

Parks Canada Agency
Rehabilitation Lachine Canal Walls
Repair and replacement of crowning walls
(Area H.4 and 12 – Reach No 4)
Project N° CL(1455-13)
Addendum n° 02

1. PLANS

- 1.1** Modifications on plans, **sheet 01 revision 00** is cancelled and replaced by **sheet 01 revision 01**:

Update drawings.

- 1.2** Modifications on plans, **sheet 07 revision 00** is cancelled and replaced by **sheet 07 revision 01**:

Update drawings.

- 1.3** Modifications on plans, **sheet 08 revision 00** is cancelled and replaced by **sheet 08 revision 01**:

Update drawings.

- 1.4** Modifications on plans, **sheet 09 revision 00** is cancelled and replaced by **sheet 09 revision 01**:

Update drawings.

- 1.5** Modifications on plans, **sheet 18 revision 00** is cancelled and replaced by **sheet 18 revision 01**:

Update drawings.

- 1.6** Modifications on plans, **sheet 21 revision 00** is cancelled and replaced by **sheet 21 revision 01**:

Update drawings.

2. SPECIFICATIONS

- 2.1 Replacement of section 01 11 00 Summary of work procedures:**

The section **01 11 00 Summary of work revision 00** is cancelled and replace by the section **01 11 00 Summary of work revision 01**. See the section appended to this addendum

- 2.2 Replacement of section 01 29 00 Payment procedures:**

The section **01 29 00 Payment procedures revision 00** is cancelled and replace by the section **01 29 00 Payment procedures revision 01**. See the section appended to this addendum

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2.3 Replacement of APPENDIX I Photos of crowning wall:

Appendix I - Photos of Crowning wall revision 00 is cancelled and replace by **appendix I photo revision No. 01** as Required by Plans and Specifications. See the section appended to this addendum.

3. TENDER FORM

3.1 Replacement of bilingual tender form:

The bilingual tender form revision No 00 is cancelled and replaced by the bilingual submission tender form revision No 01.

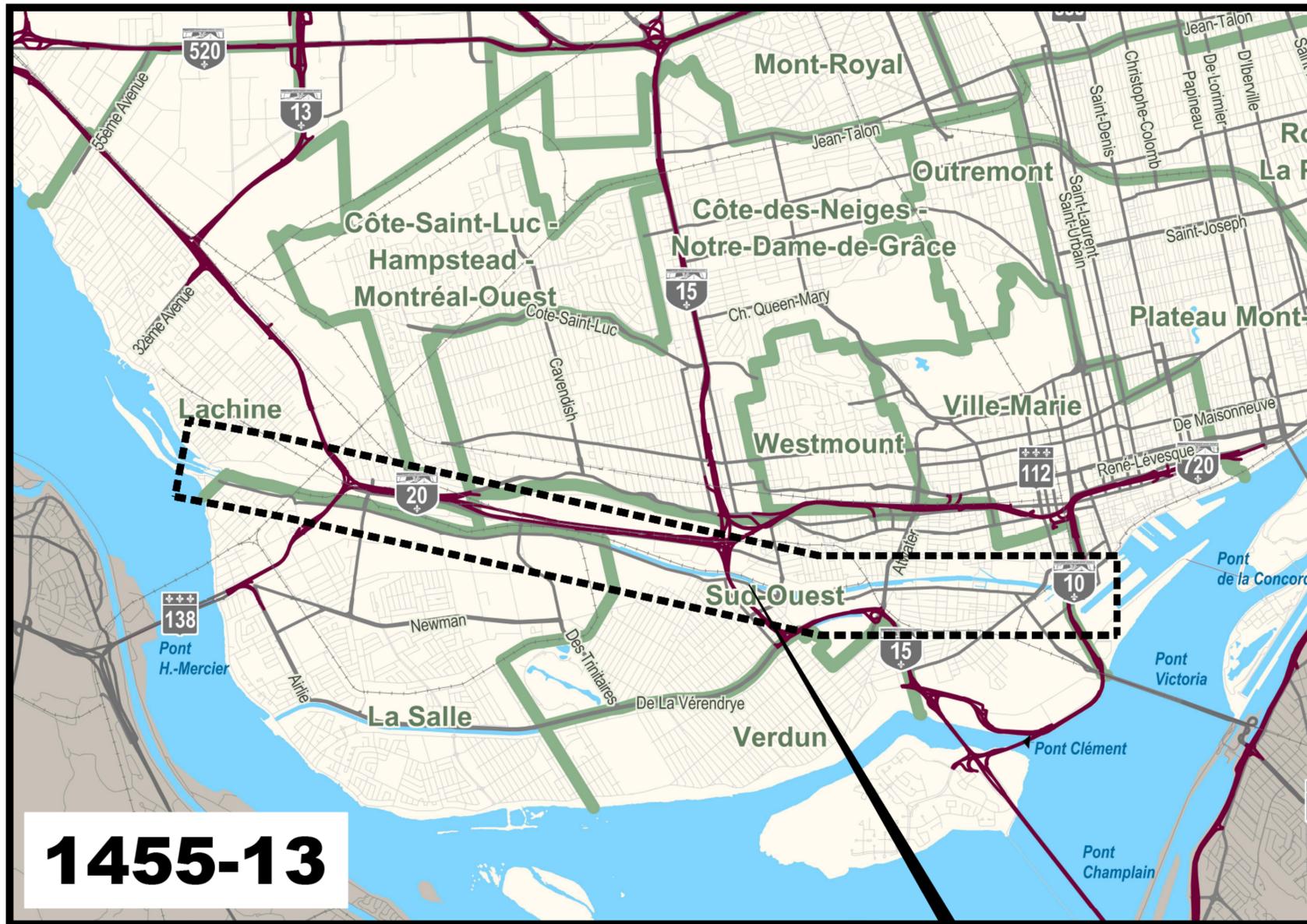
4. PRECISIONS

4.1 Abandonment of the Hydro-Quebec chamber:

For estimation purposes the contractor must consider a volume of 3m³ of concrete to be demolished.

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Drawings



1455-13

PLAN DE LOCALISATION / LOCATION PLAN

**CANAL DE LACHINE
LACHINE CANAL**

RÉPARATION ET REMPLACEMENT DE MURS DE COURONNEMENT ET REMPLACEMENT D'ASSISES (SECTEURS H.4 ET 12 - BIEF 4)

REPAIR AND REPLACEMENT OF THE CROWNING WALLS AND SEATS REPLACEMENT (AREAS H.4 AND 12 - REACH 4)

LISTE DES DESSINS:

STRUCTURE

- 01 PAGE FRONTISPICE
- 02 NOTES GÉNÉRALES
- 03 LÉGENDE ET PLAN CLÉ
- 04 PLAN DE LOCALISATION DES DIFFÉRENTES INTERVENTIONS BIEF 4
- 05 BIEF 4 - VUE EN PLAN AGRANDIE SECTEUR 12 - (EXISTANT)
- 06 BIEF 4 - VUE EN PLAN AGRANDIE SECTEUR H.4 - (EXISTANT)
- 07 ORTHOPHOTO - ZONES DE TRAVAUX - (EXISTANT)
- 08 TABLEAUX - CONDITIONS EXISTANTES
- 09 PHOTOS (EXISTANT)
- 10 REMPLACEMENT DE COURONNEMENT TYPE 2 - SECTEUR 12 - DÉMOLITION (EXISTANT)
- 11 REMPLACEMENT DE COURONNEMENT TYPE 2 - SECTEUR 12 - CONSTRUCTION
- 12 RÉPARATION DE COURONNEMENT TYPE 2A - SECTEUR 12 - DÉMOLITION (EXISTANT)
- 13 RÉPARATION DE COURONNEMENT TYPE 2A - SECTEUR 12 - CONSTRUCTION
- 14 REMPLACEMENT D'ASSISE ET DE COURONNEMENT TYPE 4 SECTEUR H.4 - EXISTANT
- 15 REMPLACEMENT D'ASSISE ET DE COURONNEMENT TYPE 4 SECTEUR H.4 - DÉMOLITION (EXISTANT)
- 16 REMPLACEMENT D'ASSISE ET DE COURONNEMENT TYPE 4 SECTEUR H.4 - CONSTRUCTION
- 17 REMPLACEMENT D'ASSISE ET DE COURONNEMENT TYPE 4 SECTEUR H.4 - DÉTAILS
- 18 DÉTAILS TYPIQUES - JOINT DE CONTRÔLE ET RECONSTRUCTION DE LA PISTE POLYVALENTE
- 19 DÉTAILS TYPIQUES - DRAIN
- 20 DÉTAILS TYPIQUES - DÉTAILS DIVERS
- 21 DÉTAILS TYPIQUES - ECHELONS ET BOLLARDS
- 22 DÉTAILS TYPIQUES - PORTE DE GARDE-CORPS
- 23 DÉTAILS TYPIQUES - GARDE-CORPS SUR MUR DE COURONNEMENT
- 24 DÉTAILS TYPIQUES - GARDE-CORPS SUR BASE DE SONOTUBE
- 25 PRISE D'EAU OBTURÉE AVEC BÉTON (EXISTANT)
- 26 MAINTIEN DE LA CIRCULATION PIÉTONNIÈRE ET CYCLABLE

ANNEXE

- 27 ARPENTAGE
- 28 BATHYMÉTRIE
- 29 RÉFÉRENCE AU PROJET DE TURCOT

DRAWING LIST:

STRUCTURE

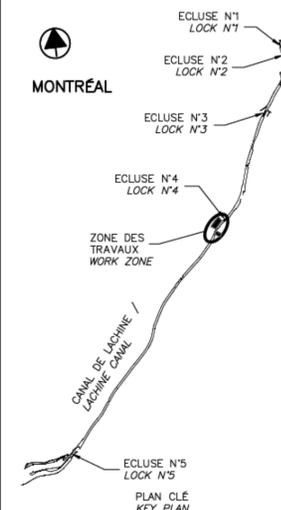
- 01 FRONT PAGE
- 02 GENERAL NOTES
- 03 LEGEND AND KEY PLAN
- 04 LOCATION PLAN FOR THE DIFFERENT INTERVENTIONS REACH 4
- 05 REACH 4 - ENLARGED PLAN VIEW AREA 12 - (EXISTING)
- 06 REACH 4 - ENLARGED PLAN VIEW AREA H.4 - (EXISTING)
- 07 ORTHOPHOTO - WORKING ZONES - (EXISTING)
- 08 TABLES - EXISTING CONDITIONS
- 09 PICTURES (EXISTING)
- 10 CROWNING WALLS REPLACEMENT TYPE 2 - AREA 12 - DEMOLITION (EXISTING)
- 11 CROWNING WALLS REPLACEMENT TYPE 2 - AREA 12 - CONSTRUCTION
- 12 CROWNING WALLS REPAIR TYPE 2A - AREA 12 - DEMOLITION (EXISTING)
- 13 CROWNING WALLS REPAIR TYPE 2A - AREA 12 - CONSTRUCTION
- 14 SEAT AND CROWNING WALLS REPLACEMENT TYPE 4 AREA H.4 - EXISTING
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- 16 SEAT AND CROWNING WALLS REPLACEMENT TYPE 4 AREA H.4 - CONSTRUCTION
- 17 SEAT AND CROWNING WALLS REPLACEMENT TYPE 4 AREA H.4 - DETAILS
- 18 TYPICAL DETAILS - CONTROL JOINT AND RECONSTRUCTION OF THE POLYVALENT PATH
- 19 TYPICAL DETAILS - DRAIN
- 20 TYPICAL DETAILS - VARIOUS DETAILS
- 21 TYPICAL DETAILS - GRAB BARS AND BOLLARDS
- 22 TYPICAL DETAILS - GUARDRAIL DOOR
- 23 TYPICAL DETAILS - GUARDRAIL ON THE CROWNING WALLS
- 24 TYPICAL DETAILS - GUARDRAIL ON SONOTUBE BASE
- 25 WATER INTAKE SEALED WITH CONCRETE (EXISTING)
- 26 MAINTENANCE OF PEDESTRIAN AND CYCLING TRAFFIC

ANNEX

- 27 SURVEY
- 28 BATHYMETRY
- 29 REFERENCE TO THE TURCOT PROJECT



N/D: 159000023 Stantec Experts-conseils Itée



SCEAUX SEALS

01	EMIS POUR ADDENDA #2 ISSUED FOR ADDENDUM #2	2019-08-27
00	EMIS POUR SOUMISSION ISSUED FOR SUBMISSION	2019-08-02
révisions revisions		date

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Projet **PARCS CANADA / PARKS CANADA** Project

RÉPARATION ET REMPLACEMENT DE MURS DE COURONNEMENT ET REMPLACEMENT D'ASSISES (SECTEURS H.4 ET 12 - BIEF 4)

REPAIR AND REPLACEMENT OF THE CROWNING WALLS AND SEATS REPLACEMENT (AREAS H.4 AND 12 - REACH 4)

Dessin **STRUCTURE / STRUCTURE** Drawing

PAGE FRONTISPICE
FRONT PAGE

Conçu par **Charles-Étienne Langevin, ing.** 2019-03-29
Designed by Date

Dessiné par **Caroline Plouffe / Gabriel Blanchette** 2019-03-29
Drawn by Date

Approuvé par **Jean-François Cloutier, ing.** 2019-03-29
Approved by Date

Soumission **Parcs Canada / Parks Canada** 2019
Administrateur de projets APC PCA Project Manager

No de projet **1455-13** No de contrat
Project number Contract number

Norm du fichier **CL(1455-13)** No de classement
File name File no

No de plan ou dessin **CL-32-135.01** No feuillet
File name No feuillet Drawing no

SOUS-SECTION / SUB-SECTION	ITEMS SPECIFIQUES / SPECIFIC ITEMS
B4-N-45-C	1 X [Symbol]
B4-N-45-D	1 X [Symbol], 2 X [Symbol]
B4-N-46-A	1 X [Symbol], 1 X [Symbol], 1 X [Symbol]
B4-N-46-B	1 X [Symbol], 1 X [Symbol], 2 X [Symbol]
B4-N-46-C	1 X [Symbol], 2 X [Symbol], 1 X [Symbol], 2 X [Symbol]
B4-N-46-D	1 X [Symbol], 4 X [Symbol], 3 X [Symbol]
B4-N-47-A	1 X [Symbol], 2 X [Symbol], 3 X [Symbol]
B4-N-47-B	1 X [Symbol], 2 X [Symbol], 3 X [Symbol]
B4-S-01-C	1 X [Symbol], 1 X [Symbol]
B4-S-01-D	1 X [Symbol]

LÉGENDE ~ LEGEND:

[Symbol]	ÉCHELONS (1) GRAB BAR (1)	[Symbol]	CHEMIN DE FER RAILROAD TRACK
[Symbol]	DRAIN CARRÉ SQUARE DRAIN	[Symbol]	ARBRE TREE
[Symbol]	BOLLARD SUR MUR BOLLARD ON WALL	[Symbol]	GRILLE/PRISE D'EAU COLMATÉE SEALED SCREEN/WATER INTAKE
[Symbol]	BOLLARD SUR CLÉ BOLLARD ON KEY	[Symbol]	GARDE-CORPS SUR MUR GUARDRAIL ON WALL
[Symbol]	BOLLARD SUR BASE BOLLARD ON BASE	[Symbol]	GARDE-CORPS SUR BASE GUARDRAIL ON BASE
[Symbol]	CLÉ SANS BOLLARD KEY WITHOUT BOLLARD	[Symbol]	ESCALIER STAIR
[Symbol]	BOLLARD (VOIR FEUILLET 21) BOLLARD (SEE SHEET 21)	[Symbol]	ESCALIER FERMÉE (CAILLEBOTIS) CLOSED STAIR (GRATING)
[Symbol]	DRAIN ROND ROUND DRAIN	[Symbol]	ÉCHELLE LADDER
[Symbol]	DRAIN COLMATÉ SEALED DRAIN	[Symbol]	REPÈRE GÉODÉSIQUE BENCHMARK
[Symbol]	CONDUITE OUTLET	[Symbol]	CÂBLE ÉLECTRIQUE ELECTRIC CABLE
[Symbol]	PRISE D'EAU À COLMATER WATER INTAKE TO BE SEALED	[Symbol]	CLÔTURE FENCE
[Symbol]	ÉLEVATION DU DESSUS DE MUR EN MÈTRE (m) TOP OF WALL ELEVATION IN METER (m)		
[Symbol]	LUMINAIRE SUR CLÉ LIGHT ON KEY		
[Symbol]	LUMINAIRE LIGHT		

(1) LE NOMBRE DE RANG PAR ÉCHELON EST VARIABLE
(1) THE NUMBER OF RANKS PER GRAB BAR IS VARIABLE

NOTE:
ENTRE LES SECTEURS B4-N-45-C @ B4-N-47-A, LES ITEMS EXISTANTS DES MURS DE COURONNEMENT, TEL QUE LES DRAINS, ÉCHELONS, ETC. NE SONT PAS CLAIREMENT VISIBLE EN RAISON DE L'ÉTAT DES MURS TRÈS ENDOMMAGÉS.
BETWEEN AREAS B4-N-45-C @ B4-N-47-A, EXISTING ITEMS OF CROWNING WALLS AS DRAINS, GRAB BARS, ETC. ARE NOT CLEARLY VISIBLE DUE TO THE WALLS CONDITION VERY DAMAGED.

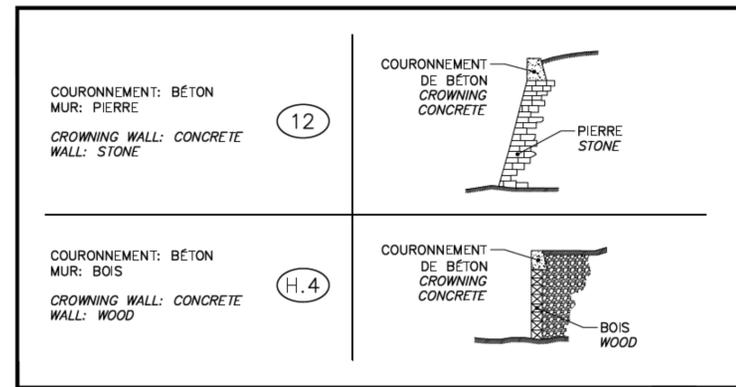


TABLEAU DES SECTEURS DES MURS
TABLE OF WALLS AREAS

8.3

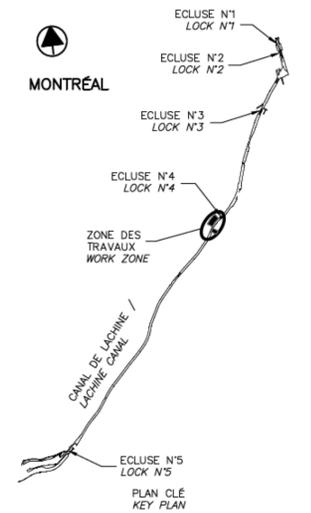


TABLEAU DES QUANTITÉS APPROXIMATIVES
APPROXIMATE TABLE OF QUANTITIES

8.1

TYPE 2		TYPE 2A		TYPE 4	
SOUS-SECTION SUB-SECTION	LONGUEUR LENGTH	SOUS-SECTION SUB-SECTION	LONGUEUR LENGTH	SOUS-SECTION SUB-SECTION	LONGUEUR LENGTH
B4-N-45-C	±11.4m	B4-N-47-A	±11.5m	B4-S-01-C	±52.7m
B4-N-45-D	±29.5m	B4-N-47-B	±30.4m	B4-S-01-D	±19.9m
B4-N-46-A	±41.3m				
B4-N-46-B	±31.9m				
B4-N-46-C	±34m				
B4-N-46-D	±38.8m				
B4-N-47-A	±23m				
TOTAL TYPE 2 = ±209.9m		TOTAL TYPE 2A = ±41.9m		TOTAL TYPE 4 = ±72.6m	

TABLEAU DES LONGUEURS DE RÉPARATION ET DE REMPLACEMENT
TABLE OF REPAIR AND REPLACEMENT LENGTHS

8.2

BIEF REACH	NIVEAU NAVIGATION NAVIGATION LEVEL	NIVEAU HORS NAVIGATION AUTOMNALE AUTOMN NAVIGATION OFF LEVEL	NIVEAU HORS NAVIGATION HIVERNALE WINTER NAVIGATION OFF LEVEL
1	±10.72m	±10.59m	N/D
2	±13.80m	±11.67m	±12.07m
3	±16.40m	±14.07m	N/D
4	±19.90m	±16.50m	±16.90m

NOTES:

- PÉRIODE DE NAVIGATION: VENDREDI PRÉCÉDENT LA FÊTE DE LA REINE JUSQU'AU LUNDI DE L'ACTION DE GRÂCE.
- LE DÉBUT DE L'ABAISSEMENT DÉBUTERA 7 À 10 JOURS OUVRABLES APRÈS LA FIN DE LA PÉRIODE DE NAVIGATION.
- PRÉVOIR 3 À 5 JOURS OUVRABLES D'ABAISSEMENT ET DE REHAUSSEMENT DES EAUX ENTRE LES PÉRIODES.
- VOIR BATHYMÉTRIE POUR INFORMATION SUR LES FONDS DU CANAL.
- VOIR SECTION DEVIS 01 11 00 SOMMAIRE DES TRAVAUX.

1- NAVIGATION PERIOD: PREVIOUS FRIDAY OF THE QUEEN'S DAY TO MONDAY OF THE THANKSGIVING.
2- DECREASING OF LEVEL START 7 TO 10 WORKING DAYS AFTER THE END OF NAVIGATION PERIOD.
3- PLAN 3 AT 5 WORKING DAYS FOR INCREASE OR DECREASE OF WATER LEVEL BETWEEN THE PERIODS.
4- SEE BATHYMETRY FOR INFORMATION ON THE BOTTOM OF THE CANAL.
5- SEE SECTION SPECIFICATIONS 01 11 00 SUMMARY OF WORK.

N/D = NON DISPONNIBLE
NOT AVAILABLE

TABLEAU DES PÉRIODES DE NAVIGATION ET NIVEAU D'EAU
TABLE OF NAVIGATION PERIODS AND WATER LEVEL

8.4

SCEAUX SEALS

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RÉPARATION ET REMPLACEMENT DE MURS DE COURONNEMENT ET REMPLACEMENT D'ASSISES (SECTEURS H.4 ET 12 - BIEF 4)
REPAIR AND REPLACEMENT OF THE CROWNING WALLS AND SEATS REPLACEMENT (AREAS H.4 AND 12 - REACH 4)

Dessin / Drawing: STRUCTURE / STRUCTURE

TABLEAUX CONDITIONS EXISTANTES
TABLES EXISTING CONDITIONS

Conçu par / Designed by: Charles-Étienne Langevin, ing. 2019-03-29
Date

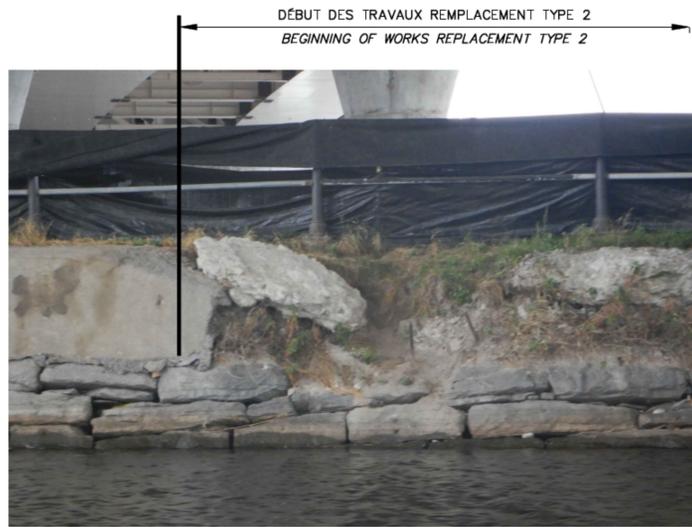
Dessiné par / Drawn by: Caroline Plouffe, Gabriel Blanchette 2019-03-29
Date

Approuvé par / Approved by: Jean-François Cloutier, ing. 2019-03-29
Date

Soumission / Tender: Parcs Canada / Parks Canada 2019
Administrateur de projets APC / PCA Project Manager

No de projet / Project number: 1455-13
No de contrat / Contract number: APC

Nom du fichier / File name: CL(1455-13)
No de plan ou dessin / File name: CL-32-135.08
No feuillet / Drawing no: 08/29



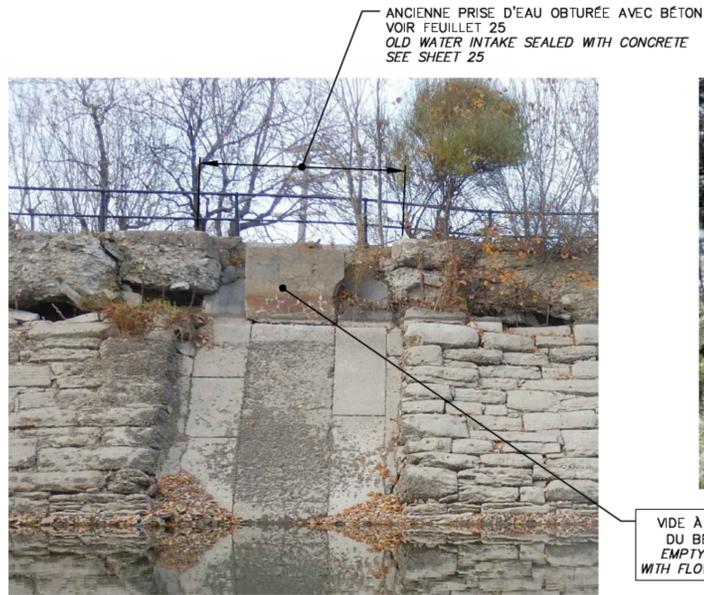
B4-N-45-C
PHOTO / PICTURE P1
N.A.É / N.T.S. 05 09



B4-N-46-A
PHOTO / PICTURE P2
N.A.É / N.T.S. 05 09



TYPIQUE / TYPICAL
PHOTO / PICTURE P3
N.A.É / N.T.S. 05 09



B4-N-46-C
PHOTO / PICTURE P4
N.A.É / N.T.S. 05 09



B4-N-46-D
PHOTO / PICTURE P5
N.A.É / N.T.S. 05 09

ENTRE LES SECTEURS B4-N-45-D @ B4-N-47-B IL Y A DES ÉLÉMENTS, DES ANNEAUX EN MÉTAL ET DES ÉLÉMENTS PATRIMONIAUX (±16 ÉLÉMENTS) À REPLACER DANS LES MURS TEL QUE L'EXISTANT
BETWEEN THE SECTORS B4-N-45-D @ B4-N-47-B THERE ARE ELEMENTS, METAL RINGS AND HERITAGE ELEMENTS (±16 ELEMENTS) TO REPLACE IN THE WALLS AS THE EXISTING.

À LOCALISER AU CHANTIER TO LOCATE AT THE SITE



B4-N-45-D À B4-N-47-B
PHOTO / PICTURE P6
N.A.É / N.T.S. 05 09



B4-S-01-C
PHOTO / PICTURE P7
N.A.É / N.T.S. 06 09

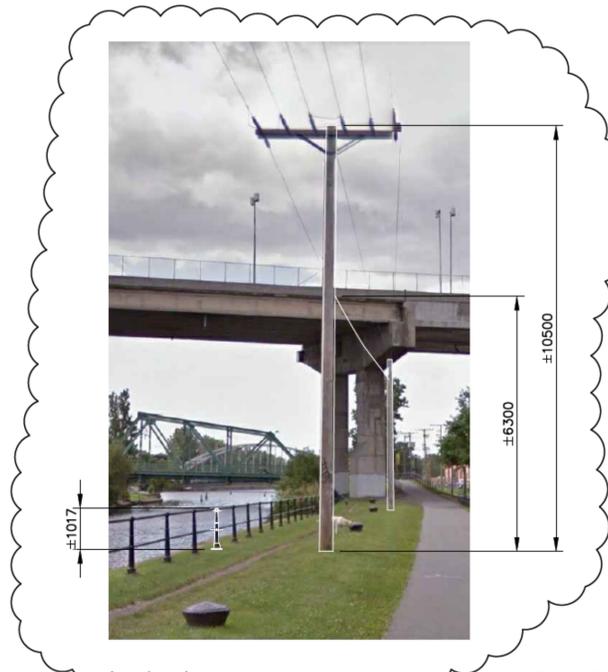
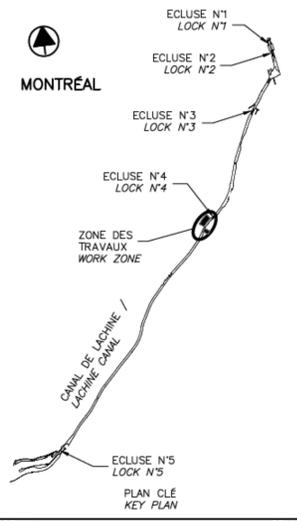


PHOTO / PICTURE P8
N.A.É / N.T.S. 05 09

ATTENTION:
ASSUREZ-VOUS QU'AUCUNE PERSONNE, AUCUN OUTIL, AUCUN MATÉRIEL DE CONSTRUCTION NE S'APPROCHE À MOINS DE TROIS MÈTRES DES FILS MOYENNES TENSION.

WARNING:
ENSURE THAT NO PERSON, NO TOOL, NO BUILDING MATERIALS ARE APPROACHING AT LESS THAN THREE METERS OF MEDIUM VOLTAGE WIRES.



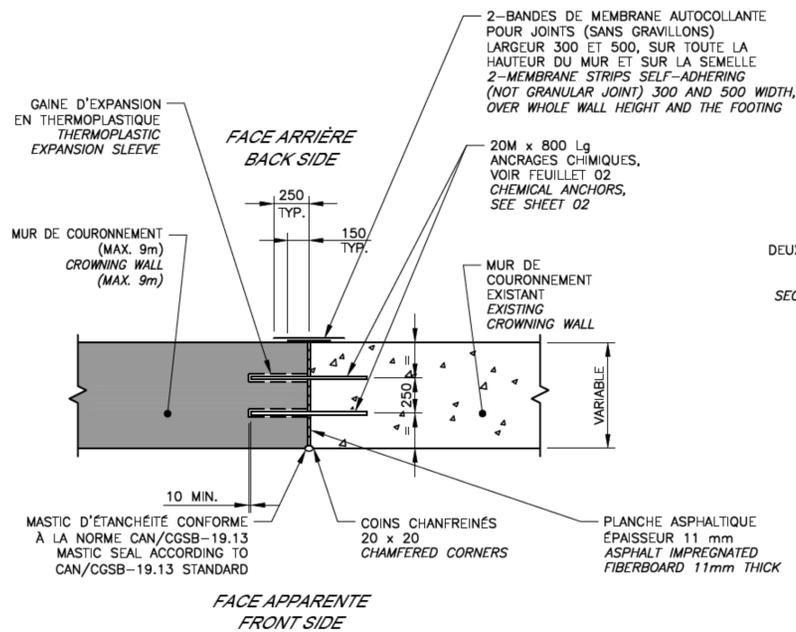
révisions / revisions	date
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REPAIR AND REPLACEMENT OF THE CROWNING WALLS AND SEATS REPLACEMENT (AREAS H.4 AND 12 - REACH 4)

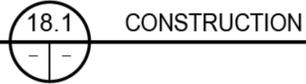
Dessin / Drawing: STRUCTURE / STRUCTURE
PHOTOS (EXISTANT) / PICTURES (EXISTING)

Conçu par / Designed by: Charles-Étienne Langevin, ing. 2019-03-29 Date	Dessiné par / Drawn by: Caroline Plouffe, Gabriel Blanchette 2019-03-29 Date
Approuvé par / Approved by: Jean-François Cloutier, ing. 2019-03-29 Date	Soumission / Tender: Parcs Canada / Parks Canada 2019
Administrateur de projets APC / PCA Project Manager	
No de projet / Project number: 1455-13	No de contrat / Contract number: APC
Nom du fichier / File name: CL(1455-13)	
No de plan ou dessin / File name: CL-32-135.09	No feuillet / Drawing no: 09 / 29

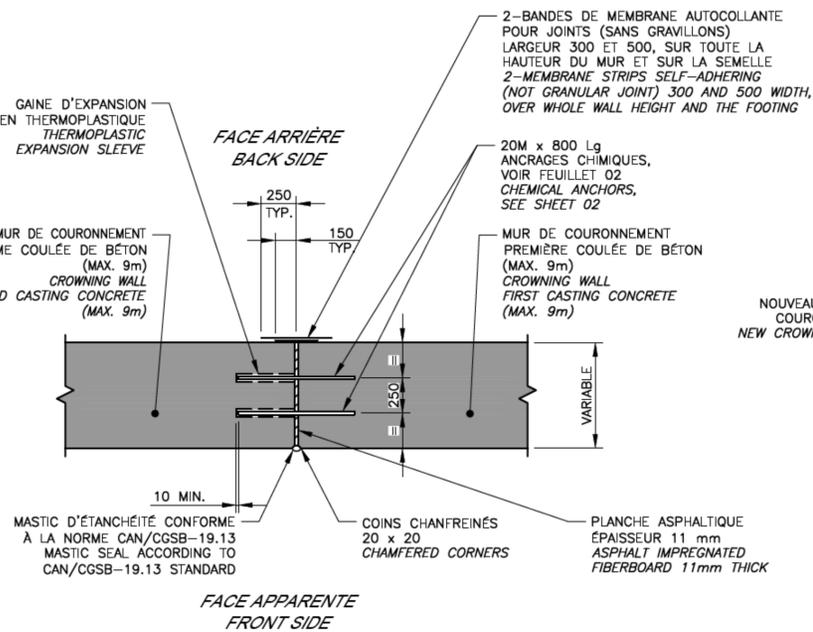


MURS VUE EN PLAN - NOUVEAU ET EXISTANT
PLAN VIEW WALLS - NEW AND EXISTING

JOINT DE CONTRÔLE
CONTROL JOINT

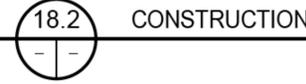


ÉCH./SCALE 1:25

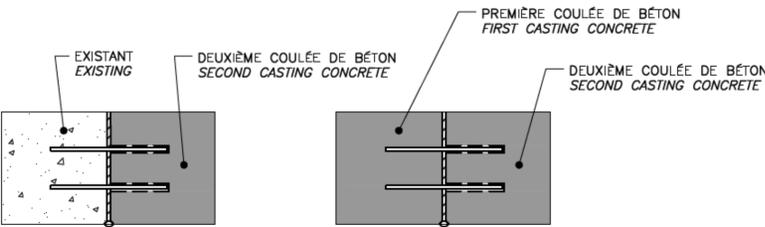


MURS VUE EN PLAN - NOUVEAU ET NOUVEAU
WALLS PLAN VIEW - NEW AND NEW

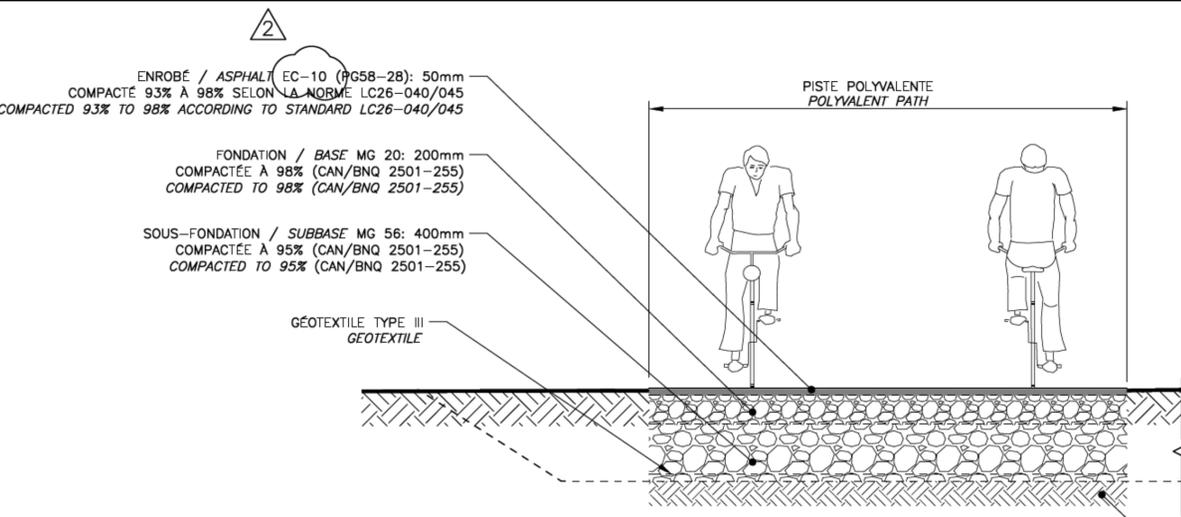
JOINT DE CONTRÔLE
CONTROL JOINT



ÉCH./SCALE 1:25



COULÉE DE BÉTON
CONCRETE CASTING

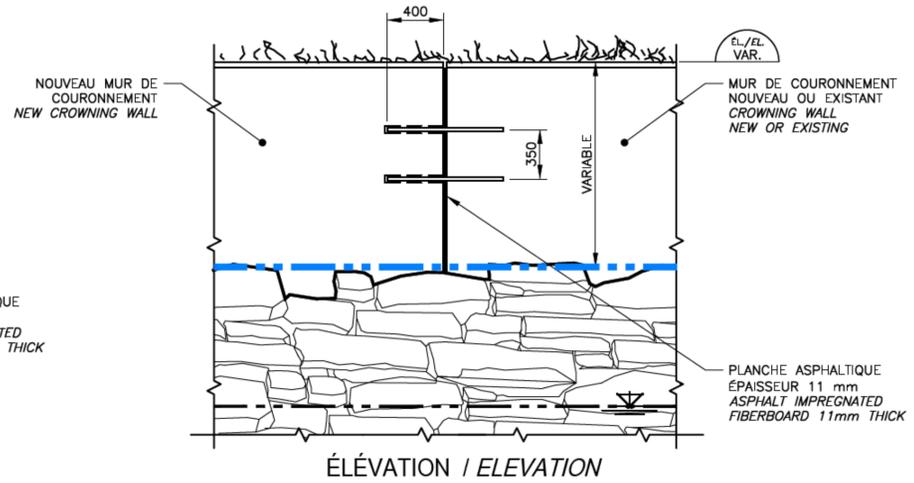


COUPE TYPIQUE DE CONSTRUCTION
TYPICAL SECTION CONSTRUCTION

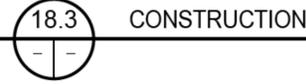


ÉCH./SCALE 1:25

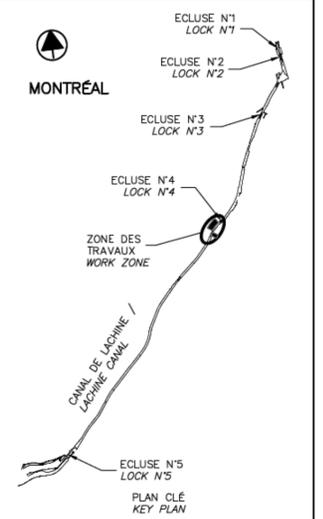
JOINT DE CONTRÔLE @ ±9m c/c (MUR ET SEMELLES) TYPIQUE
CONTROL JOINT @ ±9m c/c (WALL AND FOOTING) TYPICAL



JOINT DE CONTRÔLE
CONTROL JOINT



ÉCH./SCALE 1:25



SCEAUX SEALS

révisions / revisions	date
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REPAIR AND REPLACEMENT OF THE CROWNING WALLS AND SEATS REPLACEMENT (AREAS H.4 AND 12 - REACH 4)

Dessin STRUCTURE / Structure

DÉTAILS TYPIQUES
JOINT DE CONTRÔLE ET RECONSTRUCTION DE LA PISTE POLYVALENTE
TYPICAL DETAILS
CONTROL JOINT AND RECONSTRUCTION OF THE POLYVALENT PATH

Conçu par Charles-Étienne Langevin, ing. 2019-03-29

Dessiné par Caroline Plouffe / Gabriel Blanchette 2019-03-29

Approuvé par Jean-François Cloutier, ing. 2019-03-29

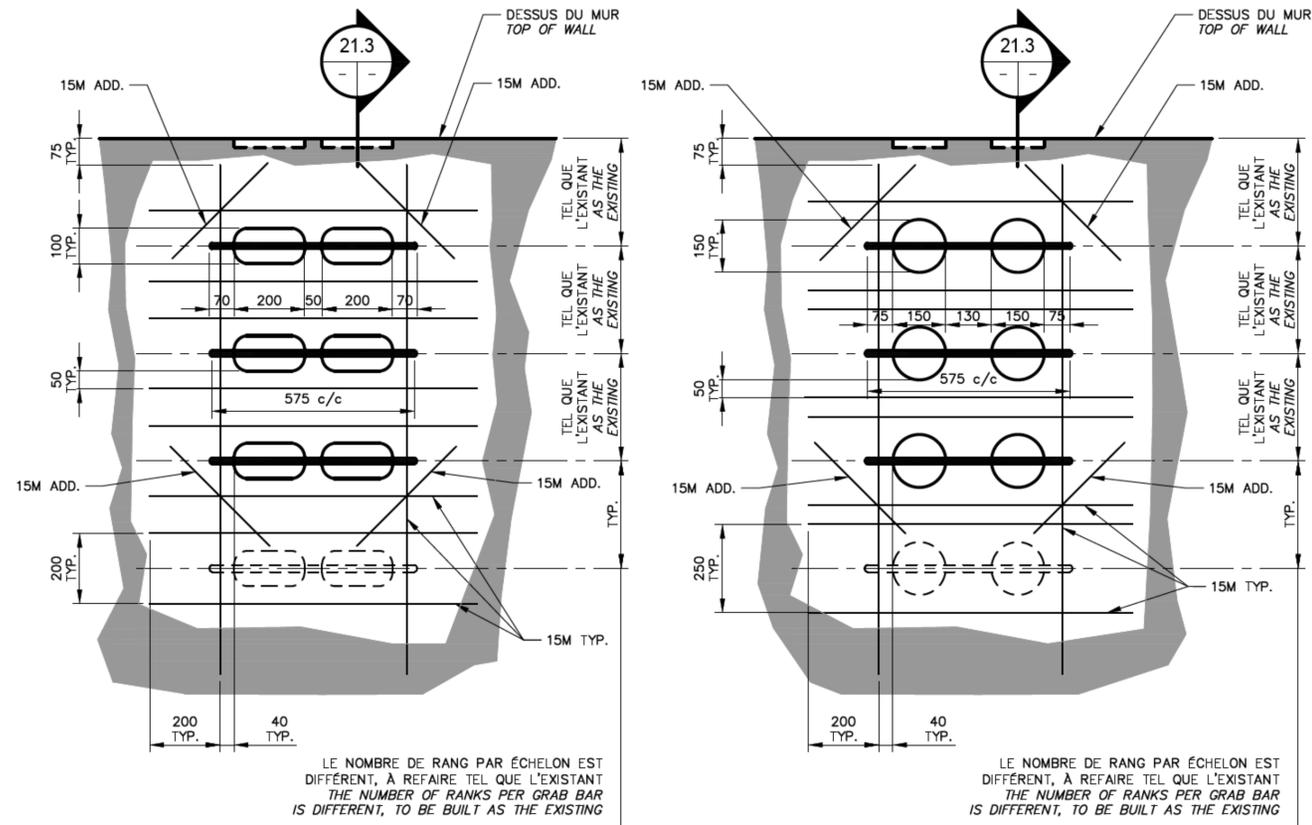
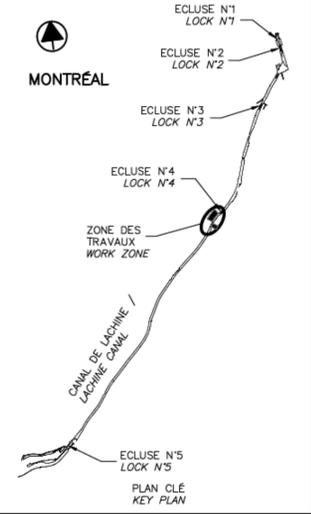
Soumission Parc Canada / Parks Canada 2019
Administrateur de projets APC PCA Project Manager

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No de plan ou dessin CL-32-135.18 / File name CL-32-135.18

No de classement 18 / 29 / Drawing no 18 / 29

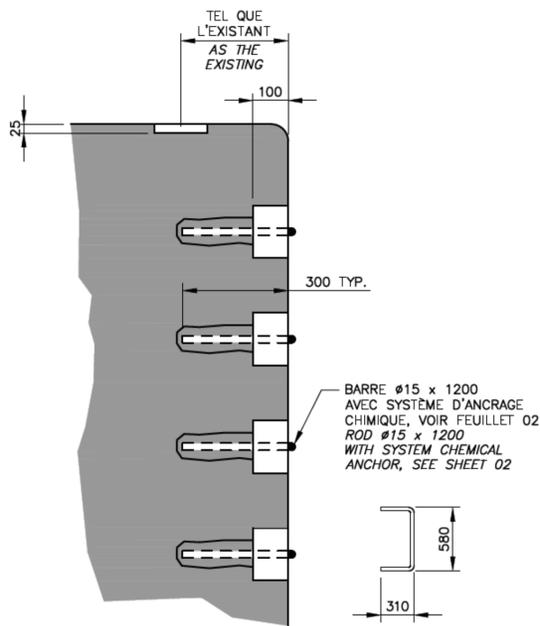


CONSTRUCTION

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ÉCH./SCALE 1:10

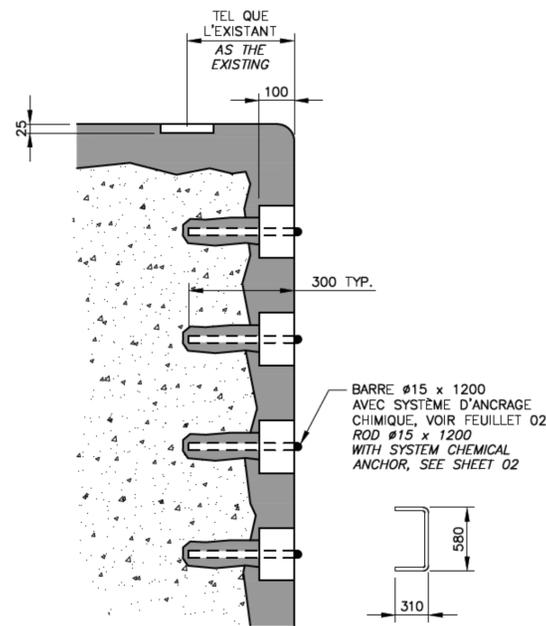
CONSTRUCTION

ÉLÉVATION / ELEVATION 21.2
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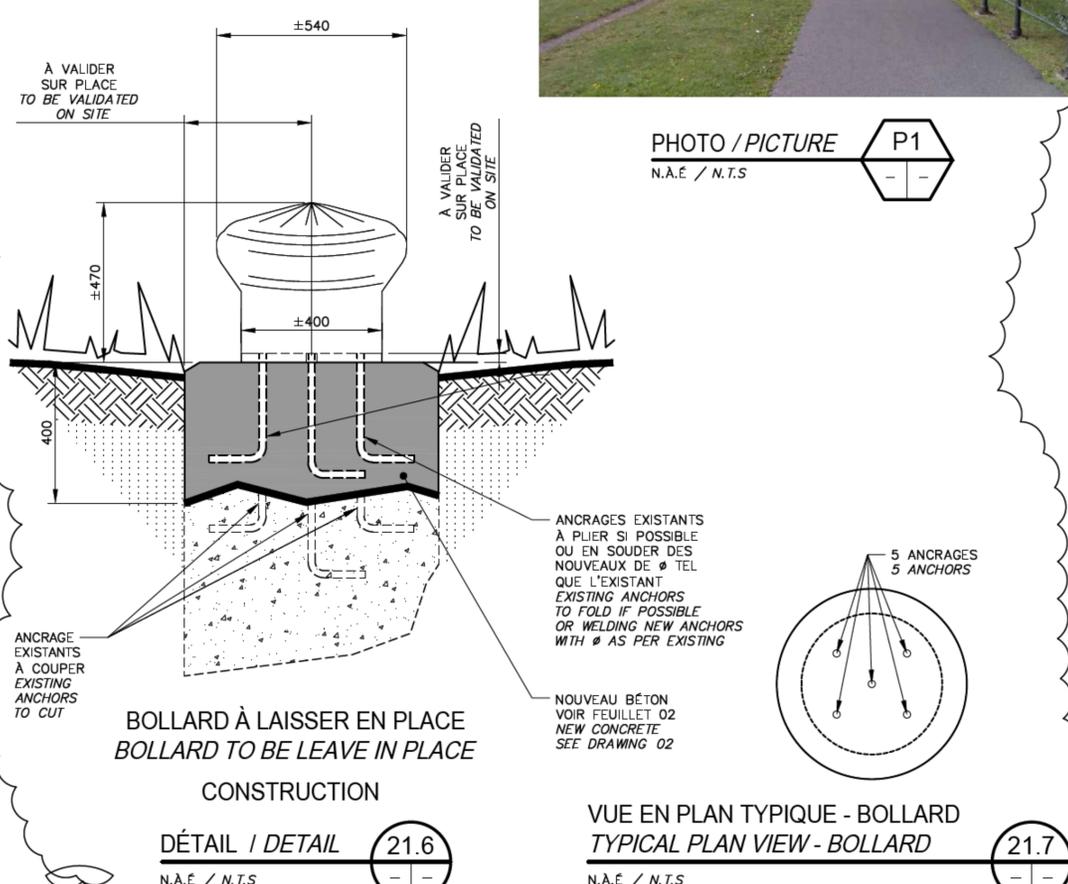
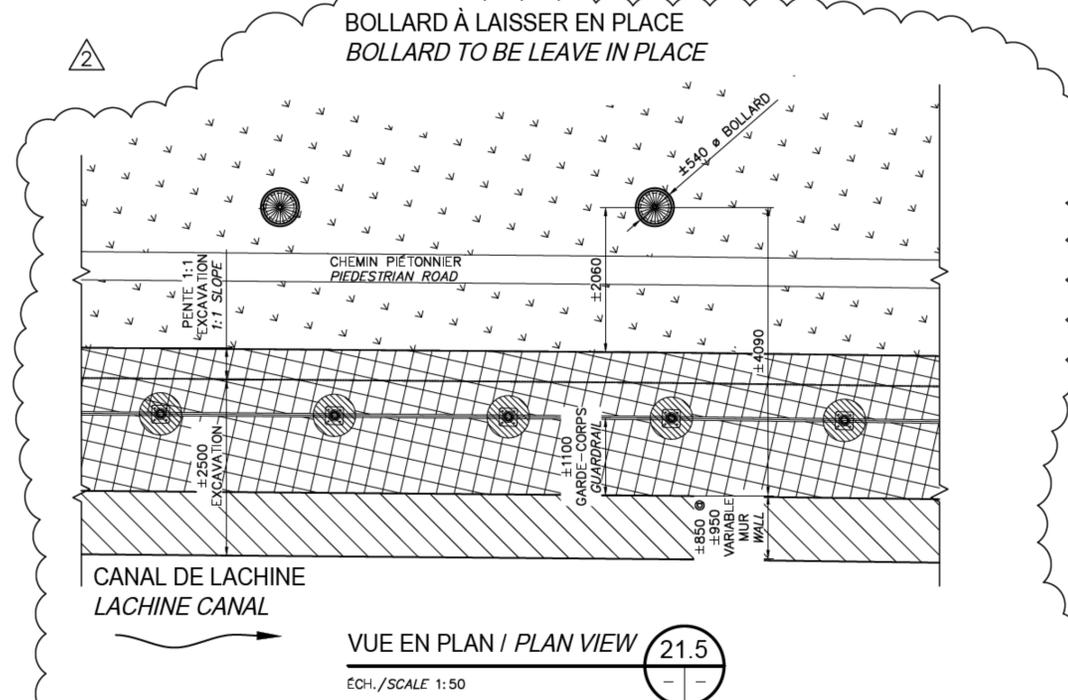
CONSTRUCTION

COUPE / SECTION 21.3
ÉCH./SCALE 1:10



RÉPARATION / REPAIR

COUPE / SECTION 21.4
ÉCH./SCALE 1:10



SCEAUX SEALS

01	ÉMIS POUR ADDENDA #2 ISSUED FOR ADDENDUM #2	2019-08-27
00	ÉMIS POUR SOUMISSION ISSUED FOR SUBMISSION	2019-08-02
révisions revisions		date

CE DOCUMENT NE DOIT PAS ÊTRE UTILISÉ À DES FINS DE CONSTRUCTION
THIS DOCUMENT MUST NOT BE USED FOR CONSTRUCTION

Projet Project
PARCS CANADA
PARKS CANADA
RÉPARATION ET REMPLACEMENT DE MURS DE COURONNEMENT ET REMPLACEMENT D'ASSISES (SECTEURS H.4 ET 12 - BIEF 4)
REPAIR AND REPLACEMENT OF THE CROWNING WALLS AND SEATS REPLACEMENT (AREAS H.4 AND 12 - REACH 4)

Dessin Drawing
2 STRUCTURE
STRUCTURE
DÉTAILS TYPIQUES ÉCHELONS ET BOLLARDS
TYPICAL DETAILS GRAB BARS AND BOLLARDS

Conçu par Charles-Etienne Langevin, ing.	Designed by 2019-03-29 Date
Dessiné par Caroline Plouffe Gabriel Blanchette	Drawn by 2019-03-29 Date
Approuvé par Jean-François Cloutier, ing.	Approved by 2019-03-29 Date
Soumission Parcs Canada / Parks Canada Administrateur de projets APC	Tender 2019 PCA Project Manager
No de projet 1455-13	Project number 1455-13
No de contrat APC	Contract number PCA
Nom du fichier CL(1455-13)	File name CL(1455-13)
No de plan ou dessin CL-32-135.21	File name CL-32-135.21
No de classement 21/29	File no 21/29

Parks Canada Agency
Rehabilitation Lachine Canal Walls
Repair and replacement of crowning walls
(Area H.4 and 12 – Reach No 4)
Project N° CL(1455-13)
Addendum n° 02

Specifications

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section G2030 – *Pedestrian Paving.*
- .2 Section 02 41 00.08 – *Demolition – Minor Works.*
- .3 Section 02 41 13.13 – *Paving Removal.*
- .4 Section 03 10 00 - *Concrete Forming and Accessories.*
- .5 Section 03 20 00 – *Concrete Reinforcing.*
- .6 Section 03 30 00 – *Cast-in-Place Concrete.*
- .7 Section 03 30 03 – *Concrete Repair.*
- .8 Section 03 37 13 – *Shotcrete.*
- .9 Section 05 50 00 – *Metal Fabrications.*
- .10 Section 06 05 73 – *Wood treatment.*
- .11 Section 06 14 00 – *Treated wood foundations.*
- .12 Section 09 91 00.08 – *Painting – Minor Works.*
- .13 Section 31 04 31 – *Historic Subgrade, Shoring and Bracing.*
- .14 Section 31 05 16 – *Aggregate for Earthwork.*
- .15 Section 31 11 00 – *Clearing and Grubbing.*
- .16 Section 31 14 13 – *Soil Stripping and Stockpiling.*
- .17 Section 31 23 33.01 – *Excavating, Trenching and Backfilling.*
- .18 Section 31 32 19.16 – *Geotextile Soil Stabilization.*
- .19 Section 31 53 13 – *Timber Crib Wall.*
- .20 Section 31 62 27 – *Cofferdam.*
- .21 Section 32 01 90.23 – *Pruning.*
- .22 Section 32 01 90.33 – *Tree and Shrub Preservation.*
- .23 Section 32 11 16.01 – *Granular Sub-Base.*
- .24 Section 32 11 17 – *Reshaping Granular Roadbed.*
- .25 Section 32 11 23 – *Aggregate Base Courses.*
- .26 Section 32 12 16 – *Asphalt Paving.*
- .27 Section 32 17 23 – *Pavement Markings.*
- .28 Section 32 91 19.13 – *Topsoil Placement and Grading.*
- .29 Section 32 92 23 – *Sodding.*

- .30 Section 32 93 10 – *Tree, Shrubs and Ground Cover Planting.*
- .31 Section 33 41 16 – *Subdrainage Piping.*
- .32 Section 35 59 29 – *Mooring Devices.*

1.2 DEFINITIONS

- .1 Navigation period: from the Friday preceding Victoria Day until Thanksgiving Day.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- .1 The Work covered by this Contract includes the restoration of the Lachine Canal walls on the section(s) indicated in the Bid Form and on drawings.
 - .1 Rehabilitation work of walls include, but are not limited to, one or more of the following activities:
 - .1 Replacement and/or repair of concrete crowning walls and/or seats repair (retaining walls);
 - .2 Demolition and reconstruction of timber crib walls (Côte St-Paul footbridge location);
 - .3 Establishment and maintenance of a detours of the bicycle path for the north and south shore of the Reach 4;
 - .4 All other repair details shown on drawings issued under this Contract;
 - .5 Perform a detailed georeferenced NAD83(CSRS) survey of the existing walls to be repaired or replaced. Validate precise dimensions, and profiles of crowing walls and seats subject to the current Contract. Validate the alignment of the wall **from the seat of the existing crowing wall**. Perform all required survey; Examine the exact dimensions of the retaining wall (crown) and top of the seats and any concrete components attached to it in order to determine the existing profile. Determine the exact profiles of existing walls and validate their actual dimensions. Submit detailed shop drawings showing the existing profiles as well as the proposed final profiles for each type of wall;
 - .6 Perform a bathymetry of the bottom of the Canal with a grid of one (1) metre (1 m by 1 m) along the entire length of the work areas (reach No 4) and across the first 15 meters wide of the Canal. Provide for a length of 100 meters. Provide specialized equipment required and / or divers if needed;
 - .7 Perform a detailed survey of the natural ground ten (10) metres behind the crowning wall or the new crowning wall projection; Provide georeferenced NAD83(CSRS) surveys before and after the work. The survey points are to be at a maximum five (5) metre spacing, except where slopes and breaks are expected at the point before and after variations (breaks, lower- and upper-embankment, etc.);
 - .8 The detailed georeferenced surveys of the existing walls (crowning walls, seats, etc.) at a maximum spacing of five (5) metres;

- .9 The retaining wall (crowning wall) surveys must provide the identification and the georeferenced drawing layout of the base of the existing wall (inside face of Canal Lachine) at the junction with the seat, the top of the wall (inside and outside faces of Canal), the chamfers' diameters (both faces), the attached bollard keys, the concrete base detached from the wall, the elevation and position of the grab bars, bollards, conduits, drains, ladders, stairs and guardrails;
- .10 Provide detailed shop drawings, showing actual profile of existing walls to be repaired or replaced in addition to proposed final profiles, for the Government Representative's approval. Submitted profiles must be consistent with existing profiles. Provide the survey drawing layout (shop drawing) of **the crowning walls** including, but without limitation, the plan view under AutoCAD 3D (.DWG) and Acrobat (.PDF) of the existing and projected, **cross sections every twenty (20) metres** of the existing and projected, Excel table (.XLS) of the survey points with the information on the front and back face, the base, the width, the height, the chamfer diameters, etc. Provide the legend and identification of each survey point and line. The PDF version of the shop drawings must be printable in the Tabloid (11"x17") format. Plan a maximum of 120 linear metres per page (profiles, cross sections, elevations, etc.);
- .11 Upper seat wall surveys shall provide for the identification and georeferenced planning of the base of the crowning wall, the sections of the seat (angled wall, between the base of the crowning wall and the water level) as well as the breaks and changes of angles in the slope to allow the execution of cuts and profiles of the existing. Surveys must identify solid parts (stones, concrete or rock) and parts in soil or without solid support;
- .12 Provide detailed survey drawing layout (shop drawings) of the **seats and crevice repair areas (number of holes, size of openings, etc.) and** preserved cut stone, including, but not limited to, the plan view under AutoCAD 3D (.DWG) and Acrobat (.PDF) of the existing and projected. The proposed profiles must be consistent with the existing profiles and respect the requirements and the print format requested;
- .13 Supply an Excel table (.XLS) of data from the existing grab bars, bollards georeferenced survey (location, numbers, height distance between grab bars, etc., with the specific drawings (cross sections or sketches) of the survey);
- .14 Conduct a complete and detailed georeferenced survey of the existing walls before demolition, of the excavation bottom and the volume plan layout (provide the required cross sections for each of the surveys and adjustments) including existing preserved cut stone under crown walls and supports. Everything must be transmitted in dwg and PDF format;
- .15 The Contractor is responsible for providing appropriate work platforms and temporary supports, required to undertake work shown on the drawings, specifications, and tender form. No additional fees will be allotted to the Contractor if he must modify his access system during

work. The shop drawing of the work platforms must be sent to and approved by Transport Canada prior to the Contractor's mobilisation. **The Contractor is responsible for submitting a work notice request to Transport Canada for all proposed temporary works (walkways, sheet piles, etc.) to be installed in the canal and outside of the area authorized by the owner for the execution of the Work. It is forbidden to install temporary works without first presenting a work notice request in accordance with the Navigation Protection Act (NPA);**

- .16 Provide and install containment to allow concrete pouring in cold weather conditions,
- .17 The Contractor is responsible to provide, at his own expenses, all required shelters, and heating systems, to be able to perform work in cold weather conditions.
- .18 The Government Representative will film certain stages of work. By bidding on this Contract, the Contractor is aware of this circumstance and can in no case oppose filming during the execution of work.
- .19 Perform site rehabilitation work;
- .20 A navigation corridor will have to be put in place on the encroachment line in the canal. The Contractor must install lateral navigation buoys at each end of the work zone and an additional one in the middle. The navigation buoys must be completely green on the port (left) side when moving upstream and red on the starboard (right) side when moving upstream. In addition to the navigation buoys, security buoys (yellow) must be installed each ten (10) metres between lateral buoys to maintain the cable at water surface. **The buoys used must have a height of 30 cm outside of water and a yellow reflective strip of a width of 10 cm. Moor buoys at each end of the Work and at a maximum interval of fifteen (15) metres.** Installation of buoys must be in accordance with Transport Canada regulations. Moored buoys must be in accordance to the Private Buoy Regulations: <https://laws-lois.justice.gc.ca/PDF/SOR-99-335.pdf>. The drawing of the navigation corridor must be sent and approved by Transports Canada prior to mobilisation of the Contractor.
- .21 **Install, during navigation period, yellow warning signs of a minimum height of one (1) metre, with borders marked with a yellow reflective material. Install the warning signs perpendicular to the navigation waterway, upstream and downstream of Work areas, at approximately one hundred (100) metres of the start and end of Work to notify waterway users of Work.**



- .22 **Request the issue of a Notice to Shipping (NOTSHIP) by communicating with the Canadian Coast Guard, Notices to Shipping (NOTSHIP) office at least 72 hours before the start of installation and/or removal work.**
- .23 At the end of this work, for each area of intervention at the delivery of the end-of-project manual, provide the 3D wall survey (scatter plot) with georeference NAD83(SCRS). Provide at least 2 different surveys (one for each sector);
- .2 Provide the specific shop drawings, procedures, overall plan, execution order (Gantt chart), calendars, signal boards, temporary access system (platform), EPP, etc., must be submitted before the kick-off meeting (see specifications for accuracy). For estimation and planning purposes, schedule the kick-off meeting 5 days after receipt of the Contract award letter.
- .3 All construction, demolition, and related temporary structures, must be performed in accordance with standards, including the Safety code for the construction industry S-2.1, r.4, CSA S350 and other applicable safety regulations in place on the owner's property.
- .4 The Contractor must provide all required labour, materials, and equipment to perform work shown on the drawings.
- .5 Perform demolition work as shown on the drawings. The section shown on the drawings specify either additional demolition, removal of loose concrete, the mechanical preparation or cleaning of cavities.
- .6 In zones affected by the demolition works, the Contractor assumes all responsibilities in regard to the **protection against dust**, the danger of demolition, and others.
- .7 Provide, for verification purposes, the drawings, diagrams, and details indicating the dismantling order of the structures, shoring parts, and temporary structures.
- .8 All temporary structures drawings must bear the seal of a recognized competent engineer, member in good standing of the *Ordre des ingénieurs du Québec*.
- .9 Take all necessary precautions to prevent any movement or collapse of structures that must be conserved to avoid any damage. Provide and install all parts

required for shoring and reinforcement. Perform all necessary remedial work as required. Put in place all necessary precautions to ensure the safety of workers throughout the work.

- .10 Anchors must be installed in accordance with the recommendation of the Government Representative or in the presence of his authorized representative.
- .11 The Contractor must coordinate his work in accordance with the existing dimensions and profiles, and must provide profiles adapted to the existing ones for the Government Representative's approval. The Contractor must also provide shop drawings showing final profiles and variants for comments.
- .12 Marking required for any encroachment in the canal.
- .13 All the walls of the navigation corridor, which are an integral part of the heritage of the Canal-de-Lachine National Historic Site, are berths used to mooring docks for boats at every point along the canal. The walls are an integral part of the components of the retaining structures and / or dike along the various basins of the Canal-de-Lachine.
- .14 Work areas or additional storage and the required access to the execution of works located outside the Parks Canada property line must be identified by the contractor and it must cover the costs of occupation, permit and ensure security.
- .15 An attendance register for the signalers is required for the project. This register must reconcile the presence of signalers required for access, intersections with the runway, the establishment of a detour via the CN / ST-Henri corridor and all other stages of the work required in the specifications or for requirements at the health and safety.

1.4 CONTRACT METHOD

- .1 Construction work is under lump-sum contract and unit price contract, in accordance with the articles presented in the Tender Form.

1.5 WORK BY OTHERS

- .1 Not used.

1.6 FUTURE WORK

- .1 Not used.

1.7 WORK SEQUENCE

.1 Deadlines

- .1 Work under this Contract must be completed in two (2) phases. The first (Phase 1) includes the work to be done between October 2019 and March 2020. While the second (Phase 2), includes the work beginning in autumn 2020.
- .2 Phase 1 work must, but is not limited to, meet the following constraints and requirements:
 - .1 Work under this Contract must be completed in full twenty-one (21) calendar weeks (including the two weeks of construction holidays) from the October 7th, 2019. Restoration of earthworks (soil and turf only) may



be carried out in the first 2 weeks of May 2020 (latest date 15 May 2020).

- .2 The normal water level in the Canal will be lowered between October 28th, 2019 to December 19th, 2019 inclusively. For the winter period, the water level in the area #4 of the Canal will be raised to approximately 400 mm to provide a water supply. Fluctuations of the water level have to be expected. The water will be refilled to the navigation level at the beginning of April 2020. The Contractor shall use this window to complete the upper seat repair and timber crib works. The Contractor must make sure an adequate working method and the necessary man labor to complete the work in the time window asked.

- .3 **Work on timber cribs on the west side of the Côte St-Paul footbridge must be completed by March 2nd, 2020** and must be completed at the beginning of the mandate.

- .1 Exploration on the west side of the Côte St-Paul bridge is required before proceeding with the work on the timber cribs and wall (Reach 4, right bank on the south side) as soon as the Canal water level is lowered. The part of the timber cribs and East walls of the bridge will not be accessible before the end of October 2020 with a refurbishment for December 20th, 2020.

- .2 Work on timber cribs, located west of the Côte-St-Paul footbridge, must meet the requirements of the total delay of phase 1 and the constraints of raising the water level (including the required explorations).

- .3 The part of timber crib and wall on the East side of the bridge will not be accessible until the end of October 2020 (see details Phase2).

- .4 The area of Reach B4-N-45 C & D (see plans) will not be accessible before September 2020. Work outside this area (concrete retaining walls on the north-east side) must still be carried out in phase 1.

- .5 Concrete retaining walls on the north side must be completed thirteen (13) weeks after October 28th, 2019 (including construction holidays).

- .3 Phase 2 work must, but is not limited to, meet the following constraints and requirements:

- .1 Work under this Contract must be completed in full twenty (20) calendar weeks (including the two weeks of construction holidays) from the September 28th, 2020.

- .2 The normal water level in the Canal will be lowered between October 26th, 2020 to December 18th, 2020 inclusively. For the winter period, the water level in the area #4 of the Canal will be raised to approximately 600 mm to provide a water supply. Fluctuations of the water level have to be expected. The water will be refilled to the navigation level at the beginning of April 2021. The Contractor shall use this window to complete the upper seat repair and timber crib works. The Contractor



must make sure an adequate working method and the necessary man labor to complete the work in the time window asked.

.3 Work on the west side timber cribs is to be completed by February 15th, 2021.

.4

.1 Exploration on the east side of the Côte St-Paul footbridge is required before proceeding with the work on the timber cribs and wall as soon as the Canal water level is lowered.

.2 Work on timber cribs, located east of the Côte-St-Paul footbridge, must meet the requirements of the total delay of phase 2 and the constraints of raising the water level (including the required explorations).

.3 The rehabilitation of the premises (soil and sodding only) Consider topsoil and sodding for the « East » part of timber cribs.

.5 The remainder of the north side concrete retaining wall work is to be completed ten (10) weeks after october 26, 2020 (including construction holidays and rehabilitation of premises).

.4 The final demobilization must be completed ten (10) working days after the acceptance by the Owner of the declaration of substantial performance of the work.

.2 Scheduling

.1 Construction Facilities

.1 At the project **kick-off meeting**, the Contractor must submit the Construction Facilities **Layout Plan** to the Government Representative for approval.

.1 In the five (5) working days following of submittal of the layout plan, the Government Representative shall return a reviewed copy of the plan, along with any comments to the Contractor.

.2 Within five (5) working days following the acceptance of the Construction Facilities Layout Plan, the Contractor shall have completed the installation of the construction trailers.

.3 No work can start prior to the approval of the Construction Facilities Layout Plan.

.2 Rehabilitation of the Lachine Canal Walls

.1 At the **kick-off meeting**, the Contractor must submit to the Government Representative the **Work Sequence for the wall rehabilitation** with a justification for each phase of the works.

.1 The Work Sequence shall be prepared by prioritizing certain work to allow the execution of other work, in favour of the execution time.

.2 Within five (5) working days following the submittal of the Work Sequence for the rehabilitation work, the Government

- Representative shall return to the Contractor, a reviewed copy of the document, along with any comments.
- .3 No work can start prior to the approval of the Work Sequence for the wall rehabilitation.
 - .2 At the **kick-off meeting**, the Contractor must submit to the Government Representative the **Layout plan (GANTT diagram)**, considering the information contained in the Work Sequence.
 - .1 Prepare the Layout plan in accordance with the timeframes specified in the present specifications section and in the Tender Form.
 - .2 Within five (5) working days following the submittal of the Layout plan, the Government Representative shall return to the Contractor a reviewed copy of the plan, along with any comments.
 - .3 Submit the **Execution schedule** to the Government Representative no later than five (5) working days after the approval of the Layout plan;
 - .4 Within five (5) working days following the submittal of the Execution schedule, the Government Representative will return to the Contractor a reviewed copy of the schedule, along with any comments.
 - .5 No work can start prior to the approval of the Execution schedule.
 - .3 Perform all repair works in accordance with the Work Sequence and the Execution schedule approved by the Government Representative.
 - .4 At the **kick-off meeting**, submit to the Government Representative the **Temporary Signage drawings** for traffic management during the performance of the Work.
 - .1 Within five (5) working days following the submittal of the Temporary Signage drawings for traffic management, the Government Representative shall return to the Contractor a reviewed copy of the drawings, along with any comments.
 - .2 Within five (5) working days following the approval of Temporary Signage drawings, the Contractor shall have completed the installation of the approved signage on site.
 - .5 At the **kick-off meeting**, submit to the Government Representative the **shop drawings of the Temporary Access System (platforms)** for the execution of the wall rehabilitation and reconstruction works.
 - .1 Within five (5) working days following the submittal of the Temporary Access System shop drawings, the Government Representative shall return to the Contractor a reviewed copy of the drawings, along with any comments.
 - .2 Immediately after having received the approval of the Temporary Access System shop drawings, the approval of the

- environmental protection plan (EPP) and once the temporary signage has been installed and approved by the Government Representative, the Contractor shall implement the Temporary Access System on the site.
- .6 Five (5) working days after the **kick-off meeting**, submit to the Government Representative the **Environmental protection plan (EPP)** for the execution of the wall rehabilitation work.
 - .1 Within (5) working days following the submittal of the EPP, the Government Representative shall return to the Contractor a reviewed copy of the plan, along with any comments.
 - .2 Immediately after having received the approval of the EPP by Government Representative, the work site mobilisation will be permitted.
 - .7 Within five (5) weeks following the date of reception of Contract award letter, the shop drawings of timber cribs must be submitted to the Government Representative allowing the wood purchase.
 - .1 Within ten (10) business days following the submission of shop drawings of timber cribs, the Representative of the Government will provide the Contractor with a revised copy of these.
 - .2 Immediately after receiving the approval of Shop Drawings of timber cribs, the Contractor shall proceed to purchase the wood required for the execution of the work. Provide 2 delivery orders for the West and East part of the bridge according to the execution requirements.
 - .8 Unless otherwise specified in the specifications, submit the necessary shop drawings for the execution of the wall rehabilitation work to the Government Representative fifteen (15) working days before the beginning of the works.
 - .1 Within fifteen (15) working days following the submittal of the shop drawings, the Government Representative shall return to the Contractor a reviewed copy of the plan, along with any comments.
 - .2 Within five (5) working days following the approval of the shop drawings, deliver the necessary materials on site.
 - .9 Transmit all shop drawings and procedures for the entire project within 25 working days following the date of the contract award according to the most restrictive requirement mentioned in the plans and specifications.

1.8 INSTRUCTIONS TO THE CONTRACTOR

- .1 By accepting this Contract, the Contractor accepts all responsibilities normally assigned to the Prime Contractor under the Act Respecting Occupational Health and Safety. Before starting work, the Contractor must perform the following activities:

- .1 Submit to the Government Representative a Health and Safety Plan and a mechanical inspection certificate for each piece of machinery used on site;
 - .2 Ensure that workers on site have received the training and information required to perform the work safely and that all required tools and protective equipment are available, in compliance with all standards, laws, and regulations;
 - .3 At all times comply with the provisions of the Act Respecting Occupational Health and Safety and the Safety Code for the Construction Industry;
 - .4 Inform his employees of their right to refuse any work that is dangerous to their health or safety;
 - .5 Identify and barricade the work area and control access to the site;
 - .6 In the case of an unforeseen incident, take all necessary measures, including stopping work, to protect the health and safety of the workers and the public, and immediately contact the Government Representative.
- .2 Execute the work in a manner as to allow continuous public usage. Maintain public access to the premises as long as an alternative has not been developed when the progress of the works is an impediment to the free movement of the public.
 - .3 Before beginning any work, the Contractor must proceed with a survey of existing walls. This survey needs to be done at the beginning for the entire project. In order to do so, removal of topsoil and deforestation within 300 mm behind the crowning wall needs to be done before the survey. The 300 mm of soil behind the crowning wall must be reinstated immediately after the survey, the Contractor must ensure himself not lay any soil on top of walls, bollard keys, etc. ,
 - .4 Regarding the wall rehabilitation, the Contractor must plan works in a manner as to respect the following execution order:
 - .1 Rehabilitation of crowing wall sections;
 - .2 150 linear meters of wall rehabilitation must be completed before starting other sections;
 - .3 Prioritize work on timber cribs as soon as the lowering of the water is completed;
 - .4 Purchase of wood.

1.9 CONTRACTOR USE OF PREMISES

- .1 The work area can be used continuously until substantial performance of the works (end of works deadline), except the identified sectors in point 1.9.10 of present section. The construction sites are restricted to the areas mentioned on the drawings.
- .2 Site access points cannot be used as storage or site facility areas.
- .3 The use of the premises is restricted to the areas necessary for the execution of the work and those areas made available to the Contractor for the installation of the Construction Facilities and for the storage of the equipment and materials required for the works. The Contractor shall allow access to these areas outside the work zones to the Owner to allow:
 - .1 Maintenance of equipment;
 - .2 Partial Owner occupancy, if required;

- .3 Work by other contractors.
- .4 The work area on the concrete retaining walls on the north side (Reach B4-N-45 C & D) will not be available before September 2020. This sector will not be accessible for mobilization before the demobilization of the Turcot interchange contractor.
- .5 Coordinate use of premises under direction of the Government Representative.
- .6 Obtain and pay for use of additional storage, access or work areas needed for operations under this Contract.
- .7 Remove or alter existing work to prevent damage to portions of existing work which are to remain.
- .8 Refer to Section 01 52 00 – *Construction facilities* and Section 01 56 00 – *Temporary barriers and enclosures*, for temporary works, service roads and parking areas, traffic regulation and public services.
- .9 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by the Government Representative.
- .10 The Contractor cannot use existing structures for the execution of his work. He shall take the necessary precautions to protect existing structures and shall assume complete responsibility of any claims resulting in the damages that are attributed to him. An authorization from the Government Representative is necessary before any installation (fixations, etc.) on an existing structure. Upon completion of the work, the existing structure must be in an equivalent or superior state than it was at the beginning of the work.
- .11 The boats and the navigation within the framework of the Contract must be limited to the zones envisaged in the drawings. If the Contractor wishes for the needs of the site to install barges, these will be confined in this perimeter. Sporadic transport of barges and equipment must meet Transport Canada standards. It can in these conditions be accepted on presentation of an installation procedure.
- .12 The Contractor must allow access to 22 *Dragons* for the dismantling of the docks of sector B4-S-02 until October 28, 2019.

1.10 OWNER OCCUPANCY

- .1 The Owner will occupy the premises (outside the work zones) during the entire construction period for execution of normal operations.
- .2 Co-operate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.

1.11 PARTIAL OWNER OCCUPANCY

- .1 Schedule and substantially complete designated portions of Work for Owner's occupancy prior to Substantial Performance of entire Work.
- .2 Execute Certificate of Substantial Performance for each designated portion of Work prior to Owner occupancy. The Contractor must allow access to the premises to the Owner at all times.

- .3 On occupancy, Owner will provide for occupied areas:
 - .1 Maintenance;
 - .2 Security.
- .4 Execute Partial Interim Certificate of Completion for each designated portion of Work prior to partial Owner occupancy. Following, allow access to the premises to the Owner.

1.12 PRE-PURCHASED EQUIPMENT

- .1 Not used.

1.13 OWNER FURNISHED ITEMS

- .1 Not used.

1.14 ALTERATIONS, ADDITIONS, OR REPAIRS TO EXISTING BUILDING

- .1 Not used.

1.15 EXISTING SERVICES

- .1 Notify the Government Representative at least ten (10) working days in advance for any shut-down or closure of active services or facilities including power and communications services. Make arrangements and obtain necessary authorisations from affected utilities and pay for the permit costs.
- .2 Establish location and extent of service lines in area of work before starting Work. Notify Government Representative of findings.

1.16 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy of each of the following documents.
 - .1 Contract Drawings;
 - .2 Specifications;
 - .3 Addenda;
 - .4 Reviewed Shop Drawings;
 - .5 List of Outstanding Shop Drawings;
 - .6 Change Orders;
 - .7 Other Modifications to Contract;
 - .8 Field Test Reports;
 - .9 Copy of Approved Work Schedule;
 - .10 Health and Safety Plan and Other Safety Related Documents;
 - .11 Other documents as specified.

Part 2 Products

2.1 TWO (2) GUARDRAILS METALLIC RAILINGS

- .1 Cast Iron Posts:
 - .1 Cast iron posts, 1.02 metre (3'-4 ") high, weighing 30 kg (66 lbs) each;
 - .2 Note: Pole holes (posts) should be checked before ordering pipe sizes and boring is required.
- .2 Galvanized rails:
 - .1 Straight pipes with lengths of more or less 4.267 metres.
 - .1 Bottom rail: 48,3 mm dia. (1,9 ") \pm 4 mm wall thickness;
 - .2 Top rail: 60.3 mm dia. (2 3/8") \pm 4 mm wall thickness.
- .3 Galvanized steel sleeves:
 - .1 Metal pipes in accordance with ASTM Standard A53/A53M-2001 and design details.
 - .1 Length: 305 mm
 - .2 Diameter of 48,3 mm dia. (1,9 ") : \pm 33,5 mm dia.
 - .3 Diameter of 60.3 mm dia. (2 3/8") : \pm 48,3 mm dia.
 - .2 Each sleeve shall have: A notch at each end of 18,3x13 mm (bxh) at 25.4 mm (1") from the ends.
- .4 Galvanized closing piece:
 - .1 Metal caps in accordance with ASTM Standard A53/A53M-2001 and design details.
 - .1 Diameter of 48,3 mm dia. (1,9 ") nominal;
 - .2 Diameter of 60.3 mm dia. (2 3/8").
- .5 Guardrail access door indicated on the plans (doors with hinges, plates, etc.). The dimensions must be validated on site by the Contractor for a reconstruction of the same width as the existing one.

2.2 IRON CAST BOLLARD

- .1 The dimensions of the elements must be checked by the Contractor on site with the existing.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 NOT USED

.1 Not Used.

Part 2 Explanation of the Bid Form Prices

**2.1 Item 1. – Worksite Organization, Government Representative’s Site Office,
Environment, and General Items**

.1 Item 1.1 – Construction Facilities

.1 Payment item 1.1 of the *Bid Form* is a fixed lump sum amount to compensate all necessary expenses incurred in the execution of the Work as well as any other expenses not included in the other *Bid Form* items, in accordance with the requirements of the specifications.

.2 The amount includes all that is described in Section 01 52 00 – *Construction Facilities*, such as, but is not limited to, the following:

- .1 Special/before Work mobilization and demobilization for the environmental characterization with twenty-five (25) exploration wells for additional sampling of contaminated soils at the start of the Project (including a characterization plan, exploration wells, sampling by a laboratory professional, investigation plan and certification), deforestation and surveys;
- .2 Electricity, water, site lighting and snow removal of construction and access areas;
- .3 Construction site offices, furnishings, telephone and related services (internet, fax, 11x17 photocopying machine with a color scanner, etc.), microwave and small refrigerator (9 cubic feet minimum), cold and hot water dispenser, including drinking water, heating and air conditioning of the site offices;
- .4 Access roads including the necessary deforestation, clearing namely the removal of scrub, vines, dead wood, trees and shrubs whose trunk diameter is less than 50 mm (measured from the diameter at chest height), the removal of all brush, roots and bushes at the first 500 mm and a depth of 250 mm of the junction of the crowning walls and seat as indicated on the drawings (for estimation purposes, a cleaning of approximately 50% of the length of the wall to be repaired or replaced should be considered), the removal of fences and vines on the edge of the crowning wall, additional characterization of five (5) consolidated soil piles from wall repair without overlay work and timber cribs replacement, the moving, the storage and replacing of street furniture (tables, benches, garbage cans, etc.), sanitary facilities, rigid site fencing (minimum height of 2440 mm), and all required displacements according to the scheduling of works, working methods, detours, deviations, etc. and confining of the mobilization premises in accordance with the

requirements of the specifications and drawings, and as directed by the Government Representative. In addition, all required measures related to the protection of the cycle or polyvalent path during the works in areas where the cycle path is open to the public, including temporary construction fencing at the locations shown on the drawings and the signalers (at all times) for all crossings and entrances.

- .5 Removal and repositioning of anchors and metal rings.
- .6 Traffic maintenance and temporary signage such as, but is not limited to, the following:
 - .1 Work areas access mobilization, maintenance and dismantling;
 - .2 Site signage and maintenance;
 - .3 Maintenance of access to properties;
 - .4 Signalers, when needed, for site access and crossings of cycle or polyvalent path open during Work;
 - .5 Signage and traffic lane maintenance including requested inspections;
 - .6 Existing signage modification and rehabilitation at the end of Work;
 - .7 Temporary signage bilingualism.
- .7 Establishment and maintenance of a detours of cycle;
- .8 Tree pruning work in accordance with the requirements of specifications such as, but is not limited to, the following:
 - .1 Preparation, presentation, and correction of the Work Plan;
 - .2 The mobilization of labour, tools, and equipment required to carry out the work;
 - .3 Supply, transport, handling, maintenance, and removal of access required for pruning works;
 - .4 Pruning of trees in accordance with the requirements of Section 32 01 90.23 – *Pruning*;
 - .5 Loading, transporting and disposing of debris to a site in accordance with current policies;
 - .6 Cleaning at the end of the works;
- .9 Other costs related to the specific requirements of traffic maintenance and **navigational corridor encroachment**.
- .10 The maintenance of the worksite and of its access routes.
- .11 The required coordination with the City of Montreal and other stakeholders, including obtaining all necessary permits to carry out the Work.
- .12 All that is required in the following sections and is not directly attributed or related to one of the other items of the *Bid Form*:

Section 01 11 00 Summary of Work
Section 01 31 19 Project Meetings

Section 01 32 16.07	Construction Progress Schedule – Bar (Gantt) Chart
Section 01 33 00	Submittal Procedures
Section 01 35 29.06	Health and Safety Requirements
Section 01 52 00	Construction Facilities
Section 01 56 00	Temporary Barriers and Enclosures
Section 01 73 00	Execution
Section 01 74 00	Cleaning
Section 01 74 19	Waste Management and Disposal
Section 01 77 00	Closeout Procedures
Section 07 78 00	Closeout Submittals
Section 32 01 90.23	Pruning
Section 32 92 23	Sodding
G2030	Pedestrian paving

- .13 All costs associated with surveying and staking the works and all other site take-offs and measurements that are not allocated to any of the other items of the *Bid Form*.
- .14 The costs of providing a security guard or other means of supervision for the site for all the duration of the contract (if required).
- .15 Rental costs of land and/or space for the storage of materials.
- .16 The protection of existing public utilities within the work site during construction. If the Contractor damages these installations during his work, he must replace them at his expense.
- .17 All fees pertaining to the supply of water and electricity for the duration of the Work.
- .18 Expenses for all means taken to avoid damage to earthworks, paving, etc.
- .19 The rehabilitation of the premises:
 - .1 All work to restore the temporary sites used (access road, storage area, etc.) to their natural state;
 - .2 All work to restore street furniture (benches, tables, garbage cans, etc.) to their original condition;
 - .3 All work to restore vegetation by grassing of sites damaged by work;
 - .4 All work permitting the repair of all other damages the Contractor caused to the site of the works, to the public or private property affected by its works.
- .20 The Contractor shall repair all damage caused in the performance of its work to the satisfaction of the Owners concerned and that of the Government Representative. The work site must be returned in a similar or better condition to that existing before the work begins.

- .21 The Contractor must complete a photo and video survey at the beginning of the project and submit a PDF report of these statements along with the site condition notes and comments.
- .22 The Contractor shall provide the list of shop drawings required in the plans and specifications and update it.
- .3 The submitted price is paid as shown below:
 - .1 A portion equal to 3% of the total amount bid for this item will be paid for the special mobilization, only once these started.
 - .2 A portion equal to 17% of the total amount bid for this item will be paid with the first progress claim, provided that the work has begun. No payment of this item will be made before official and permanent mobilization for Work.
 - .3 Other progress payments under this item will be paid to a percentage consistent with the general progress of Work for each progress claim period except for the last payment which shall be paid to an amount up to 85% of the general progress of the work.
 - .4 The last progress claim equivalent to 15% shall be paid with the payment emitted during the "*Substantial Performance of the Work*".
- .2 Item 1.2 – Environmental Protection Measures
 - .1 Payment item 1.2 of *Bid Form* is a fixed lump sum amount to compensate all necessary expenses incurred for measures to protect the environment in accordance with the requirements of the drawings and specifications.
 - .2 The amount includes, but is not limited to, the following:
 - .1 All that is described in Section 01 35 43 – *Environmental Procedures* such as the preparation, presentation, and implementation of the environmental protection plan;
 - .2 The preparation, presentation, and implementation of:
 - .1 The environmental protection plan (PPE)
 - .2 The emergency spill plan;
 - .3 The construction facilities location plan location;
 - .4 The work zone plans;
 - .5 The air pollution prevention plan;
 - .6 The contamination prevention plan;
 - .7 The wastewater management plan;
 - .8 The plan for the designation and protection of wetlands and historical, archaeological, cultural, and biological resources;
 - .9 The preparation, presentation, and implementation of a plan to protect the historical and heritage character of the site.
 - .3 Vegetation protection measures (trees, shrubs, plants, river bed and banks, etc.);

- .4 Temporary facilities for pollution prevention;
- .5 The installation of the sediment barrier includes, but is not limited to, the following:
 - .1 The preparation, presentation, and correction of the Work Plan;
 - .2 Mobilization of labor, tools and equipment required for the execution of the work;
 - .3 Supply including geotextile, transportation, handling, warehousing and placing;
 - .4 Servicing and maintenance of barriers for the duration of the work;
 - .5 Dismantling of the sediment barrier;
- .6 Cleaning of the premises at the end of work;
- .7 Any incidental expense and coordination
- .3 The submitted price is paid as shown below:
 - .1 A portion equal to 20 % of the total amount bid for this item will be paid with the first progress claim, provided that the work has begun, except for the work included with the special/before Work mobilization. No payment of this item will be made before official and permanent mobilization for Work.
 - .2 Other progress payments under this heading shall be paid at each count at a percentage consistent with that of the overall progress of the work for this statement, except for the last installment to be paid up to 85% of the progress. general works.

The last 15% will be paid with the payment issued upon the issuance of the "*Substantial Performance of the Work*"
- .3 Item 1.3 – Turbidity curtain (confinement)
 - .1 Payment item 1.3 of the *Bid Form* is per linear metre (Lin. m.) for all costs incurred for the supply and the installation of a turbidity curtain for the duration of the work in accordance with the requirements of the drawings and specifications. The paid length is that of the replacement or repair of the crowning wall, even if the curtain length exceeds it.
 - .2 **The confinement curtain must comply with the requirements of Transport Canada. It must be either yellow or orange. It must be marked with yellow reflector stripes measuring 10 cm in width by 30 cm in length, at a maximum spacing of 1 metre.**
 - .3 Price includes, but is not limited to, the following:
 - .1 The preparation, presentation, and correction, of the Work Plan and shop drawings;
 - .2 Mobilization of labor, tools and equipment required for the execution of the work;
 - .3 The supply, transportation, handling, storage, and operation;
 - .4 Maintenance and retention of the curtain for the duration of the work;
 - .5 Dismantling of the curtain;
 - .6 Cleaning of premises at the end of work;

- .7 Any incidental expense and coordination.

- .4 The submitted price is paid as shown below:
 - .1 50% of the price after the installation of the Turbidity curtain (confinement) to the satisfaction of the Government Representative;
 - .2 50% of the price after the evacuation of all materials composing the Turbidity curtain (confinement) and cleaning of the premises, to the satisfaction of the Government Representative.

- .4 Item 1.4 – Removal, Painting and Repositioning of Guardrails
 - .1 Payment item 1.4 of the *Bid Form* is priced per linear metre (Lin. m.) for the removal, the surface preparation, painting and repositioning of guardrails at the new approved positioning/location (see drawings). Plan a survey of the existing, in accordance with requirements of the drawings and specifications (including the door(s) of the existing railings).
 - .2 Guardrail posts to be removed, repainted and reinstalled. The posts of the railing are cast iron. **Note that the existing painting of the railings contains lead.** The Contractor must adjust its price to consider CNESST's requirements for lead exposure during pickling.
 - .3 Surface preparation and removal of paint containing lead can not be carried out within the perimeter of the site. This work must be done in the factory.
 - .4 Rails shall be removed and scrapped. The Contractor must supply and install new rails of the same diameter as the existing ones. The new rails must be galvanized and painted according to the requirements of the drawings and specifications and be of a minimum length of 4.267 metres.
 - .5 Price includes, but is not limited to, the following:
 - .1 The preparation, presentation and correction of shop drawings of the positioning of posts and rails (including details of installation and leveling of rails and posts), the painting procedure, samples and data sheets required;
 - .2 Survey and photographic record of existing guardrails;
 - .3 The mobilization of labor, tools, equipment and hardware required for the execution of the work;
 - .4 The supply, transport, painting and installation of new rails;
 - .5 Transport to Parks Canada of posts that will not be used for the Work and that are in good condition; The supply, handling, transport and implementation of all materials (anchors, grout, paint, shims, anti-vandal screws, etc.).
 - .6 The supply, handling, transport and implementation of all materials (anchors, grout, paint, shims, anti-vandal screws, etc.);
 - .7 All costs incurred for the preparation of surfaces;
 - .8 Leveling railings, shims and adjustments, if necessary, with cement grout;

- .9 If the guardrails are located on an existing wall, the price includes the removal of existing anchors to a minimum depth of 50 mm, the filling of the holes with a repair mortar and the installation of new anchors;
 - .10 Paint remodeling at the building site of railing elements and application of paint to the exposed portion of the anchor bolts after final tightening.
 - .11 In the event of damage, immediately restore the affected items and at the expense of the Contractor;
 - .12 Bore diameter (factory) of the openings of the poles for the passage of the rails to allow their installations. Perform factory tests to validate the passage of the slats in the poles before delivering them to the site;
 - .13 Any incidental expenses and coordination.
- .5 Item 1.5 – Clearing
- .1 Payment item 1.5.1 to 1.5.3 – Deforestation of stumps and trees with diameters superior to 50 mm (measured from the diameter at chest height)
 - .1 Payment items 1.5.1 to 1.5.3 of the *Bid Form* are priced per unit for all the costs incurred for the deforestation of trees according to their dimensions, in accordance with the requirements of the specification annex.
 - .2 The Payment Item 1.6.3 is a unit price for all costs incurred for the removal of stumps located outside the excavation area, as the complete removal of the stumps inside the excavation area is included at item 1.9 "*Excavations and stockpiling*".
 - .3 For trees outside of the excavation area, the Contractor has to cut the trees and grub the stumps 600 mm under the natural ground line.
 - .4 For trees located in the excavation area, the complete stump removing is included at item "*Excavations and stockpiling*".
 - .5 Some trees are already cut in the zone outside of the excavation area. The Contractor has to grub the stumps 600 mm under the natural ground line.
 - .6 The price includes, but is not limited to, the following:
 - .1 Preparation, presentation, and correction of the Work Plan;
 - .2 The mobilization of labour, tools, and equipment required to carry out the work;
 - .3 Supply, transport, handling, maintenance, and removal of access required for deforestation works;
 - .4 The clearing of areas identified in the specification annex;
 - .5 Loading, transporting and disposing of debris to a site in accordance with current policies;
 - .6 Cleaning at the end of the works;
 - .7 Any incidental expenses and coordination.
- .6 Item 1.6 - Platforms and Access System for Crowning Walls
- .1 Payment items 1.6.1 and 1.6.2 of the Schedule of Prices is priced per linear metre (m. Lin.) of wall intervention for the supply, installation for the duration of the work or removal of the access platforms and system in accordance with the

requirements of drawings and specifications. The unit price for the platforms and access system (in linear meter) includes the equivalent of the intervention length, regardless of the number of vertical displacements required. Only the equivalent of the intervention length will be paid. If the Contractor puts two platforms at two different heights on the same repair section of 1 m, only one platform of 1 m will be paid and not 2 m. Access platforms and systems must be watertight at the level of their contact with the existing substrate. Foresee an existing irregular substrate as indicated on the plans, on the photos and 3D cross sections.

- .2 Price includes, but is not limited to, the following:
 - .1 The preparation, presentation, and correction of shop drawings and design calculations;
 - .2 Mobilization of labor, tools and equipment required for the execution of the work;
 - .3 The supply, transport, handling, installation, maintenance and removal of platforms and access systems (including geotextile et anti-dust screen) for the complete duration of Work;
 - .4 Implementation and removal under water level if necessary;
 - .5 Any incidental expenses and coordination.
- .3 The submitted price is paid as shown below for each item:
 - .1 50% of the price after the installation of the platform to the satisfaction of the Government Representative;
 - .2 50% of the price after the evacuation of all materials composing the platform, out of the work site.
- .7 Item 1.7 – Excavations and stockpiling
 - .1 Payment item 1.7 of the *Bid Form* is priced per cubic metre (m³) for excavated and stockpiled backfilled material. The volume shall be calculated in accordance with the section and profile of excavation accepted by the Government Representative and the Contractor excavation survey in accordance with the requirements of the drawings and specifications.
 - .2 Price includes, but is not limited to, the following:
 - .1 Mobilization of labor, tools and equipment required for the execution of the work;
 - .2 The preparation, presentation, and correction of the sections and typical soil excavation profile for acceptance, the excavation, stockpiling and disposition procedure, and the shop drawing required for the job execution;
 - .3 The georeferenced excavation survey of the existing in accordance with the approved section and profile and transmission to the Government Representative;
 - .4 Complete removal and disposition of stumps and roots in excavation areas (includes removal and off-site disposal of all stumps in this area);
 - .5 The identified excavation required for not damaging the existing dressed stones;

- .6 Design, mobilization, supply and installation of retaining systems ir required in the chosen method;
 - .7 Drying and drainage of the excavation bottom;
 - .8 Excavation, loading, transport and stockpiling of the backfilled material (be sure to implement environmental requirements for soil storage and required protection system.);
 - .9 Compaction of bottom material before installation of any new backfill;
 - .10 Stripping, loading, transport and storage of topsoil for characterization prior to disposal;
 - .11 Excavation of stones in the Canal in front of timber cribs;
 - .12 Any type of excavation required for the work;
 - .13 Any incidental expenses and coordination.
- .8 Item 1.8 - Disposal of Contaminated Soil
- .1 Items 1.8.1 to 1.8.5 – Range <A, A-B, B-C, C-RESC and >RESC
 - .1 Payment items 1.10.1 to 1.10.5 of the *Tender Form* are priced per tonnes (t) of evacuated soil for the disposal of different types of contaminated soils range <A, A-B, B-C, C-RESC and >RESC in accordance with the requirements of the specifications and drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 Disposal of contaminated soils of <A, A-B, B-C, C-RESC and >RESC contamination ranges, according to the types of contaminant and parameters described in Section 01 52 00 – *Construction Facilities*, Subsection 1.15 – *Contaminated Soils* and in the site characterization appendices. This range is determined according to the instructions of the Government Representative.
 - .2 Loading, transport off-site and treatment as prescribed by Section 01 74 19 – *Waste Management and Disposal* and Section 01 35 13.43 – *Special Project Procedures for Contaminated Sites*;
 - .3 Clean-up;
 - .4 Any incidental expenses and coordination.
 - .3 Item for disposal of contaminated soils <A includes the loading and off-site disposal (to sites accepting this type of material) of pebbles and/or concrete with a diameter equal to or greater than 300 mm present in the embankments and those with a diameter equal to or greater than 150 mm in the last layer of 300 mm. For estimation purposes, provide for 300 tonnes of material to be sorted and disposed of. This does not include the concrete of the walls to be demolished, nor the ballast stones inside the existing timber cribs, but only the existing materials present in the backfill.
- .9 Item 1.9 – Topsoil
- .1 Payment item 1.9 of the *Bid Form* is priced per square metre (m²), based on the area covered in accordance with the requirements of the drawings and specifications.

- .2 Price includes, but is not limited to, the following:
 - .1 The preparation of the ground for the placement of the topsoil;
 - .2 The supply of the material, loading, transport, spreading, leveling, stripping, removal of woody debris and waste, and any amendments necessary to make the material in accordance with drawings and specifications;
 - .3 It is noted that only the theoretical sections indicated in the drawings and quantities counted in the *Bid Form* as reinforced grass are included in this payment item. Costs related to all other areas damaged by the work are considered as miscellaneous expenses and are included in the price of the restoration of the site;
 - .4 Any incidental expenses and coordination.
- .10 Item 1.13 – Sodding with Turf Grass
 - .1 Payment item 1.10 of the *Bid Form* is priced per square metre (m²) for sodding with turf grass, in accordance with the requirements of the drawings and specifications.
 - .2 Measure sodding with turf grass per square metre of sodded area.
 - .3 Price includes, but is not limited to, the following:
 - .1 The supply, implementation of materials in accordance with the plans and directives of the Government Representative;
 - .2 Recovery of sodding of portions of covered surfaces by less than 75% shoot height 150 mm;
 - .3 Protection and maintenance of turf;
 - .4 Cleaning of premises;
 - .5 First lawn mowing;
 - .6 Costs related to all other areas damaged by the work are considered miscellaneous and are included in the price of the restoration of the site.
 - .7 Any incidental expense and coordination.
 - .4 It should be noted that only the areas corresponding to the topsoil surface of item 1.9 are included in this item of payment. Costs related to the installation of sodding with turf grass to any other surfaces damaged by the work are considered as miscellaneous expenses and are included in the price of the restoration of the places.
 - .5 The submitted price is paid as shown below:
 - .1 75% of the price after initial sodding to the satisfaction of the Government Representative;
 - .2 25% of the price after the first lawn mowing to the satisfaction of the Government Representative.
- .11 Item 1.11.1 – Decommissioning of chamber
 - .1 Payment item 1.11.1 of the *Bid Form* is a fixed lump sum amount for the decommissioning of Hydro-Quebec chamber, in accordance with the drawings and specifications.

- .2 The price includes, but is not limited to, the following:
 - .1 Exploratory excavation work to determine the location of the slab above the rooms (excavation and stacking). No traffic is allowed over the slab;
 - .2 The pumping of stagnant water present
 - .3 Partial demolition of the walls and ceiling slab reinforced concrete chambers (perform the demolition of a height of one meter under the finished floor).
 - .3 The bid price is paid as follows:
 - .1 100% of the amount after completion of the complete decommissioning of the Hydro-Quebec chamber to the satisfaction of the Departmental Representative.
- .12 Item 1.11.2 – Concrete filling without shrinkage
- .1 Payment item 1.15.2 of the *Bid Form* is a price per cubic meter (m³) of concrete for the filling of the valve chambers including pipes and former water intake, in accordance with the drawings and specifications.
 - .2 The price includes, but is not limited to, the following:
 - .1 Supply and installation of backfill concrete without shrinkage in accordance with City of Montréal Specification 6VM-30 for the interior of the old water intake and the Hydro-Quebec chamber;
 - .2 The supply and installation of a Type 1 borrowing materials, MG-20 (this backfill is payable at item Type 1 borrowing materials, MG-20);
 - .3 The bid price is paid as follows:
 - .1 100% of the amount after the completion of the complete concreting of the old water intake and the Hydro-Quebec chamber to the satisfaction of the Departmental Representative.

2.2 Item 2. – Replacement of the Crowning Walls

- .1 Item 2.1 –Demolition and/or removal of collapsed walls
 - .1 Payment item 2.1 of the *Bid Form* is a price per cubic metre (m³) of demolished concrete, in accordance with the requirements of the drawings and specifications and drawings.
 - .2 The price includes, but is not limited to, the following:
 - .1 Preparation, presentation, and correction of the demolition procedure and the Work Plan regarding the demolition of the wall;
 - .2 The mobilization of labour, tools, and equipment required to carry out the work;
 - .3 All required saw cuts. Including the saw cuts in the lower part of the Canal side wall to prevent breakage of the foundations during the demolition as well as the complete sawing of the walls between the different types of walls (old, type 2, type 2A, type 4, etc.);

- .4 The preparation, presentation, and correction of the section and typical profile of the existing concrete demolition for approval;
 - .5 The demolition of defective and sound concrete as directed by the Government Representative;
 - .6 The survey markers removal and the production of a list of the removed markers;
 - .7 Cleaning, surface preparation and disposition of debris;
 - .8 Cleaning the reinforcing steel to be retained;
 - .9 Cleaning of the concrete substrate;
 - .10 The collection and treatment of demolition materials as prescribed by Section 01 74 19 – *Waste Management and Disposal*;
 - .11 Any incidental expenses and coordination.
- .2 Item 2.2 – Reinforcing Galvanized Steel
- .1 Payment item 2.2 of the *Bid Form* is a price per kilogram (kg) of steel, based on the quantities placed in the formwork, in accordance with the requirements of the drawings and specifications.
 - .2 The price includes, but is not limited to, the following:
 - .1 The preparation, presentation and correction of the Work Plan, the shop drawings and the slip concerning the laying of steel bars;
 - .2 The mobilization of labor, tools and equipment required for the execution of the work;
 - .3 The supply of reinforcing bars and the shaping thereof;
 - .4 Galvanizing when stipulated in plans and specifications;
 - .5 On-site coordination and adjustments required for the installation of concrete castings and post-wall drilling (bollards, ladders, drains, guardrail anchors, etc.);
 - .6 Field cuts and adjustments;
 - .7 The laying of reinforcing steel required;
 - .8 The rebar installation confirmation table and a revision of the installation slip;
 - .9 Reinforcing bars of the sonotubes for guardrail to be replaced;
 - .10 Any incidental expenses and coordination.
- .3 Item 2.3 – Cast-in-Place Concrete
- .1 Payment item 2.3 of the *Bid Form* is a price per cubic metre (m³) of wall concrete, the quantities are calculated according to the theoretical dimensions, in accordance with the specifications of the drawings and specifications. For estimation purposes, provide irregular flange formwork over the entire length of the wall replacement intervention - (Type 2 and 4 wall). For estimation purposes, provide 100 m² of irregular formwork for the crevices and holes in the upper seats, as indicated on the drawings. **The crowning walls are limited to 10 linear meters maximum by casting.**

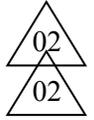
- .2 These prices include, but are not limited to, the following:
 - .1 The preparation, presentation, and correction, if required, of shop drawings, the concreting procedure, the descriptions of the mixtures and the technical data sheets required;
 - .2 Mobilization of labor, tools and equipment required for the execution of the work;
 - .3 Supply, installation and dismantling of formwork;
 - .4 Supply and installation of chamfers;
 - .5 Supply and installation of 20 mm chamfers for joints;
 - .6 The supply and application of mold release agent;
 - .7 Supply and installation of formwork ties;
 - .8 Control joints (asphaltic board, thermoplastic expanding sheath, self-adhesive membrane for joints in accordance with the 3702 standard of Chapter 3 of Volume VII - Matériaux de la collection Normes – Ouvrages routiers du Ministère des Transports)
 - .9 The supply and application of repair mortar to the location of the formwork ties;
 - .10 The anchors, used to replace the formwork tie-rods, used to hold the formwork in place and required for the placement of concrete on existing concrete.
 - .11 Supply and installation of steel wire;
 - .12 The supply, transport, handling and placing of the drain 150 mm x 150 mm;
 - .13 The supply, transport, handling and installation of the transition details, control joints including 20M anchors and 2 self-adhesive membranes as shown in the drawings;
 - .14 The supply, transport, handling and placing of the steel components incorporated in the concrete, as shown in the drawings;
 - .15 Treatment of substrate before concreting;
 - .16 Supply, installation, vibration, finishing, wet curing of concrete;
 - .17 Cleaning of concrete surfaces adjacent to the concreting area;
 - .18 At the end of the work, off-site evacuation of the formwork materials and correction of defective repairs;
 - .19 Concrete finishing, tests and register;
 - .20 Treatment of surplus materials in accordance with Section 01 74 19 – *Waste Management and Disposal*;
 - .21 The preparation, presentation and correction of the section and typical profile of cast-in-place concrete for approval;
 - .22 The preparation, supply and repair of cracks exceeding the specific requirements of the specifications;
 - .23 Concrete of the sonotubes for guardrail to be replaced;
 - .24 Provide for the preparation, supply and treatment of specific cracks (other than that of the previous article) for the purpose of injecting 30



meters in length. This processing length is conditional upon approval by the Governmental Representative;

- .25 Any incidental expenses and coordination.
- .3 Casting of the concrete footings is included for followings items:
 - .1 Wall section above the timber cribs or the retaining wall;
 - .2 Type 2A crowning wall repair;
 - .3 Replacement of the crowning walls types 2 and 4.
- .4 Position 2.4 - Bollards
 - .1 Payment item 2.4 of the *Bid Form* is unit priced for the removal, surface preparation, painting and replacing of the bollards in accordance with the requirements of the drawings and specifications.
 - .2 **Note that the existing bollard paint contain lead.** The Contractor must adapt his price to take into account the requirement of CNESST in terms of lead exposition during stripping.
 - .3 The surface preparation and the paint stripping containing lead can't be done in the field work zone. The works must be done inside a total confinement enclosure or a factory.
 - .4 Price includes, but is not limited to, the following:
 - .1 The survey of the bollard localisation, the preparation, presentation, and correction, if required, of shop drawings, the paint stripping procedure containing lead, the painting procedure, samples and technical data sheets required.
 - .2 Photographic survey of existing bollards;
 - .3 Specific bollard identification;
 - .4 Mobilization of labor, tools and equipment required for the execution of the work;
 - .5 Removal, transportation, handling, storage of bollards;
 - .6 The supply, handling, transport and use of materials;
 - .7 All costs incurred in the preparation of surfaces;
 - .8 The lead paint removal wastes disposition;
 - .9 Painting of the bollards;
 - .10 Repositioning bollards, including new anchors of the same size as the existing one (same localisation them existing);
 - .11 In the event of damage, immediately repair the affected items and at the Contractor's expense;
 - .12 Total confinement enclosure
 - .13 Soil clearance around the bollards
 - .14 All costs related to the work in section 35 59 29 - *Mooring equipment*;
 - .15 Any incidental expenses and coordination.
 - .5 The submitted price is paid as indicated below:
 - .1 100% of the price after the removal of the Bollards, to the satisfaction of the Government Representative.





.5 Item 2.5 – Rungs

- .1 Payment item 2.5 of the *Bid Form* is a unit price for the establishment of a series of rungs in accordance with the requirements of the drawings and specifications.
- .2 This item is composed of the equivalent number of steps (rows) in the existing section. It includes the holes on each of the steps (rows) and on the top of the wall and the smooth galvanised steel, as described in the drawings. The price also includes the chemical anchors required for installation and all incidental expenses.
- .3 The existing section is composed of four (4) steps on the front face and one on the top. In case of variation, the rungs will be paid proportionally.
- .4 Price includes, but is not limited to, the following:
 - .1 The georeferenced surveys, the preparation, the presentation, and the correction of shop drawings, samples, and technical data sheets. Provide a DWG, PDF and EXCEL spreadsheet with identification, location and any other relevant information on the height of the rows, numbers, spaces between them, type, shape and identification section;
 - .2 Mobilization of labor, tools and equipment required for the execution of the work;
 - .3 The supply, transport, handling and setting of the echelons, such as the existing ones;
 - .4 Any incidental expenses and coordination.

.6 Item 2.6 – Type 1 Borrowing Materials, MG-20

- .1 Payment item 2.6 of the *Bid Form* is priced per tonne (t) for the borrow materials in accordance with the requirements of the drawings and specifications.
- .2 This item is related to materials that replace excavated materials. No reuse of materials is expected for the crowning wall replacement on this Contract.
- .3 Price includes, but is not limited to, the following:
 - .1 Transportation of borrow materials to the site;
 - .2 The supply and installation of borrow materials in accordance with the drawings, specifications, and instructions of the Government Representative;
 - ~~.3 The supply and installation of an impermeable membrane for the dimensions shown on the drawings;~~
 - .4 Compaction, tests and register;
 - .5 Cleaning of premises;
 - .6 Any incidental expenses and coordination.



.7 Item 2.7 - Perforated Drain 150 mm and Geotextile, PVC (Type 1) or PVC COEX (Type 1) or PE (Type 2), 180 kPa min.

- .1 Payment item 2.7 of the *Bid Form* is priced per linear metre of replaced concrete wall (Lin. m.) for the perforated drain in accordance with the requirements of the drawings and specifications including deviation lengths for bollards and keys. Thus 1 meter of wall replacement intervention is payable even if the drain has a

- deflection of 1.2 meters. Only the replacement length of walls is payable for this item.
- .2 The drainage system to install behind the crowning wall must have a diameter of 150 mm.
 - .3 Price includes, but is not limited to, the following:
 - .1 The supply of materials, the installation of drains including the installation of the geotextile, the preparation of the foundation, the clear stone support cushions the self-adhesive membrane on all the length of the wall, the connection of the elements and all accessories required for the installation such as joints between the various sections;
 - .2 The execution of the slope needed for drainage;
 - .3 Cleaning of premises;
 - .4 Any incidental expenses and coordination.
 - .8 Item 2.8 – Concrete support pad
 - .1 The price at item 2.8 of the Schedule of Prices is a per cubic meter (m³) price for backfill, in accordance with the plans and specifications as directed by the Departmental Representative.
 - .2 The concrete for the support pad is a pumpable concrete with a minimum capacity of 20 MPa with an air-entraining admixture;
 - .3 Price includes, but is not limited to, the following:
 - .1 The preparation, presentation, and correction, if required, of shop drawings, the concreting procedure, the descriptions of the mixtures and the technical data sheets required;
 - .2 Supply, installation and dismantling of formwork of a variable height required for the works;
 - .3 Transportation of support pad concrete to the site;
 - .4 Purchase and placement of concrete support pad according to plans and specifications;
 - .5 Concrete needed to clog up out of service ducts;
 - .6 Treatment of surplus materials in accordance with the requirements of Section 01 74 21 – *Construction / Demolition Waste Management and Disposal*;
 - .7 Cleaning of the premises;
 - .8 Any incidental expenses.

2.3 Item 3. – Repair of the Crowning Wall Without Overlay

- .1 Item 3.1 – Concrete Demolition – Crowning Wall
 - .1 Payment item 3.1 of the *Bid Form* is per cubic meter (m³) of concrete demolished, in accordance with the approved theoretical section as provided to the requirements of the drawings and specifications.
 - .2 The amount includes, but is not limited to, the following:

- .1 The preparation, presentation and correction of the demolition procedure and of the Work Plan concerning the wall demolition;
 - .2 The mobilization of labor, tools and equipment required for carrying out the work;
 - .3 The required saw cuts, including the saw cuts at the bottom of the wall on the Canal side to avoid damages to the seats during wall demolition, the sawing and demolition of the crevice surfaces as indicated on the drawings and the complete sawing of walls between the different types of walls (old, type 2, type 2A, type 4, etc.);
 - .4 The preparation, presentation, and correction of the section and typical profile of the existing concrete demolition for approval;
 - .5 The demolition of defective and sound concrete as directed by the Government Representative;
 - .6 Cleaning, surface preparation and disposition of debris;
 - .7 Cleaning of reinforcing steel to be retained;
 - .8 Cleaning of the concrete substrate;
 - .9 Saw cuts and upper seat demolition and disposal.
 - .10 Collection, disposal and treatment of demolition materials as prescribed by Section 01 74 19 – *Waste Management and Disposal*;
 - .11 Any incidental expenses and coordination.
- .2 Item 3.2 – Cast-In-Place Concrete
- .1 Payment item 3.2 of the *Bid Form* is a price per cubic metre (m³) of wall concrete, the quantities are calculated according to the actual quantities cast, in accordance with the requirements of the drawings and specifications.
 - .2 The repairs are done continuously on all the length of the affected sections by types of repair required by the specifications.
 - .3 The price includes, but is not limited to, the following:
 - .1 The preparation, presentation, and correction of the Work Plan, the shop drawings, the concreting procedure, the descriptions of the mixtures and the technical data sheets required. The preparation, presentation and correction of the section and typical profile of concreting for approval;
 - .2 Mobilization of labor, tools and equipment required for the execution of the work;
 - .3 The excavation of 600 mm behind the wall and the transportation are included in item *Excavations and stockpiling*;
 - .4 Supply, installation, vibration, finishing, wet curing of concrete (including additional concrete for the bollards);
 - .5 Treatment of surplus materials in accordance with Section 01 74 19 – *Waste Management and Disposal*;
 - .6 The preparation, presentation and correction of the section and typical profile of cast-in-place concrete for approval;
 - .7 The preparation, supply and repair of cracks exceeding the specific requirements of the specifications;

- .8 Provide for the preparation, supply and treatment of specific cracks (other than that of the previous article) for the purpose of injecting 20 meters in length. This processing length is conditional upon approval by the Governmental Representative;
- .9 Any incidental expenses and coordination.
- .4 The submitted price is paid as shown below:
 - .1 100% of the price after the concrete curing has been completed and after the formwork removal to the satisfaction of the Government Representative;
- .3 Item 3.3 – Formwork in contact with cast concrete.
 - .1 Payment item 3.3 of the Bid Form is priced per square meter (m²) of surface coming into contact with the concrete to be poured in accordance with the requirements of the drawings and specifications. For estimation purposes, provide irregular flange formwork over the entire length of the wall replacement intervention - (Type 2A). For estimation purposes, provide 22 m² of irregular formwork for the crevices and holes in the seats, as indicated on the drawings.
 - .2 Price includes, but is not limited to, the following:
 - .1 The preparation, presentation, and correction of the Work Plan, the shop drawings, the concrete forming procedure and the technical data sheets required. The preparation, presentation and correction of the section and typical profile of formwork for approval;
 - .2 The supply, installation and uninstallation of formwork and anchors;
 - .3 The supply and installation of chamfers for corners;
 - .4 The supply and installation of 20 mm chamfers for joints;
 - .5 The supply and application of release agent;
 - .6 The supply and application of repair mortar for formwork cones;
 - .7 The supply and installation of a sealing membrane on construction joints of the backfilled face of the crowning wall (300 mm and 500 mm);
 - .8 The supply, transport, handling and setting of steel elements integrated into the concrete as shown in the drawings.
- .4 Item 3.4 - Reinforcing Galvanised Steel
 - .1 Payment item 3.4 of the *Bid Form* is priced per kilogram (kg) of steel according to the quantities placed in the formwork, in accordance with the requirements of the drawings and specifications.
 - .2 Price includes, but is not limited to, the following:
 - .1 The preparation, presentation and correction of the Work Plan, the shop drawings and the slip concerning the laying of steel bars;
 - .2 The mobilization of labor, tools and equipment required for the execution of the work;
 - .3 The supply of reinforcing bars and the shaping thereof,
 - .4 Galvanizing when stipulated in plans and specifications;



- .5 On-site coordination and adjustments required for the installation of concrete castings and post-wall drilling (bollards, ladders, drains, guardrail anchors, etc.).
 - .6 The rebar installation confirmation table and a revision of the installation slip.
 - .7 Field cuts and adjustments;
 - .8 The laying of reinforcing steel required including the reinforcing steel in of the upper seat repairs;
 - .9 Any incidental expenses and coordination.
- .5 Items 3.5 - Chemical anchorage
- .1 Payment item 3.5 of the *Bid Form* is priced per unit of chemical anchor, in accordance with the requirements of the drawings and specifications.
 - .2 Price includes, but is not limited to, the following:
 - .1 The preparation, presentation, and correction of shop drawings and anchor chemical technical sheet;
 - .2 Mobilization of labor, tools and equipment required for the execution of the work;
 - .3 Drilling and cleaning of holes for the installation of chemical anchors of upper seat repairs;
 - .4 The supply, handling, transport and installation of steel anchor rods and anchor chemicals;
 - .5 The execution of tests on control anchorages, in accordance with Section 03 30 03 – *Concrete Repair*;
 - .6 The confirmation installation table of reinforcement bars and a revision of the installation slip;
 - .7 Any incidental expenses and coordination.
 - .3 This item excludes the following items:
 - .1 Anchors, used to replace formwork tie-rods, which are used to hold the formwork in place and are required for the placement of concrete on existing concrete, are not covered by any item in the slip and All costs incurred by the Contractor for the construction of these works are included in the price of the formwork.
- .6 Position 3.6 - Bollards
- .1 Payment item 3.6 of the *Bid Form* is unit priced for the removal, surface preparation, painting and replacing of the bollards in accordance with the requirements of the drawings and specifications.
 - .2 **Note that the existing bollard paint contain lead.** The Contractor must adapt his price to take into account the requirement of CNESST in terms of lead exposition during stripping.
 - .3 The surface preparation and the paint stripping containing lead can't be done in the field work zone. The works must be done inside a total confinement enclosure or a factory.
 - .4 Price includes, but is not limited to, the following:

- .1 The survey of the bollard localisation, the preparation, presentation, and correction, if required, of shop drawings, the paint stripping procedure containing lead, the painting procedure, samples and technical data sheets required.
 - .2 Photographic survey of existing bollards;
 - .3 Specific bollard identification;
 - .4 Mobilization of labor, tools and equipment required for the execution of the work;
 - .5 Removal, transportation, handling, storage of bollards;
 - .6 The supply, handling, transport and use of materials;
 - .7 All costs incurred in the preparation of surfaces;
 - .8 The lead paint removal wastes disposition;
 - .9 Painting of the bollards;
 - .10 Repositioning bollards, including new anchors of the same size as the existing one (same localisation them existing);
 - .11 In the event of damage, immediately repair the affected items and at the Contractor's expense;
 - .12 Total confinement enclosure
 - .13 Soil clearance around the bollards
 - .14 All costs related to the work in section 35 59 29 - *Mooring equipment*;
 - .15 Any incidental expenses and coordination.
- .5 The submitted price is paid as indicated below:
- .1 100% of the price after the removal of the Bollards, to the satisfaction of the Government Representative.

.7 Posts 3.7 - Rungs

- .1 Payment item 3.7 of the *Bid Form* is a unit price for the establishment of a series of rungs in accordance with the requirements of the drawings and specifications.
- .2 This item is composed of the equivalent number of steps (rows) in the existing section. It includes the holes on each of the steps (rows) and on the top of the wall and the smooth galvanised steel, as described in the drawings. The price also includes the chemical anchors required for installation and all incidental expenses.
- .3 The existing section is composed of four steps on the front face and one on the top. In case of variation, the rungs will be paid proportionally.
- .4 Price includes, but is not limited to, the following:
 - .1 The georeferenced surveys, the preparation, the presentation, and the correction of shop drawings, samples, and technical data sheets. Provide a DWG, PDF and EXCEL spreadsheet with identification, location and any other relevant information on the height of the rows, numbers, spaces between them, type, shape and identification section;
 - .2 Mobilization of labor, tools and equipment required for the execution of the work;

- .3 The supply, transport, handling and setting of the echelons, such as the existing ones;
 - .4 Any incidental expenses and coordination.
- .8 Item 3.8 – Type 1 Borrowing Materials, MG-20
- .1 Payment item 3.8 of the *Bid Form* is priced per tonne (t) for the borrow materials in accordance with the requirements of the drawings and specifications.
 - .2 This item is related to materials that replace excavated materials. No reuse of materials is expected for the crowning wall replacement on this Contract
 - .3 Price includes, but is not limited to, the following:
 - .1 Transportation of borrow materials to the site;
 - .2 The supply and installation of borrow materials in accordance with the drawings, specifications, and instructions of the Government Representative;
 - .3 Compaction, tests and register;
 - .4 Cleaning of premises;
 - .5 Any incidental expenses and coordination.

2.4 Item 4 – Timber Crib Walls

- .1 Item 4.1 – Timber cribs demolition
 - .1 Payment item 4.1 of Bid Form is a fixed lump sum amount to compensate all necessary expenses incurred for Timber cribs demolition in accordance with the drawings and specifications, to the wall concept. supported, as directed by the Departmental Representative. The height of the cribs to be envisaged is $\pm 4,5$ m.
 - .2 For estimation purposes, provide that all wood is treated with preservatives such as creosote (CR) must be disposed of in accordance with the regulations in force
 - .3 The amount includes, but is not limited to, the following:
 - .1 The preparation, presentation and correction of the timber cribs demolition Work Plan;
 - .2 The mobilization of labor, tools, and equipment required to carry out the work;
 - .3 Sawing the timber cribs at the boundaries of the demolition zones
 - .4 Cleaning, surface preparation and disposal of waste material;
 - .5 Treatment of surplus materials in accordance with the requirements of Section 01 74 19 – *Waste management and disposal*. This includes all the components of the caissons (wood, stones, fasteners, etc.);
 - .6 Any incidental expenditure.
- .1 Item 4.2 - Cofferdam

- .1 Payment item 4.2 of the *Bid Form* is a fixed lump sum amount to compensate all necessary expenses incurred in the execution of the temporary support work in accordance with the requirements of the specifications and instructions of the Government Representative.
- .2 Following the installation, the cofferdam must be inspected by a competent engineer, member in good standing of the *Ordre des ingénieurs du Québec* (OIQ). A written notice signed by the engineer stating that the cofferdam is built in accordance with the submitted plans, shall be given to the site supervisor. This notice must mention the date and time of the inspection.
- .3 When the cofferdam is no longer needed, the contractor must remove it. The removal must be done from downstream to upstream.
- .4 Price includes, but is not limited to, the following:
 - .1 The preparation, presentation and correction of shop drawings signed and sealed by a competent engineer, member in good standing of the *Ordre des ingénieurs du Québec* (OIQ);
 - .2 Mobilization of labor, tools and equipment required for the execution of the work;
 - .3 The supply, transport, handling, storage and setting of the cofferdam;
 - .4 Inspection, pumping, care and maintenance of the cofferdam for the total duration of the work on the timber crib walls;
 - .5 Removal of the cofferdam;
 - .6 Cleaning of premises;
 - .7 Any incidental expenses and coordination.
- .5 The submitted price is paid as indicated below:
 - .1 70% of the price after the installation of the cofferdam, to the satisfaction of the Government Representative;
 - .2 30% of the price after the removal of the cofferdam and the cleaning, to the satisfaction of the Government Representative.
- .2 Item 4.3 – Timber crib walls
 - .1 Payment item 4.3 of the *Bid Form* is a fixed lump sum amount to compensate all necessary expenses incurred in the construction and installation of the timber cribs, in accordance with the requirements of the drawings and specifications.
 - .2 Every after-treatment cuts, notch and hole in the wood or any damage on the surface of a piece must be re-treated with a wood preservative product in accordance with section 06 05 73 *Wood Treatment*;
 - .3 Timber cribs must be filled with stones. Stones must be placed carefully to avoid damaging the cribs and must be placed to minimize voids between stones.
 - .4 Price includes, but is not limited to, sections 06 05 73 – *Wood treatment*, 06 14 00 – *Treated wood foundations* and 31 53 13 – *Timber Crib Wall*, as well as following:
 - .1 The preparation, presentation and correction of the Work Plan, shop drawings and calculation note of the timber cribs;

- .2 Mobilization of labor, tools and equipment required for the execution of the work;
- .3 Excavation required for the installation of the new cribs;
- .4 The supply, transport, handling and storage of treated wood;
- .5 The supply, transport, handling, storage and setting of galvanized metal connector hardware;
- .6 The supply, transport, handling and setting of geotextiles, stones and MG-20 required for the construction of the timber cribs;
- .7 Cleaning of premises;
- .8 Any incidental expenses and coordination.
- .5 The submitted price is paid based on the percentage of completion of this work.
- .3 Item 4.4 – Type 2 Borrowing Materials, MG-112
 - .1 Payment item 4.4 of the *Bid Form* is priced per tonne (t) for the borrow materials in accordance with the requirements of the drawings and specifications.
 - .2 This item is related to materials that replace excavated materials. No reuse of materials is expected for the crowning wall replacement on this Contract
 - .3 Price includes, but is not limited to, the following:
 - .1 Transportation of borrow materials to the site;
 - .2 The supply and installation of borrow materials in accordance with the drawings, specifications, and instructions of the Government Representative;
 - .3 The supply, transport, handling and setting of geotextiles;
 - .4 Compaction, tests and register;
 - .5 Cleaning of premises;
 - .6 Any incidental expenses and coordination.

2.5 Item 5 – Traffic maintenance end temporary signage

The temporary signage and the dimensions of signs on the pedestrian path have to be compliant with Annexe F – *Liste des panneaux de signalisation pour les voies cyclables*, with chapter 7 – *Voies cyclables* and with tome V – *Signalisation routière – Volume 1, 2 and 3* of road works published by “Les publications du Québec”.

The signs used for this project have to be bilinguals.

- .1 Item 5.1 - Traffic Maintenance and Temporary Signage
 - .1 Payment item 5.1 is a daily price for traffic and temporary signaling for the pedestrians and cyclists as shown on the drawings and orthophotos and all other pedestrian or biking access possibly needed during the works.
 - .2 Price includes, but is not limited to, the following:
 - .1 The preparation, presentation and correction of shop drawings signed and sealed by a competent engineer, member in good standing of the *Ordre des ingénieurs du Québec* (OIQ);

- .2 Acquiring of all required certificates;
- .3 The provision, mobilization, maintenance, replacement in the event of breakage or vandalism, the commissioning or disengagement, the displacement and demobilization of the temporary signaling required to carry out work on the entire site in accordance with the requirements of *Tome V – Signalisation routière – Volume 1, 2 and 3*;
- .4 Maintenance of circulation and temporary signs during the works;
- .5 The supply of warning signs for work, stop, diversion and dismount for the repair of the cycle path.
- .6 The provision of signalers as required;
- .7 Temporary signaling, tools, equipment, machinery, vehicle and labour required for the complete execution of all works;
- .8 Bilingualism of the temporary signs;
- .9 Modification and rehabilitation of existing signage;
- .10 Maintenance of access of residents;
- .11 Identification with a TR-V-7 beacon of all objects within 1.2 m of the temporary polyvalent path;
- .12 Any incidental expenses and coordination.
- .3 Are excluded the following:
 - .1 Mobilisation to working area, their maintenance and their removal, including the panels and the panel maintenance;
 - .2 Maintenance and all temporary signage other than the one related to the pedestrian access explain above are included in construction facilities item.
- .2 Item 5.2 - Special Signs
 - .1 Payment item 5.2 of the *Bid Form* is priced per square meter (m²) for the conformity and installation of special panels and signs in accordance with the requirements of the drawings and specifications.
 - .2 Price includes, but is not limited to, the following:
 - .1 The preparation, presentation and correction of shop drawings signed and sealed by a member engineer in good standing of the *Ordre des ingénieurs du Québec*(OIQ);
 - .2 Obtaining all required certificates;
 - .3 The supply, shaping, transportation and handling of the materials required for the application of the special panels and signs;
 - .4 Mobilization of labor, tools and equipment required for the execution of the work;
 - .5 The provision of accessories required for the installation of panels and signs such as poles, braces, hardware;
 - .6 Implementation, maintenance, replacement in case of accident, breakage or vandalism of special panel;
 - .7 Maintenance of the panel;
 - .8 Demobilization of special panels and signs at the end of the work;

- .9 Turning the traffic sign on or off, as often as required;
- .10 Temporary signage required during operations;
- .11 Bilingualism of temporary signs;
- .12 Any incidental expenses and coordination.

2.6 Item 6. - Provision for Winter Conditions - Concreting in Cold Weather

- .1 Item 6.1.1 - Temporary Shelter and heating for Concrete Pouring of the Crowning Walls.
 - .1 Payment item 6.1.1 of the *Bid Form* is priced per linear meter (Lin. m.) to offset all costs incurred for the temporary shelter of pre-concrete and concrete work for crowning walls, upper seats and slabs and backfilling, in accordance with the requirements of the plans and specifications.
 - .2 Temporary shelter is payable only if it is required in writing by the Government Representative.
 - .3 Price includes, but is not limited to, the following:
 - .1 The preparation, presentation, and correction of the shop drawings and the description of the shelter.
 - .2 Mobilization of labor, tools and equipment required for the execution of the work;
 - .3 The supply, handling and transportation of the materials required to construct the shelter;
 - .4 Installation, maintenance during construction and dismantling at the end of the temporary shelter;
 - .5 Heating of the temporary shelter during the work;
 - .6 Off-site transportation of materials;
 - .7 Any incidental expenses and coordination.
 - .4 The bid price is paid as follows:
 - .1 50% of the amount after assembly of the shelter to the satisfaction of the Government Representative;
 - .2 50% of the amount after the evacuation of the materials that made up the shelter, outside the construction site.
 - .5 The price includes the equivalent of the intervention length regardless of the number of installations and relocations required. Only the equivalent of the intervention length will be paid. If the contractor places two shelters at two different heights on the same 1 m repair section, a single 1m shelter will be paid and not 2 m.
- .2 Item 6.1.2 - Temporary Shelter and heating for Concrete Pouring of the walls above timber cribs.
 - .1 Payment item 6.1.2 of the *Bid Form* is priced per linear meter (Lin. m.) to offset all costs incurred for the temporary shelter of pre-concrete and concrete work, in accordance with the requirements of the plans and specifications for the timber crib walls.

- .2 Temporary shelter is payable only if it is required in writing by the Government Representative.
 - .3 Price includes, but is not limited to, the following:
 - .1 The preparation, presentation, and correction of the shop drawings and the description of the shelter.
 - .2 Mobilization of labor, tools and equipment required for the execution of the work;
 - .3 The supply, handling and transportation of the materials required to construct the shelter;
 - .4 Installation, maintenance during construction and dismantling at the end of the temporary shelter;
 - .5 Heating of the temporary shelter during the work;
 - .6 Off-site transportation of materials;
 - .7 Any incidental expenses and coordination.
 - .4 The bid price is paid as follows:
 - .1 50% of the amount after assembly of the shelter to the satisfaction of the Government Representative;
 - .2 50% of the amount after the evacuation of the materials that made up the shelter, outside the construction site.
 - .5 The price includes the equivalent of the intervention length regardless of the number of installations and relocations required. Only the equivalent of the intervention length will be paid. If the contractor places two shelters at two different heights on the same 1 m repair section, a single 1m shelter will be paid and not 2 m.
- .3 Item 6.2 – Insulator (RSI 0.40 per layer)
- .1 Payment item 6.2 of the *Bid Form* is priced per square meter (m²) of new concrete without formwork covered by an insulator, in accordance with the requirements of the drawings and specifications.
 - .2 Insulator layers are paid only if required, in writing, by the Government Representative;
 - .3 Price includes, but is not limited to, the following:
 - .1 Preparation, presentation and correction of the description of the composition of the insulator layer;
 - .2 Mobilization of labour, tools and equipment required for the execution of work;
 - .3 Supply, handling, transportation, installation, maintenance during work, removal and disposal of the insulator layers at the end of work;
 - .4 Costs related to the protection of concrete by insulator for the correction of defective work are to be paid by the Contractor;
 - .5 Any incidental expenses and coordination.
- .4 Item 6.3 - Heating of Concrete Components

- .1 Payment item 6.3 of the *Bid Form* is priced per cubic meter (m³) of concrete or cement slurry installed, the components of which are heated in accordance with the requirements of the drawings and specifications.
- .2 This item is used for all concrete activities if required.
- .3 Price includes, but is not limited to, the following:
 - .1 Heating of the mixing water (between 40° C and 80° C) used for the manufacture of the concrete;
 - .2 Heating of aggregates to remove frozen pieces, snow, and ice;
 - .3 The cost of heating the concrete or grout components without the need for shrinkage because of the correction of defective work shall be borne by the Contractor;
 - .4 Any incidental expenses and coordination.

2.7 Item 7 – Specialized Equipment

- .1 Item 7.1 – Replacement of Asphalt from a Bicycle path Area
 - .1 Payment item 8.1 of the *Bid Form* is a price per square metre (m²) of asphalted area to replace the full width of the bicycle path, in accordance with the requirements of the drawings and specifications.
 - .2 Any other area of asphalt to be replaced must be included in item 1.1 – *Construction Facilities*.
 - .3 Price includes, but is not limited to, the following:
 - .1 Asphalt sawing (plan sawing perpendicular to the path);
 - .2 Excavation, loading and transportation of excavated materials (paving and foundation);
 - .3 Off-site disposal of excavated materials to a site in accordance with the requirements of the section on contaminated soils procedures;
 - .4 Grading and preparation of the existing foundation, including supply of material, if required;
 - .5 Supply and installation of new foundation;
 - .6 50 mm asphalt paving of type EC-10 PG 58-28;
 - .7 Any incidental expenses and coordination.
 - .4 Any other damage resulting in quantities greater than those stipulated in the *Bid Form* must be included in the site restoration item;

END OF SECTION

Parks Canada Agency
Rehabilitation Lachine Canal Walls
Repair and replacement of crowning walls
(Area H.4 and 12 – Reach No 4)
Project N° CL(1455-13)
Addendum n° 02

Appendix I
Photos of Crowning wall

Agence Parcs Canada
REHABILITATION OF LACHINE CANAL WALLS
REPAIR AND REPLACEMENT OF THE CROWNING
WALLS (AREAS H.4 AND 12 – REACH NO 4)
Project N° CLAC-1455-13

APPENDIX I – Photos of Crowning Wall
Revision 01

MURS CANAL DE LACHINE

CL-1455-13



CLAC-PIF-894-B4N45-11



CLAC-PIF-894-B4N45-12



CLAC-PIF-894-B4N45-13



CLAC-PIF-894-B4N45-14



CLAC-PIF-894-B4N45-15

MURS CANAL DE LACHINE

CL-1455-13



CLAC-PIF-894-B4N46-01



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CLAC-PIF-894-B4N46-05



CLAC-PIF-894-B4N46-06

MURS CANAL DE LACHINE

CL-1455-13



CLAC-PIF-894-B4N46-07



CLAC-PIF-894-B4N46-08



CLAC-PIF-894-B4N46-09



CLAC-PIF-894-B4N46-10



CLAC-PIF-894-B4N46-11



CLAC-PIF-894-B4N46-12

MURS CANAL DE LACHINE

CL-1455-13



CLAC-PIF-894-B4N46-13



CLAC-PIF-894-B4N46-14



CLAC-PIF-894-B4N46-15



CLAC-PIF-894-B4N46-16

MURS CANAL DE LACHINE

CL-1455-13



CLAC-PIF-894-B4N47-01



CLAC-PIF-894-B4N47-02



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CLAC-PIF-894-B4N47-04



CLAC-PIF-894-B4N47-05



CLAC-PIF-894-B4N47-06

MURS CANAL DE LACHINE CL-1455-13



CLAC-PIF-894-B4N47-07

MURS CANAL DE LACHINE

CL-1455-13



CLAC-PIF-894 B4S01-15



CLAC-PIF-894 B4S01-16



CLAC-PIF-894 B4S01-17



CLAC-PIF-894 B4S01-18



CLAC-PIF-894 B4S01-19



CLAC-PIF-894 B4S01-20

MURS CANAL DE LACHINE

CL-1455-13



CLAC-PIF-894 B4S01-21



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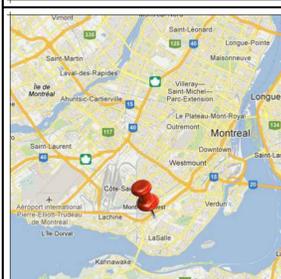
NOTES

-CE RELEVÉ A ÉTÉ EFFECTUÉ EN UTILISANT LES UNITÉS DU SYSTÈME INTERNATIONAL.

-LES INFORMATIONS CONTENUES SUR CE DESSIN N'ONT PAS ÉTÉ VÉRIFIÉES SUR LE CHANTIER.

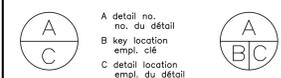
-LA PRÉCISION DU RELEVÉ EST ±200mm.

-LES DESSINS ONT ÉTÉ PRÉPARÉS EN 2012-13 À PARTIR DES DONNÉES RECUEILLIES EN 2008-09. L'ÉTAT DES MURS PEUT AVOIR CHANGÉ DEPUIS CETTE DATE.



KEY PLAN
PLAN-REPERE

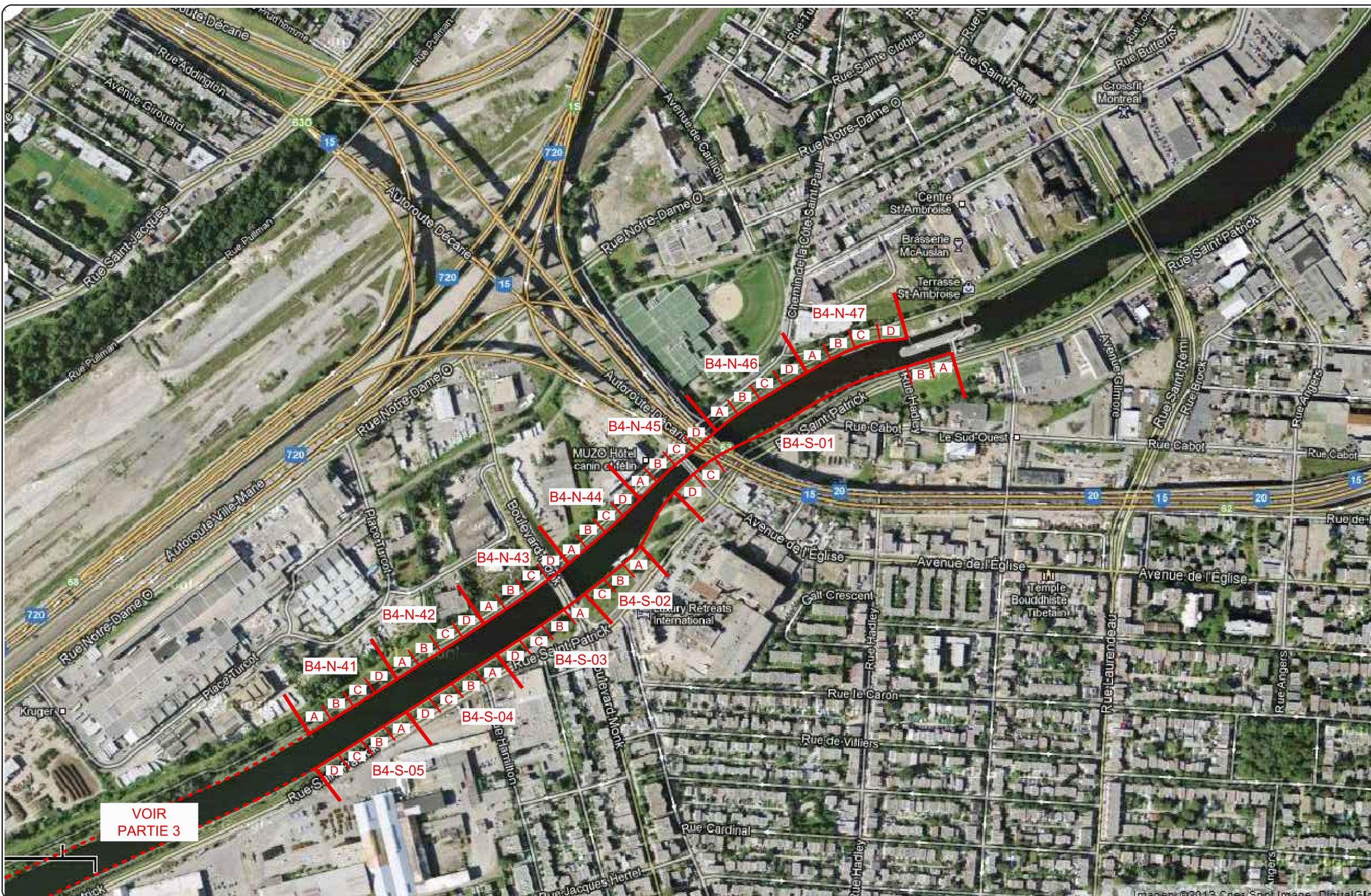
06	
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revision	date



project project
MURS DU CANAL LACHINE, MONTREAL, QUEBEC BIEF 4
RELEVÉ DU PATRIMOINE, 2008-2009

drawing dessin
PLAN CLÉ - PARTIE 4, INDEX PARTIE 4 ET PLAN LOCALISATION PARTIE 4

designed	conçu
date	
drawn	C. BOUCHARD/W. SAWYER dessiné
date	DÉCEMBRE 2012 - FÉVRIER 2013
reviewed	J. GREGG examiné
date	FÉVRIER 2013
approved	approuvé
date	
tender	soumission
Project Manager	Administrateur de projets
project no.	no. du projet
	R.061915.001/R.059192.019
drawing no.	no. du dessin



VOIR PARTIE 3

PLAN CLÉ - PARTIE 4
SANS ÉCHELLE

INDEX PARTIE 4

NORD	SUD
45 - B4-N-41	52 - B4-S-01
46 - B4-N-42	53 - B4-S-02
47 - B4-N-43	54 - B4-S-03
48 - B4-N-44	55 - B4-S-04
49 - B4-N-45	56 - B4-S-05
50 - B4-N-46	
51 - B4-N-47	



NOTES

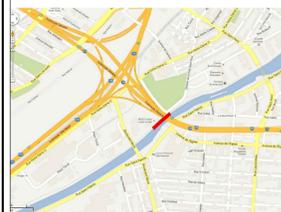
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PLAN CLÉ DU CANAL LACHINE, BIEF4-PARTIE 4



KEY PLAN
PLAN-REPÈRE

06		
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revision	date
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A	A detail no. / no. du détail	A
B	B key location / empl. clé	B/C
C	C detail location / empl. du détail	

project / projet
MURS DU CANAL LACHINE, MONTRÉAL, QUÉBEC BIEF 4
RELEVÉ DU PATRIMOINE, 2008-2009

drawing / dessin
PARTIE 4 B4-N-45 A,B,C,D

designed / conçu
date / date
drawn / dessiné
date / date
reviewed / examiné
date / date
approved / approuvé

date / date
tender / soumission
Project Manager / Administrateur de projets
project no. / no. du projet
drawing no. / no. du dessin

VOIR B4-N-44-D



BIEF 4 - NORD - 45 - A

1 : 50



BIEF 4 - NORD - 45 - B

1 : 50



BIEF 4 - NORD - 45 - C

1 : 50



BIEF 4 - NORD - 45 - D

1 : 50

VOIR B4-N-46-A



Scale 1 : 1

NOTES

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PLAN CLÉ DU CANAL LACHINE, BIEF4-PARTIE 4



KEY PLAN
PLAN-REPÈRE

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04		
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01		

revision date

A	A detail no. / no. du détail	A
B	B key location empl. clé	B/C
C	C detail location empl. du détail	

project projet
MURS DU CANAL LACHINE, MONTRÉAL, QUÉBEC BIEF 4
RELEVÉ DU PATRIMOINE, 2008-2009

drawing dessin
PARTIE 4 B4-N-46 A,B,C,D

designed conçu
date
drawn dessiné
C. BOUCHARD/W. SAWYER
date DÉCEMBRE 2012 - FÉVRIER 2013
reviewed examiné
J. GREGG
date FÉVRIER 2013
approved approuvé

date
tender soumission
Project Manager Administrateur de projets
project no. no. du projet
R.061915.001/R.059192.019
drawing no. no. du dessin

VOIR B4-N-45-D



BIEF 4 - NORD - 46 - A

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BIEF 4 - NORD - 46 - B

1 : 50



BIEF 4 - NORD - 46 - C

1 : 50



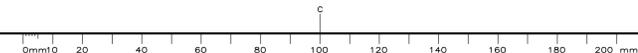
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VOIR B4-N-47-A



Scale 1 : 1



NOTES

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PLAN CLÉ DU CANAL LACHINE, BIEF4-PARTIE 4



KEY PLAN
PLAN-REPÈRE

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revision date

A C	A detail no. no. du détail B key location empl. clé C detail location empl. du détail	A B
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project projet

MURS DU
CANAL LACHINE,
MONTREAL, QUEBEC
BIEF 4
RELEVÉ DU PATRIMOINE, 2008-2009

drawing dessin

PARTIE 4
B4-N-47
A,B,C,D

designed conçu

date

drawn C.BOUCHARD/W.SAWYER dessiné

date DÉCEMBRE 2012 - FÉVRIER 2013

reviewed J.GREGG examiné

date FÉVRIER 2013

approved approuvé

date

tender soumission

Project Manager Administrateur de projets

project no. no. du projet

R.061915.001/R.059192.019

drawing no. no. du dessin

51 de 95

VOIR B4-N-46-D



BIEF 4 - NORD - 47 - A

1 : 50



BIEF 4 - NORD - 47 - B

1 : 50



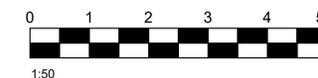
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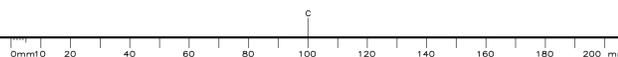


BIEF 4 - NORD - 47 - D

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Scale 1 : 1



NOTES

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PLAN CLÉ DU CANAL LACHINE, BIEF4-PARTIE 4



KEY PLAN
PLAN-REPÈRE

06		
05		
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01		

revision		date
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A C	A detail no. no. du détail B key location empl. clé C detail location empl. du détail	A B
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project / projet
MURS DU CANAL LACHINE, MONTRÉAL, QUÉBEC BIEF 4
RELEVÉ DU PATRIMOINE, 2008-2009

drawing / dessin
**PARTIE 4
B4-S-01
A,B,C,D**

designed / conçu		
date		
drawn / dessiné	C. BOUCHARD/W. SAWYER	
date	DÉCEMBRE 2012 - FÉVRIER 2013	
reviewed / examiné	J. GREGG	
date	FÉVRIER 2013	
approved / approuvé		

date		
tender / soumission		
Project Manager / Administrateur de projets		
project no. / no. du projet	R.061915.001/R.059192.019	
drawing no. / no. du dessin		



BIEF 4 - SUD - 01 - A

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BIEF 4 - SUD - 01 - B

1 : 50



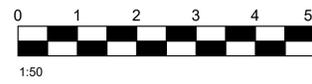
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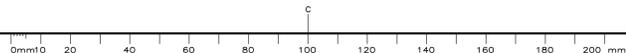


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1 : 50



Scale 1 : 1



VOIR B4-S-02-A