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Travaux publics et Services gouvernementaux  
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800, rue de La Gauchetière Ouest

7<sup>e</sup> étage, suite 7300

Montréal

Québec

H5A 1L6

## SOLICITATION AMENDMENT MODIFICATION DE L'INVITATION

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

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

### Comments - Commentaires

### Vendor/Firm Name and Address

Raison sociale et adresse du  
fournisseur/de l'entrepreneur

### Issuing Office - Bureau de distribution

Travaux publics et Services gouvernementaux Canada

Place Bonaventure, portail Sud-Oue

800, rue de La Gauchetière Ouest

7<sup>e</sup> étage, suite 7300

Montréal

Québec

H5A 1L6

|   |  |
|---|--|
| <b>Title - Sujet</b><br>Murs Lachine Bief 4 sect. 14-17   |  |
| <b>Solicitation No. - N° de l'invitation</b><br>EE520-190691/A  | <b>Amendment No. - N° modif.</b><br>002                                    |
| <b>Client Reference No. - N° de référence du client</b><br>R.077223.220   | <b>Date</b><br>2018-08-28  |
| <b>GETS Reference No. - N° de référence de SEAG</b><br>PW-\$MTC-255-14955   |  |
| <b>File No. - N° de dossier</b><br>MTC-8-41089 (255)  | <b>CCC No./N° CCC - FMS No./N° VME</b>                                     |
| <b>Solicitation Closes - L'invitation prend fin</b><br><b>at - à 02:00 PM</b><br><b>on - le 2018-09-10</b>  | <b>Time Zone</b><br><b>Fuseau horaire</b><br>Heure Avancée de l'Est<br>HAE |
| <b>F.O.B. - F.A.B.</b><br><b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/> |  |
| <b>Address Enquiries to: - Adresser toutes questions à:</b><br>Desforges, Julie   | <b>Buyer Id - Id de l'acheteur</b><br>mtc255                               |
| <b>Telephone No. - N° de téléphone</b><br>(514) 602-8307 ( )  | <b>FAX No. - N° de FAX</b><br>(418) 648-2209                               |
| <b>Destination - of Goods, Services, and Construction:</b><br><b>Destination - des biens, services et construction:</b>   |  |

Instructions: See Herein

Instructions: Voir aux présentes

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

Solicitation No. - N° de l'invitation  
EE520-190691/A

Amd. No. - N° de la modif.  
002

Buyer ID - Id de l'acheteur  
MTC255

Client Ref. No. - N° de réf. du client  
R.077223.220

File No. - N° du dossier  
MTC-8-41089

CCC No./N° CCC - FMS No./N° VME

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This amendment 002 of the solicitation is raised for the following :

- Addendum 002

All other terms and conditions to the original solicitation remains unchanged.



Project: R.077223.220

## Rehabilitation of the Lachine Canal walls, Reach 4 – Sectors 14 to 17 Lachine Canal national historic site

Object: ADDENDA # 1

August 23th, 2018

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### Part 1      Answers to bidden questions

- .1      *Question: Can we use some access to visit the site?*  
Answer: The Departmental Representative has obtained authorizations from the following owners: Cintube and Cascades. Bidders are permitted to use access via St. Joseph Street to reach the Cintube lot and visit the west end of the project. However, they must notify Mr. Albert Sebe, director of Cintube at (514) 829-1835 before any visit. Bidders are also authorized to use access # 2 by St. Joseph Street described in the contract documents to access another part of the project. These accesses are authorized till September 10, 2018 under the following conditions: use vehicles that are literate in the name of the company for which the visit is made, wear PPE, do not smoke and respect the one way and the maximum speed of 10km/h. For the eastern part of the project, it is accessible from below the interchange of route 138. This ground belongs to the MTMDDET and is thus public. KPH-Turcot uses the site for storage by the end of September 2018. You can access it to visit the entire central and eastern sector of the project.
- .2      *Question: In the MG-20 and MG-112 payment procedure, there is mention of a geotextile, however, there is nothing to indicate to the plans for this purpose, nor even the type of geotextile. Is a geotextile required?*  
Answer: Yes, geotextile is required, see addenda #1. See also technical section geotextile 31 32 19.01.
- .3      *Question: Are temporary supports included in the plans mandatory?*  
Answer : Temporary supports included in the plans (0 + 000 to 0 + 040, 0 + 130 to 0 + 340, 0 + 855 to 0 + 925, 0 + 950 to 1 + 140 (1 + 140 to 1 + 180 not essential given the presence of a plateau), 1 + 180 to 1 + 610, 1 + 760 to 1 + 780) have been included for, among others, the following reasons: stabilize the existing slopes, reduce the influence of the works, decrease excavations, reduce the disposal of contaminated soils, reduce the supply of new soils, reduce the amount of site redevelopment (turf, topsoil, trees (felling and replacement with new equivalent trees), gravel, concrete slab, fencing) , make work safer from a health and safety standpoint, avoid multiple excavations to rework slopes during periods of heavy rains, winter and thaw and other reasons. If the contractor is willing to assume the costs of increasing all quantities as well as any changes and increases made by the lack of temporary support in the overall article 1.9.4 of the estimate 01 29 00 in relation to the limits currently inscribed in the plan views and at the cuts, while carrying out all work within the property boundaries (including mobilization) and carrying out the work in the environmental and health and safety rules in force, the Contractor may carry out the work without some or all of the temporary supports provided for in the plans. For contaminated soils, quantities can be estimated using the plans presented in the appendix of the geotechnical study to the specifications. As a reminder, the only excavation

materials that can be reused on-site are materials that meet the federal CCME residential / parks limit and the provincial limit <A.

## **Part 2 Report of bidders' visit**

See appendix of this document to see the report of the visit.

## **Part 3 Technical specification**

### **3.1 Section « 01 29 00 – Payment procedures »**

#### **.1 The article 1.4.2.5.2.11 is modified as follows:**

Securing the site. The supply, installation, maintenance and removal of identification panels of color work of dimension 1220mm x 2440mm corresponding to 3.0m<sup>2</sup> for each access site.

#### **.2 The article 1.4.2.5.10.1 is modified as follows:**

Construction of all accesses path (only area identified in the plans) to perform the work, including all grubbing required. Vegetable debris piles along the existing access road (sector 17) will have to be removed representing 3125m<sup>2</sup> of clearing. The plants to be picked up will be paid per square meter of clearing (same item as complete clearing) according to the cleared area adjacent to the piles.

#### **.3 The article 1.4.2.5.10.4 is modified as follows:**

Maintenance of existing fencing and existing snake hibernacula, fencing removal and delivery to a supplier on the island of Montreal and the construction of a new hibernacula according to details of the plans Access to site #2 must be established before work begins (hole to fill with MG-20 throughout the access area and roadway structure to be determined by Contractor to limit interventions during work) and rebuild at the end of the work (between September 3 and 27, 2019, but authorizations could be issued to allow the paving of certain phases earlier) as specified in the plans (see plan CL-32-137.03 and pavement structure typical detail on plan CL-32-136.51). All costs related to the construction of this access included except for the article 1.9.10 of this estimate must be in this item.

#### **.4 The article 1.4.3.3.3 is modified as follows:**

The supply, installation, maintenance, relocation, replacement, if necessary, and dismantling of all traffic management devices (traffic signs (prescription, danger, indication and work), supplementary signs (presignalization of works, detours, optional itineraries, etc.), visual markers of the tubular beacon type, visual markers of the conic beacon type and their weighings, delineators, bollards, signaling arrows, barricades, etc.) for the all works including detour paths to be carried out according to the laws and standards in force as well as according to the signaling plans produced by the Contractor. For Access # 2, provide for the supply, installation, maintenance, relocation, replacement if necessary and dismantling of 6 stop signs.

#### **.5 The article 1.5.2.3 is modified as follows:**

This price includes all the cleaning of the stone and rock base, concrete that have not been demolished due to the projected profile, the removal of existing unstable stones and rocks as well as the concrete necessary to fill the cavities in the stone and rock base, all according to the indications to the plans and requirements of the specifications.

#### **.6 The article 1.9.1.2 is modified as follows:**

This price remunerates, by square meter (m<sup>2</sup>), all necessary measures, actions and supplies such as, but not limited to, management, labor, tools and machinery, equipment, materials, surveys, permits, professional services and construction engineering for the excavation, preparation, clearing and deforestation of shrubs whose diameter (at 1.2m from the ground) is smaller than 150mm, grubbing, transportation, storage and handling, cleaning and any activity necessary to complete the work, including expenditures to perform work not specifically described, either on the drawings, specifications or other tender documents, but deemed necessary to bring them into compliance to the rules of art. The clearing/grubbing item is included inside the intervention zone. For the item 17.9.1 of the pricing schedule, the clearing/grubbing included the existing path.

.7 *The article 1.9.10 is been added as follows:*

#### Pavement

- .1 The description of this item applies to items 14.9.10 of the pricing schedule.
- .2 The price is per square meter (m<sup>2</sup>), but not limited to:
  - .1 100mm GB-20 & 70mm d'ESG-14;
  - .2 Allow variable widths of maximum 6m;
  - .3 Provide 2% slope with high point in the middle;
  - .4 Excavation of existing pavement: 150mm thick;
  - .5 Saw cuts on all 4 faces for each phase;
  - .6 Hanging binder;
  - .7 Preparation of the surface before paving and final reprofiling;
  - .8 Reloading shoulders on both sides (MG-20b on 1m width;
  - .9 Paving, excavation and preparation work may be carried out over a maximum of 3 phases to allow maintenance of the heavy traffic of the owner during paving work. The phases will not necessarily follow one another quickly. Deadlines of several weeks may be required between phases. The end of all work must not exceed September 27, 2019
  - .10 Survey record prior to general work, prior to paving and after paving. The Contractor must also provide the alignment and profiles of the proposed pavement for approval by the Departmental Representative;

### 3.2 Section « 01 32 16.07 – Construction progress schedule »

.1 *The article 1.5.1 is been modified as follows:*

Project milestones form interim targets for Project Schedule.

- .1 Start of Work (mobilization): The Contractor will not be able to mobilize before October 1<sup>st</sup>, 2018 for the working zone between chaining **0+580 @ 1+780**.
- .2 Work area located between 0+000 and 0+580: Contractor can not access these areas before January 21<sup>st</sup>, 2019.
- .3 Completion of work (final completion) for the work area between **0+910 @ 1+780**, including the correction of deficiencies (including landscaping, tree planting, hibernacula redevelopment of access #1 and all additional accesses and storage areas located between these chaining): September 27, 2019
- .4 Completion of work (substantial completion) for the working zone between chaining **0+000 @ 0+910**, including correction of deficiencies (without exterior improvements): December 13<sup>th</sup>, 2019.
- .5 Completion of work (final completion) for work area between **0+000 @ 0+910**: May 29, 2020

.6

3.3 Section « 01 35 29.06 – Health and safety requirements »

.1 *The article 1.11.11 is been added as follows:*

.1 In all access, before entering the work area, all items in this specification apply.

.2 *The article 1.11.12 is been added as follows:*

.1 Traffic on the construction site and in the access, areas must be at a maximum speed of 10 km/h.

.3 *The article 1.11.13 is been added as follows:*

.1 Smoking is prohibited in the access area # 2.

3.4 Section « 32 12 16 – Revêtement de chaussée en enrobé bitumineux »

This section has been added to technical specification, see appendix of this.

**Part 4 Plans**

4.1 Modification to sheet S02 – Organization of the site

.1 The fence has been modified, see AD-12 in the appendix of this document.

4.2 Modification to sheet S03 – Organization of the site

.1 Modification of the Cascades acces, see AD-13 in the appendix of this document.

4.3 Modification to sheet S51 – typical details

.1 Modification of the detail W, see AD-14 in the appendix of this document.

**Part 5 Pricing schedule**

Modifications have been made in the Pricing Schedule, see schedule in the appendix of this document. This document replaces the pricing schedule issued for addenda #1.



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Pascal Béliveau, Eng., Partner  
Project Manager, Buildings Engineering - Stuctural



24 août 2018

Marcel Thum, ing.

Project manager | Client service Team - Heritage

Public Services and Procurement Canada | Government of Canada

**Object: Visit of the tenderers**

**Project title: Rehabilitation of the Lachine canal walls reach 4, sectors 14 to 17**

**V/Réf. : R077223.220**

**N/Réf. : M04068G**

M. Thum,

The bidders' visit took place on August 16, 2018 at 10:00 am at 2 locations. This was done in two stages: the first place where the bidders were invited to join was at 63 St-Joseph, at the end of the access near the Canal. The second portion of the visit took place in the western part of the project and access was by Villanova.

Mr. Thum acting as moderator first introduced the members involved in the project, and then summarized overall the work of the project. A description of the tender documents has been explained, namely the administrative clauses, the general clauses of the project as well as the price schedule. A summary description of the plans as well as the specifications including the appendices have been listed for information. It was also mentioned that tenders will open on September 10, 2019. Addenda #1 is scheduled for August 15, 2018 and will clarify several points on the intervention zone as well as the temporary support. Addenda #2 will be released shortly and will provide details on the start and end dates for the various sectors and the addition of paving for access at Cascades.

Subsequently, a more detailed description of the project took place:

- *Project boundaries*: ± 1800m long;
- *The restriction on tree cutting*: An existing tree survey has been done and the trees to be demolished are clearly indicated on the plans and technical schedule;
- *A description of the services on the site*: The services of the city of Montreal, fiber optics, gas metro, hydro Quebec. The contractor will however have to make his own request to Info excavation.
- *Project Schedule*: Work will begin in October 2018 for the area between Museum Road and CP Bridge (see modification in Addenda #2) and will be completed in September 2019 (including landscaping). For areas west of the CP, unless agreements are signed with the owners, the work can not begin until January 2019 (modified in Addenda #2). If applicable, changes will be made by addenda.



- *The different combinations of repairs on the wall:* There are several types of repair, either the repair of the concrete facing only, the repair of the concrete facing as well as the crowning wall, the repair of the concrete facing with a new crowning wall or the repair of crowning wall only;
- *The linearity of the wall:* The position of the wall must be in the same place as the existing wall, the linearity of the wall will be given in DWG version during plans for construction. In some places, the linearity is changed, but these changes will be included in the DWG;
- *Archaeological records:* The elements identified in the plans will have to be recorded by an archaeologist before starting the work, and this must be taken into consideration in the schedule of work. The works site is also in an archaeological zone and special attention must be paid throughout the works.
- *Characterization of contaminated soils:* The contractor will have to carry out his own characterization of contaminated soils since previous studies are merely indicative.
- *Exclusion barrier and hibernacula:* The exclusion barrier in place must be maintained during the work and must be removed at the end. A new hibernacula will have to be built such as the details included in the plans.

#### Questions/réponses

Les questions suivantes ont été répondues sur place auprès des soumissionnaires. Les questions présentées par courriel seront répondues par addenda.

Q1 - What are the water levels for the realization of the project?

A1 - *The water levels according to the period of the year are well indicated in the plans and specifications.*

Q2 - In the reconstruction profiles in Annex D, does the proposed profile (green line) stop at the red line in the bottom of the channel?

A2 - *Yes, the proposed profile stops vertically in the bottom of the channel*

Q3 - There are several roof shingles on the site, what do they represent?

A3 - *Shingles will no longer be present when the project begins. These are present to attract the snakes, so that they will be transferred on the other side of the barrier exclusion.*

Q4 - In the plans, there is a note concerning the debris to dispose (steel and concrete elements such as rails, beams, columns, etc.), what does this note mean?

R4 - *These are debris that have gathered in the area of intervention over the years, mainly in the area facing Cintube and which will have to be relieved by an archaeologist before being removed.*





Q5 - Several questions were asked regarding the position of the temporary support and the site boundary and whether support was required?

*A5 - The answer will be formulated in the next addenda.*

Q6 - Is it possible to visit the site and by what access?

*A6 - The answer will be formulated in the next addenda.*

Q7 - How much soil to excavate?

*A7 - The quantity of soils <A (entered in the specification), added to the quantities in the range AB, added to the quantities in the range BC, added to the quantities exceeding criterion C give the resultant of the quantity of soil to be excavated with the use of the temporary support.*

Q8 - Do we have to do a scan before and after the concreting works on the wall?

*A8 - Yes, a scorecard scan is required prior to the work and after the completion of work.*

A blue ink handwritten signature, appearing to read 'Benoit Larivière'.

Benoit Larivière, ing  
Ingénieur de projets / Structure

## **PART 1        GENERAL**

### **1.1        RELETED SECTIONS**

- .1        All sections of Division 01 – General Requirements and Division 02 – Existing Conditions.
- .2        Section 31 05 16 - Aggregate Materials.
- .3        Section 31 23 33.01 – Excavating, trenching and backfilling

### **1.2        REFERENCES**

- .1        American Association of State Highway and Transportation Officials (AASHTO)
  - .1        AASHTO M320-02, Standard Specification for Performance Graded Asphalt Binder.
  - .2        AASHTO R29-02, Standard Specification for Grading or Verifying the Performance Graded of an Asphalt Binder.
  - .3        AASHTO T245-97(2001), Resistance to Plastic flow of Bituminous Mixtures Using Marshall Apparatus.
- .2        Asphalt Institute (AI)
  - .1        AI MS2-1994 Sixth Edition, Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types.
- .3        American Society for Testing and Materials International, (ASTM)
  - .1        ASTM C 88-99a, Standard Test Method for Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate.
  - .2        ASTM C 117-95, Standard Test Method for Material Finer Than 0.075mm (No.200) Sieve in Mineral Aggregates by Washing.
  - .3        ASTM C 123-98, Standard Test Method for Lightweight Particles in Aggregate.
  - .4        ASTM C 127-01, Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate.
  - .5        ASTM C 128-01, Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate.
  - .6        ASTM C 131-01, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
  - .7        ASTM C 136-01, Standard Method for Sieve Analysis of Fine and Coarse Aggregates.
  - .8        ASTM C 207-91(1997), Standard Specification for Hydrated Lime for Masonry Purposes.
  - .9        ASTM D 995--95b(2002), Standard Specification for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
  - .10       ASTM D 2419-02, Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
  - .11       ASTM D 3203-94(2000), Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures.
  - .12       ASTM D 4791-99, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.
- .4        Canadian General Standards Board (CGSB)
  - .1        CAN/CGSB-8.1-88, Sieves Testing, Woven Wire, Inch Series.

- .2 CAN/CGSB-8.2-M88, Sieves Testing, Woven Wire, Metric.
- .3 CAN/CGSB-16.3-M90, Asphalt Cements for Road Purposes.
- .5 Gouvernement du Québec
- .1 Cahier des charges et devis généraux (CCDG)

### 1.3 SUBMITTALS

- .1 Submittals and samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit viscosity-temperature chart for asphalt cement to be supplied showing either Saybolt Furol viscosity in seconds or Kinematic Viscosity in centistokes, temperature range 105 to 175 degrees C at least 4 weeks prior to beginning Work.
- .3 Submit manufacturer's test data and certification that asphalt cement meets requirements of this Section.
- .4 Submit manufacturer's test data and certification that hydrated lime meets requirements of this Section.
- .5 Submit asphalt concrete mix design and trial mix test results to Departmental Representative for approval at least 4 weeks prior to beginning Work.
- .6 Inform Departmental Representative of proposed source of aggregates and provide access for sampling at least [4] [ ] weeks prior to beginning Work.

### 1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver and stockpile aggregates in accordance with Section 31 05 16 - Aggregate Materials. Stockpile minimum 50 % of total amount of aggregate required before beginning asphalt mixing operation.
- .2 When necessary to blend aggregates from one or more sources to produce required gradation, do not blend in stockpiles.
- .3 Stockpile fine aggregate separately from coarse aggregate, although separate stockpiles for more than two mix components are permitted.
- .4 Provide approved storage, heating tanks and pumping facilities for asphalt cement.
- .5 Submit to Departmental Representative copies of freight and waybills for asphalt cement as shipments are received. Departmental Representative reserves right to check weights as material is received.

### 1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Construction/Demolition Waste Management And Disposal.
- .2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
- .3 Divert unused aggregate materials from landfill to quarry or facility for reuse as approved by Departmental Representative.
- .4 Divert unused asphalt from landfill to facility capable of recycling materials.
- .5 Fold up metal banding, flatten and place in designated area for recycling.

## **PART 2 PRODUCTS**

### **2.1 MATERIALS**

- .1 The materials used must conform to the specifications of the relevant sections of the CCDG.
- .2 Aggregates used in asphalt mixes must be new. No recycled granulate will be allowed.
- .3 The products used as asphalt tack coat are SS-1 type in accordance with the requirements of the CCDG.
- .1

## **PART 3 EXECUTION**

### **3.1 PREPARATION**

- .1 Reshape [granular roadbed] [and] [asphalt pavement] in accordance with CCDG and the indications on the drawings.
- .2 Apply tack coat in accordance with CCDG..
- .3 Prior to laying mix, clean surfaces of loose and foreign material.

### **3.2 TRANSPORTATION OF MIX**

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

### **3.3 PLACING**

- .1 Obtain Departmental Representative's approval of base and tack coat prior to placing asphalt.
- .2 Place asphalt concrete to thicknesses, grades and lines as indicated.
- .3 Placing conditions:
  - .1 Place asphalt mixtures only when air temperature is above 5 degrees C.
  - .2 When temperature of surface on which material is to be placed falls below degrees C, provide extra rollers as necessary to obtain required compaction before cooling.
  - .3 Do not place hot-mix asphalt when pools of standing water exist on surface to be paved, during rain, or when surface is damp.

- .4 Where possible do tapering and levelling where required in lower lifts. Overlap joints by not less than 300 mm.
- .5 Place individual strips no longer than 500 m.
- .6 Spread at high side of pavement or at crown and span crowned centerlines with initial strip.
- .7 Spread and strike off mixture with self propelled mechanical finisher.
  - .1 Construct longitudinal joints and edges true to line markings. Departmental Representative to establish lines for paver to follow parallel to centerline of proposed pavement. Position and operate paver to follow established line closely.
  - .2 When using pavers in echelon, have first paver follow marks or lines, and second paver follow edge of material placed by first paver. Work pavers as close together as possible and in no case permit them to be more than 30 m apart.
  - .3 Maintain constant head of mix in auger chamber of paver during placing.
  - .4 If segregation occurs, immediately suspend spreading operation until cause is determined and corrected.
  - .5 Correct irregularities in alignment left by paver by trimming directly behind machine.
  - .6 Correct irregularities in surface of pavement course directly behind paver. Remove by shovel or lute excess material forming high spots. Fill and smooth indented areas with hot mix. Do not broadcast material over such areas.
  - .7 Do not throw surplus material on freshly screeded surfaces.
- .8 When hand spreading is used:
  - .1 Use approved wood or steel forms, rigidly supported to assure correct grade and cross section. Use measuring blocks and intermediate strips to aid in obtaining required cross-section.
  - .2 Distribute material uniformly. Do not broadcast material.
  - .3 During spreading operation, thoroughly loosen and uniformly distribute material by lutes or covered rakes. Reject material that has formed into lumps and does not break down readily.
  - .4 After placing and before rolling, check surface with templates and straightedges and correct irregularities.
  - .5 Provide heating equipment to keep hand tools free from asphalt. Control temperature to avoid burning material. Do not use tools at higher temperature than temperature of mix being placed.

### 3.4 COMPACTING

- .1 Do not change rolling pattern unless mix changes or lift thickness changes. Change rolling pattern only as directed by Departmental Representative.
- .2 Roll asphalt continuously to density not less than 93 % of mix density as per LC 26-040/045.
- .3 General:
  - .1 Start rolling operations as soon as placed mix can bear weight of roller without excess displacement of material or cracking of surface.
  - .2 Operate roller slowly initially to avoid displacement of material. Use static compaction for levelling coarse less than 25 mm thick.
  - .3 Overlap successive passes of roller by minimum of 200 mm and vary pass lengths.
  - .4 Keep wheels of roller slightly moistened with water to prevent pick-up of material but do not over-water.

- .5 Do not stop vibratory rollers on pavement that is being compacted with vibratory mechanism operating.
- .6 Do not permit heavy equipment or rollers to stand on finished surface before it has been compacted and has thoroughly cooled.
- .7 After traverse and longitudinal joints and outside edge have been compacted, start rolling longitudinally at low side and progress to high side. Ensure that all points across width of pavement receive essentially equal numbers of passes of compactors.
- .8 When paving in echelon, leave unrolled 50 to 75 mm of edge which second paver is following and roll when joint between lanes is rolled.
- .9 Where rolling causes displacement of material, loosen affected areas at once with lutes or shovels and restore to original grade of loose material before re-rolling.

### 3.5 JOINTS

- .1 General:
  - .1 Remove surplus material from surface of previously laid strip. Do not deposit on surface of freshly laid strip.
  - .2 Construct joints between asphalt concrete pavement and Portland cement concrete pavement as indicated.
  - .3 Paint contact surfaces of existing structures such as manholes, curbs or gutters with bituminous material prior to placing adjacent pavement.
- .2 Transverse joints:
  - .1 Offset transverse joint in succeeding lifts by at least 600 mm.
  - .2 Cut back to full depth vertical face and tack face with thin coat of hot asphalt prior to continuing paving.
  - .3 Compact transverse joints to provide smooth riding surface. Use methods to prevent rounding of compacted surface at joints.
- .3 Longitudinal joints:
  - .1 Offset longitudinal joints in succeeding lifts by at least 150 mm.
  - .2 Cold joint is defined as joint where asphalt mix is placed, compacted and left to cool below 100 degrees C prior to paving of adjacent lane.
  - .3 Overlap previously laid strip with spreader by 25 to 50 mm.
  - .4 Before rolling, carefully remove and discard coarse aggregate in material overlapping joint with lute or rake.
  - .5 Roll longitudinal joints directly behind paving operation.
  - .6 When rolling with static or vibratory rollers, have most of drum width ride on newly placed lane with remaining 150 mm extending onto previously placed and compacted lane.
- .4 Construct feather joints so that thinner portion of joint contains fine graded material obtained by changed mix design or by raking out coarse aggregate in mix. Place and compact joint so that joint is smooth and without visible breaks in grade. Location of feather joints as indicated.
- .5 Construct butt joints as indicated.

### 3.6 FINISH TOLERANCES

- .1 Finished asphalt surface to be within 5 mm of design elevation but not uniformly high or low.

- .2 Finished asphalt surface not to have irregularities exceeding 5 mm when checked with 4.5 m straight edge placed in any direction.

### **3.7 DEFECTIVE WORK**

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

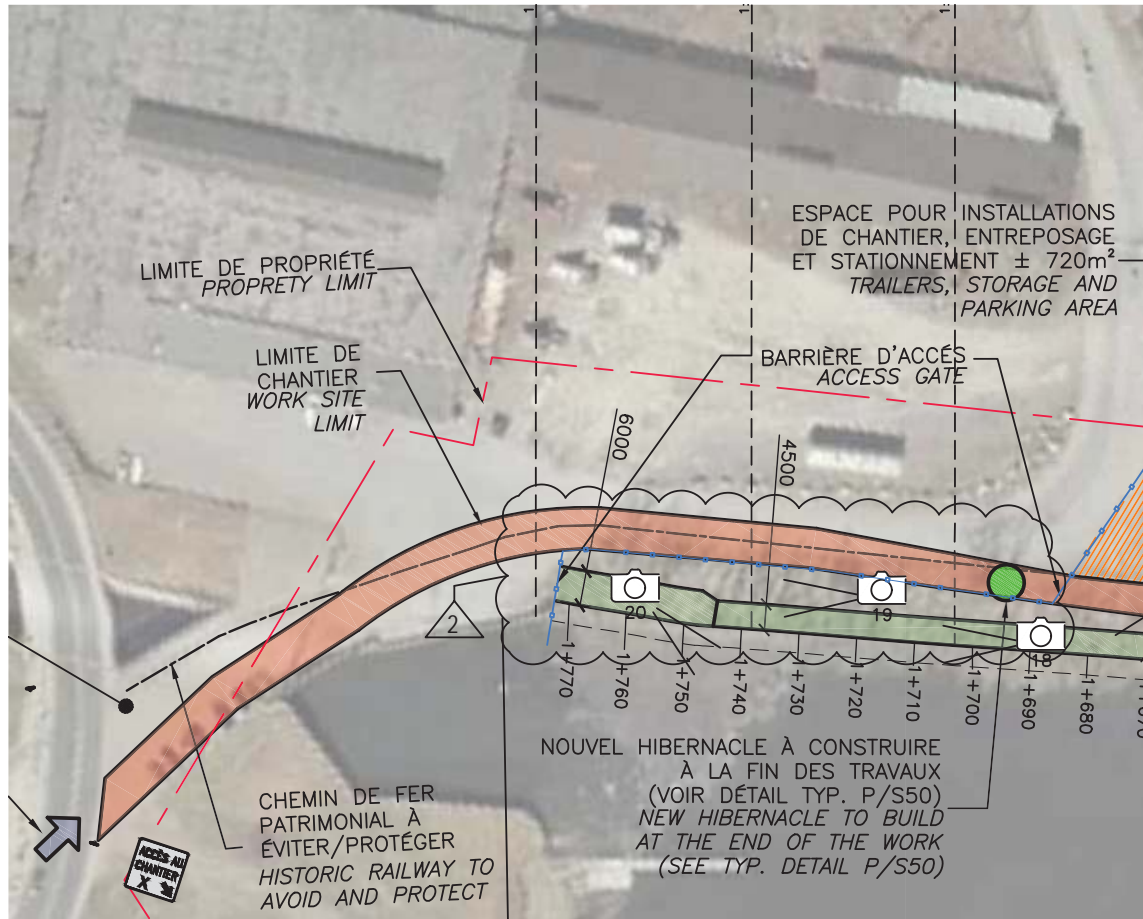
**END OF SECTION**




Partenaire de génie

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|  |   |   |  |
|--|---|---|--|
|  <b>Travaux publics et<br/>Services gouvernementaux<br/>Canada</b><br>Direction générale des<br>biens immobiliers<br><br>Région du Québec | <b>Public Works and<br/>Government Services<br/>Canada</b><br>Real Property branch<br><br>Quebec region | <b>Projet/Project</b><br>RÉFÉCTION DES MURS DU CANAL-DE-LACHINE<br>BIEF 4-SECTION 14 À 17<br>REHABILITATION OF THE LACHINE CANAL<br>WALLS REACH 4, SECTORS 14 TO 17 | <b>Titre du<br/>dessin/<br/>Drawing<br/>title:</b><br>EXTRAIT PLAN S02<br>EXTRACT PLAN S02 |
|  |   | conçu designed<br>par/ by: B. Larivière, Ing. date:   | approuvé approved<br>par/ by: P. Béliveau, Ing. date:                                      |
| <b>AGENCE PARCS CANADA (APC)<br/>PARKS CANADA AGENCY (PCA)</b>   |   | dessiné drawn<br>par/ by: A. Restrepo. date:  | no. de project<br>projet/ no. <b>R.077223.220</b> date:                                    |
|  |   | révisions: <b>02</b> échelle/ scale:  | nom du file<br>fichier/ name <b>AD-12</b>  |





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## Légende / Legend

 CHEMIN DE CIRCULATION  
TRAFFIC PATH

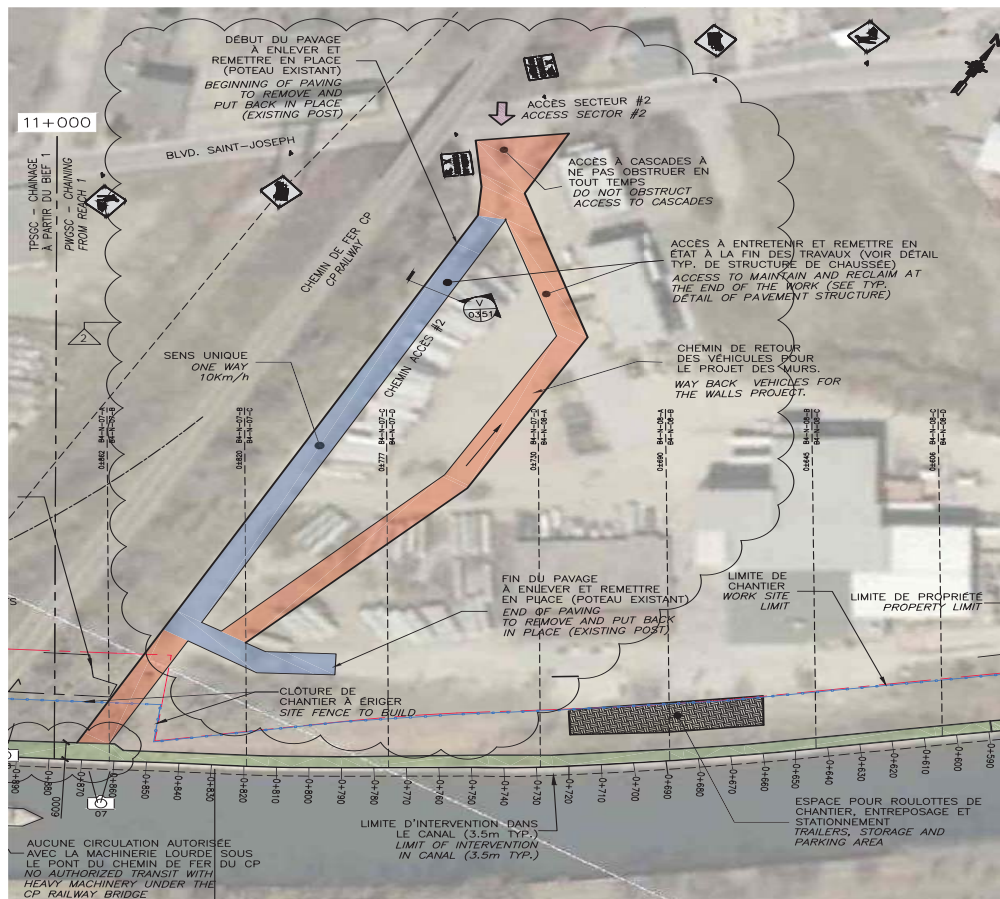
 ZONE DE DÉFRICHAGE / VOIR NOTE  
CLEARING AREA / SEE NOTE #1

 ZONE D'OBSERVATION DE COULEUVRES  
SNAKES OBSERVATORY AREA

 ZONE D'OBSERVATION DE RENARD  
FOX OBSERVATORY AREA

 CHEMIN PAVÉ  
PAVED PATH

 LIMITE DE PROPRIÉTÉ /  
PROPERTY LIMIT



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biens immobiliers

Région du Québec

Public Works and  
Government Services  
Canada  
Real Property branch

Quebec region

Projet/Project  
REFECTION DES MURS DU CANAL-DE-LACHINE  
BIEF 4-SECTION 14 À 17  
REHABILITATION OF THE LACHINE CANAL  
WALLS REACH 4, SECTORS 14 TO 17

conçu designed  
par/ by: B. Larivière, Ing. date:

dessiné drawn  
par/ by: A. Restrepo. date:

révisions: 02 échelle/ scale:

Titre du  
dessin/  
Drawing  
title:  
EXTRAIT PLAN S03  
EXTRACT PLAN S03

approuvé approved  
par/ by: P. Béliveau, Ing. date:

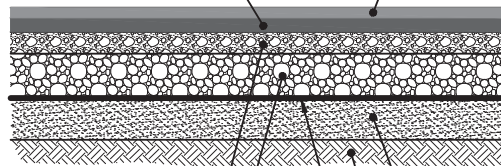
no. de project  
projet/ no. R.077223.220 date:

nom du file  
fichier/ name AD-13

AGENCE PARCS CANADA (APC)  
PARKS CANADA AGENCY (PCA)

ENROBÉ BITUMINEUX POUR COUCHE DE  
BASE, GB-20, 100mm D'ÉPAISSEUR  
PAVEMENT FOR BASE LAYER, GB-20,  
100mm THICK

ENROBÉ BITUMINEUX ESG-14,  
70mm D'ÉPAISSEUR  
PAVEMENT ESG-14, 70mm  
THICK



PIERRE CONCASSÉE MG-20, 300mm D'ÉPAIS.  
COMPACTÉE À 95% DU PROCTOR MODIFIÉ  
CRUSHED STONE MG-20, 300mm THK.  
COMPACT 95% OF MODIFIED PROCTOR

PIERRE CONCASSÉE MG-112, 300mm D'ÉPAIS.  
COMPACTÉE À 95% DU PROCTOR MODIFIÉ  
CRUSHED STONE MG-112, 300mm THK.  
COMPACT 95% OF MODIFIED PROCTOR

CLASSE "B" COMPACTÉE À 95%  
DE PROTOR MODIFIÉ  
CLASS "B" COMPACTED AT 95%  
OF MODIFIED PROTOR

SOL NON-REMANIÉ EXEMPT  
DE TERRE VÉGÉRALE  
NOT OVERHAULED SOIL  
WITHOUT TOP SOIL

MEMBRANE GÉOTEXTILE  
GEOTEXTILE MEMBRANE



STRUCTURE DE CHAUSSÉE MOYENNE  
MEDIUM PAVEMENT STRUCTURE  
DÉTAIL/DETAIL

2



Travaux publics et  
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Quebec region



AGENCE PARCS CANADA (APC)  
PARKS CANADA AGENCY (PCA)

**Projet/Project**

RÉFECTION DES MURS DU CANAL-DELACHINE  
BIEF 4 - SECTION 14 À 17  
REHABILITATION OF THE LACHINE CANAL  
WALLS REACH 4 - SECTORS 14 TO 17

conçu par/designed by:

B. LARIVIÈRE, Ing.

dessiné par/drawn by:

M. VINCENT

révisions:  
02

date:

date:

échelle/scale:

Titre du dessin/Drawing title:

EXTRAIT PLAN S51  
EXTRACT PLAN S51

approuvé par/approved by:

P. BÉLIVEAU, Ing.

no. de projet/project no.

R.077223.220

nom du fichier/file name

AD-14

**APPENDIX 1 - COMBINED PRICE FORM**

- 1) The prices per unit will govern in establishing the Total Extended Amount. Any arithmetical errors in this Appendix will be corrected by Canada.
- 2) Canada may reject the bid if any of the prices submitted do not reasonably reflect the cost of performing the part of the work to which that price applies.

**LUMP SUM**

The Lump Sum Amount designates Work to which a Lump Sum Arrangement applies.

- a) Work included in the Lump Sum Amount represents all work not included in the unit price table.

**UNIT PRICE TABLE**

The Unit Price Table designates Work to which a Unit Price Arrangement applies.

- a) Work included in each item is as described in the referenced specification section.
- b) The Price per Unit shall not include any amounts for Work that is not included in that unit price Item.

| Item  | Description   | Quantity | Measuring Unit | Unit Price (\$) | Total (\$) |
|---|---|----------|----------------|-----------------|------------|
| <b>GENERAL CONDITIONS OF CONTRACTOR</b>             |   |          |                |                 |            |
| 1.4.1   | Site supervision office and field lab   | 1        | Global         |                 |            |
| 1.4.2   | Worksite organization   | 1        | Global         |                 |            |
| 1.4.3   | Temporary traffic maintenance and temporary signaling   | 1        | Global         |                 |            |
| 1.4.4   | Environment protection plan   | 1        | Global         |                 |            |
| 1.4.5   | Environmental protection  | 1        | Global         |                 |            |
| 1.4.6   | Complementary characterization of soils and management plan of soils and contaminated materials | 1        | Global         |                 |            |
| <b>SUB TOTAL – GENERAL CONDITIONS OF CONTRACTOR</b> |   |          |                |                 |            |

**WALL SECTOR 14**

**Concrete repair work without extra thickness (facing)**

|  |   |                  |                |  |  |
|--|---|------------------|----------------|--|--|
| 14.5.1   | Partial demolition, transport and disposal of concrete to be repaired (facing)                            | 1900             | m <sup>2</sup> |  |  |
| 14.5.2   | Supply and placement of concrete (cast-in-place or shotcrete) for repair without extra thickness (facing) | 750 <sup>1</sup> | m <sup>3</sup> |  |  |
| <b>Concrete repair work without extra thickness (crowning)</b> |   |                  |                |  |  |
| 14.6.1   | Partial demolition, transport and disposal of concrete to be repaired (crowning)                          | 1750             | m <sup>2</sup> |  |  |

| Item   | Description   | Quantity | Measuring Unit | Unit Price (\$) | Total (\$) |
|--|---|----------|----------------|-----------------|------------|
| 14.6.2   | Supply and placement of cast-in-place concrete for repair without extra thickness (crowning)  | 275      | m³             |                 |            |
| <b>Complete reconstruction of the crowning</b> |   |          |                |                 |            |
| 14.7.1   | Demolition, transport and disposal of concrete (crowning)   | 40       | m³             |                 |            |
| 14.7.2   | Supply and placement of cast-in-place concrete (crowning)   | 60       | m³             |                 |            |
| <b>Metal works</b>                             |   |          |                |                 |            |
| 14.8.1   | Rehabilitation and reinstallation of existing ancestral bollards to recover or rehabilitate in place  | 19       | Unit           |                 |            |
| 14.8.2   | Supply and installation of the new vintage ladders  | -        | -              | -               | -          |
| 14.8.2.1                                       | 2 bars ladders group  | 41       | Unit           |                 |            |
| 14.8.2.2                                       | 3 bars ladders group  | 7        | Unit           |                 |            |
| 14.8.2.3                                       | 5 bars ladders group  | 1        | Unit           |                 |            |
| 14.8.3   | Repair of damaged ancestral bollards  | 2        | Unit           |                 |            |
| <b>Civil works</b>                             |   |          |                |                 |            |
| 14.9.1   | Clearing/grubbing   | 3800     | m²             |                 |            |
| 14.9.2   | Manual removal of vegetation growing on crowning walls or retaining walls   | 1        | Global         |                 |            |
| 14.9.3   | Isolated trees cutting and grubbing   | -        | -              |                 |            |
| 14.9.3.1                                       | Diameter 150mm to 300mm, including waste management   | 90       | Unit           |                 |            |
| 14.9.3.2                                       | Diameter 300mm to 450mm, including waste management   | 14       | Unit           |                 |            |
| 14.9.3.3                                       | Diameter >450mm, including waste management   | 5        | Unit           |                 |            |
| 14.9.4   | Excavation, transport, stockpiling (if required)  | 1        | Global         |                 |            |
| 14.1095  | Supplements for disposal and off-site elimination of cut material and contaminated material   | -        | -              |                 |            |
| 14.9.5.1                                       | Supplement for disposal and off-site elimination of cut materials with concentration of contaminants, after characterization, in the A-B range                            | 40¹      | m.t.           |                 |            |
| 14.9.5.2                                       | Supplement for disposal and off-site elimination of cut materials with concentration of contaminants, after characterization, in the B-C range                            | 670¹     | m.t.           |                 |            |
| 14.9.5.3                                       | Supplement for disposal and off-site elimination of cut materials with concentration of contaminants, after characterization, superior to C and lower than the RESC limit | 150¹     | m.t.           |                 |            |

| Item   | Description   | Quantity                  | Measuring Unit          | Unit Price (\$) | Total (\$) |
|--|---|---------------------------|-------------------------|-----------------|------------|
| 14.9.5.5   | <i>Supplement for disposal and off-site elimination of large stones, rock or boulders with a volume greater than 1 cubic meter.</i> | 25                        | m <sup>3</sup>          |                 |            |
| 14.9.6   | Supply, transport and placement of controlled backfill material   | -                         | -                       |                 |            |
| 14.9.6.2   | <i>Supply, transport and placement of controlled backfill MG20b<sup>1</sup> material</i>  | 425 <sup>1</sup>          | m <sup>3</sup>          |                 |            |
| 14.9.7   | Supply, transport and placement of drainage system behind the new walls   | 1                         | Global                  |                 |            |
| 14.9.8   | Topsoil and hydroseeding  | 1                         | Global                  |                 |            |
| 14.9.9   | Tree planting   | 30                        | Unit                    |                 |            |
| <b>14.9.10<sup>(2)</sup></b>                                   | <b>Pavement<sup>(2)</sup></b>   | <b>1230<sup>(2)</sup></b> | <b>m<sup>2</sup>(2)</b> |                 |            |
| <b>Miscellaneous Equipment</b>                                 |   |                           |                         |                 |            |
| 14.10.1  | Removal, reclamation and reinstallation of existing equipments  | 1                         | Global                  |                 |            |
| 14.10.2  | Removal of equipment on adjacent lots   | -                         | -                       | -               | -          |
| 14.10.2.1  | Moving materials and containers lot 2 331 574   | 1                         | Global                  |                 |            |
| 14.10.2.2  | Moving materials and containers lot 2 331 583   | 1                         | Global                  |                 |            |
| 14.10.3  | Concrete slab demolition and reconstruction   | 250                       | m <sup>2</sup>          |                 |            |
| 14.10.4  | Steel fence demolition and reconstruction   | 170                       | m                       |                 |            |
| 14.10.5  | Chain link fence demolition and reconstruction  | 20                        | m                       |                 |            |
| <b>SUB TOTAL – WALL SECTOR 14</b>                              |   |                           |                         |                 |            |
| <b>WALL SECTOR 15</b>  |   |                           |                         |                 |            |
| <b>Concrete repair work without extra thickness (facing)</b>   |   |                           |                         |                 |            |
| 15.5.1   | Partial demolition, transport and disposal of concrete to be repaired (facing)  | 300                       | m <sup>2</sup>          |                 |            |
| 15.5.2   | Supply and placement of concrete (cast-in-place or shotcrete) for repair without extra thickness (facing)                           | 65                        | m <sup>3</sup>          |                 |            |
| <b>Concrete repair work without extra thickness (crowning)</b> |   |                           |                         |                 |            |
| 15.6.1   | Partial demolition, transport and disposal of concrete to be repaired (crowning)  | 80                        | m <sup>2</sup>          |                 |            |
| 15.6.2   | Supply and placement of cast-in-place concrete for repair without extra thickness (crowning)  | 15                        | m <sup>3</sup>          |                 |            |
| <b>Complete reconstruction of the crowning</b>                 |   |                           |                         |                 |            |
| 15.7.1   | Demolition, transport and disposal of concrete (crowning)   | 140                       | m <sup>3</sup>          |                 |            |
| 15.7.2   | Supply and placement of cast-in-place concrete (crowning)   | 200                       | m <sup>3</sup>          |                 |            |
| <b>Metal works</b>   |   |                           |                         |                 |            |

| Item                           | Description  | Quantity          | Measuring Unit | Unit Price (\$) | Total (\$) |
|--------------------------------|--|-------------------|----------------|-----------------|------------|
| 15.8.1                         | Rehabilitation and reinstallation of existing ancestral bollards to recover or rehabilitate in place   | 4                 | Unit           |                 |            |
| 15.8.2                         | Supply and installation of the new vintage ladders   | -                 | -              | -               | -          |
| 15.8.2.2                       | 3 bars ladders group   | 4                 | Unit           |                 |            |
| 15.8.2.3                       | 5 bars ladders group   | 5                 | Unit           |                 |            |
| 15.8.3                         | Repair of damaged ancestral bollards   | 3                 | Unit           |                 |            |
| <b>Civil works</b>             |  |                   |                |                 |            |
| 15.9.1                         | Clearing/grubbing  | 450               | m <sup>2</sup> |                 |            |
| 15.9.2                         | Manual removal of vegetation growing on crowning walls or retaining walls  | 1                 | Global         |                 |            |
| 15.9.3                         | Isolated trees cutting   | -                 | -              |                 |            |
| 15.9.3.1                       | Diameter 150mm to 300mm, including waste management  | 6                 | Unit           |                 |            |
| 15.9.3.2                       | Diameter 300mm to 450mm, including waste management  | 1                 | Unit           |                 |            |
| 15.9.4                         | Excavation, transport, stockpiling (if required)   | 1                 | Global         |                 |            |
| 15.9.5                         | Supplements for disposal and off-site elimination of cut material and contaminated material  | -                 | -              |                 |            |
| 15.9.5.1                       | Supplement for disposal and off-site elimination of cut materials with concentration of contaminants, after characterization, in the A-B range | 100               | m.t.           |                 |            |
| 15.9.5.2                       | Supplement for disposal and off-site elimination of cut materials with concentration of contaminants, after characterization, in the B-C range | 1400 <sup>1</sup> | m.t.           |                 |            |
| 15.9.5.5                       | Supplement for disposal and off-site elimination of large stones, rock or boulders with a volume greater than 1 cubic meter.                   | 10                | m <sup>3</sup> |                 |            |
| 15.9.6                         | Supply, transport and placement of controlled backfill material  | -                 | -              | -               | -          |
| 15.9.6.1                       | Supply, transport and placement of controlled backfill MG112 material  | 600 <sup>1</sup>  | m <sup>3</sup> |                 |            |
| 15.9.6.2                       | Supply, transport and placement of controlled backfill MG20b <sup>1</sup> material   | 200 <sup>1</sup>  | m <sup>3</sup> |                 |            |
| 15.9.7                         | Supply, transport and placement of drainage system behind the new walls  | 1                 | Global         |                 |            |
| 15.9.8                         | Topsoil and hydroseeding   | 1                 | Global         |                 |            |
| 15.9.9                         | Tree planting  | 2                 | Unit           |                 |            |
| <b>Miscellaneous Equipment</b> |  |                   |                |                 |            |



| Item   | Description  | Quantity | Measuring Unit | Unit Price (\$) | Total (\$) |
|--|--|----------|----------------|-----------------|------------|
| 15.10.1  | Removal, reclamation and reinstallation of existing equipments   | 1        | Global         |                 |            |
| SUB-TOTAL – WALL SECTOR 15                                     |  |          |                |                 |            |
| <b>WALL SECTOR 16</b>  |  |          |                |                 |            |
| <b>Concrete repair work without extra thickness (facing)</b>   |  |          |                |                 |            |
| 16.5.1   | Partial demolition, transport and disposal of concrete to be repaired (facing)   | 100      | m <sup>2</sup> |                 |            |
| 16.5.2   | Supply and placement of concrete (cast-in-place or shotcrete) for repair without extra thickness (facing)                                      | 115      | m <sup>3</sup> |                 |            |
| <b>Concrete repair work without extra thickness (crowning)</b> |  |          |                |                 |            |
| 16.6.1   | Partial demolition, transport and disposal of concrete to be repaired (crowning)   | 70       | m <sup>2</sup> |                 |            |
| 16.6.2   | Supply and placement of cast-in-place concrete for repair without extra thickness (crowning)   | 12       | m <sup>3</sup> |                 |            |
| <b>Metal works</b>   |  |          |                |                 |            |
| 16.8.1   | Rehabilitation and reinstallation of existing ancestral bollards to recover or rehabilitate in place   | 1        | Unit           |                 |            |
| 16.8.2   | Supply and installation of the new vintage ladders   | -        | --             | -               | -          |
| 16.8.2.1   | 2 bars ladders   | 1        | Unit           |                 |            |
| <b>Civil works</b>   |  |          |                |                 |            |
| 16.9.1   | Clearing/grubbing  | 180      | m <sup>2</sup> |                 |            |
| 16.9.2   | Manual removal of vegetation growing on crowning walls or retaining walls  | 1        | Global         |                 |            |
| 16.9.4   | Excavation, transport, stockpiling (if required)   | 1        | Global         |                 |            |
| 16.9.5   | Supplements for disposal and off-site elimination of cut material and contaminated material  | -        | -              | -               | -          |
| 16.9.5.1   | Supplement for disposal and off-site elimination of cut materials with concentration of contaminants, after characterization, in the A-B range | 40       | m.t.           |                 |            |
| 16.9.5.2   | Supplement for disposal and off-site elimination of cut materials with concentration of contaminants, after characterization, in the B-C range | 40       | m.t.           |                 |            |
| 16.9.5.5   | Supplement for disposal and off-site elimination of large stones, rock or boulders with a volume greater than 1 cubic meter.                   | 2        | m <sup>3</sup> |                 |            |

| Item                     | Description  | Quantity | Measuring Unit | Unit Price (\$) | Total (\$) |
|--------------------------|--|----------|----------------|-----------------|------------|
| 16.9.6                   | Supply, transport and placement of controlled backfill material              | -        | -              |                 |            |
| 16.9.6.2                 | <i>Supply, transport and placement of controlled backfill MG20b material</i> | 10       | m³             |                 |            |
| 16.9.8                   | Topsoil and hydroseeding   | 1        | Global         |                 |            |
| 16.9.9                   | Tree planting  | 3        | Unit           |                 |            |
| SUB-TOTAL – WALL TYPE 16 |  |          |                |                 |            |

|  |   |                           |        |  |  |
|--|---|---------------------------|--------|--|--|
| <b>WALL TYPE 17</b>  |   |                           |        |  |  |
| <b>Concrete repair work without extra thickness (facing)</b>   |   |                           |        |  |  |
| 17.5.1   | Partial demolition, transport and disposal of concrete to be repaired (facing)                            | 2450                      | m²     |  |  |
| 17.5.2   | Supply and placement of concrete (cast-in-place or shotcrete) for repair without extra thickness (facing) | 700                       | m³     |  |  |
| <b>Concrete repair work without extra thickness (crowning)</b> |   |                           |        |  |  |
| 17.6.1   | Partial demolition, transport and disposal of concrete to be repaired (crowning)                          | 1800                      | m²     |  |  |
| 17.6.2   | Supply and placement of cast-in-place concrete for repair without extra thickness (crowning)              | 240                       | m³     |  |  |
| <b>Complete reconstruction of the crowning</b>                 |   |                           |        |  |  |
| 17.7.1   | Demolition, transport and disposal of concrete (crowning)   | 40                        | m³     |  |  |
| 17.7.2   | Supply and placement of cast-in-place concrete (crowning)   | 60                        | m³     |  |  |
| <b>Metal works</b>   |   |                           |        |  |  |
| 17.8.1   | Rehabilitation and reinstallation of existing ancestral bollards to recover or rehabilitate in place      | 12                        | Unit   |  |  |
| 17.8.2   | Supply and installation of the new vintage ladders  | -                         | -      |  |  |
| 17.8.2.1   | <i>2 bars ladders</i>   | 7                         | Unit   |  |  |
| 17.8.2.2   | <i>3 bars ladders</i>   | 10                        | Unit   |  |  |
| 17.8.3   | Repair of damaged ancestral bollards  | 1                         | Unit   |  |  |
| <b>Civil works</b>   |   |                           |        |  |  |
| 17.9.1   | Clearing/grubbing   | <b>9900<sup>(2)</sup></b> | m²     |  |  |
| 17.9.2   | Manual removal of vegetation growing on crowning walls or retaining walls                                 | 1                         | Global |  |  |
| 17.9.3   | Isolated trees cutting  | -                         | -      |  |  |
| 17.9.3.1   | <i>Diameter 150mm to 300mm, including waste management</i>  | 126                       | Unit   |  |  |
| 17.9.3.2   | <i>Diameter 300mm to 450mm, including waste management</i>  | 32                        | Unit   |  |  |
| 17.9.3.3   | <i>Diameter &gt;450mm, including waste management</i>   | 18                        | Unit   |  |  |



| Item                              | Description  | Quantity          | Measuring Unit | Unit Price (\$) | Total (\$) |
|-----------------------------------|--|-------------------|----------------|-----------------|------------|
| 17.9.4                            | Excavation, transport, stockpiling (if required)   | 1                 | Global         |                 |            |
| 17.9.5                            | Supplements for disposal and off-site elimination of cut material and contaminated material  | -                 | -              |                 |            |
| 17.9.5.1                          | <i>Supplement for disposal and off-site elimination of cut materials with concentration of contaminants, after characterization, in the A-B range</i>                            | 800               | m.t.           |                 |            |
| 17.9.5.2                          | <i>Supplement for disposal and off-site elimination of cut materials with concentration of contaminants, after characterization, in the B-C range</i>                            | 2100 <sup>1</sup> | m.t.           |                 |            |
| 17.9.5.3                          | <i>Supplement for disposal and off-site elimination of cut materials with concentration of contaminants, after characterization, superior to C and lower than the RESC limit</i> | 3200 <sup>1</sup> | m.t.           |                 |            |
| 17.9.5.4                          | <i>Supplement for disposal and off-site elimination of cut materials with concentration of contaminants, after characterization, superior to the RESC limit</i>                  | 780 <sup>1</sup>  | m.t.           |                 |            |
| 17.9.5.5                          | <i>Supplement for disposal and off-site elimination of large stones, rock or boulders with a volume greater than 1 cubic meter.</i>  | 40                | m³             |                 |            |
| 17.9.6                            | Supply, transport and placement of controlled backfill material  | -                 | -              |                 |            |
| 17.9.6.2                          | <i>Supply, transport and placement of controlled backfill MG20b<sup>1</sup> material</i>   | 2800 <sup>1</sup> | m³             |                 |            |
| 17.9.7                            | Supply, transport and placement of drainage system behind the new walls  | 1                 | Global         |                 |            |
| 17.9.8                            | Topsoil and hydroseeding   | 1                 | Global         |                 |            |
| 17.9.9                            | Tree planting  | 40                | Unit           |                 |            |
| <b>Miscellaneous Equipment</b>    |  |                   |                |                 |            |
| 17.10.1                           | Removal, reclamation and reinstallation of existing equipments   | 1                 | Global         |                 |            |
| 17.10.5                           | Chain link fence demolition and reconstruction   | 180               | m              |                 |            |
| <b>SUB-TOTAL – WALL SECTOR 17</b> |  |                   |                |                 |            |

**TOTAL COST BEFORE TAXES**

<sup>(1)</sup> ADDENDA #1

<sup>(2)</sup> **ADDENDA #2**