wall before he can start the demolition work of an adjacent section. If necessary, the Contractor shall ensure the drying of the area in order to allow backfilling and controlled compaction of the backfill materials. The Contractor must also ensure that the applicable restrictions at the level of the floating dock and dyke # 2 are met.**

.5 *The article 1.13 has been modified as follows:*

1. Contractor must consider that any soil coming from the excavation of the banks or behind the existing walls are considered susceptible to be contaminated (with concentrations in the range A-B ( $\leq A-B$ ), in the range B-C ( $\leq B-C$ ) and above the C ( $> C$ ) criteria according to the MDDELCC provincial criteria) and has undergone an environmental characterization to establish their degree of contamination. This study is presented in annex of the specification and the Contractor must refer to it to establish his Management plan of contaminated soil management.
2. **In order to increase the accuracy of the data, the Contractor shall carry out additional characterization at the beginning of the work in order to establish his contaminated soil management plan.**
3. Should the characterized materials be found contaminated, a coupon system must be established to control the quantities of contaminated materials to be disposed. Otherwise, Contractor shall dispose of materials at a site authorized by MDDELCC.
4. **Contaminated water cannot be discharged into the Canal without decontamination and must be treated in accordance with the requirements of Section 01 35 43 - Environmental Protection.**
5. Contractor must refer to section 01 35 13.43 – Special Procedures for Contaminated Sites for any specific terms related to the management of contaminated soils an environmental characterization study has been carried out and is presented in the appendix to the specifications and summarized in section 01 35 13.43.

.6 *The article 1.16 has been modified as follows:*

1. Contractor to consider that the corridor allocated for work on the canal side is relatively limited and that no dredging or excavation of the seabed is permitted. **with the exception of the excavation of the sediment mounds rising along the wall of the existing Canal to make it possible to carry out properly the work of repairing the concrete of the wall. .**
2. In general, the bottom of the canal is heavily encumbered with debris of all kinds. The Contractor shall take into account the possible presence of such debris and shall remove the debris and dispose of it in an authorized site. If necessary, the Contractor may deposit his previously cleaned facilities on the bottom of the canal in order to erect and install his work platforms but no excavation is permitted. Ensure at all times that no equipment, material or debris from the work is left in the navigable watercourse or obstructs navigation. Restore the bed of the navigable watercourse to its original state at the end of the work.

.7 *The article 1.17 has been modified as follows:*

1. The Contractor shall adapt his working methods, work scheduling and any other aspects that may be influenced by the choice of one of the following two methods of work:
  - .1 Reinforcement of concrete of retaining wall with shotcrete or;
  - .2 Reinforcement of concrete of retaining wall with cast-in-place concrete.
2. The Contractor shall announce his choice of one or other of these methods of construction at the project start-up meeting.
3. The Contractor shall minimize the use of formwork ties **and propose , from the beginning of the works during the kick-off meeting, a pattern of distribution of tie-rods which he intends to use.** The formwork **of the exposed face of the new coping wall** must be of steel.
4. The Contractor's surveyor must be present at the work site at all times throughout the duration of the work to assist the Specialized Contractor and validate the positions of the formwork installations in real time, As well as the verticality, alignment and the various permitted installation tolerances. The various surveys will be carried out in coordination with the Departmental Representative and the computer files will have to be provided daily for validation.
5. The Contractor shall carry out exploration wells throughout the depth of the projected excavations prior to the commencement of work at Dyke # 2 to determine the composition of the dike materials. **Where appropriate, if interventions such as excavation and remounting are required in this dyke, the Contractor shall immediately notify the Departmental Representative for instructions as to working methods and backfill materials.**

2.4 Section « 01 29 00 – Payment»

.1 *The article 1.3.1.5.3 of the part « Worksite Organisation » has been modified as follows :*

Reclamation

1. All existing works that have been affected or damaged in the course of the work by temporary installations, machinery, equipment, materials, workers and subcontractors, etc. shall be repaired at the expense of the Contractor and to the satisfaction of the Departmental Representative, without causing delays in the delivery of the Work.
2. **For example, but not limited to, the Contractor shall provide for the rehabilitation of all access (entrances or exits) to be used by the machinery or equipment and in particular the existing cycling path to the north of the St-Rémi tunnel. For this cycling path, the Contractor must plan to, at least, scarify the existing bituminous mix ( $\pm 50\text{mm}$ ), repair the upper foundation ( $\pm 150\text{mm}$ ) as well as reconstruct them: new asphalt mix of the same width as the existing type EB-10C with a thickness of 50mm (after compaction) on an upper foundation of type MG20 of 150mm thickness compacted to 98% MPD.**
3. Upon completion of work, existing structures and the work area and all accesses shall be in a condition equivalent to or better than the condition they were in prior to commencement of work. All existing works, as well as all existing surfaces altered by the work, be it concrete sidewalks and curbs, grassed areas, asphalt surfacing, walkways in precast concrete pavers or any other type of surface, shall be returned to a state superior to or equivalent to the satisfaction of the Departmental Representative.

.2 The article 1.3.1.5.5 of the portion « Worksite Organisation » has been modified as follows:

Temporary works and protection methods, support and shoring

1. Provision and installation of temporary retaining walls, identified or not on the plans, but required for the complete and safe construction of the structure, during excavation along the work limits including dismantling and the restoration of the site at the end of the work.
2. The provision, installation and coordination of shoring, temporary support and protective measures required during work in the vicinity of Hydro-Québec poles, including the provision of documentation, signed plans and sealed by the Contractor's engineer and the anticipated protective measures for this work including the dismantling and restoration of the premises at the end of the works.
3. Engineering and expertise as well as design of works and pre-supply of shop drawings (eg assembly drawings) signed and sealed by the Contractor's Engineer and technical data sheets (Materials, equipment, etc.) to the Departmental Representative for approval.
4. All other works or protective measures necessary for the completion of the work and which are not part of the other items in the pricing schedule.
5. **The Contractor shall be responsible for his construction methods and shall supply and install all other temporary works or protective measures of any kind which are not part of the other items in the Pricing Schedule but are necessary for the completion of the works and the entire execution of the work.**

.3 The article 1.3.5.1 has been modified as follows:

**Removal, return to owner, disposal or temporary storage and reconditioning and reinstallation of existing equipment:**

1. This price shall compensate for all necessary measures, actions and supplies, including, but not limited to, labour, equipment, machinery and equipment, materials, professional services and land surveys for the removal of existing equipment (guardrails, vintage bollards, lamppost drums, historic posts, steles, etc.) according to the requirements and indications in the plans and specifications including their transportation to the secure temporary storage site proposed by the Contractor. The Contractor is responsible for these items until the final reinstallation or delivery.
2. Existing lamp post drums must be delivered to the owner at the Parks Canada workshop at 1156 Mill Street.
3. This price also includes coordination with the Departmental Representative for the selection of existing parts in good condition to be retained **or those to dispose of, depending on the case as well as all the measures of decontamination or removal of lead paint**, and the rehabilitation of these parts (galvanizing if necessary, surface preparation and painting) and their relocation including all necessary accessories. **such as, but not limited to, reinforcement cages or other necessary devices for the temporary attachment of the elements prior to concrete placing.**
4. Certain elements will be replaced and are part of another item on pricing schedule.
5. Payment of this item will be made based on the progress of the work, as approved by the Departmental Representative.

.4 *L'article 1.3.5.4 est modifié comme suit :*

**Transportation, supply, preparation and installation of new guardrail rails to replace:**

1. Le paiement de cet item sera effectué en fonction de l'avancement des travaux, tel qu'approuvé par le Représentant du Ministère.
2. This price shall pay, per linear metre, all necessary measures, actions and supplies, including, but not limited to, labour, equipment, tooling and machinery, materials, professional services and surveys for the supply, transportation, preparation, galvanization, painting and installation of the new railings to be replaced including all necessary accessories such as fastenings, plugs, screws, etc.
3. The rails of the guardrails come in two (2) different diameters. Refer to the plans for the exact dimensions.
4. This price also includes the provision of technical data sheets and samples of the new parts (rails, fasteners, plugs, screws and other required accessories) to the Departmental Representative.
5. This price also includes coordination with the Departmental Representative for the selection of existing parts to be replaced **as well as all the decontamination measures or removal of lead paint**, the preparation (galvanizing of the rails, reaming of railing posts and surface preparation), in-shop painting and touch-ups on site.
6. Payment of this item will be made based on the progress of the work, as approved by the Departmental Representative.

.5 *The article 1.3.5.5 has been modified as follows*

**Transportation, preparation and installation of new guardrail posts to replace:**

1. This price shall pay for all necessary measures, actions and supplies, including, but not limited to, labour, equipment, tooling and machinery, materials, professional services and surveys for transportation, preparation, painting and installation of new guardrail posts to be replaced including all necessary accessories such as anchors.
2. Railing posts to be replaced are provided by the Departmental Representative and are available at the Parks Canada Workshop located at 1156 Mill Street.
3. This award also includes coordination with the Departmental Representative for the selection of existing parts to be replaced **as well as all the measures for decontamination or removal of lead paint**, the preparation (hole reaming for guardrail posts and surface preparation), in-shop painting and site retouching.
4. Payment of this item will be made based on the progress of the work, as approved by the Departmental Representative.

.6      *The article 1.3.6.1 has been modified as follows:*

**Demolition, transportation and disposal of the existing asphalt on the Lachine Canal path situated interior the work limits:**

1. This price shall compensate, **per cubic metre (m<sup>3</sup>)**, for all necessary measures, actions and supplies, including, but not limited to, labour, equipment, tooling and machinery and equipment, materials, professional services, land surveys and permits for the demolition and removal of existing asphalt pavement from the Lachine Canal path, **for the parts situated within the work limits only** in accordance with the requirements and indications in the plans and specifications including loading, transportation and disposal at an authorized site.
2. **All the other access and all other paths outside the work limits and which are not foreseen in the specific article of the pricing schedule but which must be detoured or used by the Contractor's machinery or equipment shall be demolished and rebuilt at Contractor's expense and shall be payable on a lump-sum basis in the item " 1.3.1 - WORKSITE ORGANIZATION ".**
3. Payment of this item will be made based on the progress of the work, as approved by the Departmental Representative.

.7      *This article 1.3.6.2 has been modified as follows:*

**Demolition, transportation and temporary storage of concrete from bollard bases separated from the wall, as well as bases for existing lampposts, guardrails, poles, monuments and steles:**

1. This price shall compensate, **per cubic metre (m<sup>3</sup>)**, for all necessary measures, actions and supplies, including, but not limited to, labour, equipment, tooling and machinery, materials, professional services, surveys and permits for the demolition, removal, transportation and temporary storage or storage, as the case may be, of concrete from bollard bases separated from the wall, as well as bases for street lights, guardrails, poles, monuments and existing steles, **as well as all other concrete bases not identified explicitly in the drawings, but discovered during the works for which the demolition is necessary for the complete execution of the work** all according to the requirements and indications in the plans and specifications.
2. The price also includes loading, transportation and disposal at an authorized site (where required) or temporary storage, where applicable, to a secured location proposed by the Contractor.
3. The price also includes the protection, up to final delivery, of the existing concrete bases to be retained and their relocation, such as the existing one, if applicable.
4. Payment of this item will be made based on the progress of the work, as approved by the Departmental Representative.

.8      *The article 1.3.6.3 has been modified as follows:*

**Demolition, transportation and disposal of concrete from the coping wall and vintage bollard bases built on the wall:**

1. This price shall compensate, **per cubic metre (m<sup>3</sup>)** for all necessary measures, actions and supplies, including, but not limited to, labour, equipment, tooling and machinery, materials, professional services, surveys and permits for the demolition, removal, transportation and



disposal of concrete from the coping wall and existing vintage bollard bases built on the wall, all in accordance with the requirements and indications in the plans and specifications.

2. The price also includes the loading, transportation and disposal of the concrete at an authorized site and the temporary storage of existing bollards to be retained for reinstallation, to a secured location proposed by the Contractor.
3. Price also includes coordination for sorting and disposal of materials of a different nature that may be encountered during concrete wall demolition work (stones, masonry blocks, etc.) at an authorized site.
4. Payment of this item will be made based on the progress of the work, as approved by the Departmental Representative.

.9      *The article 1.3.6.4 has been modified as follows*

**Partial demolition, transportation and disposal of concrete from the front and top of the existing retaining wall to be repaired:**

1. This price shall compensate, **per cubic metre (m<sup>3</sup>)**, for all necessary measures, actions and supplies, including, but not limited to, labour, equipment, tooling and machinery, materials, professional services, surveys and permits for partial demolition and removal of concrete from the front and top of the existing retaining wall to be repaired, all in accordance with the requirements and indications in the drawings and specifications.
2. Price also includes **coordination with the Departmental Representative for the demolition of altered concrete down to the sound concrete, the follow-up for the respect of requirements of surface preparation of cast-in-place concrete or shotcrete against existing or hardened concrete, as well as** loading, transporting and disposing of concrete in an authorized site.
3. **The price must take into account the current condition of the wall, the presence of existing cracks of varying depths up to about 500 millimeters or more in depth, the presence of sound concrete but altered by the rust of the existing reinforcement, etc.**
4. Payment of this item will be made based on the progress of the work, as approved by the Departmental Representative.

.10      *The application of a **protective sealant** required in article « 1.3.7.1 – Concrete and associated work » is cancelled.*

.11      *The article 1.3.9.3 has been modified as follows:*

**Supplements for disposal and off-site disposal of cut material and contaminated material:**

- .1 Depending on the item, these prices pay the metric tonne (mt) or cubic metre (m<sup>3</sup>) for all characterization, transportation, disposal and off-site disposal of contaminated materials from cut, excavation or demolition to disposal or treatment sites holding a certificate of authorization from the MDDELCC in the following categories:
  - .1 Supplement for disposal/elimination of excavated material, the concentration of contaminants, after characterization, is in range A-B (paid per t.m.)
  - .2 Supplement for disposal/elimination of cut materials with concentration of contaminants, after characterization, in the B-C Range (Paid by Rt)



- .3 Supplement for disposal/elimination of excavated material with contaminant concentration, after characterization, above criterion C and below the limit value of RESC (paid per t.m.)
- .4 Supplement for disposal/elimination of large stones or boulders with a volume greater than 1 cubic metre (paid per m³)
- .5 Supplement for disposal/elimination of **treated wood contaminated with creosote or lead (paid per m³) REPLACED ARTICLE**
- .2 These prices include all materials, transportation, rental, installation of equipment, equipment, machinery, tools, labor and expenditures to perform the work of disposition Off-site "of contaminated excavated material, even if they are not specifically described, either in the drawings or in the specifications or other tender documents, but deemed necessary to bring them into line with best practices.
- .3 All costs necessary to complete and provide this item, such as, but not limited to, soil management, stockpiling, soil drainage, supply and installation of protective membranes, marking of zones, coordination with the Laboratory and the Departmental Representative for soil characterization, if required before disposal, and rehabilitation of temporary repository areas should be included.
- .4 Measurement for Payment Purposes shall be the determination of the tonnage of excavated material indicated on the weigh tickets of each authorized load and compiled in a register approved by the Departmental Representative. All costs of excavation materials elimination and work carried out, including excavation and demolition carried out without the approval of the Departmental Representative, shall be at the expense of the Contractor.
- .5 Provide access to a scale at all times even when the disposal site does not have access to it.
- .6 Payment of this item will be made based on the progress of the work, as approved by the Departmental Representative.

.12 *The article 1.3.9.6 has been modified as follows:*

**Controlled backfill behind the wall with MG-56 type borrow materials:**

- 1. This price shall remunerate per metric tons (m.t) all necessary measures, actions and supplies, including, but not limited to, management, labor, machinery and equipment, equipment, materials, surveys, permits, professional services and construction engineering for the supply of installation of materials and backfilled work with approved granular borrowing materials as per plans and specifications
- 2. All costs necessary to complete and supply this item, including, but not limited to **levelling, watering, and compaction as well as** the coordination with the Laboratory and the Departmental Representative for the approval of fill materials shall be included
- 3. Payment of this item will be made based on the progress of the work, as approved by the Departmental Representative.

.13 The article 1.3.9.7 has been modified as follows:

**Controlled backfill under the new infrastructure, excluding the foundation and sub-foundation of the new multi-purpose path, with MG-20 type borrow materials:**

1. This price shall remunerate per metric tons (mt) all necessary measures, actions and supplies, including, but not limited to, management, labor, machinery and equipment, equipment, materials, Records, permits, professional services and construction engineering for the supply of materials and controlled backfill under the new infrastructure, **excluding the bicycle-path foundation and sub-foundation of the multi-use path**, with approved MG-20 approved granular borrow materials, according to the specifications and drawings.
2. **This item includes, but is not limited to, MG-20 granular borrow materials used as a foundation for new concrete infrastructure such as new concrete bases and concrete bases to be relocated or rebuild, etc**
3. All costs necessary to complete and supply this item, including, but not limited to, levelling, watering and compaction as well as coordination with the Laboratory and the Departmental Representative for the approval of fill materials shall be included.
4. Payment of this item will be made based on the progress of the work, as approved by the Departmental Representative.

.14 The article 1.3.9.11 has been modified as follows

**Perforated drains, filtering materials and geotextiles:**

1. This price shall pay for all necessary measures, actions and supplies, including, but not limited to, management, labor, machinery and equipment, equipment, materials, statements, permits, Professional services and construction engineering for the supply and installation of **the new 200 mm  $\Phi$  galvanized steel perforated drains**, including filter and geotextile materials, according to specifications and specifications.
2. All costs necessary to complete and supply this item shall be included.
3. Payment of this item will be made based on the progress of the work, as approved by the Departmental Representative.

.15 The article 1.3.11.1 has been modified as follows:

**Installation of lampposts:**

1. In the pricing schedule, the price is per unit for the item entitled : « installation of the lamp posts » Price includes but is not limited to:
  - .1 Installing a lamp post including all accessories such as drum, anchor, base cover, tenon, etc.
  - .2 Installation and connection of wiring in drum for luminaire, fuse holder and fuses, splices.
  - .3 Final adjustment of shaft verticality.
  - .4 Connecting the lamp post to the circuit.
  - .5 All other related work required to complete the works, as specified in drawings and specifications.

2. The price also includes coordination with the Departmental Representative for the recovery of equipment, which will be available only from September 2018 and the temporary storage of these until their final installation
3. Payment of this item will be made based on the progress of the work, as approved by the Departmental Representative.

2.5

Section « 01 35 13.43 – Special Project Procedures for Contaminated Sites »

.1 *The article 1.2.6 has been modified as follows :*

Due to the heterogeneous nature of the soil to be excavated, and in order to increase the accuracy of the characterization polygons, the Contractor must carry out a complementary characterization of the existing soils before the work begins. At least two additional boreholes or exploration wells will be required to be drilled between each borehole in the Terrapex study but not more than thirty (30) meters between each borehole or exploration well. If desired, the Contractor may perform this additional characterization in sections of 100 meters at a time in order to expedite the work and, regardless of his choice, he is fully responsible for providing and following a management plan that must be approved in advance by the Departmental Representative ~~these materials will be systematically stored on the site for further environmental characterization when excavated, to guide their management.~~ The characterization will be the entire responsibility of the Contractor and will be carried out by the Contractor under the supervision of Departmental Representative.

.2 *The article 3.1.1 has been modified as follows:*

All soils excavated at the back of the wall shall be considered as potentially contaminated and shall be disposed of according to the contaminated soil management plan prepared by the Contractor, **following the complementary characterisation work**, and approved by the Departmental Representative. In this case, if the soils must be placed in temporary storage for **complemenatry** or additional environmental characterisation, they must remain within the limits of the site in an area previously approved by the Departmental Representative.

.3 *The article 4.1.2 has been modified as follows:*

Responsibilities of the Contractor

1. The Contractor shall carry out, at his own expense, an additional characterization of the soil in place prior to the commencement of the work, under the supervision of the Departmental Representative.
2. The Contractor must prepare and supply the contaminated soils management **plan or plans**, the area of equipment decontamination management plans, the temporary stockpiling of excavated materials management plan and the plan for off-site management of excavated material
3. The Contractor shall provide all necessary coordination for sampling by the Departmental Representative, provision of a hydraulic excavator for characterization purposes, and wait times for test results. Regular time of analysis should be in the order of 5 working days.
4. The Contractor shall notify the Departmental Representative at least 48 hours prior to the performance of any work covered by this section of the specifications.

5. The Contractor is responsible for ensuring compliance with the recommended disposal **or elimination** sites. It must also ensure that contaminated materials can be transported smoothly, depending on the level of contamination, regardless of water content. He must also ensure that each of the recommended sites have weigh-scales.
6. The Contractor shall conduct research and preliminary selection of the disposal sites and provide the ACs for approval to the Departmental Representative.
7. The results of the chemical analyzes by the Contractor under the supervision of the Departmental Representative carried out on samples of certain materials of questionable environmental quality and put into piles will make it possible to identify their management mode. No complaint will be admissible due to the analysis deadlines. A minimum delay of 5 working days must be provided for the analysis periods which refer to the samples received in the laboratory, provided that they are received before 14:00.
8. The Contractor shall follow the instructions of the Departmental Representative in all stages of environmental monitoring of excavation and excavation work.

## 2.6 Section « 01 35 43 – Environmental Protection »

.1 *The article 3.18 has been modified as follows :*

### MANAGEMENT OF CONTAMINATED SOILS

1. Soils to be reused in the backfill area shall comply with the Canadian Environmental Quality Guidelines (Soil Quality) and the Canada-Wide Standard for Petroleum Hydrocarbons in Soils (strand 1) of the Canadian Council of Ministers of Environment(CCME) for commercial use. Soils whose concentrations exceed the applicable criteria for commercial use must be disposed of at an authorized MDDELCC treatment site, depending on the level of contamination.
2. The MDDELCC Soil Protection and Contaminated Land Reclamation Policy and the requirements of the Land Protection and Rehabilitation Regulations must be adhered to when storing and disposing of soils.
3. ~~Direct loading of non-reusable contaminated soils should be preferred to avoid storage. Soil drainage must be carried out before loading.~~
4. Where direct loading **of non-reusable contaminated** soils is not possible, contaminated soils shall be temporarily stored on a waterproof surface and covered entirely with a waterproof fabric to prevent migration of contaminants to the environment. The temporary storage site must be located 15 m from the Canal, within the property boundaries.
5. Contaminated soils to be off-site shall be temporarily stored for a maximum of five (5) working days.
6. Written proof of the transport of contaminated soil (a transport manifest specifying the nature of the materials and their quantity) and proof of receipt of the soil (soil receipt specifying the quantity of material disposed and the carrier) at a site Processing or disposition shall be delivered to the Departmental Representative.
7. Any incidental discovery of potentially contaminated and uncharacterized materials shall be reported to the Departmental Representative without delay. Where appropriate, a characterization of these soils should be carried out prior to their re-use or disposal by the Contractor. All measures in this section should be followed.

2.7 Section « 01 51 00 – Temporary Utilities »

.1 *The article 1.4 has been modified as follows:*

**FIELD CONDITIONS AND DRAINING**

1. During excavation, demolition, rehabilitation or reconstruction of the concrete wall, the Contractor shall take into consideration that he may have to work under water-in saturated conditions. He must take into consideration that depending on the construction method he chooses, it may be difficult to pump water from the water table or from the Canal in order to be able to carry out his work in dry conditions. However, during backfilling and compaction work behind the wall, and only once the coping wall has been rebuilt, he should provide temporary pumping and drainage facilities including the decontamination of the water prior to its discharge if necessary, to maintain excavations and land free of standing water. In no case may the water contaminated by the materials be pumped to the Canal.

2.8 Section « 01 56 00 – Temporary Barriers and Enclosures »

.1 *The article 2.1 has been modified as follows:*

**CONSTRUCTION FENCE**

1. Erect a temporary fencing around the worksite, **around the entire perimeter**, consisting of a new 2.4 m high fence attached with wire to T-profiled columns at 2.4 m centers. **Self-supporting commercial fences may be used upon approval by the Departmental Representative.** Provide a lockable access barrier for trucks, minimum. Excavations ~~for work of installation of back-up conduits for deep work~~ shall be protected at the end of each day by temporary barriers. Place fences around trees and plants to be left in place to protect them from damage that may be caused to them by the equipment used or by certain construction practices. Fences must be securely fastened with concrete blocks and stiffeners to prevent their falling over.
2. Fence on the periphery of the site shall be provided to support banners 2.4 m high over ~~the entire delimitation~~ **certain portions** of the worksite or ~~at the locations identified on the plans~~ **or principally near the entries and exists** if any. ~~The access doors to the site as well as the openings necessary for the proper operation of the site will not need banners.~~ Arrange the installation of the banners with the co-ordination of a Parks Canada Agency Representative. The graphic design of the banners will be provided by Parks Canada through electronic support.
3. Technical specifications of the banners:
  - .1 MESH material with printed design by Parks Canada Agency.
  - .2 Perforation type 60% printable / 40% air flow rate.
  - .3 Dimensions: 96 inches high x length of fence sections to be covered.
  - .4 Finish: matt.
  - .5 Perimeter with hem and double seam.
  - .6 Use: outdoor use.
  - .7 Hooking system: with 12 "or 24" eyelets (as recommended by manufacturer).
  - .8 Submit all posters at the end of the worksite to Parks Canada.

- .9 Provide a 1.0m x 1.0m print sample for Parks Canada approval prior to full printing.

2.9 Section « 02 83 10 – Lead-Base Paint Abatement »

*This section has been added. The complete new section is presented in the appendix of this document.*

2.10 Section « 03 10 00 – Concrete Forming and Temporary Formwork »

*The article 2.1.1 has been modified as follows:*

**Formwork materials**

1. **When placing the concrete for the reconstruction of the coping wall (level 15,300 @ 18,500), use only steel formwork, limiting as much as possible the formwork ties for the exposed side of the Canal side** ~~For concrete apparent and specifically for the repair or rebuilding of walls, only use steel formwork.~~
2. Where underwater concreting is preferred, the Contractor shall demonstrate that the formwork is perfectly watertight before continuing the work.
3. Rigid insulation board: to CAN/ULC-S701.
4. For the purposes of the project, the formwork must be drilled for the passage of the reinforcing bars which must be left on hold for structural continuity by overlap as well as for the installation of drainage sleeves.

**Form ties**

1. For the placement of exposed concrete and specifically for the coping wall **to rebuild**, minimize the amount of formwork ties. **From the start of the work, the Contractor must submit shop drawings and technical data sheets of the steel formworks he intends to use and the pattern of distribution of the formwork ties necessary for this work. The quantity of formwork ties must be kept to a minimum in order to represent the smoothest possible architectural finish and to minimize the presence of joints, tie-rods, etc**
2. Use removable or snap-off ties, galvanized steel or black steel coated with a paint rich in zinc fixed or adjustable length, free of devices leaving holes larger than 25 mm diameter, and a depth greater than 40 mm in concrete surface. Seal all the holes left by tie rods. taking care to smooth the surface well and not staining the surrounding surface..
3. For architectural concrete, use snap ties complete with plastic cones and light grey concrete plugs.
4. **Minimally, use tie rods with plastic cones and light gray concrete plugs, even if the holes are to be sealed.**
5. No tie-rod will be accepted in concrete slabs and beams.

2.11 Section « 03 15 00 – Accessories for Concrete »

- .1 *The article 2.1.24 « **Water repellent agent** » has been cancelled.*

2.12 Section « 32 12 16 – Asphalt Paving »

- .1 *The mention «To Come » of the table in 2.3.3.2 has been cancelled.*

**PART 3 Addendum #2 – Drawings**

3.1 Drawings from the STRUCTURAL discipline:

- .1 *The following drawing has been reissued in general revision:*

<u>Code</u>	<u>Révision</u>	<u>Titre</u>
CL-32-128.35	01	CIVIL ENGINEERING – GUARDRAILS AND VINTAGE LADDERS, SECTIONS AND DETAILS

- .2 *Modifications to drawings S05 and S22:*

Shaded areas indicating the presence of archaeological remains include, in particular, the presence of an old concrete base at the CH chain. 4 + 570 @ 4 + 580. The Contractor shall provide for the demolition of this old base of sound concrete of  $\pm 7.5$  meters in length to the level of the bottom of excavation (level  $\pm 16,24$ ) and comprising three pilasters of 700x700, two low walls of 550 of width for a total of about ten (10) cubic metres

- .3 *Modifications to drawing S32 :*

- .1 In the typical section 12 "NEW WALL OF THE CANAL - CONSTRUCTION", the new MG80 type borrow material has been replaced by MG56 type borrow material.

- .2 On the same typical section, the note 1 has been modified as follows:

**GENERALLY, THE MARINE BOTTOM IS VERY ENCUMBERED WITH DEBRIS AND SEDIMENTS OF ALL KINDS. THE CONTRACTOR MUST TAKE INTO ACCOUNT OF THE POSSIBLE PRESENCE OF THIS DEBRIS AS WELL AS THE MOUNDS OF SEDIMENTS UP AGAINST THE EXISTING WALL. IN ORDER TO REALIZE THE REPAIR WORKS OF THE WALL AND IN ORDER TO PERFORM A LINEAR REPAIR OF THE BOTTOM OF THE WALL. THE CONTRACTOR MUST REMOVE AND DISPOSE OF THESE DEBRIS OR SEDIMENT IN AN AUTHORIZED SITE. AS REQUIRED. HOWEVER, WITH THE EXCEPTION OF THE REMOVAL OF THE SEDIMENTS WHICH ENCUMBER THE WORK OF REFECTION OF THE BOTTOM OF THE WALL, NO OTHER EXCAVATION OF THE BOTTOM OF THE CANAL IS PERMITTED. THE CONTRACTOR MAY PLACE HIS PREVIOUSLY CLEANED INSTALLATIONS ON THE BOTTOM OF THE CANAL IN ORDER ERECT AND INSTALL HIS WORK PLATFORMS, BUT NO EXCAVATION IS PERMITTED. ENSURE THAT NO EQUIPMENT, MATERIAL OR DEBRIS FROM THE WORK IS LEFT ABANDONED IN THE NAVIGABLE WATER COURSE OR CAUSE AN OBSTRUCTION TO NAVIGATION. RETURN THE CANAL BED TO ITS ORIGINAL STATE AT THE END OF THE WORK.**

- .3 On enlarged plan view TYPICAL DETAIL - CONSTRUCTION JOINT, the following note has been added:

ON THE TOP OF THE WALL AND ON THE EXPOSED FACE OF THE CANAL WALL, WHERE THERE ARE CONSTRUCTION JOINTS, MAKE A "SOFT-CUT" SAW CUT OF 20mm MAXIMUM DEPTH USING 6mm WIDTH 12 HOURS OF THE CONCRETE CAST. AT THE END OF A 56 DAY CURE OF THE CONCRETE, REPAIR THE REQUIRED SAW CUT AND CLEAN IT BEFORE FILLING IT WITH TWO COMPONENTS OR HIGH QUALITY ELASTOMERIC SEALANT, OF CHEMICAL-BASED CURING AND NON-SLUMP CONSISTENCY POLYURETHANE (PEANUT BUTTER TYPE) APPLIED BY GUN BY QUALIFIED PERSONNEL. FOR NON-EXPOSED OR REMOVABLE FACES, MAKE A 20mm V-CUT USING WOOD STICK OR OTHER DEVICE AND FILL WITH THE SAME SEALANT AFTER THE CONCRETE IS CURED, PRIOR TO BACKFILLING.

- .4 *Modifications to drawings S33 and S34:*

- .1 On the TYPICAL DETAIL of the drawing S33 as well as on TYPICAL SECTION 17 of drawing S34, the note pointing to the new wire mesh has changed as follows:

**WELDED GALVANIZED METAL MESH, 102 x 102 / MW 13.3 X MW 13.3 ATTACHED TO CONCRETE WITH 6 Ø ANCHORS @ 600 C/C MAX.**

3.2 Drawings of the ELECTRICAL discipline

- .1 *The following drawing has been reissued in general revision::*

<u>Code</u>	<u>Revision</u>	<u>Title</u>
CL-32-128.54	01	ELECTRICAL – EXTERIOR LIGHTING SECTOR 11, SECTION 5 - DEMOLITION

**PART 4 Addendum #2 – PRICING SCHEDULE**

*The Pricing Schedule 639837-0000-40EL-EN01\_01 has been replaced by the Pricing Schedule. 639837-0000-40EL-EN01\_02*



**END OF ADDENDUM #2**



## APPENDIX

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Section « 02 83 10 – Lead-Base Paint Abatement »

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Appendix A	Environmental Site Assessment – rapport final, Soil characterization, Range 3, Type 11 walls, type H.1 and type H.2 Walls restoration of Canal-de-Lachine, Parks Canada Agency South-west Borough, Montréal, Québec – March 30, 2017, Projet N° CM4056.0	166

	<b><u>Drawings list</u></b>		
	<b><u>Code</u></b>	<b><u>Revision</u></b>	<b><u>Title</u></b>
	CL-32-128.01	01	TITLE PAGE DRAWINGS LIST GENERAL DESCRIPTION
	CL-32-128.02	01	PLAN VIEW TRUCK ACCESS AND TRAFFIC TO WORKSITE
	CL-32-128.03	01	PLAN VIEW AND ELEVATION OF RETAINING WALL FOR DEMOLITION B3-N-01, A,B
	CL-32-128.04	01	PLAN VIEW AND ELEVATION OF RETAINING WALL FOR DEMOLITION B3 N-01, C,D
	CL-32-128.05	01	PLAN VIEW AND ELEVATION OF RETAINING WALL FOR DEMOLITION B3-N-02, A,B
	CL-32-128.06	00	Plan View and elevation of retaining wall for demolition B3-N-02, C,D
	CL-32-128.07	01	PLAN VIEW AND ELEVATION OF RETAINING WALL FOR DEMOLITION B3-N-03, A,B
	CL-32-128.08	01	PLAN VIEW AND ELEVATION OF RETAINING WALL FOR DEMOLITION B3-N-03, C,D
	CL-32-128.09	01	PLAN VIEW AND ELEVATION OF RETAINING WALL FOR DEMOLITION B3-N-04, A,B
	CL-32-128.10	01	PLAN VIEW AND ELEVATION OF RETAINING WALL FOR DEMOLITION B3-N-04, C,D
	CL-32-128.11	01	PLAN VIEW AND ELEVATION OF RETAINING WALL FOR DEMOLITION B3-N-05, A,B
	CL-32-128.12	00	Plan View and elevation of retaining wall for demolition B3-N-05, C,D
	CL-32-128.13	00	Plan View and elevation of retaining wall for demolition B3-N-06, A,B
	CL-32-128.14	00	Plan View and elevation of retaining wall for demolition B3-N-06, C,D
	CL-32-128.15	00	Top elevation existing retaining walls photographs -1
	CL-32-128.16	00	Elevations existing of retaining walls photographs-2
	CL-32-128.17	00	Elevations existing of retaining walls photographs -3
	CL-32-128.18	01	TYPICAL SECTIONS OF EXISTING RETAINING WALLS FOR DEMOLITION
	CL-32-128.19	01	TYPICAL SECTIONS OF EXISTING RETAINING WALLS FOR DEMOLITION
	CL-32-128.20	01	NEW PLAN VIEW AND ELEVATION OF RETAINING WALL B3-N-01 A,B
	CL-32-128.21	01	NEW PLAN VIEW AND ELEVATION OF RETAINING WALL B3-N-01 C,D
	CL-32-128.22	01	NEW PLAN VIEW AND ELEVATION OF RETAINING WALL B3-N-02 A,B
	CL-32-128.23	00	New plan view and elevation of retaining wall B3-N-02 C,D
	CL-32-128.24	01	NEW PLAN VIEW AND ELEVATION OF RETAINING WALL B3-N-03 A,B
	CL-32-128.25	01	NEW PLAN VIEW AND ELEVATION OF RETAINING WALL B3-N-03 C,D
	CL-32-128.26	00	New plan view and elevation of retaining wall B3-N-04 A,B
	CL-32-128.27	01	NEW PLAN VIEW AND ELEVATION OF RETAINING WALL B3-N-04 C,D
	CL-32-128.28	00	New plan view and elevation of retaining wall B3-N-05 A,B
	CL-32-128.29	00	New plan view and elevation of retaining wall B3-N-05 C,D
	CL-32-128.30	00	New plan view and elevation of retaining wall B3-N-06 A,B
	CL-32-128.31	00	New plan view and elevation of retaining wall B3-N-06 C,D
	CL-32-128.32	01	NEW CANAL WALL, SECTIONS AND DETAILS
	CL-32-128.33	01	REINFORCEMENTS AND TIE RODS, SECTIONS AND DETAIL
	CL-32-128.34	01	REHABILITATION OF ST-RÉMI TUNNEL WALL, BOLLARD AND POST, BASE SECTIONS AND DETAILS

<u>Code</u>	<u>Revision</u>	<u>Title</u>
△ 02 CL-32-128.35	01	Guardrails and vintage ladders, sections and details
CL-32-128.36	01	STELE, SECTION AND DETAIL
CL-32-128.37	00	Connections to existing wall, sections and details
CL-32-128.38	01	PLAN VIEW BICYCLE PATH DETOUR OPTION # 1
CL-32-128.39	01	PLAN VIEW BICYCLE PATH DETOUR OPTION # 2
CL-32-128.40	01	WORK SITE ACCESS SAINT-PAUL STREET WEST BOUND
CL-32-128.41	01	WORK SITE ACCESS SAINT-PAUL STREET EAST BOUND
CL-32-128.42	01	WORK SITE ACCESS SAINT-REMI TUNNEL
CL-32-128.43	01	WORK SITE ACCESS GEORGES-ÉTIENNE-CARTIER
CL-32-128.44	00	CIVIL ENGINEERING - MULTI-USE PATH - PLAN LAYOUT AND PROFILE MULTI-USE PATH RECONSTRUCTION SECTOR 11 WALL STA.: 0+000@0+300
CL-32-128.45	00	CIVIL ENGINEERING - MULTI-USE PATH - PLAN LAYOUT AND PROFILE MULTI-USE PATH RECONSTRUCTION SECTOR 11 WALL STA.: 0+300@0+600
CL-32-128.46	00	CIVIL ENGINEERING - MULTI-USE PATH - PLAN LAYOUT AND PROFILE MULTI-USE PATH RECONSTRUCTION SECTOR 11 WALL STA.: 0+600@0+900
CL-32-128.47	00	CIVIL ENGINEERING - TEMPORARY PATH - PLAN LAYOUT TEMPORARY PATHS SECTOR 11 WALL
CL-32-128.48	00	CIVIL ENGINEERING - MULTI-USE PATH - TYPICAL CROSS SECTION
CL-32-128.49	00	CIVIL ENGINEERING - MULTI-USE PATH - TYPICAL CROSS SECTION CONNECTIONS AND STELE
CL-32-128.50	00	CIVIL ENGINEERING - MULTI-USE PATH - PAVEMENT MARKING AND SIGNAGE STA.: 0+000@0+899,85
CL-32-128.51	00	ELECTRICAL - LEGEND AND TABLE
CL-32-128.52	00	ELECTRICAL - EXTERIOR LIGHTING SECTOR 11 SECTIONS 1 AND 2 - DEMOLITION
CL-32-128.53	00	ELECTRICAL - EXTERIOR LIGHTING SECTOR 11 SECTIONS 3 AND 4 - DEMOLITION
△ 02 CL-32-128.54	01	ELECTRICAL - EXTERIOR LIGHTING SECTOR 11 SECTION 5 - DEMOLITION
CL-32-128.55	00	ELECTRICAL - EXTERIOR LIGHTING SECTOR 11 SECTIONS 1 AND 2 - CONSTRUCTION
CL-32-128.56	00	ELECTRICAL - EXTERIOR LIGHTING SECTOR 11 SECTIONS 3 AND 4 - CONSTRUCTION
CL-32-128.57	00	ELECTRICAL - EXTERIOR LIGHTING SECTOR 11 SECTION 5 - CONSTRUCTION
CL-32-128.58	00	ELECTRICAL - DETAILS 1 FROM 2
CL-32-128.59	00	ELECTRICAL - DETAILS 2 FROM 2

**END OF SECTION**

## **PART 1 GENERAL**

### **1.1 SUMMARY**

- .1 Comply with requirements of this Section when performing following Work:
  - .1 Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap on existing equipment such as guards, bollards, etc.
  - .2 Removal of lead-containing coatings or materials using a power tool with an effective dust collection system equipped with a HEPA filter on on existing equipment such as guards, bollards, etc.
  - .3 Removal of lead-containing coatings or materials with non-powered hand tool, other than manual scraping and sanding on on existing equipment such as guards, bollards, etc.

### **1.2 RELATED REQUIREMENTS**

- .1 All sections of Division 1 - General Requirements and Division 2 – Existing Conditions.

### **1.3 REFERENCES**

- .1 Department of Justice Canada
  - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .2 Health Canada
  - .1 Workplace Hazardous Materials Information System (WHMIS), Material Safety Data Sheets (MSDS).
- .3 Human Resources and Social Development Canada (HRSDC)
  - .1 Canada Labour Code Part II, - SOR 86-304 - Occupational Health and Safety Regulations.
- .4 Transport Canada (TC)
  - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .5 Gouvernement du Québec
  - .1 Loi sur la santé et la sécurité du travail (LSST) RLRQ, chapitre S-2.1
  - .2 Règlement sur la santé et la sécurité du travail (RSST) D. 885-2001, RLRQ, c. S-2.1, r.13
  - .3 Code de sécurité pour les travaux de construction (CSTC) RLRQ, 1981, c. S-2.1, r. 4
  - .4 Règlement sur les matières dangereuses D. 1310-97, RLRQ, c. S-2, r. 32
- .6 U.S. Environmental Protection Agency (EPA)
  - .1 EPA 747-R-95-007-1995, Sampling House Dust for Lead.
- .7 U.S. Department of Health and Human Services/Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health (NIOSH)
  - .1 NIOSH 94-113 - NIOSH Manual of Analytical Methods (NMAM), 4th Edition (1994).
- .8 U.S. Department of Labour - Occupational Safety and Health Administration (OSHA) - Toxic and Hazardous Substances
  - .1 Lead in Construction Regulation - 29 CFR 1926.62-1993.

- .9 Underwriters' Laboratories of Canada (ULC)

#### **1.4 DEFINITIONS**

- .1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .2 Authorized Visitors: Departmental Representative.
- .3 Polyethylene : polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects over cuts and tears, and elsewhere as required to provide protection and isolation. For protection of underlying surfaces from damage and to prevent lead dust entering in clean area.
- .4 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.
- .5 Action level: employee exposure, without regard to use of respirators, to airborne concentration of lead of 50 micrograms per cubic meter of air (50 ug/m<sup>3</sup>) calculated as 8-hour time-weighted average (TWA). Minimum precautions for lead abatement are based on airborne lead concentrations less than 0.05 milligrams per cubic meter of air for removal of lead based paint by methods noted in paragraph 1.1.
- .6 Competent person: Departmental Representative capable of identifying existing lead hazards in workplace taking corrective measures to eliminate them.
- .7 Lead dust: wipe sampling on vertical surfaces and/or horizontal surfaces, dust and debris is considered to be lead contaminated if it contains more than 40 micrograms of lead in dust per square foot.

#### **1.5 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of lead based paint waste in accordance with requirements of authority having jurisdiction.
- .3 Provide proof of Contractor's General and Environmental Liability Insurance.
- .4 Quality Control:
- .1 Provide Departmental Representative necessary permits for transportation and disposal of lead based paint waste and proof that lead based paint waste has been received and properly disposed.
  - .2 Provide proof satisfactory to Departmental Representative that employees have had instruction on hazards of lead exposure, respirator use, dress, and aspects of work procedures and protective measures.

#### **1.6 QUALITY ASSURANCE**

- .1 Regulatory Requirements: comply with Federal, Provincial / Territorial and local requirements pertaining to lead paint, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.



- .2 Health and Safety:
  - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
  - .2 Safety Requirements: worker and visitor protection.
    - .1 Protective equipment and clothing to be worn by workers and visitors in work Area include:
      - .1 Respirator NIOSH approved and equipped with replaceable HEPA filter cartridges with an assigned protection factor of [10], acceptable to Authority having jurisdiction. Suitable for type of lead and level of lead dust exposure. Provide sufficient amount of filters.
      - .2 Half mask respirator: half-mask particulate respirator with P - series filter, and 100% efficiency could be provided.
    - .2 Eating, drinking, chewing, and smoking are not permitted in work area.
    - .3 Ensure workers wash hands and face when leaving work area.
    - .4 Visitor Protection:
      - .1 Provide approved respirators to Authorized Visitors to work areas.
      - .2 Instruct Authorized Visitors procedures to be followed in entering and exiting work area.

## **1.7 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.
- .3 Disposal of lead waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of lead waste in leak proof drums. Label containers with appropriate warning labels.
- .4 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

## **1.8 EXISTING CONDITIONS**

- .1 Reports and information pertaining to lead based paint to be handled, removed, or otherwise disturbed and disposed of during this Project could be available for inspection at the beginning of works.
- .2 Notify Departmental Representative of lead based paint discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

## **1.9 SCHEDULING**

- .1 Not later than two days before beginning Work on this Project notify following in writing:
  - .1 Appropriate Regional or Zone Director of Medical Services Branch, Health Canada.
  - .2 CNESST .
  - .3 Provincial Ministry of Labour.

- .4 Disposal Authority.
- .2 Inform sub trades of presence of lead-containing materials identified in Existing Conditions.
- .3 Provide Departmental Representative copy of notifications prior to start of Work.

#### **1.10 PERSONNEL TRAINING**

- .1 Provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of lead exposure, in personal hygiene, in aspects of work procedures and in use, cleaning, and disposal of respirators.
- .2 Instruction and training related to respirators includes, at minimum:
  - .1 Proper fitting of equipment.
  - .2 Inspection and maintenance of equipment.
  - .3 Disinfecting of equipment.
  - .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person.
- .4 Supervisory personnel to complete required training.

### **PART 2 PRODUCTS**

#### **2.1 MATERIALS**

- .1 Polyethylene 0.15 mm thick unless otherwise specified; in sheet size to minimize joints.
- .2 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under dry conditions and wet conditions using amended water.
- .3 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual lead paint residue.
- .4 Lead waste containers: metal fibre type acceptable to dump operator with tightly fitting covers and 0.15 mm thickness sealable polyethylene liners.
  - .1 Label containers with pre-printed bilingual cautionary Warning Lead clearly visible when ready for removal to disposal site.

### **PART 3 EXECUTION**

#### **3.1 SUPERVISION**

- .1 One Supervisor for every ten workers is required.
- .2 Supervisor must remain within work area during disturbance, removal, or handling of lead based paints.

### 3.2 PREPARATION

- .1 Remove and store items to be salvaged or reused.
  - .1 Protect and wrap items and transport and store in area specified by Departmental Representative.
- .2 Work Area:
  - .1 Shut off and isolate HVAC system to prevent dust dispersal into other building areas. Conduct smoke tests to ensure duct work is airtight.
  - .2 Pre-clean fixed casework and equipment within work area, using HEPA vacuum and cover and seal with polyethylene sheeting and tape.
  - .3 Clean work area using HEPA vacuum. If not practicable, use wet cleaning method. Do not raise dust.
  - .4 Seal off openings with polyethylene sheeting and seal with tape.
  - .5 Protect floor surfaces covered from wall to wall with polyethylene sheets.
  - .6 Maintain emergency fire exits or establish alternatives satisfactory to Authority having jurisdiction.
  - .7 Where water application is required for wetting lead containing materials, provide temporary water supply appropriately sized for application of water as required.
  - .8 Provide electrical power and shut off [for operation of powered tools and equipment]. Provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical cables and equipment.
- .3 Do not start work until:
  - .1 Arrangements have been made for disposal of waste.
  - .2 Tools, equipment, and materials waste containers are on site.
  - .3 Arrangements have been made for building security.
  - .4 Notifications have been completed and preparatory steps have been taken.

### 3.3 LEAD ABATEMENT

- .1 If the conditions allow, wet the materials with water to minimise the release of dust during the works.
- .2 Using polyethylene sheets of sufficient size and adhesive tape or sealed bags of sufficient size, encapsulate materials with lead-containing coatings to prevent release of dust and chips during dismantling.
- .3 Use an appropriate tool for removing wood pieces which have contain lead, one at a time. Carefully remove them to not break unnecessarily.
- .4 If necessary, cut the materials for their removal, and do this with an electric saw fitted with a high efficiency filter.
- .5 If conditions permit, wet materials with water to minimize dust build-up during work.
- .6 Using polyethylene sheets of sufficient size and adhesive tape or sealed bags of sufficient size, encapsulate materials with lead-containing coatings to prevent release of dust and chips during dismantling.

- .7 Use a suitable tool to tear off pieces of wood with lead coating one at a time. Remove them carefully so as not to break them unnecessarily.
- .8 If cutting materials are required, perform this task using an electric saw with a high efficiency filter.
- .9 Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap; or removal equipped with HEPA filters; or removal with using power tools non-powered hand tool, other than manual scraping and sanding.
- .10 Remove lead based paint in small sections and pack as it is being removed in sealable 0.15 mm plastic bags and place in labelled containers for transport.
- .11 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to staging area. Clean external surfaces thoroughly again by wet sponging. Wash containers thoroughly pending removal to outside. Ensure containers are removed by workers who have entered from uncontaminated areas dressed in clean coveralls.
- .12 After completion of stripping work, wire brush and wet sponge surface from which lead based paint has been removed to remove visible material. During this work keep surfaces wet.
- .13 After wire brushing and wet sponging to remove visible lead based paint, and after encapsulating lead containing material impossible to remove, wet clean entire work area, and equipment used in process. After inspection by Departmental Representative apply continuous coat of slow drying sealer to surfaces of work area. Do not disturb work area for 8 hours no entry, activity, ventilation, or disturbance during this period.

### **3.4 INSPECTION**

- .1 Perform inspection to confirm compliance with specification and governing authority requirements. Deviations from these requirements not approved in writing by Departmental Representative will result in work stoppage, at no cost to Owner.
- .2 Departmental Representative will inspect work for:
  - .1 Adherence to specific procedures and materials.
  - .2 Final cleanliness and completion.
  - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

### **3.5 LEAD SURFACE SAMPLING - WORK AREAS**

- .1 Final lead surface sampling to be conducted as follows:
  - .1 After work area has passed a visual inspection for cleanliness approved and accepted by Departmental Representative. Apply coat of lock-down agent to surfaces within enclosure, and appropriate setting period of 8 hours has passed, Departmental Representative will perform lead wipe sampling.
    - .1 Final lead wipe sampling results from horizontal and vertical surfaces must show lead levels of less than 40 micrograms of lead in dust per square foot. Samples collected and analyzed in accordance with EPA 747-R-95-007.
    - .2 If wipe sampling results show levels of lead in excess of 40 micrograms per square foot, re-clean work area at contractor's expense and apply another acceptable coat of lock-down agent to surfaces.
    - .3 Repeat as necessary until fibre levels are less than 40 micrograms per square foot.

### **3.6 FINAL CLEANUP**

- .1 Following cleaning and when lead wipe surfaces sampling are below acceptable concentrations, proceed with final cleanup.
- .2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible lead containing particles observed during cleanup, immediately, using HEPA vacuum.
- .3 Place polyethylene sheets, tape, cleaning material, clothing, and contaminated waste in plastic bags and sealed labelled waste containers for transport.
- .4 Conduct final check to ensure no dust or debris remains on surfaces as result of dismantling operations.

### **3.7 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS**

- .1 Repair or replace objects damaged in course of work to their original state or better, as directed by Departmental Representative.

**END OF SECTION**