

NATIONAL CAPITAL COMMISSION  
COMMISSION DE LA CAPITALE NATIONALE

NCC-CCN

NCC Tender File #  
MA073 – North Slope  
of Parliament Hill  
Escarpment  
Vegetation  
Management Services

BID SOLICITATION

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Other annexes and appendices:

- Annex “A-1” - Maintenance Manual – Parliament Hill Slope Management
- Annex “A-2” - NCC Environmental Guidelines and Best Practices
- Annex “B” – Tender and Contract security requirements
- Annex “C” – Security Requirements
- Annex “D” – Insurance certificate
- Annex “E” - Supplier–Direct deposit payment and tax information form
- Appendix “A” – Mandatory Requirements
- Appendix “B” – Financial Proposal Form
- Appendix “C” – Bidder’s Checklist

## 1 GENERAL INFORMATION

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### 1.1 INTENT

The NCC is seeking Escarpment Vegetation management services with the objective of supporting high standards of service excellence at the best cost. The NCC believes that this bid solicitation will result in a successful contract award however, in the event proposals submitted do not meet these basic objectives, the NCC will not proceed with contract award and will implement alternative service delivery approaches.

### 1.2 SCOPE

The Escarpment Vegetation Management Contract details the provision of Specialized Landscape Maintenance, as well as other related services on the north slope of Parliament Hill in Ottawa, the National Capital. The Contractor will ensure he or she provides the services and achieves the outcomes described in the Contract even though individual tasks may or may not be specifically mentioned or identified but are required to provide the totality of the services requested.

### 1.3 SECURITY CLEARANCE REQUIREMENTS

Refer to annex "C".

### 1.4 CONTRACT DURATION

The period of the contract is for four (4) consecutive years beginning on the date of award (August 2023) and ending March 31, 2027.

By mutual consent, the NCC and the Contractor may exercise two (2) successive one (1) Year options at the same terms and conditions. Each option year will have an inflationary increase of +2.0% from the previous year's fees.

### 1.5 DEBRIEFINGS

Bidders may request a debriefing on the results of the bid solicitation process. Bidders must make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing or by video teleconference.

### 1.6 TRADE AGREEMENTS

Applicable trade agreements are listed in the tender solicitation notice on [Canadabuys.canada.ca](https://canadabuys.canada.ca)

## 2 BIDDERS INSTRUCTIONS

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### 2.1 STANDARD INSTRUCTIONS

The evaluation process has two (2) stages:

**Stage 1** – verify that the Proposal meets the mandatory requirements;

**Stage 2** – evaluate the financial proposal of Proposals that pass stage 1 and determine the lowest bid.

Each Proposal should consist of two (2) separate emails: Email #1 and Email #2

### 2.2 BID SUBMISSION

BID CLOSING DATE: Wednesday, August 11, 2023 at 3:00 pm EDT

SEND PROPOSALS TO: National Capital Commission's Bid email address at [Bids-soumissions@ncc-ccn.ca](mailto:Bids-soumissions@ncc-ccn.ca)

Refer to NCC tender file # MA073

It is the bidder's responsibility to ensure Proposals and all related documents are received at the specified email address prior to the closing date and time. Proposals arriving after the bid closing date and time will be disqualified and receive no further review. Facsimile transmitted Proposals will be treated as non-compliant and will receive no further consideration.

### 2.3 ENQUIRIES

ADDRESS ENQUIRIES IN WRITING TO: [micheline.al-koutsi@ncc-ccn.ca](mailto:micheline.al-koutsi@ncc-ccn.ca)

Enquiries regarding this bid solicitation must be submitted in writing to the Contracting Authority as early as possible within the solicitation period. Enquiries should be received no later than seven (7) business days prior to the date set for solicitation closing to allow enough time to provide a response. Enquiries received after that time may result in an answer not being provided. To ensure consistency and quality of the information provided to Bidders, the Contracting Authority shall examine the content of the enquiry and shall decide whether to issue an amendment. All enquiries and other communications related to this tender sent throughout the solicitation period are to be directed only to the Contracting Authority. Non-compliance with this requirement during the solicitation period can, for that reason alone, result in disqualification of a proposal.

### 2.4 GOVERNING LAWS AND FORUM

Any resulting Contract shall be governed by, construed and interpreted in accordance with the applicable laws in force in the province of Ontario. Any dispute arising out of this Contract shall be subject to the exclusive jurisdiction of the courts of the province of Ontario (Canada).

### 3 BID PREPARATION INSTRUCTIONS

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#### 3.1 BID PREPARATION INSTRUCTIONS

**Technical proposal**

- Tender Security in form of a Bid Bond
- Certificate Submittals as per Appendix “A”- Mandatory Requirements

#### 3.1.1 EMAIL #1

**EMAIL #2**

**Fee proposal**

To be submitted in a separate email. It must include:

- One (1) original of the signed Price Proposal Form - Appendix “B”.

The Financial Proposal should be submitted in a separate email from email #1 and clearly marked email #2 (do not insert any other document in this email). The Fixed Fee and cost breakdowns and any other financial information identified in the said Financial Proposal should not appear in the Technical Proposal or anywhere else in the Proposal.

## 4 EVALUATION PROCEDURE AND BASIS OF SELECTION

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### 4.1 EVALUATION PROCEDURES

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the mandatory requirements and financial proposals.
- (b) An evaluation team composed of NCC representatives will evaluate the bids.

### 4.2 STAGE 1 - TECHNICAL EVALUATION

<b>Mandatory Requirements</b>		
Certificate submittals Refer to Appendix A – Mandatory Requirements	Mandatory	Pass/fail
Tender Security	Mandatory	Pass/fail

All Detailed Proposals that are received on time will be reviewed to ensure that the mandatory bid solicitation requirements identified have been submitted. Detailed Proposals complying with the mandatory requirement shall be considered compliant and will proceed to stage 2 of the evaluation process. Detailed Proposals that are not in compliance with the mandatory requirement shall be treated as non-compliant and receive no further consideration.

### 4.3 STAGE 2 - FINANCIAL EVALUATION - (REFER TO Appendix B)

The financial proposal email of each technical proposal passing stage 1 shall be opened and evaluated.

### 4.4 BASIS OF SELECTION

A bid must comply with all the mandatory requirements of the tender to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

### 4.5 NEGOTIATIONS

If the highest ranked bidder exceeds the amount of funding the NCC has allocated for the work (Appendix B):

- a) by 25% or less, the NCC, at its sole discretion, shall either:
  - i. cancel the solicitation; or
  - ii. obtain additional funding and award the Contract to the highest ranked bidder; or
  - iii. revise the Statement of Work accordingly and negotiate with the highest ranked bidder a corresponding reduction in the tendered price
- b) by more than 25%, the NCC, at its sole discretion, shall either:
  - i. cancel the solicitation; or
  - ii. obtain additional funding and award the Contract to the highest ranked bidder; or

- iii. revise the Statement of Work accordingly and invite all responsive bidders to re-tender the work, and, subsequently re-rank the bidders as per sections 4.3 and 4.4.
- c) If negotiations or a re-tender are undertaken as is contemplated in item a)(iii) or b)(iii) above, Bidders shall retain the same sub-consultants and suppliers as they carried in their original tenders.
- d) If the NCC elects to negotiate a reduction in the tender price as is contemplated in a)(iii) herein and the negotiations fail to reach an agreement, the NCC shall then exercise either of the options referred to in a.(i) or a.(ii)

## 5 CERTIFICATIONS, CONDITIONS OF CONTRACT AWARD AND ADDITIONAL INFORMATION

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- 1 Contract Security. The Successful Bidder must provide Contract Security in accordance with the requirements specified in Annex 'B'.
- 2 Proof of Insurance. The Successful Bidder must provide proof of insurance in accordance with the requirements specified in the SOW and also each year of the contract term.
- 3 Supplier – Direct Payment and Tax Information Form. The Bidder must complete and submit to the NCC the Direct Payment and Tax Information Form and annex a voided cheque prior to Contract award. Refer to page 2 of the form for instructions and purpose.
- 4 CSST or WSIB Certificate. The Successful Bidder shall provide a CSST or WSIB certificate as applicable. This is a document confirming that the Contractor is registered, and that his/her file is in good standing order.
- 5 Security Representative. The Successful Bidder must provide the name, phone number and email of his/her company security representative (see annex H) to ensure the coordination of the security screening process with NCC Security.
- 6 Health and Safety Plan. The Successful Bidder must provide his/her health and safety plan (see SOW).
- 7 Access to Information. Detailed Proposals shall be held in strict confidence. However, Bidders are reminded that the NCC, as a Crown corporation, is subject to the provisions of the Access to Information Act. Information submitted may be eligible for disclosure in accordance with the requirements of the Access to Information Act. In such circumstances, the NCC shall be relieved of its obligation thereunder to keep such information confidential. Such information is usually not released without consent of the pertinent Bidder, unless there is an order made pursuant to the Act. However, the Bidder consents to the public disclosure of its Grand Total by the NCC, and further agrees that it will have no right to claim against the NCC, its employees, agents or servants, or any of them, in relation to such public disclosure.
- 8 The successful Contractor shall indemnify and save harmless the NCC from and against all claims, damages, costs and expenses sustained or incurred by the NCC resulting from any action or legal proceeding on infringement, made, sustained, brought, prosecuted, threatened to or prosecuted, by any Person that was under the direction and control of the Contractor during the Term of the resulting Contract and which Person is claiming or claims a moral right, as set out under the Copyright Act. The obligation to indemnify under this clause survives termination of the resulting Contract and shall remain in force for the duration of the copyright in the work created under the resulting Contract. This obligation to indemnify relative to alleged moral rights infringement(s) is in addition to the Contractor's other obligations to indemnify and save harmless which are set out in the Contract

## 6 RESULTING CONTRACT CLAUSES

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### 6.1 DEFINITIONS

In this bid solicitation, the following words, when presented with the first letter in upper case shall have the corresponding meaning:

**“Act”** means the National Capital Act, R.S.C. 1985, c. N-4 as amended and the regulations enacted thereunder;

**“Applicable Laws”** means, at any time, with respect to any Person, property, transaction or event, all then applicable laws, by-laws, statutes, regulations, treaties, judgements, decrees and (whether or not they have the force of law) all then applicable official directives, rules, consents, approvals, authorizations, guidelines, orders and policies of any governmental authorities or Persons having authority over any of such Person, property, transaction or event and includes all Environmental Laws.

**“Asset”**, unless the context clearly indicates a contrary intention, whenever the term “asset” is used in this Contract, whether in upper case or lower case, the term shall be interpreted as meaning both natural and built assets.

**“Business Day”** means any Monday to Friday inclusive, except statutory holidays in the Province of Ontario. This definition applies to contract management but is not applicable to the Work to be performed by the Contractor pursuant to this Contract.

**“Business Hours”** means the hours between 8 a.m. and 5 p.m. on any Business Day. This definition applies to contract management but is not applicable to the Work to be performed by the Contractor pursuant to this Contract.

**“Capital Stewardship Branch”** (CS Branch) is the branch of the NCC responsible for the maintenance, management and preservation of the natural and cultural assets of Canada’s Capital region.

**“Contract”** means the contract entered into between the Successful Proponent and the NCC, incorporating, with such changes as may be required by the context, all of these Terms and Conditions, pursuant to which the Successful Proponent agrees to perform all of the specific services in accordance with the standards of performance set out in the Subject Matter and other matters arising out of the successful proposal and accepted by the NCC, if any.

**“Contract Management Officer”** or **“CMO”** means an NCC employee or delegate whose function is to monitor the Contract on behalf of the NCC.

**“Contractor”** is synonymous with Successful Proponent.

**“Employees of the Contractor”, “Contractor’s Employees”, “Personnel of the Contractor”** and **“Contractor’s Personnel”**, whether in upper or lower case, all mean any person employed by the Contractor and include dependent contractors and any subcontractors of the Contractor as well as their employees and volunteers.

**“Environmental Laws”** means:

- I. all federal, provincial, regional or municipal statutes and regulations with respect to environmental or occupational health and safety matters as they may be amended or replaced from time to time;
- II. the jurisprudence with respect to environmental law and health and safety law; and
- III. all environmental assessment procedures, rules, ordinances, policies (including, but not limited to, the procedures and mitigation measures set out in Appendix 8.5),



guidelines, orders, approvals, notices, permits, judgements, directives, licences, decisions and requirements, with or without force of law, as they may be amended or replaced from time to time.

**“Equipment”** means all equipment and machinery that shall be provided by the Contractor to the satisfaction of the NCC, for landscaping and Civil Maintenance, Snow and Ice Control, Waste/ Cleaning Operations or Additional Services pursuant to the Contract.

**“Event of Insolvency”** means any of the following events:

- (i) if proceedings are instituted by or against the Contractor to cause it to be wound up, dissolved, liquidated and, in the case where such proceedings are instituted against the Contractor, the Contractor acquiesces in such proceedings, or the Contractor has its existence terminated or has any resolution passed therefore, or makes a general assignment for the benefit of its creditors or a proposal under any legislation dealing with insolvency or bankruptcy, or is declared bankrupt or insolvent, or files a petition or answer seeking a reorganization, arrangement, composition, readjustment, liquidation, dissolution or similar relief for itself under any present or future law relating to bankruptcy, insolvency or other relief for or against debtors;
- (ii) if a court of competent jurisdiction enters an order, judgement or decree approving a petition or proceedings filed against the Contractor seeking any reorganization, arrangement, composition, readjustment, liquidation, dissolution, winding up, termination of existence, declaration of bankruptcy or insolvency or similar relief under any present or future law relating to bankruptcy, insolvency, or other relief for or against debtors; or
- (iii) if a trustee in bankruptcy, receiver and manager, liquidator, administrator or any other officer with similar powers is appointed for the management of all or any substantial part of the property of the Contractor.

**“Force Majeure”** means any of the following events which (i) prevents the performance by the Contractor of its obligations pursuant to this Contract, and (ii) is not caused by and is beyond the control of the Contractor: acts of God, earthquakes, tidal waves, hurricanes, windstorms of extreme violence or intensity, other exceptional climatic condition of extreme violence or intensity, lightning, wars (whether declared or not), riots, insurrections, rebellions, civil commotions, sabotage, partial or entire failure of Utilities, strikes or other labour disruptions, shortage of and inability to procure labour, materials and supplies (after best efforts have been made by the Contractor to obtain replacements for such labour, materials and supplies) or orders, legislation, regulations and directives of any governmental authorities. With respect to: partial or entire failure of Utilities, strikes or other labour disruptions, shortages of and inability to procure labour, materials and supplies, or orders, legislation, regulations and directives of any governmental authorities, an increase in the cost on an annual basis of any such factor of less than twenty-five per cent (25%) compared to the amount budgeted for such factor in any approved payment schedule, or a delay of less than two weeks in the time for performance of any services required under the Contract, shall be deemed not to be, and shall not be claimed to constitute an event of Force Majeure.

a) Subject to the provisions of b) where the performance of an obligation of the Contractor is subject to Force Majeure as defined above, then the date or period for performance of the obligations set out in such provision shall be extended by the period of any delay caused by Force Majeure and the

party so delayed shall satisfy such obligation immediately after the Force Majeure ceases to affect the performance of the obligation. An event of Force Majeure shall only extend the time period for performing an obligation if the particular matter which, or matter which together with other matters, is the subject of the Force Majeure, is the primary cause of the delay and is a matter on the critical flow path of such process as is being delayed, so that other matters cannot be done or work cannot be performed during the period of the existence of the Force Majeure.

b) In certain circumstances, the delay of the performance of an obligation due to an event of Force Majeure may result in a loss to the NCC of all or substantially all of the value attributable to such performance. Where one of a series of periodic services is delayed, the eventual resumption of performance means that the Contractor's obligations have effectively been reduced with no corresponding savings to the NCC. For example, if grass is to be mowed when it reaches a particular height, which effectively requires this service to be performed on a weekly basis, and an event of Force Majeure delays performance for one week, the resumption of performance has the effect of extinguishing the value that would otherwise have been attributed to the performance thus delayed and results in the quality standards not having been respected and the site appearance having been negatively affected. In such circumstances, the NCC shall have the right to deliver notice in writing to the Contractor relieving it of the obligation to perform the affected service or services, and the NCC shall also have the right to set-off from the Fixed Fee of the Contract an amount equal to the value of any such obligations of the Contractor.

**"Fixed Fee"** means the dollar amount per annum payable by the NCC to the Contractor for each Year of the Term of the Contract.

**"Hourly Rate/Unit Price"** means rates contained in the winning bid (if any) used in Appendix B – Price Proposal Form.

**"Irrigation System"** includes pumps and their associated Components (timers, solenoids, control panels, software, etc.), distribution pipes, valves, etc.

**"Landscape Maintenance"** means the provision of all services required to Maintain and preserve NCC natural Assets, woody and non-woody plants, turf, trees, shrubs, annuals, bulbs, perennials, ornamental grasses, etc.

**"Maintenance"** means all Landscape Maintenance, Civil Maintenance, Snow and Ice Control, Waste/Cleaning Operations and any other services that are to be performed by the Contractor to respect its obligations in this Contract. It also means the ongoing operation and provision of a specific set of quality standards in order to achieve a desired condition of Asset or levels of service (see Class A, B, C and N). Maintenance operation entails the installation and upkeep, repair and restoration of assets to a condition in which it may be effectively utilized for its designated purpose.

**"National Capital Region"** (NCR) has the meaning ascribed thereto in the Act.

**"NCC"** means the National Capital Commission.

**"NCC Records"** means any records in the custody of the NCC in existence on the commencement date of the Term, pertaining to the Subject Matter and all information, data and records prepared by the Contractor during the Term in relation to the Subject Matter and all reports of same including any correspondence, memorandum, book, plan, map, drawing, diagram, pictorial or graphic work,

photograph, film, microfilm, sound recording, videotape, digitally recorded data, and any other documentary material, regardless of physical form or characteristics.

“**Person**” means any individual, corporation, partnership, trust, other legal entity, other incorporated association or a government or political body.

“**Safety and Clearance Pruning**” is all pruning, trimming and removal of trees and shrubs related to safety and the maintenance of clearance and visibility corridors on the lands which are subject to this Contract.

“**Subject Matter**” means the Lands or Buildings, fixed and Field assets and all duties and/or services related thereto, to be performed pursuant to the Contract.

“**Successful Proponent**” means the Contractor, if any, to whom the NCC has awarded the Contract.

“**Term**” means the period of four (4) consecutive years beginning on the date of contract award and ending March 31, 2027. By mutual consent, the NCC and the Contractor may exercise two (2) successive one (1) Year options at the same terms and conditions. Each option Year will have an inflationary increase of +2.0% from the previous Year’s fees.

“**Terms and Conditions**” means the Contract and the expressions hereof, herein, hereto, hereunder, hereby and similar expressions referring to these Terms and Conditions; unless otherwise indicated, references to articles, sections and recitals are to articles, sections and recitals in these Terms and Conditions.

“**Unit Price/Hourly Rate**” means rates for the materials and labour services described in Appendix B – Financial Proposal to be provided by the Contractor in conformity with the standards of performance contained in this Contract.

“**Variable Operational Requirement**” (**VOR**) is Work that will be requested and preapproved by the NCC as and when required during the Term. The Contractor will invoice the NCC for preapproved VOR services as per the Hourly Rates/Unit Prices in the Contract and as per the Terms and Conditions that may apply to the Work.

“**Work**” means the whole of the goods, services, materials, equipment, software, matters and things required to be done, furnished or performed by the Contractor with respect to the Subject Matter in accordance with the terms of this Contract.

“**Year**” means a period of twelve consecutive months during the Term extending from April 1<sup>st</sup> of one calendar year to March 31<sup>st</sup> in the next calendar year.

## **6.2 SECURITY REQUIREMENTS**

Refer to Annex 'C' Security Requirements. Reliability clearance level is required.

## **6.3 STATEMENT OF WORK**

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A" and the Contractor's technical proposal entitled \_\_\_\_\_, dated \_\_\_\_\_.

## **6.4 STANDARD CLAUSES AND CONDITIONS**

### **6.4.1 Denial of Partnership**

It is understood and agreed that neither the provisions contained herein nor any acts of the parties hereto shall be deemed to create any relationship of agency partnership, joint venture or common enterprise other than a contractual one. In all respects the Contractor is acting in its own capacity and all debts and liabilities to third parties incurred are and shall be exclusively for the account of the Contractor.

### **6.4.2 Warranty**

The Contractor warrants that it is competent to perform the Work required under this Contract in that it has the necessary qualifications including, without limitation any licensing or certification requirements imposed by the Applicable laws as well as the knowledge, skill and ability to perform the Work. Any work and/or service provided by the Contractor must be consistent with the established and generally accepted standards for supplies and services of the type covered by this Contract, in full compliance with the requirements and free from defect in material and workmanship. The Contractor agrees that this warranty shall survive the acceptance of and payment for the Work and agrees that the Contractor's obligation under it includes repairing or replacing any part or parts thereof which shall, within twelve (12) months from the date of delivery or date of completion of the Work, become defective as a result of faulty design, material or workmanship.

### **6.4.3 Damage Caused by the Contractor**

The Contractor shall be responsible for any damage he/she causes to NCC property or Assets. Any damage is to be reported immediately to the NCC on an occurrence report. The scalping of turf, tearing of bark, broken signs, broken planks on boardwalks or bridges as the result of machinery and Equipment, major rutting, damage caused by whipper snipping of Assets, etc., shall be considered damage to be repaired by the Contractor at its sole cost.

Repairs and replacements required as a result of damage caused by the Contractor shall be completed within 48 hours of the occurrence unless otherwise approved by the NCC. If not, the NCC shall conduct the repairs or replacement at the Contractor's expense. In cases where the safety of the public is threatened (e.g. broken gate on pathway), the Contractor shall correct the situation immediately.

### **6.4.4 Sub-Contracting**

The Contractor shall advise the NCC of any part of the Work that it wishes to subcontract prior to contracting for such Work and shall allow the NCC to review the terms of reference for such contract. If the scope of Work identified in the terms of reference for such contract or any other part of such contract is not satisfactory to the NCC, the Contractor shall make any modifications that the NCC requires.

### **6.4.5 Time is of the essence**

It is essential that the Work be performed within or at the time stated in the Contract.

#### 6.4.6 Force Majeure – see 6.1 Definitions

#### 6.4.7 Inspection Rights

The NCC shall always have access during the Term to all parts of the Subject Matter for the purpose of conducting inspections to ensure that all Maintenance duties are being performed in accordance with the Terms of the Contract.

#### 6.4.8 Audit

The NCC, or the NCC's auditor may, without prior notice but during Business Hours, inspect, take extracts from, audit and review all the books and records of the Contractor and obtain such other information as may be available to the NCC in order to enable the auditor to establish amounts expended on operating or capital expenditures, or any computation or matter relevant to the determination of any fee or other compensation paid or to be paid to the Contractor. These rights are extended to the NCC throughout the Term and for a period of twenty-four months after the expiration of the Term or earlier termination of this Contract.

#### 6.4.9 Compliance with applicable laws

All Work pursuant to this Contract shall be performed in accordance with all existing and future federal, provincial and municipal laws, regulations and by-laws. The Contractor shall be responsible for any charges imposed by such laws, regulations and by-laws, and shall be unable to recover any amounts therefore from the NCC.

Without limiting the generality of the foregoing, the Contractor shall be registered and comply with all regulations related to Workplace Safety and Insurance Board of Ontario. The NCC reserves the right to terminate this Contract if the Contractor does not have all the necessary permits and licenses for the execution of the Work.

The Contractor shall also ensure that all Work accomplished to meet the requirements of this Contract is in accordance with the latest applicable codes and standards (especially Canadian Standards Association) and that any specialized work, such as electricity and plumbing be done by licensed workers.

#### 6.4.10 Amendment

To be effective, any amendment to the Contract must be done in writing by the Contracting Authority and the authorized representative of the Contractor.

#### 6.4.11 Outright Assignment Prohibited

The Contractor shall not assign any of its rights and benefits, or any of its duties or obligations hereunder or arising out of this Contract without the prior written consent of the NCC, which consent may be arbitrarily withheld. Every assignment or sub-contract, if any, shall incorporate all the Terms and Conditions of this Contract which can reasonably be applied thereto.

#### 6.4.12 Change in Control

For the purposes of this Contract, an amalgamation or transfer by operation of law or otherwise shall be deemed to be an assignment to which the provisions of this section apply.

The NCC reserves the right to terminate this Contract if, in its sole discretion, it does not wish to consent to the assignment, transfer, amalgamation or change in control that is being proposed by the Contractor. In such a case, the Contract shall be terminated.

#### 6.4.13 Exceptions

Notwithstanding the provisions of clause 6.4.11 the Contractor may assign its interest in the amounts to be paid by the NCC to the Contractor hereunder as security for a borrowing related to the financing of the activities contemplated herein. The right to give such assignment as security is subject to the Contractor being in good standing hereunder at the time of such assignment as security.

#### 6.4.14 Suspension of the Work

The Contracting Authority may at any time, by written notice, order the Contractor to suspend or stop the Work or part of the Work under the Contract. The Contractor must immediately comply with any such order in a way that minimizes the cost of doing so.

#### 6.4.15 NCC Termination Right

Pursuant to section 40 of the *Financial Administration Act*, it is a term of every contract for the payment of any money by the NCC, that payment under the Contract is subject to there being a parliamentary appropriation for the fiscal year in which any commitment under the Contract is due and payable. If there is no parliamentary appropriation, the NCC shall have the right to deliver notice in writing to the Contractor terminating this Contract in its entirety and the NCC shall not be liable for any damages suffered by the Contractor as a result of such termination.

#### 6.4.16 Contract Termination

The Contract shall terminate on the expiry of the Term or any extension thereof or following the termination of the Contract provided that on the occurrence of an Event of Insolvency or any other default hereunder, the NCC, in addition to such other remedies that it may have hereunder or at law or in equity, may elect to terminate the Contract.

#### 6.4.17 Deliveries on Termination

- a) The Contractor shall within fifteen days thereof deliver a final accounting to the NCC;
- b) The Contractor shall immediately surrender to the NCC all NCC Records and keys;
- c) The Contractor shall immediately return to the NCC all portable and operational Assets, Equipment/furniture and miscellaneous Assets owned by the NCC together with an inventory of same including any additions or Replacements to such inventory;
- d) The Contractor shall immediately return in good working order to the NCC all fixed assets owned by the NCC including any additions or Replacements to such inventory.

#### 6.4.18 Rights on Termination

Any termination of the Contract shall release the parties from any further obligations hereunder except rights and obligations in respect of amounts owing, or to remedies with respect to any defaults or to matters with respect to which indemnities have been given hereunder.

#### 6.4.19 Conflict of Interest

The Contractor agrees to co-operate fully with the NCC in monitoring compliance with the conflict of interest and post-employment code rules promulgated from time to time by the Treasury Board of the Queen's Privy Council and/or the NCC for matters arising during the Term of this Contract.

#### 6.4.20 Entire Contract

When duly executed by the Contractor and the NCC, the Contract shall constitute the entire Contract between the parties pertaining to the Subject Matter. There shall be no warranties, representations or agreements between the parties in connection with such Subject Matter except as specifically set forth or referred to in the Contract. All the provisions of the Contract shall be construed as covenants and agreements. Except as expressly provided in the Contract, no amendment, or waiver of any provision of such agreement shall be binding unless executed in writing by the party to be bound thereby. No waiver of any provision of the Contract shall constitute a waiver of any other provision and no waiver of any provision of such Contract shall constitute a continuing waiver unless otherwise expressly provided.

#### 6.4.21 Access to Information

The Contractor shall provide access to personal information upon request from the NCC to ensure that the person to whom the information relates to can fulfill her/his rights of access and correction.

### 6.5 **AUTHORITIES**

#### 6.5.1 Contracting Authority

Micheline Al-Koutsi  
National Capital Commission  
Senior Procurement Officer  
Address: 202-40 Elgin Street  
Ottawa, ON K1P 1C7  
Telephone: 343-552-5974  
E-mail address: [Micheline.al-koutsi@ncc-ccn.ca](mailto:Micheline.al-koutsi@ncc-ccn.ca)

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

#### 6.5.2 Contract Management Officer (CMO)

The NCC shall provide a CMO for this Contract who shall be the Contractor's principal contact at the NCC. The CMO shall make random inspections to ensure that all Contractual obligations are met. The CMO shall inform the Contractor of his/her observations. A formal evaluation shall be conducted twice a Year. The purpose of the evaluation is to identify areas of improvement.

#### 6.5.3 Contractor's Representative

The Contractor must identify a supervisor and/or foreperson who shall work jointly with the NCC throughout the Term to plan and execute the Work. The Contractor's representative shall be a person in authority, capable of making decisions, directing Employees and resources and proactively contributing to the planning and execution of the Work.

### 6.6 **PAYMENT**

#### 6.6.1 Basis of Payment

Provided that the Contractor is not in default, but subject always to the provisions dealing with set-off or withholding of payments, the NCC shall pay to the Contractor for preapproved VOR as per rates provided in Appendix "B" – Price Proposal Form on a thirty-day net basis (N30) for the work performed in the previous month.

The Commission is a Crown Corporation subject to the Goods and Services Tax (GST) and the Provincial Sales Tax (OHST or QST). The Contractor is required to indicate separately, with the request for payment, the amount of GST and OHST/QST, to the extent applicable, that the Commission will pay. These amounts will be paid to the Contractor who will be required to make the appropriate remittances to Revenue Canada and the respective provincial governments.

### 6.7 **PRIORITY OF DOCUMENTS**

- 1) In the event of any discrepancy or conflict in the contents of the following documents, such documents shall take precedence and govern in the following order:
  - (a) any contract amendment or variation of the contract documents that is made in



- accordance with the Resulting Contract Clauses;
- (b) any amendment issued prior to tender closing;
- (c) Resulting Contract Clauses;
- (d) Statement of Work;
- (e) Annex “A.1” – Maintenance Manual – Parliament Hill Slope Management.

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

- 2) in the event of any discrepancy or conflict in the information contained in the Sites maps and Statement of Work, the following rules shall apply:
  - (a) Statement of Work shall govern over Sites Maps;
  - (b) Dimensions shown in figures on a Site Map shall govern where they differ from dimensions scaled from the same Site Map; and
  - (c). Sites Maps of larger scale govern over those of smaller scale

#### **6.8 ALTERATIONS TO THE SCOPE OF THE CONTRACT**

The NCC reserves the right to make alterations to any part of the Subject Matter at any time during the Term by delivery of notice in writing to that effect to be effective from the date stipulated which shall not be earlier than ten (10) Business Days after the deemed delivery date of the written notice. These alterations shall consist of additions, re-allocations, revisions or withdrawals of sites/services/activities/sub-activities\* (e.g. site: Carlsbad Springs; activity: Landscape Maintenance; sub-activity: Turf mowing and trimming).

\*A solidus (/) throughout section 6.8 “Alterations to Scope of Contract” means “and/or” e.g.: site and/or program and/or event, etc.

#### **6.9 COST ESTABLISHMENT PROCESS**

The NCC shall use a cost establishment process for calculating the amount of any compensation resulting from additions, re-allocations and withdrawals (with the exception of the specific kinds of withdrawals indicated in sections 6.12 and 6.13). This process shall determine the amount owed to either the NCC (in the case of withdrawals) or to the Contractor (in the case of additions). The following is a summary of the cost establishment process:

Prior to Contract Award

The Contractor shall provide as part of his/her Proposal a price breakdown for each site/reporting unit included in the Contract.

After Contract Award and During Term of Contract

The NCC shall notify the Contractor in writing of any alteration and shall provide a description of the sites/reporting unit, activities or sub-activities to be added, re-allocated, revised or withdrawn. The NCC’s right to make alterations is unlimited. The Contractor shall then provide the NCC with an estimate of the total cost for any alteration accompanied by a breakdown per activity and, if required, per sub-activity which must be based on the following:

1. The original price per unit price as provided in the Bidder’s Proposal;
2. The information provided by the NCC describing the alteration;



3. The Hourly Rate/Unit Price for each service as indicated in Appendix B (if applicable).

The NCC shall evaluate the Contractor's estimate based on items one, two and three indicated above. The NCC and the Contractor shall arrive at a mutually agreed fee for any alteration based again on items one, two and three indicated above. Failing agreement, the NCC and Contractor shall deliver their respective proposals on the amount to be added or deleted to an arbitrator appointed pursuant to 6.15.

The arbitrator's jurisdiction in such matter shall be limited to choosing one of the two proposals based on items one, two and three indicated above. This choice shall be binding on the parties. The parties will each pay 50% of the arbitrator's fee.

#### **6.10 ADDITIONS TO CONTRACT**

The Contractor acknowledges that should there be any sites/services/activities/sub-activities added to the Subject Matter, the Contractor shall be obligated to provide the said Additional Services at a fair equitable price as requested by the NCC. Except in case of emergency, the Contractor must await the issuance of a change order before performing the additional work.

#### **6.11 RE-ALLOCATION**

The NCC shall have the right to re-allocate or revise Maintenance activities to be provided herein to other sites, to substitute new sites/ services/activities/sub-activities for deleted sites/services/activities/sub-activities or to revise standards of performance.

#### **6.12 WITHDRAWALS TO CONTRACT – GENERAL**

In the event the NCC elects to permanently or temporarily withdraw any site/ service/activity/ sub-activity, then the Contractor shall be relieved of any further rights or obligations hereunder in respect of such site/reporting unit/service/activity/sub-activity, including without limitation the right to recover any part of the Fixed Fee of the Contract that would otherwise have been payable to the Contractor in respect of such withdrawal. The Contractor acknowledges that should the NCC withdraw any site/reporting unit/service/activity/sub-activity, then the Contractor shall have no recourse or any entitlement to damages or any other remedies pursuant to this Contract or otherwise in respect of such decision made by the NCC.

#### **6.13 WITHDRAWAL OF AN ENTIRE SITE/REPORTING UNIT /SERVICE**

The NCC shall use a cost establishment process for the withdrawals of an entire site/reporting unit/service that is different from the one indicated in 6.10 above. The total amount for the site/reporting unit/service to be withdrawn shall be as provided by the Contractor in the fee breakdown as per Appendix B – Price Proposal Form.

#### **6.14 WITHDRAWAL OF ACTIVITIES/SUB-ACTIVITIES**

The NCC shall again use a cost establishment process for the withdrawal of activities/sub- activities that is different from the process indicated in 6.10 above. The NCC and Contractor shall establish, on a case per case basis, a unit cost for each activity/sub-activity to be withdrawn. The unit cost shall then be used along with a cost calculation formula to establish the amount to be adjusted on the Fixed Fee of the Contract.

## **6.15 DISPUTES**

It is the non-binding intention of the parties that where a dispute arises between the parties in connection with the Contract, the parties shall attempt to resolve the dispute by negotiating in good faith and where possible by retaining an expert to help resolve the dispute, provided that failure to do so shall in no way affect the jurisdiction of an arbitrator to arbitrate such a dispute. Notwithstanding the intention of the parties to negotiate, any bona fide dispute or question arising over any of the provisions of the Contract, its interpretation or effects shall be submitted to arbitration and not to any other forum. Any arbitration proceeding initiated in relation to these Terms and Conditions and the Contract shall be held in Ottawa, and in accordance with the provisions of the *Commercial Arbitrations Act* (Canada) as it may be amended from time to time, and any legislation in replacement thereof. The arbitrator(s) shall determine the process of the arbitration having due regard to the intention of the NCC and the Contractor that the arbitration be completed as expeditiously as possible in all the circumstances. An award by the sole arbitrator or panel of arbitrators, as the case may be, shall be final and binding upon the parties. The parties will each pay 50% of the arbitrator(s)' fee unless the arbitrator(s) find that one of the parties acted in bad faith throughout the arbitration process, in which case the arbitrator(s) may determine how the payment should be apportioned between the parties.

## **6.16 PROHIBITED TRANSACTIONS**

### **6.16.1 Contracting with NCC Employees**

The Contractor agrees that it shall be absolutely prohibited from employing, contracting with, in respect of any part or parts of the Subject Matter, or in any other way entering into a commercial arrangement with any individual that is an employee, officer, or commissioner of the NCC or any of its advisory committees.

### **6.16.2 Contracting with Related Corporations**

The prohibition set out in 6.16.1 extends to any contract or commercial arrangement with a corporation or other business organization in which an NCC employee, whether directly or indirectly, is an employee, officer, director, shareholder, partner, or in any other way related, as defined in the Canada Business Corporations Act.

### **6.16.3 Exception**

The prohibition in 6.16.2 does not apply to contracts with corporations the shares of which are publicly traded, provided that the only relationship that exists between the NCC employee and such corporation is that of shareholder.

## **6.17 INDEMNITIES**

### **6.17.1 Unconditional Obligation to Perform**

The Contractor covenants and agrees to take, or cause to be taken, such action as may be necessary to cause the Contractor, at all times fully and faithfully, to perform and discharge its obligations under this Contract and each part hereof, and to comply with the Terms and Conditions hereof.

### **6.17.2 Liability for Payments**

The Contractor shall duly perform and observe each and every covenant, proviso or condition in this Contract on the part of the Contractor to be performed and observed, including any and all payments agreed to be paid or payable under the Contract, on the days and at the times and in the manner herein specified. If any default shall be made by the Contractor, in payment of any sums from time to time falling due hereunder as and when the same become due and payable, or in the performance or observance of any of the covenants, provisos or conditions which under the terms of the Contract are to be performed, observed or kept by the Contractor, then the Contractor shall forthwith pay to the

NCC on demand such sums in respect of which such default shall have occurred and all damages that may arise in consequence of the non-observance or non-performance of any of the said covenants, provisos, or conditions.

#### 6.17.3 Forbearance Not to Constitute Estoppel

No neglect or forbearance of the NCC in endeavouring to obtain payment of any amount required to be made under the provisions of the Contract as and when the same become due, no delay of the NCC in taking steps to enforce performance or observance of the several covenants, provisos or conditions contained in the Contract to be performed or observed by the Contractor, no extension or extensions of time which may be given by the NCC from time to time to the Contractor, and no other act or failure to act of or by the NCC shall release, discharge or in any way reduce the obligations of the Contractor hereunder.

#### 6.17.4 Indemnity Survives Disclaimer or Other Determination

##### 6.17.5 (This section is only applicable if the NCC requests an indemnifier)

In the event of a determination of this Contract other than by a mutual release in writing between the NCC and the Contractor, or in the event of the determination of this Contract by reason of bankruptcy or by reason of any statutory provision similar thereto, or in the event of a disclaimer of the Contract pursuant to any statute, then the Indemnifiers, at the option of the NCC, shall forthwith execute a new Contract between the NCC as owner and the Indemnifiers as Contractor in respect of the liabilities and obligations that remain unperformed at the date of such termination or such disclaimer. Such Contract shall contain the same owner and Contractor obligations respectively and the like covenants, provisos, agreements and conditions in all respects (including the rights of termination) as are contained in the Contract.

##### 6.17.6 Primary Liability

(This section is only applicable if the NCC requests an indemnifier)

The Indemnifiers are primarily liable, jointly and severally, with the Contractor and not as mere sureties or guarantors. The Indemnifiers shall not be released nor will their liability hereunder be limited or lessened by the NCC granting time, taking or giving securities, accepting proposals, or by time being given to the Contractor, or by any amendment of this Contract, or by any compromise, arrangement, composition or plan of reorganization affecting the Contractor or the Indemnifiers, or by release of any party liable directly as surety or otherwise, or by failure to declare a default under this Contract, or by any dealings whatsoever between the NCC and the Contractor, or by or with any other parties or Persons whomsoever, or by any other act, omission or proceedings in relation to this Contract whereby the Indemnifiers might otherwise be released or exonerated or the liabilities and obligations of the Indemnifiers hereunder effected. The Indemnifiers hereby expressly waive notice of the granting of time, the taking of giving of securities, and any other matter whatsoever referred to in this Contract. No waiver by the NCC of any rights under this Contract shall be effective unless in writing and no such waiver shall be taken in any manner whatsoever to affect those rights or any other rights, except as expressly so provided in such waiver, and only for such time periods as are provided in such waiver. Nothing except for the performance of all obligations of the Contractor and the Indemnifiers under or contained in this Contract will discharge the Indemnifiers.

##### 6.17.7 No Obligation to Exhaust Other Remedies

(This section is only applicable if the NCC requests an indemnifier)

The NCC shall not be bound to have recourse to or exhaust its recourse against the Contractor, or in respect of the Letter of Credit, letter of guarantee, performance bond or otherwise before enforcing the NCC's rights against the Indemnifiers under clauses 6.17.4 and 6.17.5. If there be more than one Indemnifier, the obligations of the Indemnifier under clauses 6.17.4 and 6.17.5 shall be joint and

several.

## **6.18 INSURANCE**

### **6.18.1 Minimum Coverage**

The Contractor shall purchase, provide and maintain in force throughout the Term insurance in the following amounts and containing at least the following endorsements:

a) Liability Insurance:

**Minimum Amounts of Coverage Required:**

\$5,000,000 per occurrence  
\$10,000,000 minimum annual cumulative limit

b) Endorsements:

- Premises and operations
- Broad form products and completed operations liability
- Broad form property damage
- Personal injury
- Blanket contractual liability
- Occurrence coverage
- Non-owned automobile, including contractual
- Contingent employers' liability
- Employees as additional insured's
- Cross liability
- Severability of interests
- Employers Liability

The insurance policy must cover all activities and/or services that are to be performed by the Contractor to respect its obligations under this Contract, including, but not limited to, specialized services such as tree take down, pruning and trimming of trees and shrubs.

The policy must also include a deductible portion not to exceed \$5,000 and the policy must satisfy the NCC in all respect.

### **6.18.2 Assignment of Insurance**

The Contractor shall have the right to assign its interest in all such insurance to any secured lender. Without limiting the foregoing, any such assignment shall be subject to the requirements of this Contract.

### **6.18.3 Premiums**

The Contractor shall duly and punctually pay all premiums and other sums of money payable for maintaining the insurance required hereunder.

### **6.18.4 Non-Cancellation**

Each of the policies for such insurance required herein shall contain a condition to the effect that the insurer shall not cancel such policy or materially alter the coverage afforded by such policy except after sixty (60) Business Days prior written notice to the NCC. The Contractor covenants not to do anything, omit to do anything, or permit anything to be done, or omitted to be done, which shall invalidate,

adversely affect or limit any insurance policy referred to herein.

#### 6.18.5 Evidence of Insurance

The Contractor shall, concurrently with the execution of the Contract and each subsequent March 15 during the Term and at other times upon the request of the NCC, provide certified copies of the policies of insurance and certificates of insurance required under this Contract as well as satisfactory evidence that such policies are in full force and effect.

#### 6.18.6 Acknowledgement of Release by Contractor of Claims & Indemnity

The Contractor hereby releases the NCC, its servants, agents, and those for whom the NCC is in law responsible, from all liabilities, claims, actions, damages, loss and expenses arising out of the Contractor's negligence. The parties acknowledge that the Contractor has agreed that the NCC shall not be liable or responsible in any way for any injury or death to any person or for any loss or damage to any property at any time in, on or related to the Subject Matter, arising out of the Contractor's negligence.

#### 6.18.7 Additional Insured's

All insurance policies to be maintained by the Contractor hereunder shall include the NCC as an additional insured and shall contain a waiver of subrogation in favour of the NCC.

#### 6.18.8 Indemnity

The parties acknowledge that both during and after the Term, the Contractor agrees to indemnify and save harmless the NCC, its successors and assigns, and all of its heirs and their servants, agents, employees and persons for whom they are responsible at law, in respect of any and all claims actions, causes of action, suits, debts, costs (including all legal fees and disbursements on a solicitor and his/her own clients basis), expenses, losses, claims or demands whatsoever, at law or in equity arising out of the Contractor's negligence and related to the Subject Matter. The Contractor further acknowledges that every indemnity, exclusion of liability, and waiver of subrogation contained for the benefit of the NCC herein or in any insurance policy required to be maintained by the Contractor hereunder, or otherwise maintained by the Contractor, shall extend to and benefit all the NCC's servants, agents, employees and other persons for whom the NCC is in law responsible.

#### 6.18.9 Co-Insurance

If any policies of insurance contemplated in this Contract shall contain any co-insurance clause, the Contractor shall maintain at all times a sufficient amount of such insurance to meet the requirements of any such co-insurance clause so as to prevent the Contractor and/or the NCC from becoming a co-insurer under the Terms of such policy or policies and to permit full recovery up to the amount insured in the event of loss.

#### 6.18.10 Coverage Not Available

Notwithstanding anything contained in 6.18.1, if any specific obligation contained in 6.18.1 shall become obsolete or that insurance to meet such obligation is not available, then the Contractor shall obtain insurance providing for similar coverage which shall be satisfactory to the NCC acting reasonably. In the event the Contractor is unable or unwilling to provide such other similar coverage, then the NCC may obtain such other coverage and recover the cost thereof from the Contractor. If no such similar coverage is available, then a mutually agreeable replacement for such coverage shall be affected by the Contractor. Until the replacement policy is put into effect, the NCC may, at its risk and expense, place such coverage as it deems advisable and, in the event, failing agreement, it is later determined by a court or other tribunal having jurisdiction that such coverage is reasonable, the Contractor shall reimburse the NCC the cost of such coverage.

6.18.11 Exclusion of Limitations on Contractor's Liability

The Contractor's liabilities and obligations shall not be restricted to any sums mentioned as minimums in any of the insurance clauses contained herein nor by any approval of the NCC pursuant to 6.18.10.

6.18.12 Periodic Review

The required limits of insurance shall be reviewed at the request of the NCC and shall be increased at the NCC's request which request shall reflect current experience and appropriate indexing as deemed reasonable by a prudent owner.

6.18.13 Severability of Provisions

Each of the provisions contained in this Contract is distinct and severable and a declaration of invalidity or unenforceability of any such provision or part thereof by a court of competent jurisdiction shall not affect the validity or enforceability of any other provision hereof.

6.18.14 Headings & Table of Contents

The inclusion of headings and table of contents in this bid solicitation is for convenience of reference only and shall not affect the construction or interpretation of the provisions set out in this Contract.

6.18.15 Conflict between Provisions

In case of any discrepancy whatsoever between parts of this Contract, the part containing the more extensive obligations on the part of the Contractor shall prevail. In case of any ambiguity on the extensiveness of the obligations, the NCC shall solely establish which one prevails.

6.18.16 Extended Meanings

Unless otherwise indicated, references to articles, sections and recitals are to articles, sections and recitals in this Contract. Changes in grammar, gender, number and syntax required by the identity, structure or nature of the parties shall in all cases be assumed as though in each case fully expressed.

6.18.17 Notice

Any notice or other communication required or permitted to be given hereunder shall be in writing and shall be given by priority post, personal delivery, facsimile transmission, or electronic mail as hereinafter provided. Any such notice or other communication, if delivered by post at any time other than during a general discontinuance of postal service due to strike, lockout or otherwise, shall be deemed to have been received on the fifth Business Day following the day on which the notice was sent, if personally delivered shall be deemed to have been received at the time it is delivered to the applicable address noted below either to the individual designated below or to an individual at such address having apparent authority to accept deliveries on behalf of the addressee, and if transmitted by facsimile transmission or by electronic mail on the next Business Day following the date of transmission. Notice of change of address shall also be governed by this section. In the event of a general discontinuance of postal service due to strike, lockout or otherwise, notices or other communications shall be personally delivered or sent by fax or e-mail and shall be deemed to have been received in accordance with this section. Notices and other communications shall be addressed as follows:

- a) if to the NCC:

National Capital Commission

40 Elgin Street, Ottawa, ON K1P 1C7

Attention: Director, Ontario Urban Lands and Greenbelt Capital Stewardship Branch.

- b) if to the Contractor:

At the address and to the person specified in the Contractor's Tender

The word "notice" in this paragraph shall be deemed to include any request, statement or other writing in these Terms and Conditions provided or permitted to be given by the NCC to the Contractor or by the Contractor to the NCC.

**6.18.18 Joint & Several Liability**

If the Contractor comprises more than one Person, the liability of each such Person shall be joint and several.

**6.18.19 Further Assurances**

The parties covenant to execute and provide such further assurances as may reasonably be required to give effect to any provision of the Contract.

**6.18.20 Paramourncy of Federal Authority**

Notwithstanding anything contained in this Contract relating to any provincial or municipal statute, by-law, regulation or other enactment, the NCC hereby declares that no such reference shall be interpreted or implied as recognition by the NCC that the Province of Ontario, any municipality, or any other provincial or municipal statute, by-law, regulation or other enactment, has any jurisdiction over the NCC, or the Subject Matter, provided, however, that nothing in this section shall release the Contractor from compliance with any provincial or municipal law as it applies to the Contractor.

**6.19 DENIAL OF PARTNERSHIP**

It is understood and agreed that neither the provisions contained herein nor any acts of the parties hereto shall be deemed to create any relationship of agency partnership, joint venture or common enterprise other than a contractual one. In all respects the Contractor is acting in its own capacity and all debts and liabilities to third parties incurred are and shall be exclusively for the account of the Contractor.

**6.19.1 Successors**

The rights created by this Contract extend to the permitted successors and assigns of each of the NCC and the Contractor, and the liabilities created herein extend to and bind all successors and assigns of each of the NCC and the Contractor.

**6.19.2 Representation & Warranty Regarding Authority**

The NCC and the Contractor each represent and warrant to the other party that they have full right, power and authority to enter into the Contract and to perform its obligations thereunder.

**6.19.3 Access to Information**

The Contractor acknowledges that the NCC is subject to the provisions of the *Access to Information Act (Canada)* and may therefore be required to release information pertaining to these Terms and Conditions and the Contract which is the subject of a formal request under that Act and which is not exempt from disclosure under the provisions of that act.

**6.19.4 No Offer**

No contractual or other rights shall exist between the NCC and the Contractor as a result of the negotiation of the Contract until all parties have executed and delivered the Contract, notwithstanding that the NCC may have delivered to the Contractor an unexecuted copy of the Contract. Such delivery shall be for examination purposes only and does not and shall not create any interest by the Contractor in these Terms and Conditions and the Contract or raise any estoppel against the NCC. Execution of the



Contract by the Contractor and its return to the NCC shall not create any obligation on the NCC, notwithstanding the lapse of any time interval, until the NCC has in fact executed and delivered the Contract to the Contractor.

### 6.19.5 Ownership of Intellectual Property

In this section,

- “Material” means anything that is prepared, developed or conceived by the Contractor as part of the Work under this Contract and that is protected by copyright, and includes, but is not limited to, Web pages, databases, lists and client lists created or updated by the Contractor pursuant to or as a result of this Contract and content and illustrations produced by the Contractor to market or promote any part or parts of the Subject Matter or any event, product or service relating to the Subject Matter;
- “Moral Rights” has the same meaning as in the *Copyright Act*, R.S.C. 1985, c.C- 42.

At the expiration or on the earlier termination of the Contract, or at such other time as the Contract or the NCC may require, the Contractor shall fully and promptly disclose to the NCC all Material prepared, developed or conceived under the Contract.

The Contractor hereby acknowledges and agrees that the copyright in any Material vests in the NCC under the Contract and hereby assigns each and every right, title and interest it has in the ownership of the Material to the NCC. The Contractor agrees to execute such conveyances and other documents relating to title or copyright as the NCC may require and to provide any codes, keys, passwords, etc. required to enable the NCC to use the Material.

The Contractor shall not use, copy, divulge or publish any Material except as it is necessary to perform the Contract. If the Contractor is the author of the Material, the Contractor hereby permanently waives the Contractor’s moral rights in respect of the Material.

### 6.19.6 Limitations on Contracting Authority

#### 6.19.6.1 Authority Linked to Approved Budgets

The Contractor shall not have, and shall not represent to any third party that it has, any authority to commit the NCC to any expenditure or to enter into any contract on behalf of the NCC unless:

- a) Such expenditure or contract is made pursuant to a payment schedule or a capital budget which has been approved by the NCC;
- b) The Contractor has obtained the prior approval of the NCC in writing to enter into the expenditure or contract; and
- c) The Contractor has complied with the other contractual requirements set out in this document; or
- d) Such work is required to be performed by reason of an emergency situation (which is a situation that if not remedied without delay, would result, in the reasonable opinion of the Contractor, in damage or further damage to any part or parts of the Subject Matter or to private property adjoining the Subject Matter) in which event the Contractor is hereby authorized to proceed with such work as is reasonably deemed by the Contractor to be necessary for the protection and preservation of such Subject Matter, provided however, that such expenditure may not extend beyond a period of twenty-four hours from the time of the occurrence unless otherwise approved by the NCC.

Notwithstanding the foregoing, the Contractor shall not have, and shall not represent that it has, the



authority to pledge the credit of the NCC nor purport to create any security interest in any property of the NCC in favour of a third party.

*6.19.6.2 Prohibition*

The Contractor shall not incur any expenditure or enter into any contract on behalf of the NCC except on an arm's length basis.

**6.20 DEFAULT PROVISIONS**

**6.20.1 Default**

If the Contractor:

- a) Fails to keep, perform or observe any of the covenants, agreements, conditions or provisions contained in this Contract that are to be kept, performed or observed by the Contractor and such failure continues for, or is not remedied within:
  - 1-hour verbal notice for public safety situations (all Snow and Ice Control activities are deemed to be public safety situations);
  - 12 hours verbal notice for property damage;
  - 24 hours written notice for all others.

If the Contractor has recurrent failures related to the same activity, covenant, agreement, condition or provision of this Contract the NCC only needs to notify the Contractor of the first incident before having recourse to the default and remedy provisions set out in this Contract.

- b) Suffers an Event of Insolvency;
- c) Purports to make any transfer or assignment of this Contract other than in compliance with the terms of this Contract; or
- d) Delays in the performance of one of a series of periodic services that result in a loss for the NCC of all or substantially all of the value attributable to such performance. (Where one of a series of periodic services is delayed, the eventual resumption of performance means that the Contractor's obligations have effectively been reduced with no corresponding savings to the NCC. For example, if grass is to be mowed when it reaches a particular height, which effectively requires this service to be performed on a weekly basis, and performance is delayed for one week, the resumption of performance has the effect of extinguishing the value that would otherwise have been attributed to the performance thus delayed.);

Then the NCC shall have the following rights and remedies, which are cumulative and not alternative, and are in addition to and not in substitution for any rights or remedies that the NCC may have hereunder and/or pursuant to Applicable Laws:

- i. To remedy or attempt to remedy any default of the Contractor under the Contract for the account of the Contractor. The NCC shall not be liable to the Contractor for any loss, injury or damage caused by acts of the NCC in remedying or attempting to remedy such default and the Contractor shall pay to the NCC all expenses incurred by the NCC in connection with remedying or attempting to remedy such default, together with all of the NCC's reasonable administrative expenses;
- ii. To recover from the Contractor all damages and expenses incurred by the NCC as a result of any breach by the Contractor;
- iii. To terminate the Contract without further notice to the Contractor;
- iv. To withhold, in whole or in part, any payments otherwise due to the Contractor

hereunder until such default has been remedied;

- v. To set-off from the Fixed Fee of the Contract an amount equal to the value of any obligations not performed or periodic obligations delayed by the Contractor;
- vi. As applicable, impose the monetary sanctions detailed below.

Subject to the requirement for notice set out in clause 6.2.16 a), failure to keep, perform or observe any of the covenants, agreements, Terms and Conditions or provisions contained in this Contract may result in the application of monetary penalties (plus applicable taxes) set out below which shall be paid by the Contractor immediately upon receipt of a written notice from the NCC detailing the event of default:

- a) first occurrence of the default of one or more item: penalty of \$500.00;
- b) irrespective of the item, the second occurrence of the default: penalty of \$1,000.00;
- c) irrespective of the item, the third occurrence of the default: penalty of \$1,500.00; and
- d) each additional occurrence of default (following the third): preceding penalty plus \$1,000 (for example, for a fourth case = \$2,500 (\$1,500 + \$1,000), fifth case = \$3,500 (\$2,500 + \$1,000), and so forth).

#### 6.20.2 Appointment of an Administrator

Notwithstanding anything herein contained, it is declared and agreed that, at any time and from time to time, when there shall be default under the provisions of the Contract and the NCC has exercised any of its rights hereunder, the NCC may also appoint by writing a receiver (which shall include a receiver and manager) of the Contract and the NCC shall be deemed to be acting as the agent or attorney for the Contractor. Upon the appointment of any such receiver or receivers from time to time, the following provisions shall apply:

- i. Every such receiver shall be the irrevocable agent or attorney of the Contractor for the collection of all revenues being generated in respect of any use of the Subject Matter or any parts thereof;
- ii. Every such receiver may, at the discretion of the NCC and evidenced in writing, be vested with all or any of the powers and discretion of the NCC;
- iii. The NCC may from time to time by notice in writing fix the reasonable remuneration of every such receiver who shall be entitled to deduct the same out of the revenues derived from the Subject Matter;
- iv. Every such receiver shall, so far as concerns the responsibility for acts or omissions, be deemed the agent or attorney of the Contractor and not the agent of the NCC unless specifically appointed by the NCC as agent of the NCC;
- v. Every such receiver shall have full power to manage, operate, amend, maintain, protect, preserve and repair the Subject Matter or any parts thereof in the name of the Contractor for the purpose of securing the payment of revenues from the Subject Matter or any parts thereof provided that the receiver shall do so as a prudent receiver would do;
- vi. No such receiver shall be liable to the Contractor to account for monies or damages other than cash received by him in respect of the Subject Matter or any parts thereof and out of such cash so received, every such receiver shall in the following order pay:
  - 1. His commission or remuneration as receiver;
  - 2. All expenses made or incurred by such receiver in connection with the

- management, operation, amendment, protection, preservation of, repair or Maintenance services of the Subject Matter or any parts thereof;
3. All taxes, insurance premiums and every other proper expenditure made or incurred by him in respect to the Subject Matter or any parts thereof;
  4. All revenues and any other amounts due to the NCC under the Contract;
  5. All payments required to be made to keep in good standing the supply of Utilities and services;
  6. Any surplus remaining in the hands of every such receiver after payments made as aforesaid shall be accounted for the Contractor;
  7. The NCC may, at any time and from time to time, terminate any such receivership by notice in writing to the Contractor and to any such receiver;
  8. The Contractor hereby releases and discharges the NCC and every such receiver from every claim of every nature, whether in damages or not, which may arise or be caused to the Contractor or any Person claiming through or under it by reason or as a result of anything done by the NCC or any successor or assign or anyone for whom the NCC is responsible or by any such receiver under the provisions of this section unless such claim be the direct and proximate result of the dishonesty or gross negligence of the NCC, the receiver or their respective heirs, successors or assigns.

### 6.20.3 Remedies Generally

Mention in this Contract of any particular remedy of the NCC in respect of the default by the Contractor does not preclude the NCC from any other remedy in respect thereof, whether available at law or in equity or expressly provided for in this Contract. No remedy shall be exclusive of or dependent upon any other remedy, but the NCC may from time to time exercise any one or more of such remedies generally or in combination, such remedies being cumulative and not alternative.

## 7 ADDENDUM ACKNOWLEDGEMENT

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

## 8 SIGNATURE OF OFFER

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**We hereby OFFER to sell and/or supply to the National Capital Commission upon the terms and conditions set out within the NCC tender package, the supplies and/or services listed above and on any attached sheets at the submitted price(s).**

Name and address of Contractor :		Signature(s)	
Tel-Tél:		Title:	
Contact E-mail:		Date:	

Accepted & executed on behalf of the Commission this \_\_\_\_\_ day of \_\_\_\_\_, 2023.

<b>COMMISSION USE ONLY</b> <b>NCC SIGNATURE ONLY</b>	<b>TITLE</b>
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NATIONAL CAPITAL COMMISSION  
COMMISSION DE LA CAPITALE NATIONALE

Annex "A"  
Statement of Work

Escarpment  
Vegetation  
Management –  
Statement of Work

Specialized Operations and Maintenance

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# 1 INTENT

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The NCC is seeking specialized maintenance management services with the objective of supporting high standards of service excellence at the best cost. The NCC believes that this tender will result in a successful contract award however, in the event proposals submitted do not meet the NCC’s objectives, the NCC may, at its sole discretion, not proceed with contract award and implement alternative service delivery approaches.

This Statement of Work (SOW) is based on the detailed specifications contained in Annex “A-1” *Maintenance Manual – Parliament Hill Slope Management* issued by the Science and Parliamentary Infrastructure Branch (SPIB) of Public Services and Procurement Canada (PSPC).

*Ce document est aussi disponible en français.*

# 2 TERM

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This TENDER contemplates entering into a Contract having a Term of four (4) consecutive years beginning on date of award and ending March 31, 2027.

# 3 CONTEXT

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The National Capital Commission (NCC), through its Capital Stewardship Branch (CS Branch), manages the natural and built facilities and assets in the core and urban areas of the Capital, which contributes towards its rich symbolic setting as the seat of national government. The CS Branch manages contracts which provide high quality maintenance services for the Commission’s urban sites as well as summer and winter maintenance of major federal institutions in the Capital, such as Parliament Hill. Effective maintenance and lifecycle management is required for a diverse mix of assets ranging from urban conservation areas, naturalized meadow parkways to heavily used downtown parks which host major national events. The overall objectives of the maintenance practices are to ensure public health and safety, protect and preserve assets and provide for an enjoyable experience of NCC and Federal sites in keeping with their key role as part of the Nation’s Capital. In achieving these objectives, the NCC is committed to planning, developing and implementing its programs and activities in a manner that minimizes adverse effects on the environment and ideally enhances the environmental resources under its responsibility.

In 2021, a reforestation and stabilization project of the escarpment of The Parliament Hill was undertaken. Work included invasive species management, selective pruning, slope stabilization and erosion control, soil improvement and the planting of thousands of new trees, shrubs and perennials. This statement of Work (SOW) is based on the Maintenance Manual – Parliament Hill Slope Management “Annex A-1” developed by a team of consultants with extensive experience in landscape architecture, heritage, biology, ecology, civil engineering, archeology, geotechnical



engineering, forestry, health and safety and arboriculture, with input and support from NCC and PSPC subject matter experts.

*Maintenance of the escarpment is crucial. The work performed in 2021 must be monitored and bonified for years to come to ensure the long-term success of the reforestation effort. The scope of this maintenance will be to verify the condition of the general vegetation of the escarpment, new plantings and stabilization efforts completed in 2021 and to bring corrections as outlined in this document. This will include continuing invasive plant control, assessing plant replacement and seeding needs, performing plant maintenance to ensure plant health, and correct stabilization work. A team of professionals, including landscape architects, arborists, structural engineers, and biologists will support the maintenance team to provide expertise and guidance. This maintenance manual presents the context, the reforestation strategy and maintenance plan with needed specifications and drawings to support the maintenance team for years to come.*

## 4 CONTRACTOR'S RESPONSIBILITIES

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Unless specifically excluded, the Contractor shall provide at his/her own expense all labour, material and Equipment needed to perform the Work. These costs include, but are not limited to all vehicles, materials, consumables, tools, labour as well as all subcontracting expenses required to perform the Work and fulfill the obligations of the Contract. The maintenance services are to be performed in accordance with the Subject Matter and all Applicable Laws related to the type of Work required.

### 4.1 BUSINESS PRACTICES

The Contractor agrees not to conduct and to use its best efforts to restrain all other Persons entitled to use the Subject Matter or any part or parts thereof from conducting any of the following businesses or methods of doing business on or from the Subject Matter, and further agrees to include the wording of this section in any contracts granting the use of the Subject Matter or any part or parts thereof:

- a) Any business which, because of the merchandising methods likely to be used, would adversely affect the reputation of the Subject Matter and/or the NCC;
- b) An operation in any line of merchandise or service which makes a practice of unethical or deceptive advertising or selling procedures;
- c) An operation in any line of merchandise or service which, because of the character of the merchandise or service, would adversely affect the reputation of the Subject Matter and/or the NCC;
- d) Any business practice which, whether through advertising, selling procedures or otherwise, may adversely affect the Subject Matter or the reputation of the NCC, or may reflect unfavourably on the Subject Matter or the NCC, or which may confuse, mislead or deceive the public.

## 4.2 DUTY TO ACT IN GOOD FAITH

The Contractor shall act diligently, efficiently, in good faith, in conformity with the requirement of insurers and in accordance with the standards applicable to a prudent owner in performing the duties and services required of it hereunder.

## 4.3 CONTRACT BOUNDARIES

The Statement of Work (SOW) includes site maps containing information related to site limits. The Contractor shall provide all services within the geographic boundaries as summarized on the maps. Whenever a limit on a map runs along a natural asset (e.g. cliff, escarpment, etc.), the Contractor's obligation shall extend to that entire Asset. If the limit runs along a shoreline, the Contractor's obligation shall extend to the water's edge wherever it may be at any given time.

# 5 GENERAL REQUIREMENTS

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## 5.1 CHANGE OF DATES

The NCC may, at its sole discretion, change deadlines for any operational requirement. The NCC shall notify the Contractor of any changes. The Contractor shall modify his/her work plan accordingly and then provide all services without additional costs while respecting the revised deadlines as determined by the NCC.

## 5.2 PUBLIC SAFETY

The Contractor shall take all necessary precautions and/or measures to provide sites that are safe for the public. This includes ensuring that all Work, activities or operations undertaken by the Contractor to fulfil the obligations of this Contract are accomplished in a manner that does not compromise public safety. Furthermore, the Contractor shall secure any area within a site that might (or has) become a safety hazard. Any such incident shall be reported immediately to the NCC and to the appropriate emergency services agencies (police, firefighters, etc.).

For further clarity, in all cases where the Contractor observes or is made aware of a deficiency, whether the deficiency is specifically mentioned in the Subject Matter or not, treating the deficiency means immediately taking reasonable steps to protect users, including the execution of Work as may be required by the Subject Matter, alerting users' attention to the deficiency with signage and/or preventing or limiting access to the area.

## 5.3 MEDIA AND PUBLIC RELATIONS

The Contractor shall not act as a spokesperson for the NCC in dealing with the media and the public. All requests for interviews or information on NCC matters made by the media must be forwarded to the NCC. The Contractor shall not give interviews without prior written approval from the NCC.

## 5.4 DISCREPANCIES

In case of any discrepancy whatsoever between the SOW, the Maintenance Manual or any other section of this Contract, the part containing the more extensive obligations on the part of the Contractor shall prevail.

## 5.5 COMMITMENTS MADE IN THE CONTRACTOR'S PROPOSAL

In addition to the obligations contained in this Contract, the Contractor hereby undertakes to fulfil the commitments made in its Proposal which is incorporated by reference into this Contract. If there are any inconsistencies between the terms and conditions of this Contract and those set out in the Contractor's Proposal, the document containing the most extensive obligations on the part of the Contractor shall prevail.

## 5.6 WORK FOR OTHERS

The Contractor shall obtain prior authorization in writing from the NCC before accepting and/or commencing any work for a third party on land subject to this Contract. The NCC shall verify that the work contemplated is not already included under this Contract before providing its authorization.

## 5.7 LAWS, REGULATIONS, BY-LAWS

All Work pursuant to this Contract shall be performed in accordance with all existing and future federal, provincial, and municipal laws, regulations and by-laws. The Contractor shall be responsible for any charges imposed by such laws, regulations, and by-laws, and shall be unable to recover any amounts therefore from the NCC.

Without limiting the generality of the foregoing, the Contractor shall be registered and comply with all regulations related to Workplace Safety and Insurance Board of Ontario. The NCC reserves the right to terminate this Contract if the Contractor does not have the necessary permits and licenses for the execution of the Work.

The Contractor shall ensure that all Work accomplished to meet the requirements of this Contract is in accordance with the latest applicable codes and standards (especially Canadian Standards Association) and that any specialized work, such as electricity and plumbing be done by licensed workers.

### 5.7.1 Environmental Laws

The Contractor shall comply with all applicable federal, provincial and municipal environmental legislation and regulations, including any and all amendments or replacement policies, procedures or best practices. The Contractor shall also apply the guidelines and best practices listed in the Environmental Guidelines and Best Practices.

## 5.8 USE OF VEHICLES

The maximum vehicle speed on Pathways and trails is 15 km/hr. Where visibility or sightlines are limited, the maximum speed is 5 km/hr. Contractor's vehicles must engage the 4-way emergency flashers while travelling on Pathways; operators will sound the horn as they enter any bend in the pathway with limited visibility of oncoming traffic. Contractor's vehicles must yield to pedestrian and cycling traffic at all times, regardless of the circumstances. Parking and driving vehicles on turf areas and pathways must be minimized.

Contractors are strongly encouraged to use smaller, more energy efficient vehicles when accessing the pathway network for certain tasks.

## 5.9 VEHICLES

The Contractor shall provide all vehicles required to fulfill the contractual obligations of this Contract. This includes any vehicles required for transportation purposes and/or for providing maintenance

services as requested in this Contract. The Contractor shall assume all risks inherent to the use of general or specialized vehicles. All vehicles used by the Contractor shall be kept in a clean and presentable condition, exempt of rust, and shall meet all provincial safety standards. The company name shall be prominently displayed on all road and off-road vehicles (including personal vehicles used on Contract related business). Use of off-road motor vehicles is permitted exclusively to carry out the Contractor's contractual responsibilities. No vehicles may be used by the Contractor or anyone acting on his behalf for recreational purposes or any other purposes not required by this Contract. Off-road vehicles will be used with care and respect for both the natural resources and visitors' desire of a recreational experience in a natural environment.

To the extent possible the Contractor will minimize unnecessary idling of vehicles which can result in the wastage of fuel and creation of greenhouse gases (refer to municipal by-laws). When replacing fleet vehicles, the NCC encourages the Contractor to select energy efficient and environmentally responsible Equipment (electrical vehicles, small pick-ups, 4-stroke motors, alternate fuels, etc.).

### **5.10 STORAGE ON NCC LANDS**

No material, vehicle or Equipment shall be stored on the Lands included in this Contract without prior NCC approval. No fuel storage tanks are permitted on NCC property without prior written consent from the NCC.

### **5.11 NCC AUDITORS**

The NCC, or the NCC's auditors may, without prior notice but during Business Hours, inspect, take extracts from, audit and review all the books and records of the Contractor and obtain such other information as may be available to the NCC in order to enable the auditors to establish amounts expended on operating or capital expenditures, or any computation or matter relevant to the determination of any fee or other compensation paid or to be paid to the Contractor. These rights are extended to the NCC throughout the Term and for a period of twenty-four months after the expiration of the Term or earlier termination of this Contract.

If provincial or federal emergency orders prevent the NCC from completing onsite audits, the Contractor shall take the necessary steps, when requested by the NCC or its auditors, to promptly provide all information related to the books and records of the Contractor by electronic or other means.

### **5.12 ALTERATIONS TO THE SCOPE OF THE CONTRACT**

The NCC reserves the right to make alterations to any part of the Subject Matter at any time during the Term by delivery of notice in writing to that effect to be effective from the date stipulated which shall not be earlier than ten (10) business days after the deemed delivery date of the written notice. The frequency and quantity of tasks can only be determined once the Contractor and the NCC have assessed future needs and requirements. These Variable Operational Requirements (VOR) will be requested and preapproved by the NCC as and when required during the Term. Though the NCC has made every effort to accurately forecast the quantities and frequency of tasks and materials requested, the amounts presented remain estimates. The Contractor will invoice the NCC for VOR as per the Hourly Rates/Unit Prices in Appendix B – Price Proposal Form, as per the Subject Matter, up to the Yearly maximum amounts listed below, and as per the following general terms and conditions:

2023, Year 1 of the Term: \$ 157,500

2024, Year 2 of the Term: \$ 152,500

2025, Year 3 of the Term: \$ 342,500

2026, Year 4 of the Term: \$ 228,000

- If after careful consideration the NCC determines that an estimate submitted by the Contractor does not reflect fair market prices the NCC may, at its sole discretion, award the Work to other suppliers;
- When plant material is purchased by the Contractor for the sole purpose of performing VOR which have been requested and approved by the NCC, the Contractor may add a maximum fifteen percent (15%) materials handling charge to the plant materials.
- Equipment, labour and materials for which the Contractor is responsible by virtue of other sections of this Contract shall not be subject to materials handling charges of any kind.
- Billable hours for VOR will begin and end at the work site, wherever that may be within the geographical boundaries of the Contract. Travel time shall not apply unless preapproved by the NCC.

## 6 OPERATIONS AND MAINTENANCE SPECIFICATIONS

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The Contractor will ensure he or she provides the services and achieves the outcomes described in the Contract even though individual tasks may or may not be specifically mentioned or identified, but are required to provide the totality of the services requested and meet all of the operational objectives identified. Though certain tasks have been grouped together, such groupings may be arbitrary from an operational perspective. The groupings are meant to facilitate the drafting of the SOW and not necessarily to dictate the sequence or extent of maintenance tasks.

The Maintenance Manual – Parliament Hill Slope Management (Annex “A-1”) remains the primary reference for maintenance specifications on the escarpment. However, only the Work and associated materials mentioned in this SOW will form part of the Contract. Other tasks and specifications contained in the manual are provided to Bidders for information purposes only.

**N.B.:** Within the geographic boundaries of this Contract, the NCC no longer allows the use of gas-powered leaf-blowers, brush cutters, edge trimmers and small chainsaws. Battery-powered equivalents must be used.

### 6.1 PROFESSIONAL SERVICES

#### 6.1.1 Arborist

The Contractor shall provide the services of a qualified (see 6.4.2) arborist with a minimum six (6) years' experience. Twice (2) per growing season, the arborist will inspect Compartments A to F. During each visit the arborist shall:

- Assess overall tree and shrub health.
- Recommend tree pruning and removals as required.
- Identify invasive species and recommend remediation measures.
- Submit a detailed written report no later than five (5) Days following each visit.

When additional inspections are requested by the NCC, remuneration shall be calculated based on the unit prices and/or hourly rate submitted.

## 6.2 STABILIZATION WORK

For safety and efficiency reasons, most tasks will be performed by a team of three (3).

### 6.2.1 Soil Stabilization with Geotextiles

Detailed specifications for this Work are described in Section 3 of the Maintenance Manual – Parliament Hill Slope Management (July 2022).

### 6.2.2 Live Branches Repairs

Detailed specifications for this Work are described in Section 3 of the Maintenance Manual – Parliament Hill Slope Management (July 2022).

### 6.2.3 Other Stabilization Work

Other stabilization work will involve log and wire mesh installations. Work will be directed by an engineer employed by PWGSC. Detailed specifications for this Work are described in Section 3 of the Maintenance Manual – Parliament Hill Slope Management (July 2022).

## 6.3 REFORESTATION MANAGEMENT

The reforestation-related tasks include arboricultural works, removal of invasive species, planting and plant care. They are described in chapters 3, 4, 5 and 6 of the Maintenance Manual – Parliament Hill Slope Management (July 2022). The Contractor shall supply qualified (see 6.4.3) Personnel to safely and efficiently perform the Work. For safety and efficiency reasons, most tasks should be performed by a team of three (3).

## 6.4 PERSONNEL QUALIFICATIONS

The Contractor shall ensure that he/she is able to demonstrate at any time to the NCC that he/she is in compliance with the qualification and experience requirements indicated by providing any and all proof of work experience for all Employees. All field Employees of the Contractor shall be dressed, at the Contractor's expense, in a neat presentable fashion and wear approved safety equipment when required.

Any Employee hired by the Contractor will be relieved of his/her duties and immediately replaced by the Contractor, if in the opinion of the NCC, this Employee is unqualified or is acting in a manner contrary to the best interests of the NCC or if the Employee does not meet the requirements stated herein.

Furthermore, the Contractor shall respect all trade certification when required by law. Any work to be performed by the Contractor must be done in accordance with the art of the trade and must follow any and all guidelines, requirements and specifications as set out by such trade. The Contractor will operate in accordance with all Federal, Provincial and Municipal codes and standards. Proper safety precautions must be exercised at all times, with extra precautions taken to protect the general public.

### 6.4.1 Employees

Employees shall have appropriate experience and skills to perform the duties of the Contract that are assigned to them. Employees hired by the Contractor shall be knowledgeable, have experience commensurate with the Work assigned, be fluent in one of the two official languages of Canada, respect

all safety requirements, and act in a manner that does not adversely affect the reputation of the Subject Matter and/or the NCC.

#### 6.4.2 Arborist

Must be an experienced arborist as certified by the International Society of Arboriculture (ISA) and/or a registered Professional Forester with Tree Risk Assessment Qualification (TRAQ) credentials from the ISA. The Contractor must provide the arborist's resumé and proof of certification in the form of a copy of the International Society of Arboriculture (ISA) certificate, or a certificate number, that will be verified via the ISA website credential check located at: [www.treesaregood.org/findanarborist/verify](http://www.treesaregood.org/findanarborist/verify)

#### 6.4.3 Tree Maintenance Team

##### 6.4.3.1 Class A Tree Climber Arborist

Must be a certified arborist with a minimum of six (6) years' experience in climbing, pruning, rigging operations, large tree removals, installing cable and brace systems, fertilizing, and air spade. The Contractor must provide the arborist's proof of certification in the form of a copy of the International Society of Arboriculture (ISA) certificate, or a Class A ISA certificate accompanied by a detailed resumé.

##### 6.4.3.2 Class B Tree Climber Arborist

Must be a certified arborist with a minimum of three (3) years' experience in climbing, pruning, rigging operations, large tree removals, installing cable and brace systems, fertilizing, and air spade. The Contractor must provide the arborist's proof of certification in the form of a copy of the International Society of Arboriculture (ISA) certificate, or a Class A ISA certificate accompanied by a detailed resumé.

##### 6.4.3.3 Ground Worker

Must have a minimum of one (1) years' experience and have a valid chainsaw training certificate issued by a recognized organization.

### 6.5 MATERIALS

The Contractor shall provide at his/her own expense all labour, material and Equipment needed to perform the Work. These costs include, but are not limited to all vehicles, materials, consumables, Equipment, tools, labour as well as all subcontracting expenses required to perform the Work and fulfill the obligations of the Contract.

All materials shall respect the material standards and guidelines identified in Annex 'A-1' – *Maintenance Manual – Parliament Hill Slope Management*. The Contractor shall not use an alternate type or lower quality material on any given site, nor shall the Contractor mix the type or quality of materials on any site. Substitutions must be preapproved by the NCC.

### 6.6 WORK ENVIRONMENT

The Work is performed in a high-profile, unique urban environment using specialized equipment and the application of extensive health and safety measures. The Contractor shall ensure all its Employees possess the aptitudes/experience, PPE, tools and Equipment to allow them to perform the Work assigned to them in a safe and expeditious manner. The Contractor shall inform its Employees and



subcontractors about known or foreseeable risks inherent in the Work assigned to them and establish the necessary control measures. The Contractor must always ensure supervision, methods and training to ensure the occupational health and safety of its Employees.

### 6.6.1 Known Risks

As part of this Contract, the following is a list of activities representing known and/or foreseeable inherent risks associated with the Work.

- Using heavy machinery on rugged terrain (overturning, crushing, launching of projectiles, back injury, etc.);
- Using mechanized and manual cutting Equipment (chainsaws, pruning shears, knives, saws, etc.)
- Using a bucket truck during pruning Work (fall);
- Working at heights (falls, inspecting and using fall protection equipment, etc.);
- Using dangerous chemical products such as pesticides, herbicides, fungicides, solvents, paint, gas, oil, cleaning products, de-icing agents (eye and skin irritation, respiratory problems or long-term health effects);
- Operating machinery on or near recreational pathways;
- Moving machinery to and from work sites (collision with a vehicle, cyclist, pedestrian, etc.);
- Working with or near contaminated soil (health impacts);
- Working in difficult climatic conditions (sunstroke, dehydration, hypothermia, sunburn, chilblains, etc.);
- Working during storm events or other weather phenomenon (skidding, falling, being dragged, being struck by a falling object, etc.);
- Working with or in proximity to mechanical devices and/or motorized vehicles (injury, cuts, laceration, deafness, asphyxia due to inhaling harmful gases, etc.);
- Walking on rugged terrain (falls, dislocations, fractures, etc.);
- Insect or animal bites (injuries, allergic/immune reactions or to toxins, rabies, West Nile virus, encephalitis, etc.);
- Reaction to plant allergens and toxins (hay fever, poison ivy, mould, wild parsnip, etc.);
- Performing exhausting physical work (back injuries, cardio-vascular ailments, etc.).
- Working in a wildlife environment (deer, geese, coyotes, etc.)
- Working on or near water (drowning);
- Working in remote (isolated) locations.

## 6.7 OTHER REPORTING REQUIREMENTS

### 6.7.1 Insurance Certificate

Proof of insurance must be provided each March 15<sup>th</sup> during the Term of the Contract. At the same time, the Contractor shall submit proof of liability insurance.

### 6.7.2 WSIB Certificate

WSIB certificate is a document confirming that the Contractor is registered, and that his/her file is in order. Such certificates shall be delivered to the CMO every sixty (60) days in the case of Ontario (April 1st, June 1st, August 1st, October 1st, December 1st and February 1st of each Contract Year).



### 6.7.3 Health and Safety Plan

After being informed that his/her bid has been retained and prior to and as a condition of Contract award, the Contractor shall, at his/her own expense, submit to the NCC his/her health and safety plan. Plan must be submitted to the NCC before Contract signature. Any modifications to this plan must be presented to the NCC.

### 6.7.4 Environmental Reporting

#### 6.7.4.1 Fuel Consumption

The Contractor shall track monthly fuel consumption for fleet vehicles and other motorized Equipment, including gasoline, diesel, biodiesel, ethanol, propane and compressed natural gas. Contractors shall fill out and submit a fuel consumption report to the NCC at the end of each Year of the Term.

#### 6.7.4.2 Toxic Spill Response Plan

The Contractor will establish a response plan for toxic spills. This plan will be submitted to the NCC for approval within thirty days of Contract commencement.

## 7 LEGAL PROVISIONS

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### 7.1 LIMITATIONS ON CONTRACTING AUTHORITY

#### 7.1.1 Authority Linked to Approved Budgets

The Contractor shall not have, and shall not represent to any third party that it has, any authority to commit the NCC to any expenditure or to enter into any contract on behalf of the NCC unless:

- a) Such expenditure or contract is made pursuant to a payment schedule or a capital budget which has been approved by the NCC;
- b) The Contractor has obtained the prior approval of the NCC in writing to enter into the expenditure or contract; and
- c) The Contractor has complied with the other contractual requirements set out in this document; or
- d) Such work is required to be performed by reason of an emergency situation (which is a situation that if not remedied without delay, would result, in the reasonable opinion of the Contractor, in damage or further damage to any part or parts of the Subject Matter or to private property adjoining the Subject Matter) in which event the Contractor is hereby authorized to proceed with such work as is reasonably deemed by the Contractor to be necessary for the protection and preservation of such Subject Matter, provided however, that such expenditure may not extend beyond a period of twenty-four hours from the time of the occurrence unless otherwise approved by the NCC.

Notwithstanding the foregoing, the Contractor shall not have, and shall not represent that it has, the authority to pledge the credit of the NCC nor purport to create any security interest in any property of the NCC in favour of a third party.

### 7.1.2 Denial of Agency

Nothing contained in this Contract creates any relationship of agency, partnership, joint enterprise or any relationship other than a contractual one. In all respects the Contractor is acting in his own capacity, and all debts and liabilities to third persons incurred by the Contractor are and shall be exclusively for the account of the Contractor.

## 7.2 APPLICATION OF THE NATIONAL CAPITAL ACT

### 7.2.1 Federal Land Use & Other Approvals

Pursuant to subsections 12 (1), (3) and (4) of the Act, changes in the use of NCC Lands (or other federal lands), including alterations to the landscape or alterations to the interior of a building or other works the effect of which is to accommodate a change in use of such building or work, may not take place unless the NCC grants its approval to such changes prior to the commencement of the works effecting the change in use. The Contractor hereby covenants and agrees that no work or activity, including the submission of applications for development approvals, in respect of a change in the use of lands or structure owned by the NCC (or by another federal entity) may occur without the Contractor having first obtained Federal Land Use Approval pursuant to subsection 12 (1) of the Act therefore from the NCC. The Contractor acknowledges that nothing in this Contract limits the jurisdiction of the NCC in exercising its function as the land use planner for the National Capital Region as that term is defined in the Act. For greater clarity, the Contractor acknowledges that the NCC in its role as land use planner may deny approval for any proposal submitted in respect of any change in use of lands or buildings comprising part of the Subject Matter, and that the Contractor shall have no recourse nor any entitlement to damages or any other remedies pursuant to this Contract or otherwise in respect of such denial. The Contractor further covenants and agrees to:

- a) prepare and submit to the NCC requests for approval for any proposed change in use of any part or parts of the lands or structures comprising part of the Subject Matter, together with such supporting information, studies or other requirements that are usually and customarily imposed by the NCC in the context of such applications; and
- b) to refrain from and not to permit the commencement of any works to effect a change in land use for any part or parts of the lands or structures comprising part of the Subject Matter without first obtaining approval therefore from the NCC.

### 7.2.2 Design Approval

Pursuant to subsection 12 of the Act, prior to commencement of any construction, demolition or alteration project involving a federal entity and/or federal lands or structures located thereon, design approval shall first be obtained from the NCC. The Contractor hereby covenants and agrees that no work or activity, including submitting applications for development approvals, in respect of any such Construction, demolition or alteration projects may occur without the Contractor having first obtained design approval therefore from the NCC. The Contractor acknowledges that nothing in this Contract limits the jurisdiction of the NCC in granting or denying design approvals as contemplated herein. For greater clarity, the Contractor acknowledges that the NCC may deny design approval for any tender submitted in respect of any part of the Subject Matter, and that the Contractor shall have no recourse nor any entitlement to damages or any other remedies hereunder or otherwise in respect of such denial. The Contractor further covenants and agrees to:

- a) prepare and submit to the NCC requests for approval for any proposed Construction, demolition or alteration of lands or structures comprising part of the Subject Matter, together with such supporting information, studies or other requirements that are usually and customarily imposed by the NCC in the context of such applications;
- b) refrain from and not permit the commencement of any Construction, demolition or alteration works to affect any part or parts of the lands or structures comprising the Subject Matter without first obtaining approval therefore from the NCC; and
- c) include in agreements with proposed users of lands and structures involving a change in use of lands or structures, a term that receipt of NCC approval to the change in land use is a condition precedent to the creation of a binding agreement.

## 7.3 REPORTING REQUIREMENTS – NCC RECORDS

### 7.3.1 Ownership

The NCC retains ownership of all NCC Records during the Term. For the purpose of clauses 7.3.1 to 7.3.7 the term “Records” will have the same meaning as is ascribed to the term “Record” in section 1 of the *Access to Information Act*, R.S.C. 1985, c. A-1, as amended.

### 7.3.2 Control

Notwithstanding that the Contractor may be permitted to use and keep current the NCC Records relating to the Subject Matter, the NCC shall at all times have control over such files without regard to their location. The Contractor agrees that the NCC shall have unrestricted access to the NCC Records during the Term and thereafter and shall co-operate fully with the NCC in respect of the performance of any obligation imposed in respect of the NCC Records by the *Access to Information Act* (Canada), the *Privacy Act*, (Canada), or any other element of Applicable Laws.

### 7.3.3 Custody

During the Term, the Contractor shall have custody of those NCC Records routinely located in premises situated on land within the Subject Matter. During the Term, the NCC shall have custody of those NCC Records that are situated at 40 Elgin Street, Ottawa, Ontario, or at any other facility under the direct control of the NCC.

### 7.3.4 Access by Contractor

During the Term, subject to the *Access to Information Act*, and the *Privacy Act*, and provided that it is necessary to the performance of the Contractor’s obligations under this Contract, the NCC shall permit the Contractor to have access to and make copies of the NCC Records in the custody of the NCC.

### 7.3.5 Maintenance of NCC Records

The Contractor agrees, in respect of NCC Records in its custody, that throughout the Term it shall, at its sole cost and expense:

- a) take such measures as a prudent owner would to protect such NCC Records from damage, destruction, loss or theft, including but not limited to, making regular back-up copies of NCC Records kept in an electronic format;
- b) ensure that Employees who have access to said documents have the required profile and security clearance;

- c) segregate its own files from the NCC Records in the Contractor’s custody; and
- d) regularly update such NCC Records to ensure their accuracy and usefulness.

### 7.3.6 Confidentiality

The Contractor agrees to ensure the confidentiality of the NCC Records and information contained therein which are in the Contractor’s custody. The Contractor hereby agrees to indemnify and save the NCC harmless from any claim or loss of any kind whatsoever arising out of any breach of the obligation set out in 7.3.5.

### 7.3.7 Return of NCC Records on Termination

On the expiry of the Term or earlier termination of the Contract, the Contractor shall return the NCC Records, updates thereto, all original leases or agreements and all other documents created during the Term to the custody of the NCC.

### 7.3.8 Access to Information Act & Privacy Act Matters

For further particularity but without restricting the generality of the obligations contained in clauses 7.3.2 and 7.3.4 above, the Contractor acknowledges and agrees that it shall comply with the following provisions regarding NCC Records.

### 7.3.9 Restricted Use of Personal Information

The Contractor shall use any personal information provided by the NCC or otherwise coming into the possession of the Contractor only for the purpose of execution of its obligations under this Contract and shall only disclose such information to its Employees or agents, with the proper security clearance, on a need-to-know basis. In this clause and in clauses 7.3.10 to 7.3.15, “personal information” has the same meaning as that ascribed to it in the *Privacy Act*.

### 7.3.10 Security of Records

The Contractor shall keep in locked cabinets all documents, diskettes, compact disks, memory sticks, video display disks or any other medium of any kind containing personal information.

### 7.3.11 Disposal at End of Term

At the end of the Term, all documents and NCC Records containing personal information, including all back-up copies of NCC Records kept in an electronic format and all databases, shall be returned to the NCC for conservation and/or disposal.

### 7.3.12 Collection of Personal Information

If personal information is collected on behalf of the NCC during the Term, then the Contractor shall collect and wherever possible directly from the individual from whom it relates, only the minimum personal information that is required and inform the individuals from whom such information is being solicited of the uses of this information. The Contractor shall not make any other use of this information and shall also prohibit any other use of this personal information. The Contractor shall not collect social insurance numbers.

### 7.3.13 Access to Information

The Contractor shall provide access to personal information upon request from the NCC to ensure that the person to whom the information relates to can fulfill her/his rights of access and correction.

#### 7.3.14 Retention of Records

Personal information collected on behalf of the NCC, which has been used for an administrative purpose shall be retained by the Contractor for the Term or earlier termination of this Contract unless the NCC consents in writing to its earlier disposal.

#### 7.3.15 Audit Rights

The NCC and the Privacy Commissioner have the right to audit compliance with the provisions of this Contract relating to collection, control, use, retention and communication of records and personal information.

### 7.4 PROHIBITION ON ASSIGNMENT

#### 7.4.1 Outright Assignment Prohibited

The Contractor shall not assign any of its rights and benefits, or any of its duties or obligations hereunder or arising out of this Contract without the prior written consent of the NCC, which consent may be arbitrarily withheld. Every assignment or sub-contract, if any, shall incorporate all the Terms and Conditions of this Contract which can reasonably be applied thereto.

#### 7.4.2 Change in Control

For the purposes of this Contract, an amalgamation or transfer by operation of law or otherwise shall be deemed to be an assignment to which the provisions of this section (7.4) apply.

The NCC reserves the right to terminate this Contract if, in its sole discretion, it does not wish to consent to the assignment, transfer, amalgamation or change in control that is being proposed by the Contractor. In such a case, the Contract shall be terminated in accordance with clauses 6.4.15 and 6.4.16 of the Bid Solicitation.

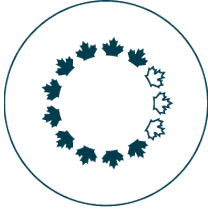
#### 7.4.3 Exceptions

Notwithstanding the provisions of clause 7.4.1, the Contractor may assign its interest in the amounts to be paid by the NCC to the Contractor hereunder as security for a borrowing related to the financing of the activities contemplated herein. The right to give such assignment as security is subject to the Contractor being in good standing hereunder at the time of such assignment as security.

#### 7.4.4 General Provisions

##### 7.4.4.1 Conflict between Provisions

In case of any discrepancy whatsoever between parts of this Contract, the part containing the more extensive obligations on the part of the Contractor shall prevail. In case of any ambiguity on the extensiveness of the obligations, the NCC shall solely establish which one prevails.



**NATIONAL CAPITAL COMMISSION**  
**COMMISSION DE LA CAPITALE NATIONALE**

***ANNEX "A-1" MAINTENANCE MANUAL***  
***PARLIAMENT HILL SLOPE MANAGEMENT***

# MAINTENANCE MANUAL

## PARLIAMMENT HILL SLOPE MANAGEMENT

July 2022 - Issued For Coordination

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# 1. Context

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# 1. Context

## 1.1 Introduction

This document presents the maintenance manual reforestation and stabilization project of the escarpment of The Parliament Hill that took place in 2021. The goal of this project was to address security issues regarding the stability of the escarpment, recreate cultural and natural landscapes, while using a conservation, landscape and ecological approach. The 2021 project builds on reforestation pilot project which targeted a portion of the east slope in 2015. The pilot project's approach has been successful in re-establishing a diverse plant community.

Work on the 2021 project included:

- Invasive species management
- Pruning of existing trees to ensure the safety of passersby
- Slope stabilization through various strategies:
  - The installation of an erosion control mat
  - The repair of previous stabilization of the slope with anchored wood logs
  - The installation of new anchored wood logs
  - The installation of wire mesh on rock faces
- Planting of thousands of plants by adding trees, shrubs, and perennials.
- Improvement of the soil by spreading of substrate on the entire slope inducing newly installed vegetation to take root and contribute to the stability of the slope

The reforestation and stabilization plan has been developed by a consultant team providing expertise in landscape architecture, heritage, biology, ecology, civil engineering, archeology, geotechnical engineering, forestry, health and safety, and arboriculture, with the support of PSPC and NCC.

Maintenance of the escarpment is crucial. The work performed in 2021 must be monitored and bonified for years to come to ensure the long-term success of the reforestation effort. As such, maintenance has been programmed over a 10-year period. The scope of this maintenance will be to verify the condition of the general vegetation of the escarpment, new plantings and stabilization efforts completed in 2021 and to bring corrections as outlined in this document. This will include continuing invasive plant control, assessing plant replacement and seeding needs, performing plant maintenance to ensure plant health, and correct stabilization work. A team of professionals, including landscape architects, arborists, structural engineers, and biologists will support the maintenance team to provide expertise and guidance.

This maintenance manual presents the context, the reforestation strategy and maintenance plan with needed specifications and drawings to support the maintenance team for years to come.

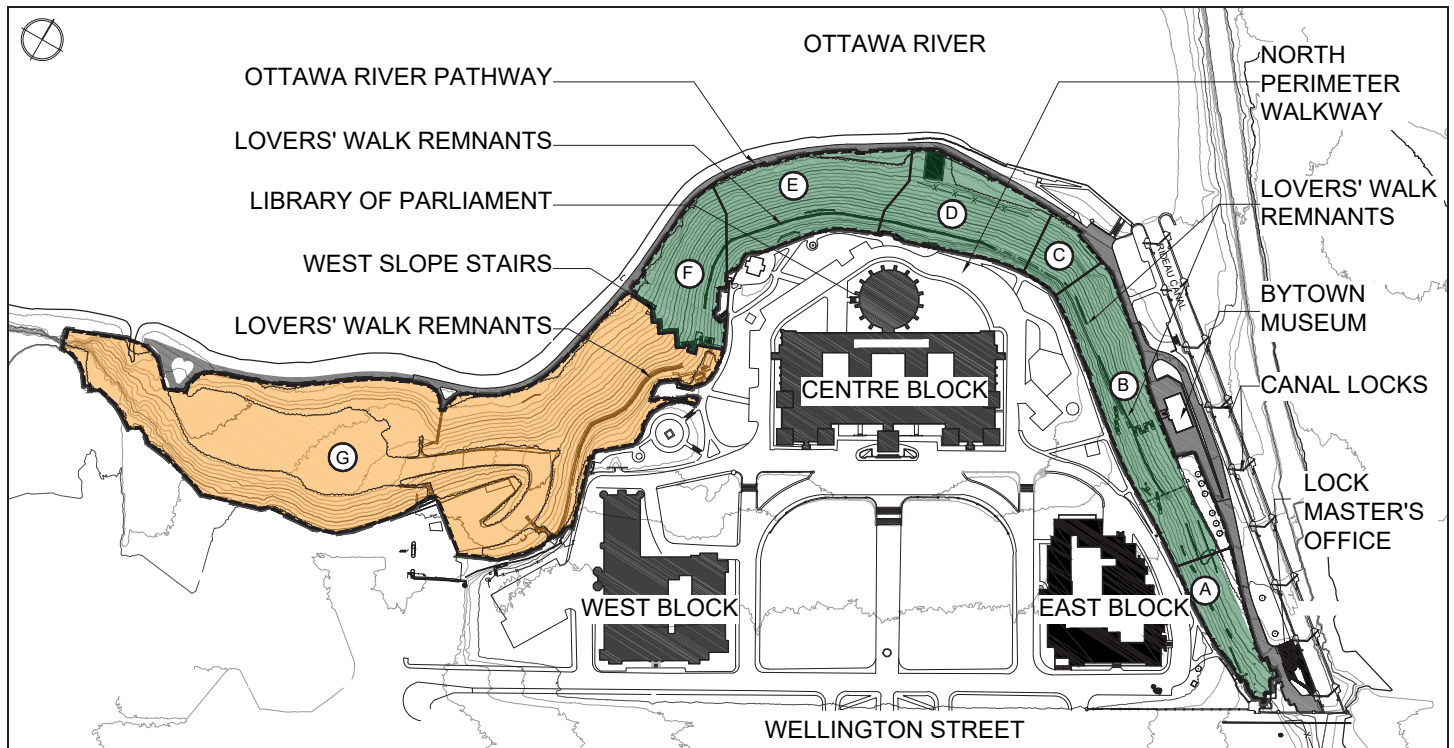
# 1. Context

## 1.2 Site

The North Slope project limits include the entirety of Parliament Hill's escarpment east of the West Slope Staircase. The area to the west is not part of the project as it will host future construction activities.

The site of the escarpment belongs to an overall landscape which groups the Ottawa River, its banks and its islands. For its ecological features, viewscape and archeological remnants, the landscape of Parliament Hill, including its wooded slopes, has been designated a National Historic Site of Canada by Parks Canada. It is designated "Classified" by the Federal Heritage Buildings Review Office (FHBRO), the highest level of designation in the country. The site is adjacent to the Rideau Canal, UNESCO World Heritage site.

The escarpment of Parliament Hill in Ottawa is a major heritage, highly visited attraction of the Canadian capital, under the jurisdiction of the City of Ottawa, NCC and PSPC. The protection of the shores of the Ottawa River is also under the jurisdiction of the Conservation Authorities of Ontario.



LEGEND:

- (A) COMPARTMENT
- RENOVATION OF LOVERS' WALK AND REFORESTATION AROUND THE PARLIAMENT HILL STAIRWAY - COMPARTMENT G
- ESCARPMENT SLOPE SURROUNDING CENTRE BLOCK AND EAST BLOCK - REMOVAL OF INVASIVE SPECIES, DEBRIS, AND REFORESTATION PLANTING WORK - COMPARTMENTS A TO F

Fig. 1 Site context

# 1. Context

## 1.3 Health and Safety

The existing remnants of Lovers' Walk, extending from the Bank Street Valley to the west side of the West Slope Staircase, have been evaluated as a health and safety concern. Stabilization work including the use of wire mesh draped over the remnants was performed to conserve this character-defining element of the Parliamentary escarpment. The monitoring of Lovers' Walk stabilization is not part of the maintenance described in this manual.

Further work to ensure public safety was performed by consolidating existing logs from previous stabilization efforts and loose rocks stabilized in place by wire mesh. In addition to these soil bioengineering and physical infrastructures, the choice of using vegetative means to control soil movement on the escarpment was decided to play a major role in the long-term stability of the slope. This approach, supported by FHBRO and the NCC, is the most cost-effective in the long-term as it requires less maintenance. Furthermore, it maintains the esthetic appeal and involves less disturbance to the site of the slopes. Similar slopes along the Ottawa river are stabilized by native vegetation alone.

# 1. Context

## 1.4 Heritage Value and Area of Archeological Sensitivity

Parliament Hill is designated as both a National Historic Site of Canada (NHSC) and a 'Classified' Federal Heritage Landscape. Recognized as a UNESCO World Heritage Site, the Rideau Canal NHSC is adjacent to the escarpment. The conservation approach for this project is governed by the Heritage Character Statements for the site and the 'Standards and Guidelines for the Conservation of Historic Places in Canada' (Second Edition). This implies that the strategies are guided by a minimum intervention approach and limited to that which is necessary to stabilize, maintain and/or enhance the integrity of the site, its historic fabric and character-defining elements.

The Standards and Guidelines for the Conservation of Historic Places in Canada is a tool to help users decide how to best conserve historic places. This tool is a Federal, Provincial and Territorial Collaboration. The following guidelines were followed to develop the reforestation strategy:

- Section 4.1.5 Visual relationships: These guidelines provide direction when visual relationships have been identified as a character-defining element of an historic place.
- Section 4.1.7 Ecological Features: These guidelines provide direction when an ecological feature has been identified as a character-defining element of an historic place.
- Section 4.1.8 Vegetation : Vegetation may have historical associations as well as functional and aesthetic qualities [...] These guidelines provide general recommendations for the conservation of vegetation in a cultural landscape.
- Section 4.2.1 Archeological sites: These guidelines provide direction for the conservation of archeological sites when formally recognized as an historic place, or part of an historic place.

The escarpment hosts several built elements involving protective measures. All of these elements require archeological monitoring. Any work done in these areas must be verified and monitored by the appropriate specialists.

**Brewery:** A brewery was constructed in the early nineteenth century at the foot of the road leading down to the Ottawa River from the north end of Bank Street, resulting in the area being called Brewery Bay. It is believed the brewery was constructed for the military on Barracks Hill.

**Steam Plant (North of the Library of Parliament) :** A steam plant was constructed at the base of the northern escarpment in 1867 to provide hot air to Parliament Hill. The steam plant underwent rehabilitation work in 2021.

**Lovers' Walk :** Located part way down the escarpment face, the construction of Lovers' Walk first began in 1868, with further improvements made in the 1870s.

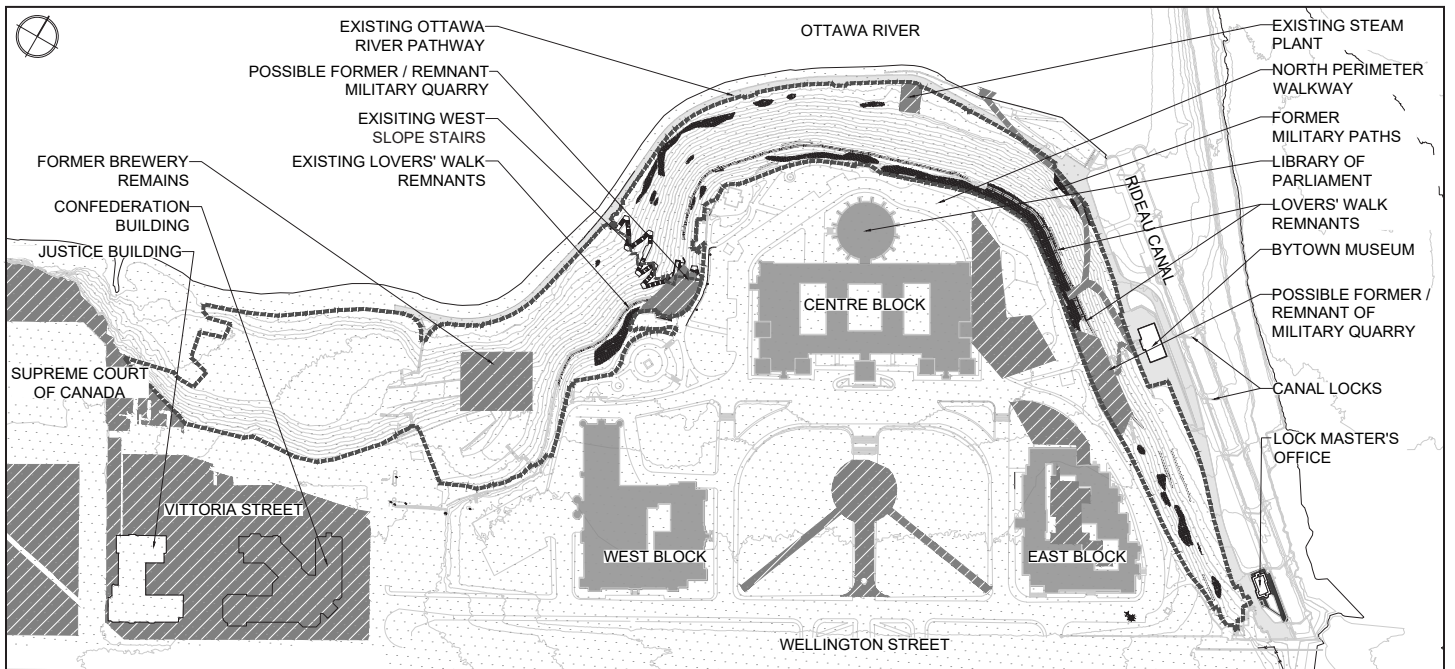
**Quarry :** During the military occupation of Barrack Hill, a limestone quarry was situated along the east escarpment, which included a slide from the top of the bank to the canal to transport the quarried blocks.

**Military Path:** From Barrack Hill to Locks several pathways ran down the east slope, connecting Barrack Hill to the locks during the Military Period.

From: Archaeological Overview of the North Slope of Parliament Hill (WSP)






# 1. Context



Archaeological Overview of the North Slope of Parliament Hill (WSP)

## LEGEND

-  ZONE WITH HIGH ARCHEOLOGICAL POTENTIAL - ARCHEOLOGICAL MONITORING REQUIRED
-  ARCHEOLOGICAL MONITORING REQUIRED IN THIS ZONE
-  WORK ZONE LIMIT

## NOTES

1. PARLIAMENT HILL AND THE RIDEAU CANAL ARE DESIGNATED AS A FEDERALLY CLASSIFIED NATIONAL HISTORIC SITE BY PARKS CANADA. THE RIDEAU CANAL IS REGISTERED AS A UNESCO WORLD HERITAGE SITE. THE REMAINS OF LOVERS' WALK ARE AN IMPORTANT BUILT ELEMENT TO BE PROTECTED. THE SITE HAS A HIGH ARCHEOLOGICAL POTENTIAL.
2. ALL ZONES WITHIN WORK AREAS INCLUDING THOSE IDENTIFIED AS HAVING HIGH ARCHEOLOGICAL POTENTIAL, REQUIRE ARCHEOLOGICAL MONITORING AS DESCRIBED IN SECTION 013595.

Fig. 2 Sites of Noted Heritage Value

# 1. Context

## 1.5 Vision - Conservation of the Picturesque Landscape

The Landscape Conservation Guidelines for Parliament Hill (2000) identified the rehabilitation of the vegetative cover of the escarpment slope as one of Parliament Hill's highest conservation priorities. This project proposes the rehabilitation of the picturesque landscape of the escarpment. The presence of invasive plants have resulted in the loss of stabilizing ground cover plants across the slope, most notably shaded areas due to Norway Maples, leading to slope instability in some areas and a loss of the lucius natural beauty that charatrised the escarpement for centuries. The remnants of Lovers' Walk also require stabilization.

*The word Picturesque, literally means "in the manner of a picture or fit to be made into a picture." It was a word used as early as 1703 and derived from French pittoresque and Italian term pittoreco, "in a manner of a painter" (Merriam Webster n.d.).*

*The Picturesque Movement was strongly influenced by the idea of designing landscape in the similar manner of artists creating paintings. The Picturesque Movement sought to bring landscape design closer to nature by restoring and preserving inherent visual qualities defined as irregularity, variety, and intricacy in form, colour, and texture and their effects of light and shadow (Wright 2011).*

*The visual qualities in the movement were influenced by the landscape painters of the 17th century, including Claude Laurin, Salvator Rosa, and Gaspar Poussin. The two images are examples of paintings that depict key elements of the picturesque style, in which beauty was implied through roughness in texture, ruggedness in delineation and the 'bold roughness' of nature.*

*In the late 18th century Picturesque Movement theories were published. These theorists defined Picturesque in a similar terms to Gilpin's earlier ideas, but believed that the Picturesque should be used as a basic principle in landscape gardening. They also noted that the role of the landscape designer was to enhance, and not alter, the accidental beauties of nature in all its roughness, irregularity, and variety.*

*Source: Bank street final report – vol.1*



Source: Artble 2017

Fig. 3 Claude Lorrain, Landscape with Ascanius Shooting the Stag of Sylvia, 1682.



Source: Artble 2017

Fig. 4 Salvator Rosa, Evening Landscape, 1640-1643



# 1. Context

## 1.6 Design Criteria

Design criteria were established to lead to the development of plans and specifications for the naturalization of the escarpment. Criteria have been developed for all elements deemed necessary to create a project that respects the heritage and allows for a restoration of the ecology of the site.

### 1.6.1 Habitat Creation and Conservation

The 2021 project built on the 2015 pilot project and was enhanced to include wildlife habitat. The management strategies are based on studies carried out previously, and which adhere to numerous heritage and environmental policies. The studies include research on plants (existing and invasive), wildlife, archeology, topography, erosion, and different interventions made on the site throughout the years.

Site visits and workshops with specialists from within the team allowed the consultants to verify and complement the information gathered. The 2020 and 2021 inventories provided updated knowledge of the site characteristics. This maintenance manual provides the specifications for the ten first-year implementation of the strategy. Leading continuous monitoring during maintenance effort will provide an environment conducive to the use of the site by local wildlife with the evolution of the reforestation.

A comparative study has been conducted with Rockcliffe Park West. The reference site shares certain ecological characteristics with the Parliament Hill North Slope, with closely related vegetation and topography. The Rockcliffe Park represents the state of the escarpment forest if it had never been damaged. The comparative study will provide restoration targets for restoring the Parliament Hill escarpment to its native state.

Based on the site characteristics of various components which represents a synthesis of studies, regulatory frameworks and a comparative study, the team proposes recommendations through a vision for the long-term ecological management of the escarpment with specific objectives and design criteria. These include vegetation management (existing, new, invasive), maintenance, creation and enhancement of wildlife habitats and soil erosion control, while taking health and safety issues as well as the heritage preservation into consideration.

### 1.6.2 Exotic and invasive Species Management

The escarpment vegetation was dominated by invasive species prior to the 2021 work. Due to the fragility of the slope to erosion, existing root systems are maintained in place as much as possible. Thus, invasive trees such as Norway maples and buckthorn is phased out while retaining their root systems. A progressive eradication of woody species has started in 2021.

### 1.6.3 Protection of Indigenous Species and Species at Risk

The escarpment is home to a few Butternut trees, they are a vulnerable and threatened species and must be protected.—see Annex V Ecological Surveys Regarding the Context of the Parliament Hill Slope Management Plan (BDC) and Annex VI Parliament Hill Slope & Management & Restoration Plan (WSP) for full reference. All plants introduced to the escarpment must be native.

### 1.6.4 Forest Succession and Slope Stabilization

Some Norway maples have been replaced by native species specific to the escarpment ecosystem. An annual assessment will determine the next cuttings and replacement. Hazardous trees have been cut and openings created to allow light to enter the newly planted trees. The maintenance strategy aims to continue the reforestation process over the next 10 years by renewing the canopy without affecting the stability of the slope.

### 1.6.5 Archeological features and Built Elements Protection

In order to protect the Archeological Elements present on the site, no work can be done within a 5-meter-wide protection band around the steam plant located at the bottom of compartment D. For any future works, no excavation may be made within 10 metres of the structures identified on the plan.

Refer to point 1.4 for a plan and descriptions of all archeological elements.

### 1.6.6 Valued Visual Relationships Protection

Beautiful views can be appreciated from the top of the escarpment towards the Ottawa River and the Rideau Canal. The pathway which along the base of the escarpment offers views up the hill, its vegetation and buildings. The height of the trees proposed on the top and the bottom of the slope must ensure the preservation of these views.

# 2. Vegetation Management Plan

## Contents

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## 2. Vegetation Management Plan

### 2.1 General Strategy

Given the scale of the site, almost 1000 meters in length, the general strategy for establishing interventions was to first divide it into compartments with similar characteristics. topography, soil type, exposed the rock face area and vegetation conditions. The analysis leading to the division of these areas has been defined with geological and vegetation surveys and analysis.

Each compartment was then further subdivided into three section of similar topographical conditions of: Top of slope, Middle of slope and bottom of slope.

Lastly, similar situations, requiring specific interventions were identified throughout the site.

The goals for the interventions were also divided into 3 levels: Maintain, Enhance and Create. These are described in the following section and include elements that were not constructed during the 2021 project, whose completion would benefit the escarpment in the future

#### **Maintain (maintaining and optimizing existing conditions)**

- Plant native trees
- Identify productive and control invasive species
- Keep existing logs
- Preserve bat habitats
- Keep tree stumps (for salamanders)
- Prune and conserve existing Lilac or replace with Sumac
- Remove ash trees
- Remove seedlings Norway Maple seedlings and saplings and keep a majority of mature trees
- Remove buckthorn
- Remove Japanese knotweed

#### **Enhance (enhance existing conditions)**

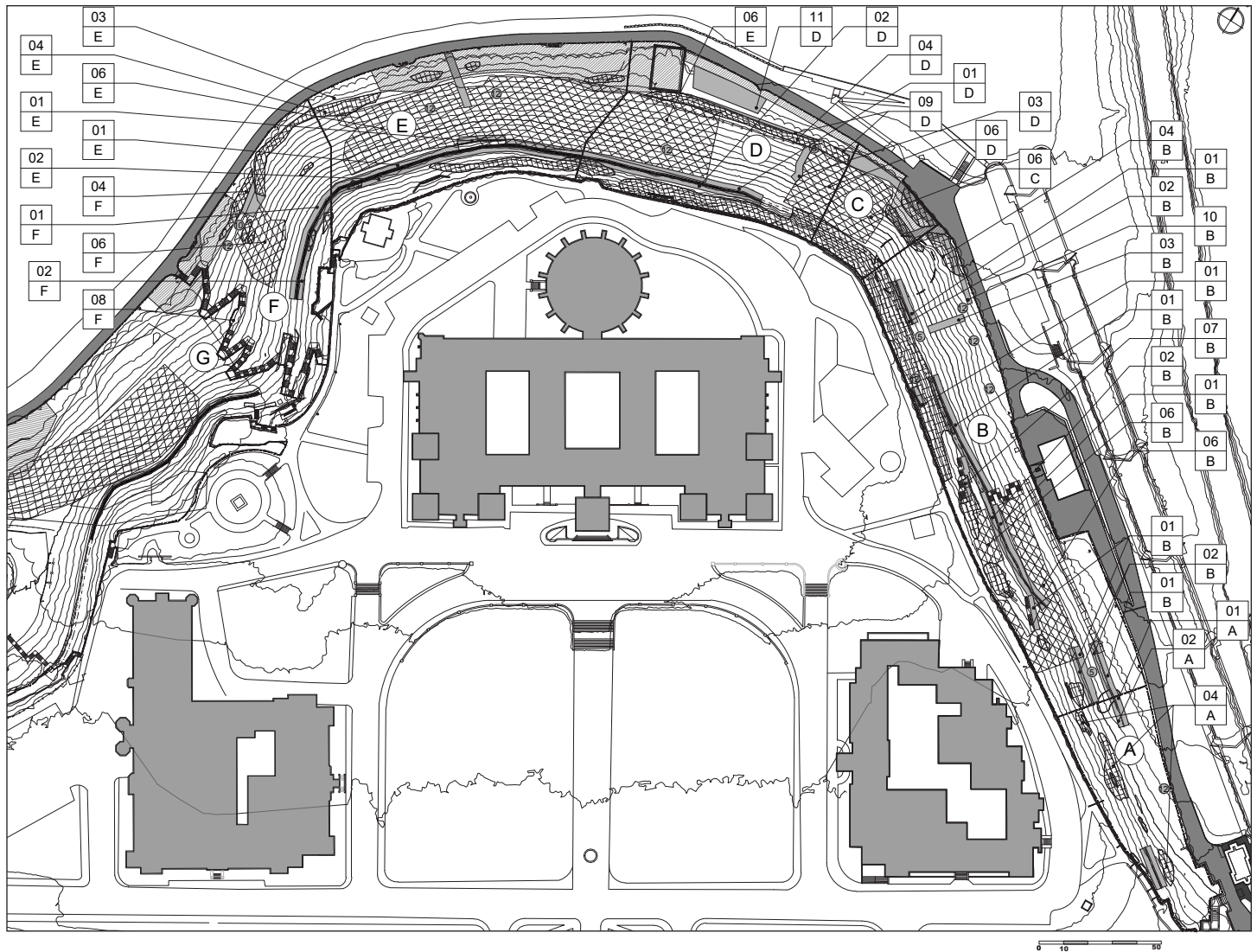
- Manage invasive species
- Plant food-producing trees and shrubs to feed the fauna
- Plant tall trees for birds to perch on
- Add natural structures to enhance habitats
- Add pollinators habitats
- Plant species for slope control
- Implement ecological grass maintenance
- Plant resistant Butternut species
- Plant pest-resistant plants
- Plant along the Lovers, Walk

#### **Create (interventions to create additional structures)**









- Create wetland
- Create a raptor nest platform
- Create a nursery
- Create a turtle habitat
- Create a pollinator meadow

## 2. Vegetation Management Plan

### 2.2 Compartment and Situation Plantation and Stabilization Measures



#### LEGEND:

	VEGETATION COMPARTMENT
	LOCALIZED SITUATION
	SITUATION ZONE
	SITUATION NUMBER SITUATION COMPARTMENT
	COMPARTMENT LIMIT
	VEGETATION COMPARTMENT BOUNDARY
	EXISTING EROSION CONTROL WITH LOGS
	AREA REMOVED FROM SCOPE FOLLOWING PWGSC SITE INSTRUCTION 006 - SEPTEMBER 28 2021

#### PLANTING SITUATIONS:

1. ZONE BELOW LOVERS' WALK
2. ZONE ABOVE LOVERS' WALK
3. GULLY EROSION
4. EXPOSED ROCK FACE
5. EXPOSED TREE ROOTS
6. EXISTING SLOPE STABILIZATION MEASURES WITH TREE LOGS
7. PREVIOUS RENOVATION OF LOVERS' WALK
8. PEDESTRIAN STAIRS
9. TALUS DEPOSITED BY EROSION
10. ROCK FALLING INTO TREE TRUNK DUE TO SOIL CREEP
11. CREATION OF A POLLINATOR MEADOW
12. GROUND WATER SEEP

#### NOTES:

1. THIS PLAN IDENTIFIES SITUATIONS WHICH MAY OCCUR AT OTHER LOCATIONS ON THE PARLIAMENT HILL ESCARPMENT. THIS PLAN IS TO BE USED TO IDENTIFY OTHER SITES WHERE ONE OF THE 12 SITUATIONS CAN BE FOUND.

Fig. 5 Compartement and situation plantation plan

## 2. Vegetation Management Plan

### 2.2 Compartment and Situation Plantation and Stabilization Measures

#### 2.2.1 Description of the Compartments

**Compartment A** is located along the eastern side of the escarpment, starting at the east slope stairs on Wellington Street. It is the compartment with the lowest slope steepness, consequently it has no erosion control methods using wood logs. This area was the site of a pilot project in 2015 and has younger plants resulting from this reforestation effort. The area is partly populated by younger plants and has a dense vegetation cover with heavily shaded areas throughout. The exception is the top of the slope, which is open to sunlight.

A large quantity of invasive plants was removed from the compartment, most of them situated on the top of slope and along the east slope stairs on Wellington Street (pea shrub, honeysuckle, and buckthorn). They will require cutbacks until they are completely eradicated.

Also, a large water seep in this compartment requires specific monitoring. Investigations regarding the origin of the water are ongoing.

**Compartment B** is located along the Rideau Canal between compartment A and the first lock. The area includes a large portion of Lovers' Walk and the remnants of an old, deteriorated staircase. A large section of the compartment has been stabilized with wood logs.

This portion was planted with Norway maples in the 1990s making them the dominant species of the compartment. As such, very little undergrowth was present before the reforestation project of 2021 due to the heavy shade caused by them.

As in compartment A, many invasive plants were removed, especially on the top of the slope. They require regular cutbacks until they are completely eradicated.

**Compartment C** is the smallest compartment in size and is located at the meeting point of the Rideau Canal and Ottawa river. The average slope is very steep, and the exposed bedrock occupies large sections of it. A portion of the compartment, beneath the rockface near the pedestrian path at the bottom and above the rockface was not planted due to a high security risk of rockfalls.

Most of the mature canopy is Manitoba and Norway Maple.

**Compartment D** is located behind the Center Block Building, east of the Library of Parliament. The compartment has a steep slope throughout, whilst the top of slope is comprised entirely of a rockface and a plateau near the pedestrian path. As such, a large portion of the compartment has erosion control with wood logs.

The canopy is dominated by Norway and Manitoba Maples. Many invasive shrubs such as honeysuckle and buckthorn were eliminated from this area and will require monitoring. Also, riverbank grape has been cut to ground and will require monitoring as well to ensure newly planted vegetation thrives.

A flowering meadow has been planted at the plateau between the bottom of the escarpment and the multiuse path. Remnants of a Steam plant have been solidified and need to be protected. No works can occur within a 5-meter radius of the site.

**Compartment E** is located behind the Center Block Building, west of the Library of Parliament. As in compartment D, the compartment is steep and wood logs installed for erosion control occupy most of the compartment.

The vegetation from this compartment is characterized by a large population of European buckthorn. The removal of which is staggered with the new plantings over a period of multiple years and will require monitoring. Extra care must be taken during this process as this invasive plays a significant role maintaining the soil in place.

**Compartment F** occupies the western portion of the escarpment extending to the west slope stairs. It is characterized by rocky outcrops, open conditions, and a diversified plant population around the staircase due to previous planting efforts.

As in compartment E, large swathes European buckthorn are present throughout and its eradication must be staggered with new plantings and monitored for excessive erosion. Various erosion control measures have been installed in previous years, comprising various erosion control mats, and should be kept intact.

**Compartment G** was to include vegetation management and seeding. This work was not carried out as major renovation work is planned for this area.



## 2. Vegetation Management Plan

### 2.2 Compartment and Situation Plantation and Stabilization measures

#### 2.2.2 Description of the Situations

Situations are specific elements that appear in different areas of the slope and share common interventions.

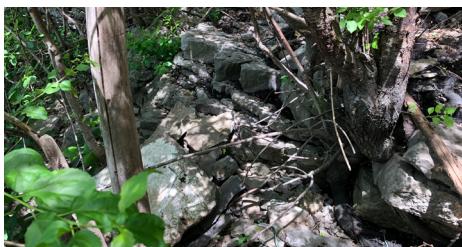
Situations include:

- Planting close to Lovers' walk (below and above)
- Treatment of gully erosion
- Plantings around the rock face
- Treatment of exposed tree roots
- Planting in areas of stabilization measures with tree logs
- Plantings around pedestrian stairs

- Treatment of talus created by erosion
- Treatment of rock falling due to soil creep
- Planting of a pollinator meadow
- Planting in ground water seep

Refer to the compartment and situation plan as well as the photos for full details. Specific interventions for the situations are in Chapter 6.

#### 2.2.3 Situation Photos



1 Situation 1: Zone Below Existing Wall

4 Situation 4: Exposed Rock Face

7 Situation 7: Previous Renovation of Lovers' walk

10 Situation 10: Rock Falling into Tree Trunk due to SoilCreep

2 Situation 2: Zone Above Existing Wall

5 Situation 5: Exposed Tree Roots

8 Situation 8: Pedestrian Stairs

11 Situation 11: Creation of a pollinator meadow

3 Situation 3: Gully Erosion

6 Situation 6: Existing Slope Retention Measures with logs

9 Situation 9: Talus Deposited by Erosion

12 Situation 12: Groundwater seep

Fig. 6 Situation photos



## 2. Vegetation Management Plan

### 2.3 High Level Maintenance Schedule

The goal of the maintenance schedule is to ensure the success of the revegetation of the escarpment. Maintenance will be spread over a period of 10 years. The following table explains the distribution of the tasks over time and their frequency, as well as the compartments involved.

Tasks refer to the appropriate specification sections. In those sections the scope of work required for maintenance, the materials and execution are detailed. Also, refer to drawings in annex. The tasks required for maintenance can be found in the following section of the document, except for tasks related to engineering work. A structural engineer shall be consulted to dictate the appropriate maintenance tasks for these works.

The maintenance strategy is established for a 10-year period. During the first 3 years more maintenance work and monitoring will be required to ensure the establishment period of the reforestation effort is successful. This frequency will subside with time. Therefore, the work is divided in years 1, 2, 3 and 4–10.

The maintenance table is divided in three sections:

- Professional services
- Stabilization work
- Reforestation management and other works.

#### 1. Professional Services

The professional services aim to verify the progression and state of the vegetation and stabilization interventions, keep an inventory of the flora and fauna, and review yearly tasks.

##### Landscape Architect Inspections

The role of the landscape architect is to follow the overall state of the project and its evolution

- One visit in the spring when the vegetation is visible to review overall state of the project, validate maintenance work required, and meet the maintenance team.
- One visit in the fall to review work done.
- Revision of the maintenance manual.
- Reports for each visit.

##### Arborist Inspections

The role of the arborist is to identify and eliminate dangerous trees for maintenance workers and site users, and to reduce quantity of invasive trees

- One visit in early spring to verify tree health and plan tree cuts (invasive, dangerous) and pruning.
- One visit after work completed by a professional tree feller.
- Reports for each visit.

##### Biologist Inventories

The role of the biologists is to keep an inventory of the vegetation in identified sample plots, of the overall revegetation project and the fauna present on the site.

- One visit for the inventory of the revegetation project in the spring when plants show fully. This inventory will be only for year one of maintenance to evaluate the overall state of the vegetation after initial planting.
- Two visits for the sample plots inventories in spring and at the end of summer.
- Verification of the invasive plants status.
- One visit to record the presence of fauna on the site.
- Report for the completed inventory.
- Updated records of the inventories.

##### Structural Engineer Inspections

The role of the structural is to verify the stability of the logs and the wire mesh. The specifications and drawings of these elements are not part of the manual. Safety supervision, rope access support and accompaniment during all visits will need to be coordinated with a safety expert.

#### 2. Stabilization Work

The stabilization work involves logs and wire mesh installations. They will need to be assessed and verified by a structural engineer.

#### 3. Reforestation Tasks

The reforestation-related tasks include arboricultural works, removal of invasive species, planting, plant care. They are described in the specifications and the plans and details in chapters 3, 4, 5 and 6.

## 2. Vegetation Management Plan

### 2.3 High Level Maintenance Schedule

Specs	Monthly task	Compartments						Quantities per year				# of visit					
		A	B	C	D	E	F	1	2	3	4-10+	May	June	July	Aug.	Sept.	Oct.
<b>1.00</b>	<b>Professional services</b>																
1.01	Landscape architect inspection - Evaluation of overall state, coordination meeting with maintenance team, revision and update of maintenance manual and needs	x	x	x	x	x	x	x	x	x	x	1					1
1.02	Arborist inspection - Verification of tree health, planning of tree cuts (invasive, dangerous and pruning)	x	x	x	x	x	x	x	x	x	x	1	1				
1.03	Biologist inventory of completed reforestation	x	x	x	x	x	x	x				1					
1.04	Biologist inventory of sample plots - Flora	x	x		x	x	x	x	x	x	x	1					1
1.05	Biologist inventory of Fauna by species	x	x	x	x	x	x	x	x	x	x		1				
1.06	Structural engineer inspection - Verify wire mesh and wood logs		x	x	x	x	x	x	x	x	x	1					
1.07	Safety supervision, rope access support during visits	x	x	x	x	x	x	x	x	x	x	5	2				2
<b>2.00</b>	<b>Stabilization work</b>																
2.01	313219.16 Replacement and repositioning of erosion control blanket (m2)	x	x	x	x	x	x	250	250	200		1					
2.02	329310 Live branches repairs (m2)		x		x		x	600				1					
2.03	Wood log stabilization, repositioning and replacement if necessary. Refer to structural engineer (l.m)		x	x	x	x	x	50	25	25	25	1					
<b>3.00</b>	<b>Reforestation management</b>																
3.01	311100 Removal of invasive species (herbaceous, tree and shrub seedlings and root suckers (except for buckthorn suckers)) (m <sup>2</sup> )	x	x	x	x	x	x	x	x	x	x	1					
3.02	311100 Removal of buckthorns (cut to ground) and application of Lalcide Chondro (m2)			x	x	x	x		1500		1500	1					
3.03	311100 Removal of tree and shrub seedlings within 2m up slope from Lovers' Walk. (m2)	x	x	x	x	x	x	900	900	900	900	1					
3.04	320293 Cutting and pruning of dangerous trees and strategic tree cuts (to lower amount of invasive trees) (units)	x	x	x	x	x	x	30	30	30	15						1
3.05	329219.13 Repair and reseed dead or bare seeded areas (bottom of slope) using a mechanical hand seeder (m2)				x			50	50	50	25	1					
3.06	329219.16 Repair and reseed dead or bare terraseeded areas with seedlings (mid and top of slope) (m2)	x	x	x	x	x	x	2000		1000		1					
3.07	329219.16 Application of natural fertilizer to terraseeded areas and plants in top and mid slope	x	x	x	x	x	x	x	x	x	x	1					
3.08	329223 Application of natural fertilizer to grass bottom of slope (NCC)	x	x					x	x	x	x	1					
3.09	329223 Grass cutting bottom of slope (NCC)	x	x					x	x	x	x	1	2	2	2	1	1
3.10	329310 Application of natural fertilizer to trees and shrubs in bottom of slope				x			x	x	x	x	1					
3.11	329310 Planting of trees in open areas following tree cuts (units)	x	x	x	x	x	x	150	150	150	75	1					
3.12	329310 Plant situation 3 in new gullys and swales (m2)	x	x	x	x	x	x	250	150	75		1					
3.13	329310 Plant newly formed talus deposited by erosion (m2)	x	x	x	x	x	x	100	100	100		1					
3.14	329310 Replacement of dead plants (1Gal pots) (units)	x	x	x	x	x	x	1000	500	250	200	1					
3.15	329310 Replacement of dead plants (Seedlings) (units)	x	x	x	x	x	x	5000	2500	1250	500	1					
3.16	329310 Reapplication of mulch (Ramial chipped wood) in base of slope (m2)				x			100		100		1					
3.17	329310 Weeding in base of slope plantings (m2)				x			100	100	100	100	1		1			
3.18	329310 Moisture monitoring and watering				x			x	x	x		1	2	2	2	1	
3.19	329310 Control of insects and fungal pathogens	x	x	x	x	x	x	x	x	x	x		1		1		
3.20	329310 Repellant application on trees and large shrubs (top and mid slope) (units)	x	x	x	x	x	x	8300	8300	8300	8300	1		1		1	1

Fig. 7 High level maintenance table



## 2. Vegetation Management Plan

### 2.4 Recommended Species

The following list of plants in Figure 9 suggests substitutions for the plants used during the reforestation project of 2021. Substitutions were established according to plant types, calibre and size by creating a "sub category". Plants may be substituted by another plant of the same category.

Pre-ordering plant material is recommended to ensure supply.

A pre-order should be made with a nursery specializing in native plants, capable of customized production.

The table in figure 8 represents the actual planting quantities that have resulted from the 2021 reforestation project.

The goal of maintenance is to replace plants to maintain about 85% of the table in figure 8.

	A		B		C		D		E		F	
	TREES	SHRUBS	TREES	SHRUBS	TREES	SHRUBS	TREES	SHRUBS	TREES	SHRUBS	TREES	SHRUBS
RATIO	59%	49%	122%	91%	163%	58%	86%	55%	74%	44%	243%	95%

Fig. 8 Planting ratios for 2021 reforestation project

A high mortality rate is expected in the first year.

Plants that have not performed well will have to be replaced.

The complete requirements for the nurseries listed in the substitutes might be necessary.

Refer to plant substitutes provided with the plant list in Figure 9.

Storage space and plant care will need to be provided if a large quantity is delivered at once.

## 2. Vegetation Management Plan

### 2.4 Recommended Species

This list is based on inventories and reforestation studies.

Deciduous trees										
Key	Latin name	Nom commun en français	Common name	Calibre	Type	Calibre	Type	Calibre	Type	Sub category
AR	Acer rubrum	Érable rouge	Red Maple	10 gal	pot	class 10	pot			A
AS	Acer saccharum	Érable à sucre	Sugar Maple	1m whip	pot	1 gal	pot	class 1	pot	B
BA	Betula allagheniensis	Bouleau jaune	Yellow Birch	1m whip	pot	1 gal	pot	class 1	pot	B
BP	Betula populifolia	Bouleau gris	Grey Birch	1m whip	pot	1 gal	pot	class 1	pot	C
CCA	Crataegus canadensis	Aubépine canadienne	Hawthorn	1m whip	pot	1 gal	pot	class 1	pot	C
CC	Carya cordiformis	Bitternut hickory	Bitternut Hickory	1m whip	pot	1 gal	pot	class 1	pot	B
OV	Ostrya virginiana	Ostryer de Virginie	Ironwood	1m whip	pot	1 gal	pot	class 1	pot	B
PD	Populus deltoides	Peuplier Deltoide	Eastern Cottonwood	10 gal	pot	class 10	pot			A
PSE	Prunus serotina	Prunier tardif	Black cherry	1m whip	pot	1 gal	pot	class 1	pot	C
QM	Quercus macrocarpa	Chêne à gros fruits	Bur Oak	1m whip	pot	1 gal	pot	class 1	pot	B
QM sub	Quercus alba	Chêne blanc	White Oak	1m whip	pot	1 gal	pot	class 1	pot	B
TA	Tilia americana	Tilleuil d'amérique	American Basswood	1m whip	pot	1 gal	pot	class 1	pot	B
SD	Sorbus decora	Sorbier des montagnes	Mountain Ash	1m whip	pot	1 gal	pot	class 1	pot	C

Coniferous trees										
Key	Latin name	Nom commun en français	Common name	Calibre	Type	Calibre	Type	Calibre	Type	Sub category
Jc	Juniperus virginiana	Genévrier commun	Eastern Red Cedar	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	C
PA	Picea alba	Épinette blanche	White Spruce	500mm whip	pot	1 gal	pot	class 1	pot	D
PS	Pinus strobus	Pin blanc	White Pine	500mm whip	pot	1 gal	pot	class 1	pot	E
TC	Taxus canadensis	If du Canada	Canadian Yew	500mm whip	pot	1 gal	pot	class 1	pot	E
TO	Thuja occidentalis	Thuja occidental	Eastern White Cedar	500mm whip	pot	1 gal	pot	class 1	pot	E
TO sub	Tsuga canadensis	Pruche	Eastern Hemlock	500mm whip	pot	1 gal	pot	class 1	pot	I

Large shrubs										
Key	Latin name	Nom commun en français	Common name	Calibre	Type	Calibre	Type	Calibre	Type	Sub category
Ac	Amelanchier canadensis	Amélanchier du Canada	Serviceberry	1m whip	pot	1 gal	whip	class 1	pot	F
Ac sub	Amelanchier laevis	Amélanchier glabre	Smooth serviceberry	1m whip	pot	1 gal	whip	class 1	pot	F
Ca	Cornus alternifolia	Cornouiller à feuilles alternes	Pagoda dogwood	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	F
Pv	Prunus virginiana	Prunier de virginie	Choke Cherry	1m whip	pot	1 gal	whip	class 1	pot	F
Pv sub	Prunus pensylvanica	Cerisier de Pennsylvanie	Pin cherry	1m whip	pot	1 gal	whip	class 1	pot	F
Rt	Rhus typhina	Vinaigrier	Sumac	1m whip	pot	1 gal	whip	class 1	pot	F
St	Staphylea trifolia	Staphylier à trois folioles	Bladdernut	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	G
St sub	Dirca palustris	Dirca des marais	Leatherwood	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	G

Small shrubs and vines										
Key	Latin name	Nom commun en français	Common name	Calibre	Type	Calibre	Type	Calibre	Type	Sub category
Au	Arctostaphylos uva-ursi	Raisin d'ours	Bear berry	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	H
Cr	Cornus racemosa	Cornouiller à grappe	Grey dogwood	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	I
Cs	Cornus sericea stolonifera	Cornouiller stolonifère	Redosier dogwood	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	I
Cs2	Cornus sericea stolonifera	Cornouiller stolonifère	Redosier dogwood	2 gal	pot	class 2	pot			J
Cp	Comptonia peregrina	Comptonie voyageuse	Sweet fern	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	H
Cv	Clematis virginiana	Clématite de Virginie	Virgin's Bower	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	K
DI	Diervilla lonicera	Diervillée chevrefeuille	Northern bush honeysuckle	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	L
Po	Physocarpus opulifolius	Ninebark	Physocarpe à feuille d'obier	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	I
Ra	Rhus aromatica	Sumac aromatique	Fragrant sumac	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	L
Rb	Rosa blanda	Rosier inerme	Purple Flowering Raspberry	2 gal	pot	class 2	pot			M
Ro	Rubus odoratus	Ronce odorante	Purple Flowering Raspberry	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	I
Ro sub	Lonicera canadensis	Chèvrefeuille du Canada	Canada fly-honeysuckle	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	I
Sc	Sambucus canadensis	Common elderberry	White Elderberry	2 gal	pot	class 2	pot			G
Sp	Sambucus pubens	Common elderberry	Red Elderberry	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	I
Sa	Symphoricarpos albus	Symphorine blanche	Snowberry	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	L
SI	Spiraea latifolia	Spirée à larges feuilles	Meadowsweet	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	M

Fig. 9 Recommended species list

## 2. Vegetation Management Plan

### 2.4 Recommended Species

Ground Cover										
Key	Latin name	Nom commun en français	Common name	Calibre	Type	Calibre	Type	Calibre	Type	Sub category
ac	<i>Aquilegia canadensis</i>	Ancolie du Canada	Canadian columbine	A 45/110ml	plug	SP1	plug			N
am	<i>Anaphalis margaritacea</i>	Immortelle	Perly everlasting	A 45/110ml	plug	SP1	plug			O
at	<i>Asclepias tuberosa</i>	Asclépiade tubéreuse	Butterfly milkweed	A 45/110ml	plug	SP1	plug			O
ca	<i>Carex aurea</i>	Carex doré	Golden Fruit Sedge	A 45/110ml	plug	SP1	plug			P
ci	<i>Carex intumescens</i>	Carex gonflé	Bladder Sedge	A 45/110ml	plug	SP1	plug			Q
cg	<i>Campanula gieseck</i>	Campanule de gieseck	Giesecke's bellflower	A 45/110ml	plug	SP1	plug			N
cgl	<i>Chelone glabra</i>	Chelone glabre	White turtlehead	A 45/110ml	plug	SP1	plug			Q
dm	<i>Dryopteris marginalis</i>	Dryoptère marginale	Marginal Wood Fern	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	R
dm sub	<i>Dryopteris spinulosa</i>	Dryoptéride spinuleuse	Wood fern	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	R
gc	<i>Glycera canadensis</i>	Omonde cannelle	Cinnamon fern	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	Q
pv	<i>Pycnanthemum virginianum</i>	Menthe des montagnes	Common Mountain Mint	A 45/110ml	plug	SP1	plug			O
mc	<i>Mentha canadensis</i>	Menthe du canada	Canadian mint	A 45/110ml	plug	SP1	plug			Q
mf	<i>Monarda fistulosa</i>	Monarde fistileuse	Wild bergamot	A 45/110ml	plug	SP1	plug			O
oc	<i>Osmunda cinnaminea</i>	Onoclée sensible	Sensitive fern	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	Q
os	<i>Onoclea sensibilis</i>	Onoclée sensible	Sensitive fern	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	P
pa	<i>Polystichum acrostichoides</i>	Polystic faux-acrostic	Christmas Fern	A 15/320ml	plug	3" / 75mm	plug	10cm / 4"	pot	R
sc	<i>Symphiotrichum cordifolium</i>	Aster à feuilles cordées	Heartleaf aster	A 45/110ml	plug	SP1	plug			O
ss	<i>Schizachyrium scoparium</i>	Barbon à balai	Little blue stem	1 lt	pot	SP4	pot			O

## 2. Vegetation Management Plan

### 2.5 Invasive Species Removal and Management

Invasive plant management is an essential part of the reforestation project. A major eradication effort was performed throughout the escarpment in 2021. Maintenance work includes for invasive plants includes, without being limited to:

- Managing regrowth of plants that have been cut low to the ground such as honeysuckle and the Siberian pea shrub
- Pulling up perennials such as garlic mustard, lesser periwinkle and swallowwort
- Phasing out Buckthorn through the application of a fungus-based herbicide
- Japanese knotweed removal and monitoring.
- Updating invasives species list to be monitored on the slope according to the most recent lists from governmental authorities.
- Adjust removal methods according to most recent best practices as needed.

In addition to all specifications of section 311100—Clearing and Grubbing, and all provided specifications issued for tender, the following instructions are to be applied. The following plan locates the areas of plants to remove in the context of this contract. Other plants can be found on the site and should be removed as well.

#### Japanese Knotweed (*Reynoutria japonica*)

1. Pull out any new growth from the eradicated area.
2. For any new zones:
3. Cut plants at the ground level;
4. Remove all surfaces indicated on the plan and any other areas found on the site;
5. Cover the area with a geo-membrane adding 1 metre width of the surface around the removed plant areas ;
6. Use Texel Geo-9 for the membrane or approved equivalent;
7. Add soil and seeding over the membrane and two layers of soil stabilization blanket;
8. Cut X shaped openings in the stabilization blanket and the membrane;
9. Plant *Rhus Typhina*, 1 gal. format, each meter alternately.

Guide for species identification (Ontario Invasive Plants Council):

[https://www.ontarioinvasiveplants.ca/wp-content/uploads/2020/10/JapaneseKnotweed\\_BMP.pdf](https://www.ontarioinvasiveplants.ca/wp-content/uploads/2020/10/JapaneseKnotweed_BMP.pdf)

#### Lesser Periwinkle (*Vinca minor*)

Remove any new growth from the eradicated area shown on the plan or any other area identified on the site.

Guide for species identification (Conservation Halton): <https://www.conservationhalton.ca/wp-content/uploads/2022/05/factsheetperwinkle.pdf>

#### Glossy Buckthorn (*Frangula alnus*)

1. Cut plants 20 cm above ground level ;
2. Cut all isolated shrubs;
3. Cut colonies of shrubs following instructions on plans (1,2 m strips, in every 3 metres);
4. Apply the fungus product following the supplier recommendations (see attached data sheet) (<https://bioforest.ca/en/canada/product-details/lalicide-chondro/>), product delivery possible from the end of May;
5. Applications can be made from the end of May to the end of July;
6. Apply substrate and seeding where possible in uncut buckthorn surfaces.
7. Apply substrate and seeding on all strips of cut buckthorn.
8. Install erosion control blankets on the 1.2 metre strips and everywhere possible as required on plans;

Buckthorn stems must exceed erosion control blankets and substrate by 10 cm when cut. Make x-shaped openings in blanket where stems are present.

Guide for species identification (Ontario Invasive Plants Council): [https://www.ontarioinvasiveplants.ca/wp-content/uploads/2020/10/Buckthorn\\_BMP.pdf](https://www.ontarioinvasiveplants.ca/wp-content/uploads/2020/10/Buckthorn_BMP.pdf)

#### Siberian Pea shrub (*Caragana arborescens*) and Honeysuckle spec. (*Lonicera spec.*)

Recut to ground level any new growth or specimens identified at the site

Species identification (Ontario Invasive Plants Council): [https://www.ontarioinvasiveplants.ca/wp-content/uploads/2020/10/InvasiveHoneysuckle\\_BMP.pdf](https://www.ontarioinvasiveplants.ca/wp-content/uploads/2020/10/InvasiveHoneysuckle_BMP.pdf)

## 2. Vegetation Management Plan

### 2.5 Invasive Species Removal and Management

#### **European Swallowwort (Dog Strangling Vine) (*Vincetoxicum rossicum*)**

Remove any new growth from the eradicated area shown on the plan or any other area identified on the site. Keep zone identified with a stake.

Species identification (Ontario Invasive Plants Council): [https://www.ontarioinvasiveplants.ca/wp-content/uploads/2020/10/DSV\\_BMP.pdf](https://www.ontarioinvasiveplants.ca/wp-content/uploads/2020/10/DSV_BMP.pdf)

#### **North American vine (*Parthenocissus quinifolia*)**

Cut the vines at the ground level;  
Microsite A: 5m x 15m patch of dense *Parthenocissus quinifolia* at the base of the slope.

#### **Poison Ivy (*Toxicodendron radicans*)**

1. Remove any new growth from the eradicated area shown on the plan or any other area identified on the site. Use protective gear;
2. Remove all the areas located on the plan, or any other identified on the site;

Sources (OMAFRO): <http://www.omafra.gov.on.ca/english/crops/facts/99-015.htm>  
Health Canada : <https://www.canada.ca/en/health-canada/services/home-garden-safety/poison-ivy.html>

#### **Garlic Mustard (*Alliaria petiolata*)**

Remove any new growth from the eradicated area shown on the plan or any other area identified on the site. Keep zone identified with a stake.

Species identification (Ontario Invasive Plants Council): [http://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/OIPC\\_BMP\\_GarlicMustard.pdf](http://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/OIPC_BMP_GarlicMustard.pdf)

#### **Norway maple (*Acer Platanoides*)**

1. Remove all the seedlings found in the areas indicated the map;
2. Pull-out small individuals cut larger seedlings at the ground level to avoid affecting soil stability;

#### **Disposal**

Dispose of all invasive plants in facilities approved by applicable laws and regulations.

Other references:

Quick reference guide to Invasive Plants (Nottawasaga Valley Conservation Authority)  
[http://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/QRG\\_FINAL.pdf](http://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/QRG_FINAL.pdf)

## 2. Vegetation Management Plan

### 2.5 Invasive Species Removal and Management

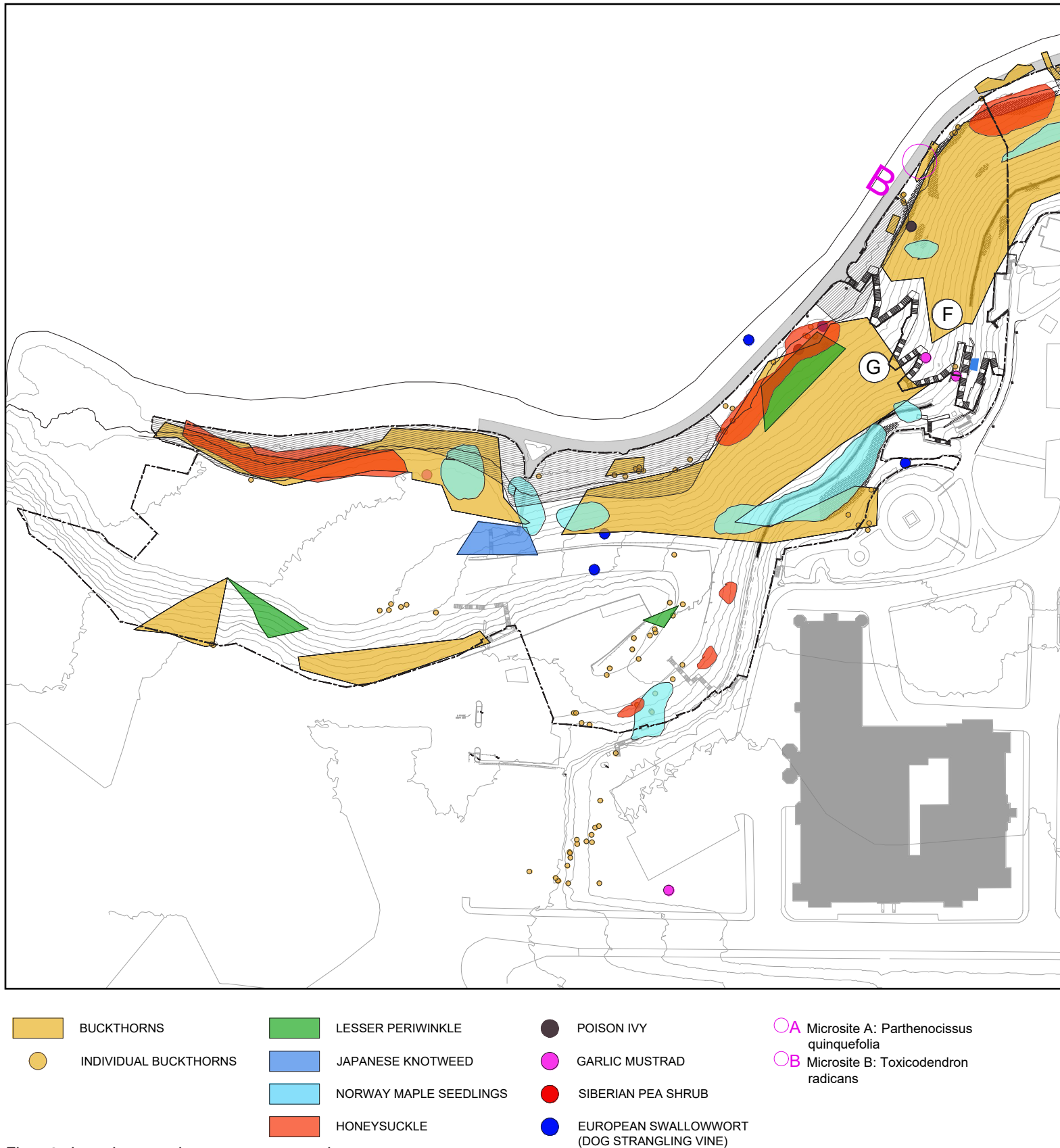


Fig. 10 Invasive species management plan





**NOTES:**

1. For microsites, see Annex 1 "*Hazard Tree Inventory and Vegetation (NFU)*", 1.4 Description of microsites
2. For invasive species, see Annex 2 "*Ecological Surveys Regarding the context of the Parliament Hill Slope Management Plan- (Bio-Conseil)*", 2.1 Invasive Species Location

## 2. Vegetation Management Plan

### 2.6 Monitoring

Efficient monitoring provides information to validate the effectiveness of interventions in all aspects of the project.

The inventories will make it possible to draw lessons from the interventions carried out and to carry out the necessary correction. They are key to guarantee the success of this project. In certain compartments and situations, spot monitoring of plant evolution should be made in parcels of selected areas.

All inventories must be provided in written reports and be made available to all maintenance and management crews.

#### **Arboriculture monitoring will include:**

- Dangerous trees for maintenance workers and site users to be cut
- Pruning needs

#### **Biologist monitoring will include:**

##### **Flora:**

- Tree regeneration: coverage per tree species, crown coverage and height;
- Shrub and herbaceous coverage and species, including seeding;
- Invasive species presence;
- Soil depth and humus content.

##### **Fauna:**

- Birds;
- Herpetofauna;
- Bats;
- Any other fauna present.

#### **Structural engineering monitoring:**

- Verification of the stability and effectiveness of all interventions

**All monitoring should also include any other relevant information.**

### 2.7 Qualifications

#### **Arborist**

The project requires a contractor qualified as arborist, a member of a professional arboriculture association affiliated to the Society of Arboriculture: ISA Ontario (International Society of Arboriculture of Ontario) or SIAQ (Société internationale d'arboriculture Québec) or at least one staff member to be an ISA certified arboriculturist.

#### **Silvicultural Contractor**

The project requires a can experienced crew to plant and maintain plantings in a knowledgeable and safe manner. A minimum of five years of practical experience in naturalization projects and in depth knowledge of taxonomy and plant identification, including invasive plants.

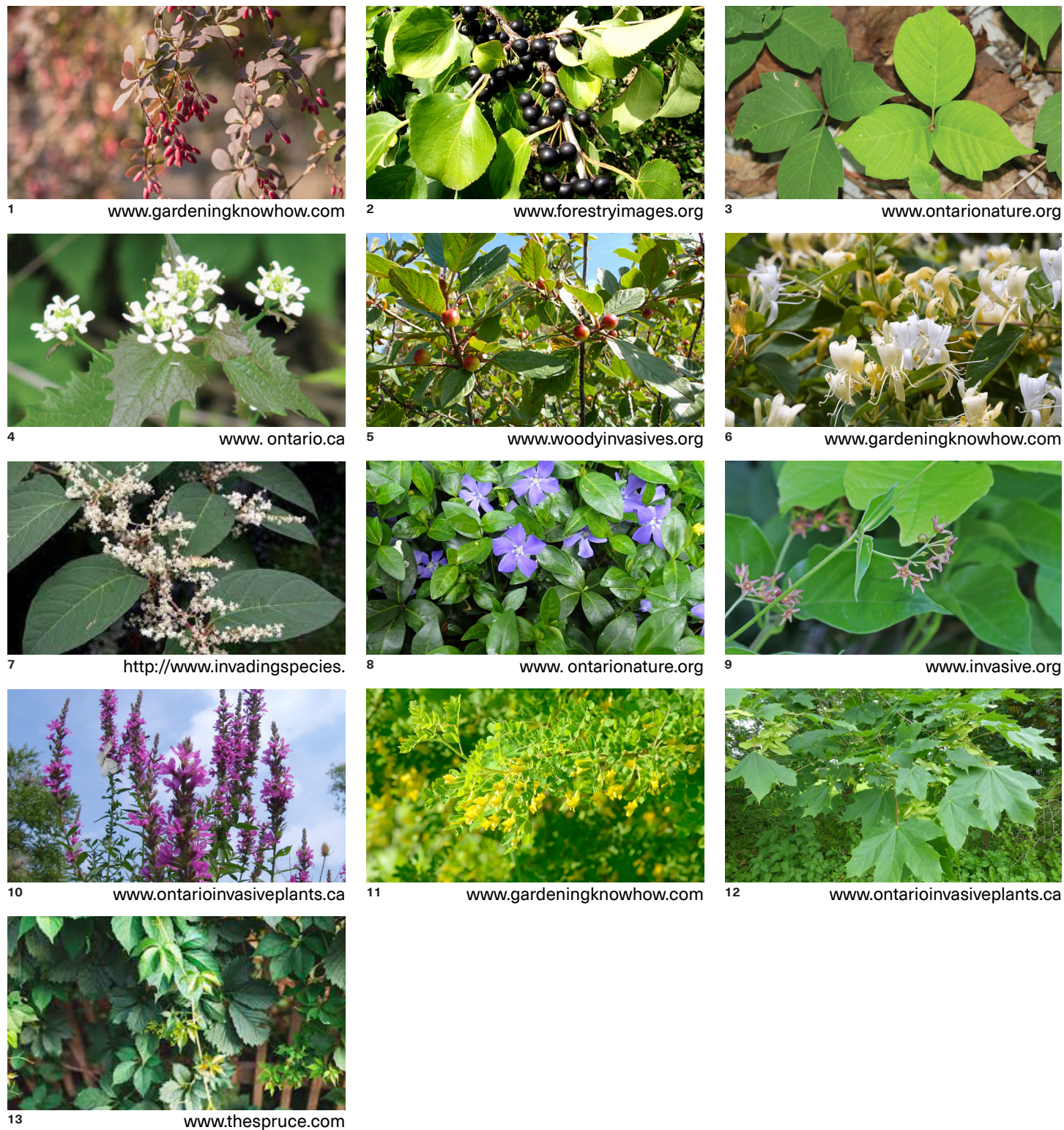
#### **Native Plant Supplier**

The supplier must be located within 400km of the city of Ottawa and have a sufficient stock capacity to meet demands. They will have a specialization in native plants as well as bare roots and plugs plant productions. They will need to be able to provide care and maintenance during stock storage. The plant hardiness zone of the production area must be the same as Ottawa or colder.



## 2. Vegetation Management Plan

### 2.8 Invasive Species Removal and Management



- |  |  |  |
|--|--|--|
| 1 Common Barberry ( <i>Berberis vulgaris</i> )             | 2 European Buckthorn ( <i>Rhamnus cathartica</i> )   | 3 Poison-Ivy ( <i>Toxicodendron radicans</i> )         |
| 4 Garlic Mustard ( <i>Alliaria petiolata</i> )             | 5 Glossy Buckthorn ( <i>Frangula alnus</i> )         | 6 Honeysuckle spec ( <i>Lonicera periclymenum</i> .)   |
| 7 Japanese Knotweed ( <i>Reynoutria japonica</i> )         | 8 Periwinkle ( <i>Vinca minor</i> )                  | 9 European swallowwort ( <i>Vincetoxicum roscium</i> ) |
| 10 Purple loosestrife ( <i>Lythrum salicaria</i> )         | 11 Siberian peashrub ( <i>Caragana arborescens</i> ) | 12 Norway Maple ( <i>Acer platanoides</i> )            |
| 13 Virginia Creeper ( <i>Parthenocissus quinquefolia</i> ) |  |  |

Fig. 11 Invasive species photos

# 3. Standard construction specifications for maintenance

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# 3. Standard construction specifications for maintenance

## SECTION 311100 CLEARING AND GRUBBING

### **Part 1        General**

#### **1.1        SCOPE OF WORK**

- .1        Removal of invasive species (herbaceous, tree and shrub seedlings and root suckers, except for buckthorn suckers).
- .2        Removal of buckthorns (cut to ground) and application of Lalcide chondro.

#### **1.2        SUBMITTALS**

- .1        The contractor must submit the following documents prior to beginning the work:
  - 1.        Site-specific Health and Safety Plan (HSP), within seven (7) days after the date of notice to Proceed and before mobilization to Site, in accordance with Section 01 35 29.06 - Health and Safety Requirements (see Tender documents in annex). Submit HSP for review and approval by Departmental Representative.
  - 2.        List of equipment that is going to be on-site, with description, and provide manufacturer's installation instructions for review by Departmental Representative.
  - 3.        Submit manufacturer's instructions, printed product literature and data sheets for lalcide chondro herbicide and geotextile at least four (4) weeks prior to beginning work.
  - 4.        Submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
  - 5.        Ensure workers are wearing gloves and safety boots while performing clearing and grubbing activities.

#### **1.3        QUALITY STANDARDS**

- .1        Regulatory Requirements:
  - 1.        Ensure Work is performed in compliance with CEPA, CEAA, TDGA, and applicable Provincial and Municipal regulations.
  - 2.        Comply with hauling and disposal regulations of authority having jurisdiction.
- .2        Qualifications:
  - 1.        Provide proof of qualifications when requested by Departmental Representative.
  - 2.        Qualification Statement: Contractor has documented proof that they have completed work of similar scope.
- .3        Special attention must be paid to the quality of work. The Departmental Representative's construction supervision does not release the Contractor from their responsibilities to carry out the full execution of the required works.

#### **1.4        HEALTH AND SAFETY**

- .1        Perform clearing and grubbing work in accordance with the Site-specific HSP recommendations as directed by Departmental Representative.
- .2        Safety Requirements: worker protection.
  - .1        Ensure workers are wearing gloves and safety boots while performing clearing and grubbing activities.

# 3. Standard construction specifications for maintenance

## SECTION 311100 CLEARING AND GRUBBING

### 1.5 ENVIRONMENTAL REQUIREMENTS

- .1 Perform clearing and grubbing work in accordance with the Site-specific EPP recommendations as directed by Departmental Representative.
- .2 Clean up spills of preservative materials immediately with absorbent material and safely discard to landfill.
- .3 Do not dispose of unused preservative materials into the sewer system, into streams, lakes, onto ground or in other locations where they will pose health or environmental hazards.
- .4 Ensure safe use and disposal of wood preservatives comply with all Federal, Provincial/Territorial and Municipal regulations, particularly the Canadian Environmental Assessment Act (CEAA), the Canadian Environmental Protection Act, and the Pest Control Products Act.
  - 1. For information and procedures on pest control products, call the Pest Management Information Service at 1-800-267-6315. Ensure that the use and disposal of wood preservatives comply with all departmental regulations, particularly the Environmental Assessment Review Process.

### Part 2 Products

#### 2.1 MATERIALS

- .1 Biological herbicide - Lalcide chondro
- .2 Geotextile: Geo 9 type from Texel or approved equivalent

### Part 3 Equipment and Labour

#### 3.1 MACHINERY, EQUIPMENT AND TOOLS

- .1 The Contractor must have all machinery, equipment, tools and labour necessary for the implementation of clearing and grubbing work.

#### 3.2 WORKFORCE

- .1 For pruning, guying and removal work, Contractor must provide following equipment and machinery:
  - 1. The Contractor must provide trucks and all necessary tooling, material, labour and monitoring necessary to complete the work described in the drawings.
- .2 The workforce provided by Contractor must consist of 2 to 3 employees, including 1 for driving the truck:
  - 1. A tree trimmer who is skilled with "cable" work.
  - 2. A worker to work on the ground.



# 3. Standard construction specifications for maintenance

## SECTION 311100 CLEARING AND GRUBBING

### Part 4 Execution

#### 4.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrate previously installed under other Sections or Contracts are acceptable for mechanical seeding installation in accordance with the manufacturer's written instructions.

1. Visually inspect substrate in presence of Departmental Representative.
2. Inform Departmental Representative of unacceptable conditions immediately upon discovery.

#### 4.2 Proceed with installation only after unacceptable conditions have been remedied SPECIFICATION FOR INVASIVE PLANTS REMOVAL

.1 In addition of the Section 2.5 Invasive Species Removal and Management of the Maintenance Manual, refer to the complete list of invasive plants below for the clearing and grubbing work:

1. Common barbery (*Berberis vulgaris*)
2. Dog-struggling wine (*Vincetoxicum rossicum*)
3. European buckthorn (*Rhamnus Cathartica*)
4. European swallowwort (*Vincetoxicum roicum*)
5. Garlic mustard (*Alliaria petiolate*)
6. Glossy buckthorn (*Frangula alnus*)
7. Honeysuckle spec. (*Lonicera periclymenum*)
8. Japanese knotweed (*Reynoutria japonica*)
9. Lesser Periwinkle (*Vinca minor*)
10. Purple loosestrife (*Lythrum salicaria*)
11. Siberian peashrub (*Caragana arborescens*)

.2 In addition to all compartments where the erosion blanket and Terraseeding are to be installed, the slope will also have to be covered wherever plants will be grubbed, and trees removed.

#### 4.3 PROTECTION

.1 Structures, existing works and goods:

1. The Contractor must, at his expense, protect and refurbish, to the satisfaction of their owner, all installations and goods, structures and other works, including trees, shrubs, lawn, plants, private and public properties that he encounters, damages or puts at risk during the construction work.
2. If the damages caused cannot be repaired, the Contractor will have to assume full responsibility, going from partial compensation for the value to replacement of objects or trees involved.
3. In all cases, the Contractor must inform the Departmental Representative of damages he has caused or dangers he has created by his work or during these works and indicate what actions have been taken with regards to these.
4. All associated costs related to the rehabilitation of trees, shrubs and other amenities or damaged sites must be assumed by the Contractor.

### 3. Standard construction specifications for maintenance

#### SECTION 311100 CLEARING AND GRUBBING

5. After all rehabilitation work has been done, a tree or a shrub which has been wounded, broken or damaged may show residual depreciation engaging the responsibility of the Contractor for a partial financial compensation of the damaged trees or shrubs.
6. The residual depreciation of a damaged tree or shrub, even after rehabilitation, will be evaluated using the evaluation methods by the International Society of Arboriculture (ISA) with the expertise of a representative designated by the Departmental Representative.
7. The work will be executed and the complaints considered and resolved by the Contractor with the required tact required to maintain good relations between neighbouring owners, citizens and the federal government.
8. The Contractor cannot engage the Departmental Representative's responsibility for payments of damages, compensation, favours, etc.

.2 Property of the Government of Canada:

1. The work required is located on sites that are the Property of the Government of Canada.
2. The Contractor must limit as much as possible his operations and the circulation of his vehicles and employees to the limit of the Federal Government property.
3. All the planned work has to take place within the Federal Government property limit. At no time can the Contractor encroach on private property to execute his work.
4. During the construction work, the Contractors must expect to encounter obstacles limiting their machinery access such as hedges, mineral surfaces and amenities, lawns, construction sites, paths, etc. These conditions are considered normal for the realization of a project such as the one described in the present specifications, and they will not justify additional payments.
5. During the construction work, the Contractor cannot use rolling stock in private alleys or parking.

#### 4.4 RECLAMATIONS

- .1 When there is a claim against the Contractor or when the Contractor has a debt obligation that can translate in a monetary responsibility for the Departmental Representative or constitute a cost on a property or good that belongs to the Federal Government, the Departmental Representative has the right to guarantee itself, in capital, interest and fees, against a claim or debt obligation, by retaining the required sums from all amounts due or to become due to the Contractor, or by obtaining from the Contractor appropriate certificates and warranties.
- .2 If a claim or a debt obligation is established after the Departmental Representative has issued all payments to the Contractor, the Contractor must reimburse all amounts in capital, costs and interests that the Departmental Representative has had to disburse by reason of the Contractor's default.

#### 4.5 EMERGENCY MEASURES

- .1 If there are situations that the Contractor cannot address or that he refuses to which require, in the view of the Departmental Representative, urgent measures to protect the public, existing structures and works during the execution of the work, up until the final reception of the work, the Departmental Representative can take necessary measures to address these situations.

### 3. Standard construction specifications for maintenance

#### SECTION 311100 CLEARING AND GRUBBING

- .2 Such expenses are the charge of the Contractor and can be deducted from the amounts that are or can become due to him.

#### 4.6 PREPARATION

- .1 Inspect the site and verify with Departmental Representative any items designated to remain on site.
- .2 Locate and protect utility lines: preserve in operating condition active utilities traversing site.
  - 1. Notify Departmental Representative immediately of damage to or when unknown existing utility lines are encountered.
  - 2. When utility lines which are to be removed are encountered within area of operations, notify Departmental Representative in ample time to minimize interruption of service.
- .3 Notify utility authorities before starting to clear and grubbing.
- .4 Keep roads and walks free of dirt and debris.

#### 4.7 APPLICATION

- .1 Manufacturer's instructions: comply with the manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and data sheet.

#### 4.8 NOTICE FOR WORK AND SAFETY

- .1 The Contractor must confirm to Departmental Representative within three working days of the date at which they will be beginning and/or resuming work.
- .2 Areas where pedestrian or vehicular traffic is more important – namely the pedestrian path along the Rideau Canal and the Ottawa River - and where clearing works are planned, coordination must be carried out between the contractor and the Departmental Representative.

#### 4.9 WORKER'S SAFETY

- .1 The contractor is responsible for providing to employees all information and equipment necessary for their protection during the performance of clearing work, and in safe conditions. The contractor must also make sure that the instructions and safety rules are understood and must commit to ensure that they are seen and respected by their employees. In particular, workers on the ground must wear a safety vest at all times.
- .2 The Contractor must comply at all times with security measures identified in the specifications and provided by Departmental Representative.

#### 4.10 ON-SITE SAFETY

- .1 The Contractor is solely responsible for on-site security, for the adequate protection of workers and staff, and the public in general, as well as for the protection of goods, materials and equipment.
- .2 The Contractor shall, at all times and at their own expense, maintain the level of order and cleanliness required for the safety of staff and the public on the work site.
- .3 The Contractor will be responsible for the provision and installation of adequate signage on the work site as well as any installation of barriers or fencing limiting access to work areas.



### 3. Standard construction specifications for maintenance

#### SECTION 311100 CLEARING AND GRUBBING

- .4 If necessary, the Contractor shall provide flagmen specifically assigned to the signaling of work near work site.

##### 4.11 CLOSE CUT CLEARING

- .1 Clearing includes felling and cutting of tall invasive shrubs into sections and satisfactory disposal of large shrubs for the invasive plant list and designated for removal, including downed timber, snags, brush and rubbish occurring within cleared areas.
- .2 Clear as directed by Departmental Representative, by cutting at not more than 25 mm above ground.
- .3 Cut off unsound branches on trees designated to remain as directed by Departmental Representative.
- .4 The use of chemical herbicides is forbidden.
- .5 For all clearing work, the Contractor must use the appropriate method with respect to the environment in which they are operating in order to avoid damage to property (grassy areas, flowerbeds, etc.), goods (cars, etc), as well as to buildings, other infrastructure and injury to passers-by.
- .6 Stumps must be kept in place in order to maintain slope stability, the stump must then be sawed close to the ground, following the instructions of the Departmental Representative regarding height from the ground surface.
- .7 The use of chainsaws must be done in respect to all security rules and regulations.
- .8 Cut off unsound branches on trees designated to remain as directed by Departmental Representative.

##### 4.12 UNDERBRUSH CLEARING

- .1 Invasive ground covers and small plants pulled out by hand.
- .2 The Contractor must remove by hand all seedling of Fraxinus (Ash), Acer platanoides (Norway Maple), Acer negundo (Manitoba Maple) and Rhamnus spec. (Buckthorn) as well as any other seedling identify by the Departmental Representative.
- .3 Larger seedlings of invasive plants can be removed using a hand shovel without any disturbance of the native soil
- .4 The Contractor must remove all stump shoots and root suckers around the tree and shrub stumps of previous cuts. No mechanical chain chainsaw may be used for this work.

##### 4.13 REMOVAL OF CLEARING RESIDUES

- .1 All residues of clearing and stumps - wood chips, logs, earth, etc. – resulting from arboriculture work must be removed from the site of the work to an appropriate location, approved by Departmental Representative at the expense of the Contractor.
- .2 Departmental Representatives must be fully aware of sites where residues will be placed.
- .3 Refer to section 320293 - Arboriculture Work for trees residues.
- .4 The residues must be evacuated from the site the same day of the production.

##### 4.14 REMOVAL AND DISPOSAL

- .1 Remove cleared materials off site as indicated by Departmental Representative, and in the same day of the production.

### 3. Standard construction specifications for maintenance

#### SECTION 311100 CLEARING AND GRUBBING

- .2 Remove diseased plants identified by Departmental Representative and dispose of this material to approval of Departmental Representative.

#### 4.15 APPLICATION OF LALCIDE CHONDRO HERBICIDE ON BUCKTHORNS

- .1 Follow manufacturer instructions.
- .2 Application to stump top:
  - 1. Stump height should be kept low (around 10 cm if possible) in order to minimize the distance required for *Chondrostereum purpureum* to travel to colonize the stump.
  - 2. Apply a single layer of LALCIDE CHONDRO to freshly cut stumps.
  - 3. For stumps less than 6 cm in diameter: cover **entire** cut surface area.
  - 4. For stumps greater than 6 cm diameter: apply a wide band covering an outer ring of the cut surface, including bark, cambium, and sapwood. Ensure complete coverage of the circumference of the stump surface.
  - 5. Buckthorn often grows in multi-stem groups: all cut stems require treatment.
- .3 Application to a girdling wound:
  - 1. Girdle buckthorn stems completely, leaving no intact cambium. Incomplete girdling can result in reduced efficacy.
  - 2. Girdling band should be at least 2.5 cm wide and kept low on the stem (approximately 10 cm).
  - 3. Using a paintbrush, apply LALCIDE CHONDRO to entire exposed girdled surface.
- .4 For multi-stems, care must be taken to ensure all stems are completely girdled. Often stems can be fused together which could leave intact tissue. In this case, consider girdling slightly higher, or cutting one or more stems before treating the cut surface directly, in order to free up the other stems for complete girdling.
- .5 Entire contents of the bottle must be used on the same day it is opened.

#### 4.16 CLEANING

- .1 Immediately after clearing and grubbing work has been completed, or at the end of each workday, the Contractor shall make sure that the site has been properly cleaned and left unsoiled, i.e., free of leaves, branches, logs, tree trunks, wood chips and grubbing residues.
  - 1. The clearing up of residues on planted or grassy surfaces must be done with utmost care, i.e. with a portable "blower", a leaf rake or any other method giving equivalent results or better.
  - 2. The clearing up of residues on hard surfaces (pavement, asphalt, paving stones, etc.) must be done with utmost care, i.e. with a portable "blower", a leaf rake or any other method giving equivalent results or better.
  - 3. In the case of the snow-covered surfaces, the clearing up of residues should be done in such a way as to avoid accumulations of debris deemed too important by the Departmental Representative.
- .2 The Contractor must organize all materials and equipment in a safe and orderly manner on the site.

### 3. Standard construction specifications for maintenance

#### SECTION 311100 CLEARING AND GRUBBING

- .3 If the Departmental Representative discovers debris that were left on the site, outside the staging area, and not picked up at the end of the working day, penalties may be applied on the performance bond.
- .4 Maintain work area in tidy condition, free from accumulation of waste products and debris.
- .5 Do not clean equipment in the waterbody or where the wash-water can enter the waterbody.
- .6 The Contractor can store debris from grubbing and removal work in the staging area during the arboriculture work. The debris must be evacuated and the staging area, as well as all existing finished surfaces, must be cleaned and restored at the end of the day, each day.

**END OF SECTION**

# 3. Standard construction specifications for maintenance

## SECTION 313219.16 GEOTEXTILE SOIL STABILIZATION

### Part 1 General

#### 1.1 SCOPE OF WORK

- .1 Replacement and repositioning of erosion control blanket.

#### 1.2 SUBMITTALS

- .1 Provide manufacturer's instructions, printed product literature and data sheets for each geotextile and include product characteristics, performance criteria, physical size, finish, and limitations, at least four (4) weeks prior to beginning work.
- .2 Provide following samples to the Departmental Representative at least four (4) weeks prior to beginning Work:
  - 1. Minimum length of 2 m of roll width of wood erosion blankets.
  - 2. Minimum length of 1 m of geotextile.
  - 3. Staples.

### Part 2 Products

#### 2.1 MATERIAL

- .1 Wood erosion control blanket with polypropylene net, supplied in rolls.
  - 1. Width: 2.4 m minimum.
  - 2. Nontoxic, environment safe, de-inked plant fibre.
  - 3. Biodegradable in approximately 30 months.
  - 4. Able to adapt and bond to ground conditions.
  - 5. Physical properties:
    - 1. Thickness: to CAN/CGSB-148.1, No.3, minimum 11.68 mm.
    - 2. Mass per unit area: to CAN/CGSB-148.1, No.2, minimum 412 g/m<sup>2</sup>.
    - 3. Tensile strength and elongation (in any principal direction): to ASTM D4595.
    - 4. TD Tensile strength: minimum 2.03 N, wet condition.
    - 5. TD Elongation at break: maximum 29.5%.
    - 6. Light penetration: 20.5%.
    - 7. Resiliency: 53%
    - 8. Fibre length (80% min.): min 15.2 cm
    - 9. Net openings, polypropylene: 25,4mm x 25,4mm

### Part 3 Execution

#### 3.1 EXAMINATION

- .1 Verification of areas to be repaired take place every spring. Repairs include repositioning of mat and filling of empty areas due to displacement.
- .2 Verify the conditions surfaces to evaluate the quantity of repairs and quantities of materials needed .

### 3. Standard construction specifications for maintenance

#### SECTION 313219.16 GEOTEXTILE SOIL STABILIZATION

1. Visually inspect substrate in presence of Departmental Representative.
2. Inform Departmental Representative of unacceptable conditions immediately upon discovery.
3. Proceed with installation only after unacceptable conditions have been remedied.

#### 3.2

#### INSTALLATION

##### .1

#### Erosion blanket

1. Refer to plan of slope steepness, in Annex II of issued for construction drawings, for choice of blanket.
2. Use same type of blanket present on slope for portions to be replaced.
3. Refer to the manufacturer's installation specifications.
4. Place erosion blanket material by unrolling onto the Terraseeded surface of the slope in the orientation, manner and locations indicated and retain in position with U-shaped staples.
5. Place erosion blanket material smooth and free of tension stress, folds, wrinkles and creases.
6. Place erosion blanket material on sloping surfaces in one continuous length from the toe of the slope to upper extent of mat, according to existing site conditions.
7. Overlap each successive strip of blanket as specified by the manufacturer over previously laid strip.
8. Pin successive strips of blanket with securing pins at 900 mm interval in the direction of the slope and at a 1200 mm interval horizontally.
9. Protect installed mat material from displacement, damage, or deterioration before, during and after placement of material layers.
10. Replace damaged or deteriorated blanket to approval of Departmental Representative.
11. In addition to all compartments where the erosion blanket and terraseeding are to be installed, the slope will also have to be covered with the erosion blanket and terraseeding wherever plants will be grubbed, and trees removed.

**END OF SECTION**

# 3. Standard construction specifications for maintenance

## SECTION 320293 ARBORICULTURE WORK

- Part 1            General**
- 1.1               SCOPE OF WORK**
  - .1                Cutting and pruning of dangerous trees and strategic tree cuts.
- 1.2               QUALITY STANDARDS**
  - .1                Regulatory Requirements:
    1.                Pruning work should be carried out in accordance with the information and techniques described in the most recent version of the following guide and/or reference standard published by the International Society of Arboriculture (ISA), available to order via [www.isa-arbor.com](http://www.isa-arbor.com).
    2.                **ANSI A300 (Part 1) Tree, and Shrub, and Other Woody Plant Management – Standard Practices (Pruning), American National Standard Institute.**
  
- Part 2            Materials**

Non applicable
  
- Part 3            Equipment and labor**
- 3.1               PROFESSIONAL QUALITY OF THE CONTRACTOR**
  - .1                The Contractor who will be designated to carry out the felling and pruning work must have at least one ISA Certified Arborist (International Society of Arboriculture) among his work crew on site and whose certification will be fully valid at the time of carrying out the arboriculture work and throughout the duration of the work.
- 3.2               QUALITY STANDARDS FOR WORK PRUNING**
  - .1                For pruning and felling work, the Contractor must provide the following equipment and machinery:
    1.                A minimum of one tree truck with a closed box for chipping branches with a minimum volume of 10 cubic meters.
    2.                An industrial type woodchipper on a trailer. The chipper should be able to chop branches at least 8 inches in diameter.
    3.                The Contractor shall provide with his trucks all the equipment and tools necessary for carrying out all the arboriculture work that will be requested of him.
  - .2                The work team that the Contractor must provide will be made up of 3 employees, including 1 for driving the truck:
    1.                A pruner and team leader with at least 5 years of minimum experience, or experience deemed satisfactory by the Departmental Representative, and who is authorized to work with "ropes" methods in particular.

### 3. Standard construction specifications for maintenance

#### SECTION 320293 ARBORICULTURE WORK

2. A pruner with at least 2 years of experience, or experience deemed satisfactory by the Departmental Representative, and who is authorized to work with "cable" methods in particular, if a team of 3 workers is required.
  3. A man for the groundwork.
- .3 In addition, for his work team, the Contractor must comply with the following requirements at the start of his work :
1. He should give the past employment references of his pruners as well as their academic or professional training.
  2. Any change of personnel is prohibited, except for major considerations which must be accepted in advance by the Departmental Representative.
  3. The Departmental Representative reserves the right to immediately exclude any worker who is incompetent or not in a condition allowing him to perform his work or having reprehensible conduct.
  4. Before acceptance of the contract or the start of work, an evaluation of employees may be requested by the Departmental Representative.

#### **Part 4 Execution**

##### **4.1 EXAMINATION**

- .1 The identification of the trees to be worked on and the nature of the work to be done will be done by the Departmental Representative prior to the beginning of the work.

##### **4.2 WORK PLAN**

- .1 Within 10 working days of being notified that the Contract will be awarded, the Contractor must submit to Service Canada a complete written work plan to describe, among other things, the periods (days or weeks) and the areas (or groups of trees) in which it intends to carry out the Work.
- .2 This work plan will require validation and approval by Service Canada. If activities are to take place in certain areas and/or on certain dates (or periods), Service Canada may require modifications to the work plan to meet the constraints associated with these activities. The Contractor will then be required to make the necessary changes and comply with them.

##### **4.3 NOTICE FOR WORK AND SAFETY**

- .1 The Contractor shall confirm in advance, within three working days, to the Departmental Representative the date of commencement or resumption of his work.
- .2 In areas of the work site where pedestrian or vehicular traffic is more important - pedestrian pathway along the Rideau Canal and the Ottawa River, Parliament Hill - and where arboriculture work is planned, coordination will have to be carried out between the Contractor and the federal agencies and/or authorities concerned.

##### **4.4 WORKER'S SAFETY**

- .1 The Contractor is responsible for providing his employees with all the information and equipment necessary for their protection during the execution of the arboriculture work, in safe conditions. He must also ensure that safety instructions and rules are understood,



### 3. Standard construction specifications for maintenance

#### SECTION 320293 ARBORICULTURE WORK

and he must undertake to ensure that they are observed and respected by his employees.

- .2 In particular, the Contractor shall comply at all times with the security rules as enacted by Service Canada in its standards, laws and regulations.

#### 4.5 SPURS

- .1 Notwithstanding what may be stated in the reference standards, the use of climbers (spikes or spurs) is strictly prohibited for work other than felling or during aerial rescues.

#### 4.6 PRODUCTS RECOVERY

- .1 The use of covering products on cutting surfaces or wounds or injuries is prohibited under all circumstances

#### 4.7 CLEANING OF THE PREMISES AND RECONDITIONING

- .1 Immediately upon completion of the arboriculture work, or at the latest at the end of each day, the Contractor shall ensure that the site has been properly cleaned and left clean, i.e. free of piles of leaves, branches, logs, wood chips and stumpage residues in particular.
- .2 Collecting on landscaped or grassed areas must involve careful work using a blower, leaf sweeper or any other method giving equivalent or better results.
- .3 Pick-up on hard surfaces (sidewalk, asphalt, paving stones, etc.) must involve careful work using a blower, broom or brush or any other method giving equivalent or better results.
- .4 In the case of snow-covered surfaces, collection shall be done in such a way as to avoid leaving accumulations of debris deemed too large by the Departmental Representative.
- .5 The Contractor shall dispose of materials and equipment in an orderly and safe manner on the site.
- .6 If the Departmental Representative finds that debris has been left on site and not picked up at the end of the working day, penalties may be applied to the performance bond.

#### 4.8 FELLING OF TREES

- .1 For felling work, the Contractor will use the appropriate method according to the environment of the tree to be felled and to avoid any damage to property (grassy ground, etc.), goods (cars, etc.), buildings and other infrastructure as well as any injury to passers-by.
- .2 All felling work must be carried out in such a way as to avoid damage to other trees and to the soil to prevent undue erosion of the land.
- .3 In the case of trees to be felled in the form of a totem, the complete cutting of the trunk must be done at a height of approximately 7 to 10 m above the ground. The lower portion of the trunk must be kept standing without cutting it at a lower height or at the stump.

#### 4.9 CUTTING OF STUMPS

- .1 The stumps of all trees to be felled must be cut as close to the ground as possible with a chainsaw.
- .2 All sections of stumps cut close to the ground must be removed and transported off-site.

### 3. Standard construction specifications for maintenance

#### SECTION 320293 ARBORICULTURE WORK

##### 4.10 PRUNNING

- .1 Pruning work shall be carried out in accordance with the requirements of the reference guide referred to in Article 1.2.
- .2 Pruning work on trees will be defined as follows:
  1. Safety pruning: removal by cutting of all branches with a minimum diameter of 2.5 cm at its base that are dangerous, dead, dying, weak, or suffering from epidemic and fatal disease.
  2. Crown raising removal by directional cutting of low branches to ensure a minimum clearance of 3.5 m over any trail or grassed area.

##### 4.11 PRUNING RESIDUES, SLAUGHTER AND REGROWTH CONTROL

- .1 All residues from pruning, felling and grubbing - wood chips, logs, soil, etc. - are to be disposed of.
- .2 The tailings site(s) shall be known to the Departmental Representative.
- .3 In the case of wood residue from ash trees, the Contractor shall dispose of it in accordance with applicable federal (Canadian Food Inspection Agency, etc.), provincial and municipal laws and regulations. Any additional costs that may be incurred in complying with these laws and regulations shall be borne by the Contractor.
- .4 In the case of wood residues from butternut (scientific name: *Juglans cinerea*), the following rules should be followed:
  1. All felling and grubbing residues - wood chips, logs, branches, soil, stumps, etc. - are to be disposed of. - produced during the work shall be transported and disposed of by the Contractor in a landfill pit at the contractor's expense.
  2. The designation of the intended site of the landfill pit is the responsibility and expense of the Contractor. The location of this site shall be provided to the Departmental Representative for his approval.
  3. The Contractor shall excavate a pit of sufficient size to deposit and contain all residues resulting from the logging and grubbing operations and cover the latter with a compacted layer of soil at least 100 cm thick above the residues.
  4. Any additional costs that may be incurred shall be borne by the Contractor.

##### 4.12 DANGEROUS TREES

- .1 If the Contractor or his employees observe during the performance of their work that a tree could pose any threat to public safety, the Contractor shall notify the Departmental Representative as soon as possible.

**END OF SECTION**

# 3. Standard construction specifications for maintenance

## SECTION 329219.13 MECHANICAL SEEDING

### Part 1 General

#### 1.1 SCOPE OF WORK

- .1 Repairment and reseed dead or bare seeded areas (bottom of slope) using a mechanical hand seeder.

#### 1.2 SUBMITTALS

- .1 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for seed, and organic natural fertilizer at least four (4) weeks prior to beginning work.
  - .2 SPEC NOTE: As of February 2015, new WHMIS regulation replaced the Material Safety Data Sheets (MSDS) with Safety Data Sheets (SDS). Consult the CCOHS website for additional information.
  - .3 Submit WHMIS Safety Data Sheet (SDS) in accordance with Section 014715 - Sustainable Requirements: Construction and Section 028100 - Hazardous Materials (see Annex III).
  - .4 Submit 0.5 kg container of each type of organic natural fertilizer used.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

#### 1.3 QUALITY STANDARDS

- .1 Qualifications:
  - .1 Provide proof of qualifications when requested by Departmental Representative.
  - .2 Contractor Qualifications: Landscape Contractor: to be a Member in Good Standing of the Canadian Nursery Landscape Association, the Landscape Ontario Green for Life (LO), the The Ontario Association of Landscape Architects (OALA) or the Association des paysagistes du Québec (APPQ).
  - .3 Landscape Planting Supervisor: Landscape Horticulturist Journeyperson or Landscape Industry Certified Technician with Softscape Installation designation or equivalent.
  - .4 Landscape Maintenance Supervisor: Landscape Horticulturist Journeyperson or Landscape Industry Certified Technician with Turf Maintenance designation or equivalent.

### Part 2 Products

#### 2.1 SEED MIX

- .1 Native grass mixture:
  - 3,0% Agrostis scabra
  - 12,0% Bromus ciliatus
  - 4,0% Carex vulpinoidea
  - 7,4% Deschampsia cespitosa

# 3. Standard construction specifications for maintenance

## SECTION 329219.13 MECHANICAL SEEDING

- 22,0% Festuca rubra
- 7,8% Festuca saximontana
- 8,8% Poa pratensis
- 35,0% Schizachyrium scoparium

- .2 In packages individually labelled in accordance with "Seeds Regulations" and indicating name of supplier.
- .3 Seeds must be 100% Canadian native.

### 2.2 COMPOST

- .1 100% decomposed organic material.
- .2 Organic matter: compost Category B in accordance with CCME PN1340, unprocessed organic matter, such as rotted manure, hay, straw, bark residue or sawdust, meeting the organic matter, stability and contaminant requirements.

## Part 3 Execution

### 3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of seeded surfaces to evaluate the quantity of repairs and quantities of materials needed. .
- .2 Visually inspect substrate in presence of Departmental Representative.
- .3 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
- .4 Proceed with installation only after unacceptable conditions have been remedied.

### 3.2 SEED BED PREPARATION / REPAIR

- .1 Do not perform work under adverse field conditions.
- .2 Remove and dispose of weeds; debris; stones 50 mm in diameter and larger; soil contaminated by oil, gasoline and other deleterious materials. Verify that grades are correct.
- .3 Fine grade surface free of humps and hollows to smooth, even grade, to contours to tolerance of plus or minus 15 mm, surface draining naturally.
- .4 Apply an even layer of 50 mm of topsoil.
- .5 Rake fine graded surface approved by Departmental Representative to 25 mm depth immediately before seeding.

### 3.3 RESEEDING

- .1 SPEC NOTE: Indicate where mechanical and manual seeding is to occur.
- .2 Use manually operated drop seeder.
- .3 Use equipment and method acceptable to Departmental Representative.
- .4 On cultivated surfaces, sow seed uniformly at the rate of:
  - .1 5,1 g/m<sup>2</sup> native grasses mixture.

### 3. Standard construction specifications for maintenance

#### SECTION 329219.13 MECHANICAL SEEDING

- .2 2 g/m<sup>2</sup> Lolium multiflorum (cover plant)
- .5 Sow half of required amount of seed in one direction and remainder at right angles as applicable.
- .6 Incorporate seed by light raking in cross directions.

#### **3.4 WATERING AND GRASS CUTTING**

- .1 Water seeded area to maintain optimum soil moisture level for continued growth of grass. Control watering to prevent washouts.
- .2 Cut grass to 150 mm whenever it reaches height of 300 mm. Keep clippings on site if distributed evenly.
- .3 Fertilize seeded areas in accordance with fertilizing program. Spread half of required amount of organic natural fertilizer in one direction and remainder at right angles and water it well.
- .4 Control weeds by mechanical means.

**END OF SECTION**

# 3. Standard construction specifications for maintenance

## SECTION 329219.16 HYDRAULIC SEEDING - TERRASEEDING

- Part 1            General**
- 1.1                SCOPE OF WORK**
- .1            Repair and reseed dead or bare terraseeded areas with seedlings (mid and top of slope) with clear water mix hydroseeding
  - .2            Application of organic natural fertilizer to terraseeded areas and plants in top and mid slope
- 1.2                SUBMITTALS**
- .1            Submit manufacturer's instructions, printed product literature and data sheets for:
    - .1    Seed.
    - .2    Tackfier
    - .3    organic natural fertilizer
  - .2            Submit in writing to Departmental Representative seven (7) days before work starts: Mixture for water base hydroseeding for the repairs of the terraseeding surfaces
  - .3            Submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
  - .4            Submit legible, certified test reports from a seed testing testing laboratory, approved by Agriculture and Agrifood Canada, for seed mixes, showing compliance with specified performance characteristics and physical properties. This shall be submitted to the Departmental Representative a minimum of 15 days prior to any seeding works.
- 1.3                QUALITY STANDARDS**
- .1            Qualifications: Provide proof of qualifications when requested by Departmental Representative.
  - .2            Contractor Qualifications:
    - .1    Landscape Contractor: to be a Member in Good Standing of Canadian Nursery Landscape Association or Landscape Ontario Green for Life (LO).
    - .2    Landscape Planting Supervisor: Landscape Horticulturist Journeyman or Landscape Industry Certified Technician with Softscape Installation designation or equivalent.
    - .3    Landscape Maintenance Supervisor: Landscape Horticulturist Journeyman or Landscape Industry Certified Technician with Turf Maintenance designation or equivalent.

### 3. Standard construction specifications for maintenance

#### SECTION 329219.16 HYDRAULIC SEEDING - TERRASEEDING

**Part 2 Products**

**2.1 MATERIALS**

- .1 Seed: "Canada pedigreed grade" in accordance with Government of Canada Seeds Act and Regulations.
- .2 The seed mix must correspond to the following mixture:
  - .1 Native grass slope mix:

% Weight	Latin name	% Seed count
18,2 %	Dichanthelium clandestinum	16 %
26,1 %	Elymus virginicus	7 %
31,2 %	Festuca rubra	36 %
0,5 %	Juncus tenuis	26 %
24,0 %	Schizachyrium scoparium	15 %
18,2 %	Dichanthelium clandestinum	16 %

Seeding rate: 20.7 g/m<sup>2</sup> (207 kg / ha)

- .2 Native grass and flower slope mix:

% Weight	Latin name	% Seed count
0,7 %	Ageratina altissima	4,0 %
0,5 %	Anemone virginiana	0,5 %
0,5 %	Aquilegia canadensis	0,7 %
0,9 %	Prunella vulgaris	0,5 %
0,9 %	Solidago flexicaulis	2,9 %
0,5 %	Symphotrichum cordifolium	2,4 %
17,5 %	Dichanthelium clandestinum	14,4 %
25,0 %	Elymus virginicus	5,9 %
30,0%	Festuca rubra	32,1 %
0,5 %	Juncus tenuis	23,5 %
23 %	Schizachyrium scoparium	13,2 %

Seeding rate of 15,2g / m<sup>2</sup> (152kg / ha)

- .3 An addition of Lolium multiflorum (Annual raygrass) must be included in the preparation. Seed rate: 5 g/m<sup>2</sup>.
- .4 No dye of any colour should be used
- .5 Tackfier: solvable in water.

	Test Method	Units	Minimum Value
<b>Physical Properties</b>			
Mass/Unit Area	ASTM D65661	g/m <sup>2</sup> (oz/yd <sup>2</sup> )	407 (12)
Thickness	ASTM D65251	mm (in)	5.6 (0.22)
Erosion Control Effectiveness	ASTM D68181	N/m (lb/ft)	131 (9)
Ground Cover	ASTM D65671	%	99
Water-Holding Capacity	ASTM D7367	%	1700
Material Color	Observed	n/a	Green



### 3. Standard construction specifications for maintenance

#### SECTION 329219.16 HYDRAULIC SEEDING - TERRASEEDING

<b>Environmental Properties</b>			
Biodegradability	ASTM D5338	%	100
Functional Longevity	ASTM D5338	n/a	Up to 18 months 96-hr LC50 >
Ecotoxicity	EPA 2021.0	%	100%
Effluent Turbidity	Large Scale	NTU	< 100
<b>Performance Properties</b>			
Cover Factor	Large Scale	n/a	< 0.01
Percent Effectiveness	Large Scale	%	> 99
Cure Time	Observed	hours	0-2
Vegetation Establishment	ASTM D73221	%	> 800
<b>Production Composition</b>			<b>Typical Value</b>
Thermally Processed Wood Fibers (within a pressurized vessel)			80% ± 3%
Cross-Linked Biopolymers and Water Absorbents			10% ± 1%
Crimped, Man-Made Biodegradable Interlocking Fibers			5% ± 1%
Proprietary Mineral Activator			5% ± 1%

#### Part 3 Execution

##### 3.1 EXAMINATION

- .1 Verification of areas to be repaired take place every spring. Repairs reseeding in empty areas due poor germination.
- .1 Verification of Conditions: verify conditions surfaces to evaluate the quantity of repairs and quantities of materials needed.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied.

##### 3.2 PROTECTION OF EXISTING CONDITIONS

- .1 Protect structures, signs, guide rails, fences, plant material, utilities and other surfaces not intended for spray. Do not spread onto any surfaces other than intended.
- .2 Immediately remove any material spread where not intended, using clean water, to the satisfaction of the Departmental Representative.

##### 3.3 WORKMANSHIP

- .1 Do not perform work under adverse field conditions such as wind speeds over 10 km/h, frozen ground, ground covered with snow, ice or standing water.

### 3. Standard construction specifications for maintenance

#### SECTION 329219.16 HYDRAULIC SEEDING - TERRASEEDING

- .2 Protect seeded areas from trespass with temporary fencing until plants are established to acceptance standards.

#### 3.4 INSTALLATION

- .1 All reseeded of the terraseeded areas will be made with a water-based hydraulic application. This application will be transparent (no dye) and will ensure a calibrated seed spray.
- .2 The contractor will have to provide a method and materials to be approved at least 7 days prior to work.
- .3 Repair and reseed dead or bare spots to allow establishment of seed before acceptance.
- .4 Fertilize seeded areas according to manufacturer's recommendations. First application during seeding. Second application 20 days after seeding. Third application 90 days after seeding. Spread half of required amount of organic natural fertilizer in one direction and remainder at right angles.

#### 3.5 ACCEPTANCE

- .1 Seeded areas will be accepted by Departmental Representative provided that:
  - .1 Plants are uniformly established and seeded areas are free of rutted, eroded, bare or dead spots.
  - .2 Areas have been fertilized according to the specifications.
  - .3 Areas seeded in fall will achieve final acceptance in following spring, one month after start of growing season provided acceptance conditions are fulfilled.
  - .4 While several seed species require higher levels of germination, this specification has adopted 70% as the acceptable minimum and has allowed a further 25% reduction to account for variation in seeding application, seedbed quality, seedbed preparation and area cover.
- .2 Submit seeded areas maintenance reports for review by Departmental Representative.

**END OF SECTION**

# 3. Standard construction specifications for maintenance

## SECTION 329223 SODDING

### Part 1 General

#### 1.1 SCOPE OF WORK

- .1 Application of natural fertilizer to grass bottom of slope.
- .2 Grass cutting bottom of slope.

#### 1.2 SUBMITTALS

- .1 Submit in accordance with Section 013300 - Submittal Procedures (see Annex III).
- .2 Submit manufacturer's instructions, printed product literature and data sheets for sod and include product characteristics, performance criteria, physical size, finish, and limitations.
- .3 Provide purchase order in accordance with the requirements of the specifications
- .4 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements of seed mix, seed purity, and sod quality.

#### 1.3 QUALITY ASSURANCE

- .1 Qualifications: Provide proof of qualifications when requested by Departmental Representative.
- .2 Contractor Qualifications:
  - 1. Landscape Contractor: to be a Member in Good Standing of the Canadian Nursery Landscape Association and the Landscape Ontario Green for Life (LO).
  - 2. Landscape Sodding Supervisor: Landscape Horticulturist Journeyperson or Landscape Industry Certified Technician with Softscape Installation designation or equivalent.
  - 3. Landscape Maintenance Supervisor: Landscape Horticulturist Journeyperson or Landscape Industry Certified Technician with Turf Maintenance designation or equivalent.

### Part 2 Products

#### 2.1 MATERIALS

- .1 Number One Turf Grass Nursery Sod: sod that has been especially sown and cultivated in nursery fields as turf grass crop.
  - 1. Turf Grass Nursery Sod types:
    - 1. Number One Kentucky Bluegrass Sod - Fescue Sod: Nursery Sod grown solely from seed mixture of cultivars of Kentucky Bluegrass and Chewing Fescue or Creeping Red Fescue, containing not less than 40% Kentucky Bluegrass cultivars and 30% Chewing Fescue or Creeping Red Fescue cultivars.
  - 2. Turf Grass Nursery Sod quality:
    - 1. Not more than 1 broadleaf weed and up to 1% native grasses per 40 m<sup>2</sup>.

# 3. Standard construction specifications for maintenance

## SECTION 329223 SODDING

- 2. Density of sod sufficient so that no soil is visible from height of 1500 mm when mown to height of 50 mm.
  - 3. Mowing height limit: 35 to 65 mm.
  - 4. Soil portion of sod: 6 to 15 mm in thickness.
- .2 Commercial Grade Turf Grass Nursery:
- 1. Mow sod at height directed by Departmental Representative within 36 hours before lifting and remove clippings.
  - 2. Not more than 5 broadleaf weeds and up to 20% native grasses per 40 m<sup>2</sup>.
- .3 Water:
- 1. Supplied by Departmental Representative at designated sources.
  - 2. Free of impurities that would inhibit plant growth.
- .4 Fertiliser:
- 1. To Canada "Fertilizers Act" and Fertilizers Regulations.
  - 2. Complete, synthetic, slow release with 65% of nitrogen content in water-insoluble form.

### 2.2 SOURCE QUALITY CONTROL

- .1 Obtain written approval from Departmental Representative of sod at source.
- .2 When proposed source of sod is approved, use no other source without written authorization from Departmental Representative.

## Part 3 Execution

### 3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for sod installation in accordance with manufacturer's written instructions.
  - 1. Visually inspect substrate in presence of Departmental Representative.
  - 2. Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - 3. Proceed with installation only after unacceptable conditions have been remedied.

### 3.2 PREPARATION

- .1 Verify that grades are correct and prepared in accordance with Section 329119.13 - Topsoil Placement and Grading (see Annex III). If discrepancies occur, notify Departmental Representative and commence work when instructed by Departmental Representative.
- .2 Do not perform work under adverse field conditions such as frozen soil, excessively wet soil or soil covered with snow, ice, or standing water.
- .3 Fine grade surface free of humps and hollows to smooth, even grade, to contours indicated, to tolerance of plus or minus 8 mm, for Turf Grass Nursery Sod, surface to drain naturally.

# 3. Standard construction specifications for maintenance

## SECTION 329223 SODDING

- .4 Remove and dispose of weeds; debris; stones 50 mm in diameter and larger; soil contaminated by oil, gasoline and other deleterious materials; in location as directed by Departmental Representative in accordance with Section 017419 - Waste Management and Disposal (see Annex III).

### 3.3 SOD REPLACEMENT

- .1 Lay sod within 24 hours of it being received on site.
- .2 Lay sod during active growing season for type of sod. Laying sod during dry, freezing, or over frozen soil is unacceptable.
- .3 If growing medium surface is dry, it shall be lightly moistened immediately before laying sod.
- .4 Lay sod flush with adjoining grass areas, paving and top surface of curbs, unless shown otherwise on the drawings.
- .5 Lay sod within 24 hours of being lifted if air temperature exceeds 20 degrees C.
- .6 Lay sod sections in rows, joints staggered (a minimum of 25 cm). Butt sections closely without overlapping or leaving gaps between sections. Cut out irregular or thin sections with sharp implements.
- .7 Roll sod as directed by Departmental Representative. Provide close contact between sod and soil by light rolling. Use of heavy roller to correct irregularities in grade is not permitted.

### 3.4 FERTILIZING PERIOD

- .1 Fertilize in the following period:

Date	Date	Rate	Ratio
05-25 to 07-05	05-31	6.0/100	kg/ha

### 3.5 QUALITY CONTROL

- .1 Water sodded areas in sufficient quantities and at frequency required to maintain optimum soil moisture condition to depth of 75 to 100 mm.
- .2 Cut grass to 50 mm when (or before it) reaching height of 75 mm. Remove clippings which will smother grassed areas as directed by Departmental Representative. A minimum of four (4) separate mowing must be done before the end of the establishment period.
- .3 Maintain sodded areas weed free at 95%.
- .4 Fertilize areas in accordance with point 3.4. Spread half of required amount of fertilizer in one direction and remainder at right angles and water it well enough to allow fertilizer to penetrate into the soil.
- .5 Temporary barriers or signage to be maintained where required to protect newly established sod.

**END OF SECTION**

# 3. Standard construction specifications for maintenance

## SECTION 329310 TREES, SHRUBS AND GROUND COVER PLANTING

### Part 1 General

#### 1.1 SCOPE OF WORK

- .1 Application of organic natural fertilizer to trees and shrubs in bottom of slope
- .2 Planting of trees in open areas left by tree cuts
- .3 Plant situation 3 in new gullys and swales
- .4 Plant newly formed talus deposited by erosion
- .5 Replacement of dead plants (1Gal pots)
- .6 Replacement of dead plants (Seedlings)
- .7 Reapplication of mulch (Ramial chipped wood) in base of slope
- .8 Weeding in base of slope plantings
- .9 Moisture monitoring and watering
- .10 Control of insects and fungal pathogens
- .11 Repellant application on trees and large shrubs (top and mid slope)

#### 1.2 SUBMITTALS

- .1 Submit manufacturer's instructions, printed product literature and data sheets for trees, shrubs, ground cover, organic natural fertilizer, **mycorrhizal inoculum, trunk protection, stakes, bloodmeal base animal repellent and mulch and include product characteristics, performance criteria, physical size, finish and limitations.**
- .2 Submit samples of mulch and mycorrhizal inoculum.
- .3 Departmental Representative may need to verify supply material at the source of supply and may need to approve purchase order.
- .4 Plant material verified at the source of supply may be declined on site before or after the planting.
- .5 The Contractor must inform Departmental Representative of the source of supply at least seven (7) days prior to plant delivery. The Contractor must obtain approval from Departmental Representative prior to starting work prescribed in this current section.
- .6 Quality control at the source of supply does not relieve the Contractor from his responsibility to ensure the quality of plant material during the warranty.
- .7 Species, size and production type of planted trees must be those defined in planting schedule.
- .8 All trees must be single trunk. The trunk must be robust and straight, and crown must be well balanced and uniformly distributed.
- .9 All plants must be disease free and exempt of any pathogenic insects.
- .10 Trees must be free of structural defects and injuries along the trunk, branches, and root system.
- .11 Container grown trees should have been potted at least one year prior to the time they are planted. They must have been grown at least one year in the same container prior to their delivery on-site.

# 3. Standard construction specifications for maintenance

## SECTION 329310 TREES, SHRUBS AND GROUND COVER PLANTING

- .12 Plants must be chosen at nursery or upon their reception at the construction site by the Departmental Representative.
- .13 Plants approved at source may be denied on site if it turns out that they have been injured during transport and/or handling.
- .14 Any request for substitution of trees or change of caliper size (or dimension) could happen only for very exceptional circumstances and must be approved in advance by the Departmental Representative.

### 1.3 QUALITY STANDARDS

- .1 Qualifications: Provide proof of qualifications when requested by Departmental Representative.
  - .1 Landscape Contractor: to be a Member in Good Standing of the Canadian Nursery Landscape Association and /or the Landscape Ontario Green for Life (LO) and / or a member of the Association des paysagistes professionnels du Québec (APPQ).
  - .2 Landscape Supervisor: Landscape Horticulturist Journeyperson or Landscape Industry Certified Technician with Softscape Installation designation or equivalent.
  - .3 Landscape Maintenance Supervisor: Landscape Horticulturist Journeyperson or Landscape Industry Certified Technician with Ornamental Maintenance designation or equivalent.

### 1.4 SUBMITTALS

- .1 Provide manufacturer's instructions, printed product literature and data sheets to Departmental Representative for approval, 7 days prior to delivery of plant material for:
  - .1 Organic natural fertilizer;
  - .2 Mulch;
  - .3 Ties;
  - .4 Wood stakes;
  - .5 Bloodmeal **based animal repellent**.
- .2 **Provide following samples to the Departmental Representative at least four (4) weeks prior to beginning Work:**
  - .1 Wood stakes;
  - .2 Mulch.



### 3. Standard construction specifications for maintenance

#### SECTION 329310 TREES, SHRUBS AND GROUND COVER PLANTING

##### Part 2 Products

- .1 **PLANT MATERIAL**Type of root preparation, sizing, grading and quality: comply to Canadian Nursery Stock Standard.
- .2 Source of plant material grown in Zone 5a in accordance with Plant Hardiness Zones in Canada. Plants that come from regions benefiting from a milder climate than that of place work site will not be accepted.
- .3 Plant material shall be planted in zone specified as appropriate for its species.
- .4 Nurseries must be a maximum of 400 km from Ottawa.
- .5 Seeds must come from Zone 36, related to the South Ontario tree Seeds Zones.
- .6 Plant material: free of disease, insects, defects or injuries and structurally sound with strong fibrous root system.
- .7 Trees: with straight trunks, well and characteristically branched for species.
- .8 Bare root stock: nursery grown, in dormant stage, not balled and bur lapped, or container grown.
- .9 Native plants only (no horticultural variety will be accepted) and grown in the Ottawa area: size as specified in the planting list and on drawings, with well-developed crown and characteristic branching structure of respective species. The height of the bole of the tree must not exceed 40% of the total height of the plant.
- .10 Use plants that have strong and fibrous roots, without diseases, insects, defects, injuries, and well developed. Use trees with a straight trunk, a uniform canopy, characterizing each selected species. Tree roots must have been regularly cut at the latest during the growing season that precedes the delivery and on-site planting.
- .11 Plants can be refused on the construction site, before or after the planting occurs.
- .12 The genus and species of plants are specified in the planting list.
- .13 Seedlings must have been produced in nurseries and must have been sown and grown in small containers. Root systems must be strong enough to allow the soil to remain in place when the plugs are pulled out of their containers. Seedlings with root spirals will not be accepted. Dry, damaged or infected plants will not be accepted.
- .14 Young woody or fern seedlings must have a root ball with a volume of 320 ml. young woody or fern seedling plugs must have a minimum height of 30 cm (measured from the root collar to the end of the end upright stem). Seedling plugs must be made of thermoplastic or equivalent. Trays of seedlings must have 15 plugs of 320 ml volume (15-320) each. Equivalent formats must be submitted for approval prior ordering.
- .15 Young perennial seedlings must have a root ball with a volume of 110 ml. Seedling plugs must be made of thermoplastic or equivalent. Trays of seedlings must have 45 plugs of 110 ml volume (45-110) each. Equivalent formats must be submitted for approval prior ordering.
- .16 Live branches for bundles must be straight branches of Red-osier dogwood (*Cornus stolonifera*), 1.5 m long, in dormant stage, kept in a cool environment to prevent drying or hatching of leaves.
- .17 Live branches for live branches groupings (gully erosion) must be straight branches of Red-osier dogwood (*Cornus stolonifera*), 1,5m long, in dormant stage, kept in a cool environment to prevent drying or hatching of leaves.

## 3. Standard construction specifications for maintenance

### SECTION 329310 TREES, SHRUBS AND GROUND COVER PLANTING

#### 2.2 WOOD STAKES

- .1 Natural wood stake pointed one end, 38 x 38 mm, 1200 mm long (poted deciduous tree stakes / support).
- .2 Natural wood stake pointed one end, 38 x 38 mm, 900 mm long (shrub and tree seedling stakes / support).
- .3 Natural wood pointed one end 38 mm x 38 mm, 750 mm long (bundles).
- .4 Natural wood, 38 mm x 38 mm, max 1500 mm, cut to fit on the site (gully erosion).

#### 2.3 NATURAL ROPE TIES

- .1 For the natural rope tie use 2-ply sisal twine with a tensile strength of 163 kg.
- .2 Use natural rope ties for bundle and gully erosion.

#### 2.4 MULCH

- .1 Ramial chipped wood (shredded hardwood of small and medium branches, does not contain tree trunks, nor stumps or roots wood shredding) approved by the Departmental Representative. Mulch produced by the Contractor with accepted tree species during the felling and pruning of trees must be used on site. The balance of required mulch will be provided by Contractor within a radius of 25 km from the site of the work.
- .2 Properties:
  - .1 Well prepared and dried.
  - .2 Departmental Representative must verify to ensure that material is safe.
  - .3 Made from approved tree species branches.

#### 2.5 ORGANIC NATURAL FERTILIZER

- .1 Organic natural fertilizer non-animal origin, type 4-4-4 and mycorrhizal inoculum applied on roots and soil during planting and approved by Departmental Representative, including soil analysis provided by the Contractor.
  - .1 Ensure new root growth is in contact with mycorrhiza.
  - .2 Use mycorrhiza as recommended by the manufacturer's written recommendations.

### Part 3 Execution

#### 3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrate previously installed under other Sections or Contracts are acceptable for planting installation in accordance with the manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied.

#### 3.2 PRE-PLANTING PREPARATION

- .1 Remove dead plants to be replaced.

## 3. Standard construction specifications for maintenance

### SECTION 329310 TREES, SHRUBS AND GROUND COVER PLANTING

- .2 Ensure plant material acceptable to Departmental Representative.
- .3 Remove damaged roots and branches from plant material.
- .4 Verify on drawings for presence of obstacles which might interfere with proper establishment of plant material on the site; utility lines, tree stumps, overhead and underground wires, poles, sidewalks, existing landscaping, etc.

#### 3.3 PLANTING AND OTHER PLANTS INSTALLATIONS

- .1 Follow these general guidelines for grid planting / compartments well as planting drawings (Annex II).
- .2 Minimal planting distance from existing vegetation: all trees and shrubs must be planted at a minimal distance of 2 m from existing trees.
- .3 Typical plant spacing (centre to centre): tree whips and conifers: 1,5m, Shrub seedlings, 45 cm.
- .4 Plant shrub same species in groups of 3, 6 or 9.
- .5 Vary plantings to create a natural effect.
- .6 Distribute trees evenly in open spaces to close canopy.
- .7 Reposition proposed plants depending on the presence of roots, rocks and other obstacles.
- .8 All purchased plants will be planted. In the impossibility to plant all plants from one grid, the remaining plants can be distributed in the following grids of the same compartment with coordination of the Department Representative.
- .9 Typical planting to be adapted around existing plants on site.
- .10 Seedling plantings :
  - .1 Replace dead plants in trenches made in erosion control blanket and add a shove; full of compost.
  - .2 Compact soil gently by hand making sure all roots are well covered
- .11 Tree whips plantings :
  - .1 Replace the whip in the trench and fill with native soil and two hand shovels full of compost.
  - .2 Compact soil gently making sure all roots are well covered.
  - .3 For trees in the top of the slope, insert wood stake a minimum of 300 mm in the soil and tree trunk protection.
- .12 Potted trees, conifers and shrubs:
  - .1 Remove dead plant.
  - .2 Create a well-compacted lift at the bottom of the planting hole with topsoil.
  - .3 Add topsoil around to fill planting hole.
  - .4 Compact soil by hand gently making sure all roots are well covered.
  - .5 Create watering basin.
  - .6 Install mulch.
  - .7 Trees: insert wood stake a minimum of 300 mm in the soil and tree trunk protection.

### 3. Standard construction specifications for maintenance

#### SECTION 329310 TREES, SHRUBS AND GROUND COVER PLANTING

- .8 Plant trees at a minimum of 4 m from street lamps.
- .9 Backfill soil in 150 mm lifts:
  - 1. Tamp each lift to eliminate air pockets.
  - 2. When two thirds of depth of planting pit has been backfilled, fill remaining space with water.
  - 3. After water has penetrated into soil, backfill to finish grade.
- .10 Form watering saucer (watering basin) as indicated.
- .11 Minimal topsoil depth in accordance with Section 329119.13 - Topsoil Placement and Grading (see Annex III).
- .13 When planting seedling plugs, planting areas must be cleared of herbaceous vegetation. All planting must be done deep enough to allow the entire root system to be in the ground. The root system must be placed in the ground so as to reproduce as best as possible the natural growth pattern of root, without damaging, bending or folding roots. Roots and stems must have a clear vertical axis. The crown of the plant must be at ground level, and no leaves, branches nor needles may be left buried into the ground.
- .14 Dispose of container material off-site to a recycling facility.
- .15 Make sure all plants have tag around their trunk indicating the species. Maintain the tag in place on the plant after planting.
- .16 Install wood stake as indicated on drawings or directed by Departmental Representative.
- .17 Use single stake tree support for deciduous trees less than 3 m in height.
- .18 Place stake on the uphill side and 150 mm minimum from the trunk. Drive stake 150 mm minimum into undisturbed soil beneath roots.
- .19 Place stake on the uphill side and 150 mm minimum from the trunk.
- .20 Drive stake 150 mm minimum into undisturbed soil beneath roots.
- .21 Ensure stake is secure, vertical and unsplit.
- .22 Install stakes in accordance with the manufacturer's installation instructions for tree shelter and shrub shelter trunk protection measures.
- .23 After tree supports have been installed, remove broken branches with clean, sharp tools.

#### **3.4 MULCHING**

- .1 Ensure soil settlement has been corrected before mulching.
- .2 Spread mulch on all surfaces as indicated on drawings or directed by Departmental Representative. Wet mulch if it may be carried away by wind and mix it with a little bit of topsoil. Loosen the soil before spreading the mulch. Use a depth of at least 80 mm. Apply 50 mm of mulch on the first tier of the slope starting from the lowest point.

#### **3.5 MAINTENANCE DURING ESTABLISHMENT PERIOD**

- .1 Perform following maintenance operations from time of planting to acceptance by Departmental Representative.
- .2 An inspection to identify plant material requiring replacement will be performed in the fall of the establishment period by Departmental Representative. An inspection by the Departmental Representative will also be performed after planting.

### 3. Standard construction specifications for maintenance

#### SECTION 329310 TREES, SHRUBS AND GROUND COVER PLANTING

- .3 All plants removed outside of those inspections will have to be documented (location, size, species) by the Contractor in a Maintenance Report which will be sent to the Departmental Representative.
- .4 Mulching over bare areas: replace or re-spread damaged, missing or disturbed mulch.
- .5 Perform maintenance work for the establishment period between planting and October 15.
- .6 Water to maintain soil moisture conditions for optimum growth and health of plant material without causing erosion.
  - 1. Self-watering product to be monitored and maintained during warranty period.
  - 2. Reform damaged watering saucers. (base of the slope)
  - 3. No sprinkling allowed. When watering, soil should be wet up to a depth of 100 mm.
  - 4. A precipitation of more than 10 mm of rain replaces watering.
- .7 Remove weeds twice in the growing season on the bottom of the slope only.
- .8 Use appropriate control methods, if required to control insects, fungi and disease, in accordance with federal, provincial and municipal regulations. Obtain product approval from Departmental Representative before application.
- .9 Apply organic natural fertilizer in early spring as indicated by soil test.
- .10 Remove dead, broken or hazardous branches from plant material.
- .11 Remove dead plants and plants that are not in a healthy growing condition. Keep trunk protection and tree supports in proper repair and adjustment.
- .12 Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.
- .13 Make other replacements in same manner as specified for original plantings.
- .14 Apply animal repellent as prescribed by manufacturer's instructions.

#### 3.6 VERIFICATION

- .1 Planting work will be verified by Departmental Representative..
- .2 Verification requirements include:
  - 1. All plant material is installed in proper location are in good health and meet normal growth conditions.
  - 2. All plants conform to the requirements of the planting list, and all sections of this current book of specifications.
  - 3. All plants are free of insects and diseases.
- .3 Contractor is responsible for all plant material throughout the contract period. During that period all dead plant material must be replaced. At the request of the Departmental Representative, all dead plant material must be removed within 48 hours of request.
- .4 A tree will be considered inappropriate for one or more of the following reasons:
  - 1. If it carries 75% of foliage compared with the expected volume of foliage for a fully live tree of the same species at the same dimension.
  - 2. If leaves are not of normal dimensions, and not well distributed in the crown, and present on branches or twigs that originate already formed buds.

### 3. Standard construction specifications for maintenance

#### SECTION 329310 TREES, SHRUBS AND GROUND COVER PLANTING

3. If the tree of which more than 25% of its living foliage is developed on stems originating from dormant or adventitious buds, and even though the foliage expresses all the characteristics described in article 3.10.4 above.
4. If detached bark or old wounds - not visible at the acceptance of the tree by the Departmental Representative - are present on the trunk.
5. If after pruning of some of the branches, the tree no longer matches the criteria set article 3.9.4 of the present specifications.

**END OF SECTION**



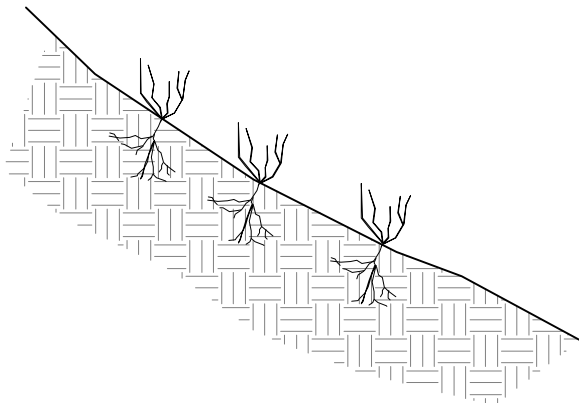


# 4. Standard Construction Drawings for maintenance

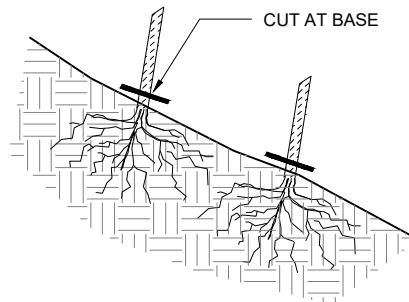
# 4. Standard Construction Drawings for maintenance

## LARGER WOODY PLANTS

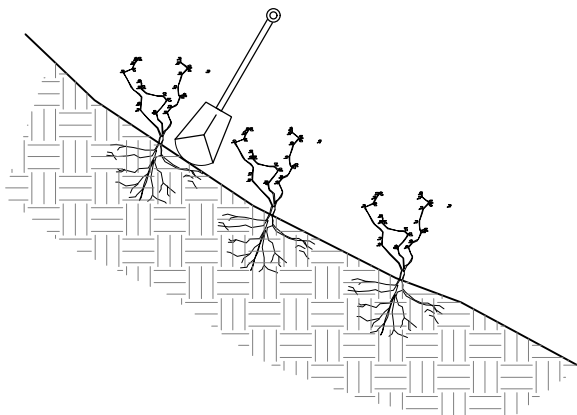
IF IMPOSSIBLE TO DIG OUT, CUT TO GROUND, COVER WITH GEOTEXTILE AND EROSION CONTROL BLANKET OR MULCH DEPENDING OF THE COMPARTMENT AND THE SITUATION.



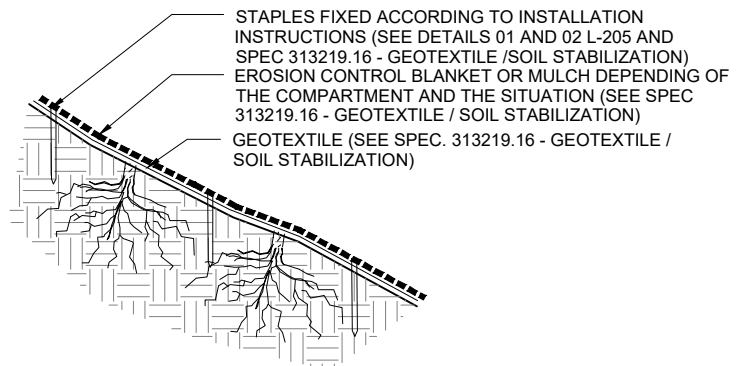
03  
L-200  
REMOVAL OF INVASIVE SEEDLINGS DETAIL  
SECTION



05  
L-200  
REMOVAL OF LARGER WOODY INVASIVE PLANTS DETAIL  
SECTION



04  
L-200  
REMOVAL OF SMALL INVASIVE PLANTS DETAIL  
SECTION



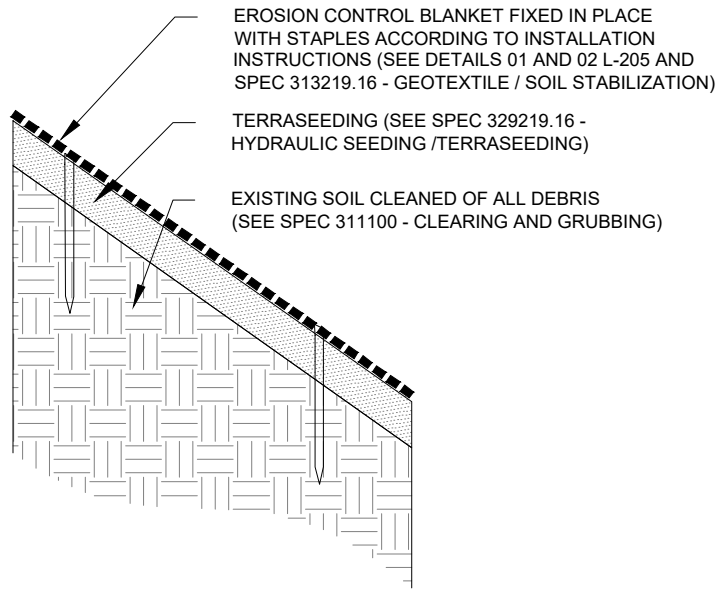
06  
L-200  
REMOVAL OF LARGER WOODY INVASIVE PLANTS DETAIL  
SECTION

### NOTES

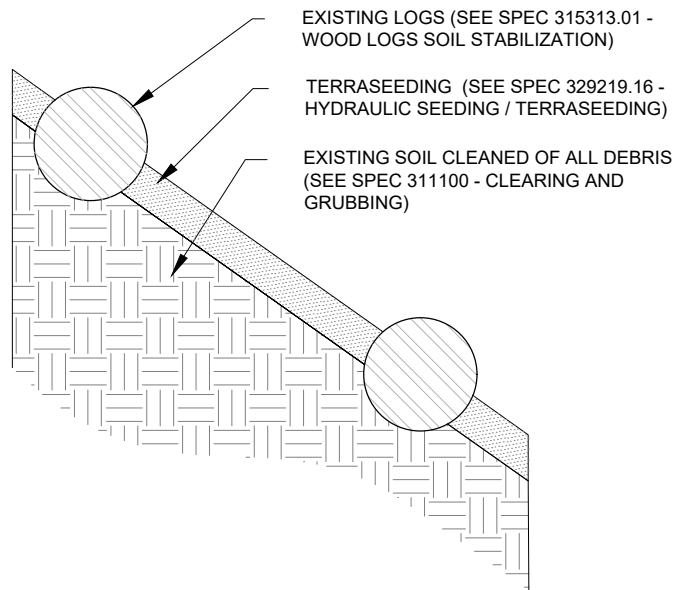
1. SEE SPECIFICATIONS 320190.33 - TREE AND SHRUB PRESERVATION
2. SEE SPEC 311100 - CLEARING AND GRUBBING

# 4. Standard Construction Drawings for maintenance

## Terraseeding



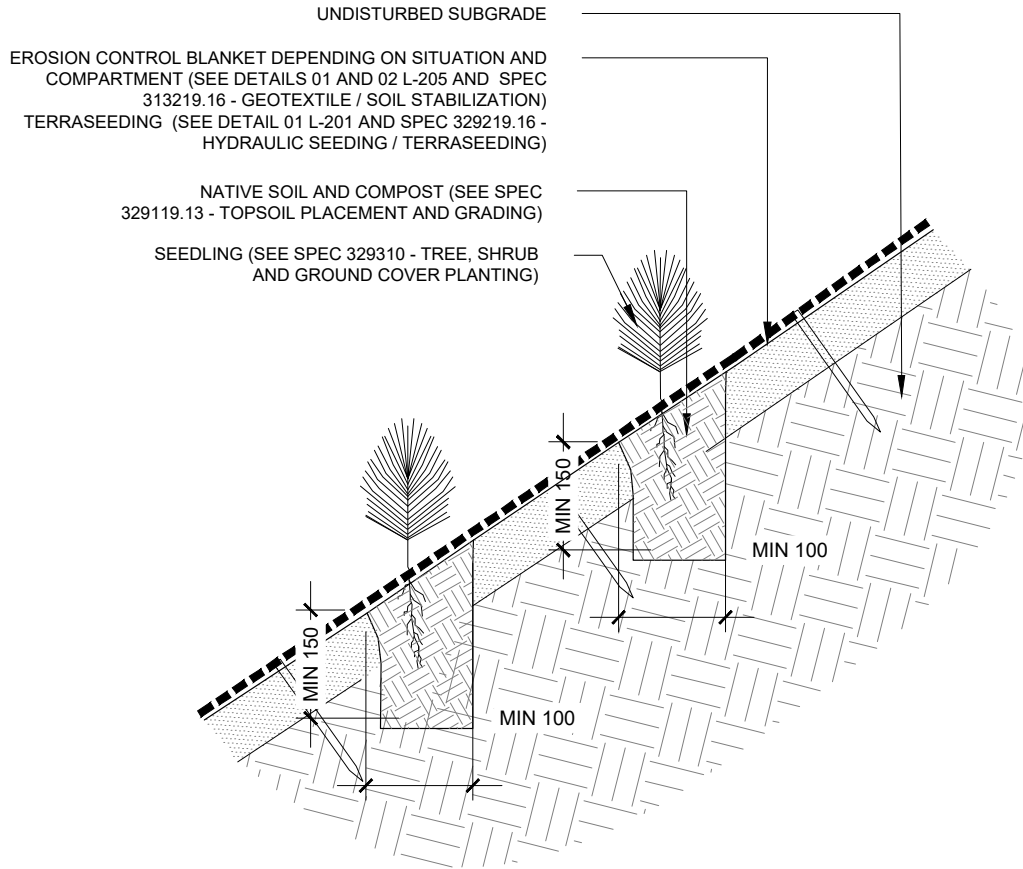
01 TERRASEEDING WITH EROSION CONTROL BLANKET DETAIL SECTION  
L-201



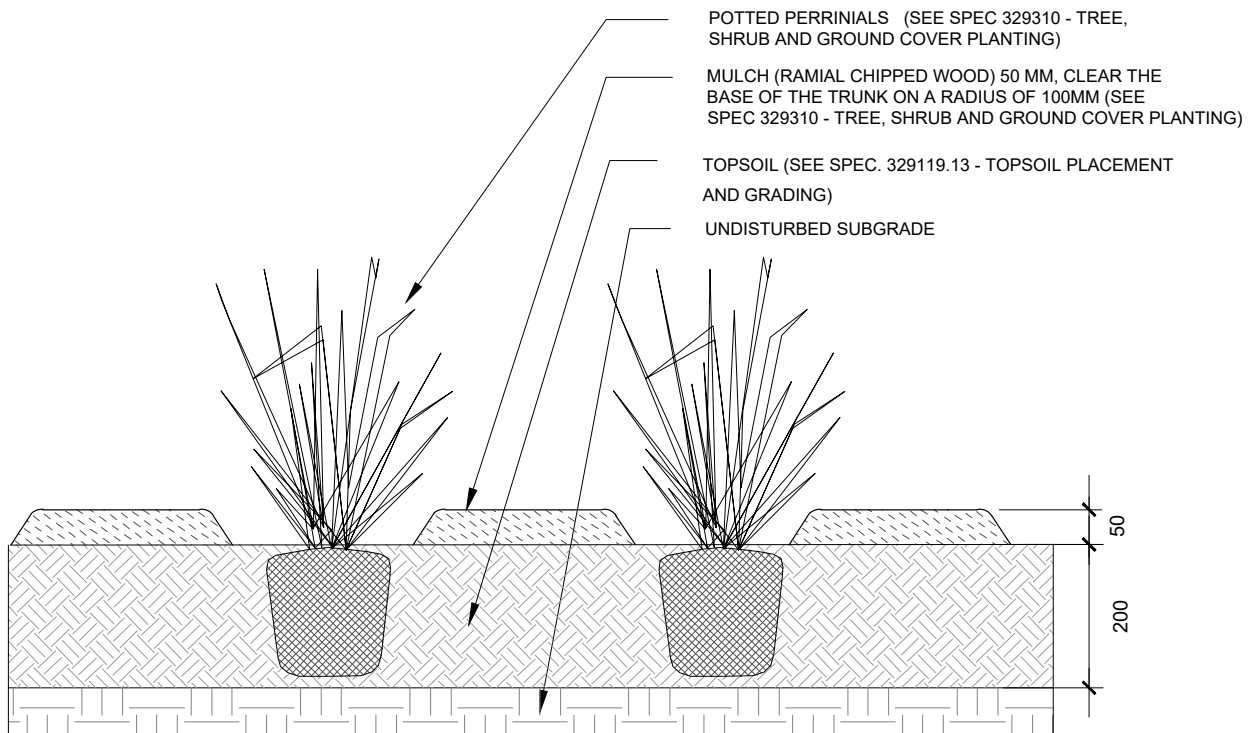
02 TERRASEEDING IN LOG AREAS DETAIL SECTION  
L-201

# 4. Standard Construction Drawings for maintenance

## Seedling Planting for Shrubs, Perennials and Ground Covers -Perennials in Pots



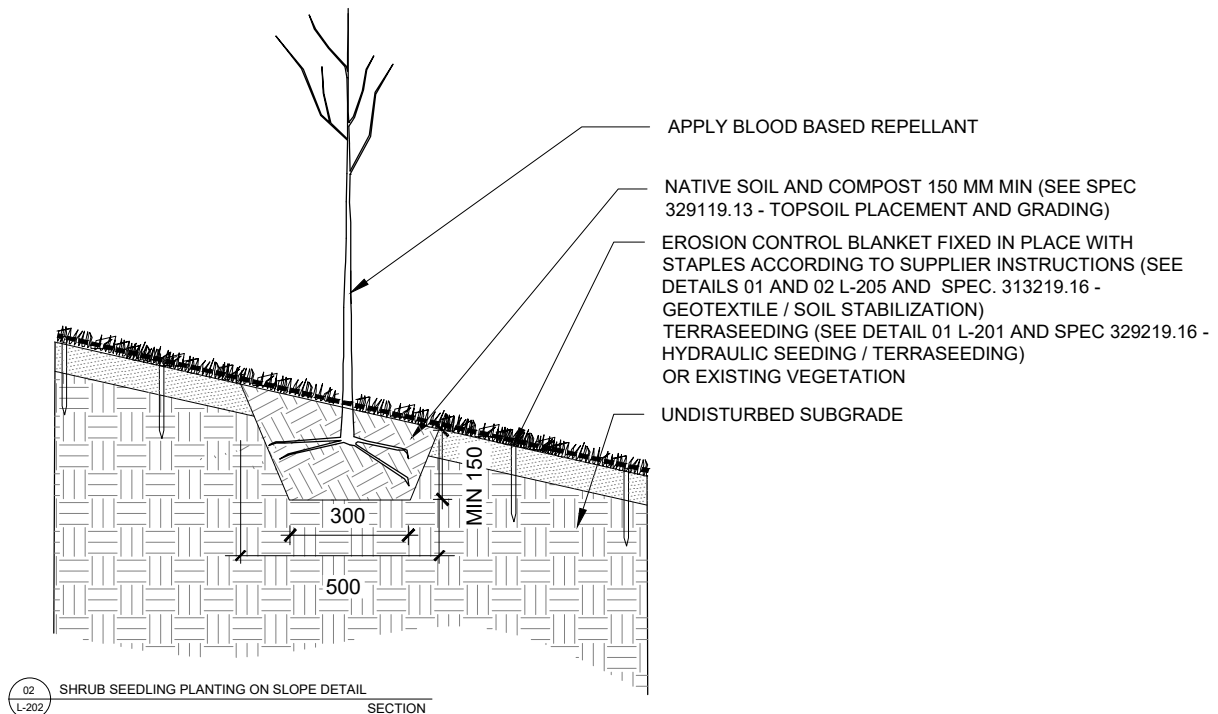
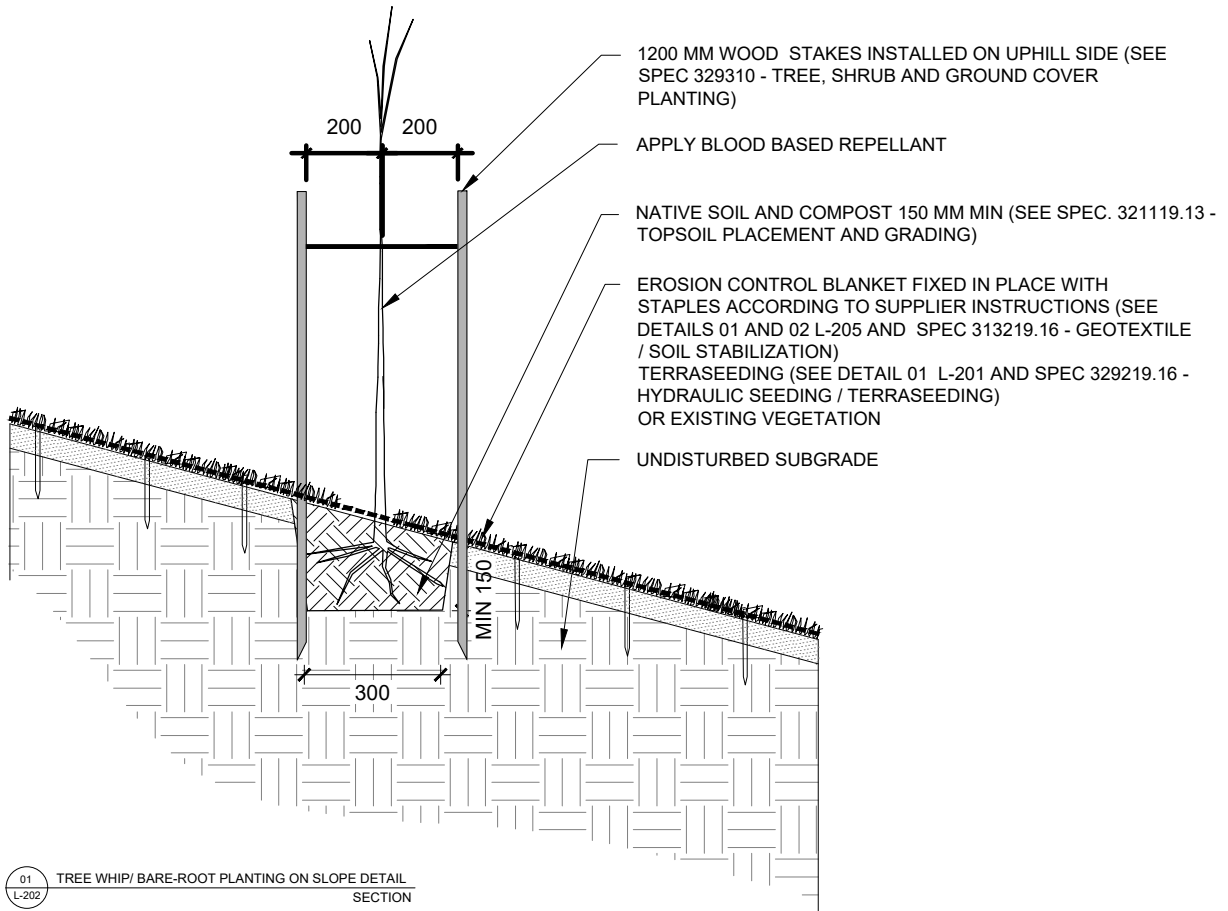
03 SEEDLING PLANTING FOR SHRUBS, PERENNIALS AND GROUND COVERS DETAIL SECTION L-201



04 PERENNIALS IN POTS DETAIL SECTION L-201

# 4. Standard Construction Drawings for maintenance

## Tree Whip and Bare-Root Planting on Slope - Shrub Seedling Planting on Slope

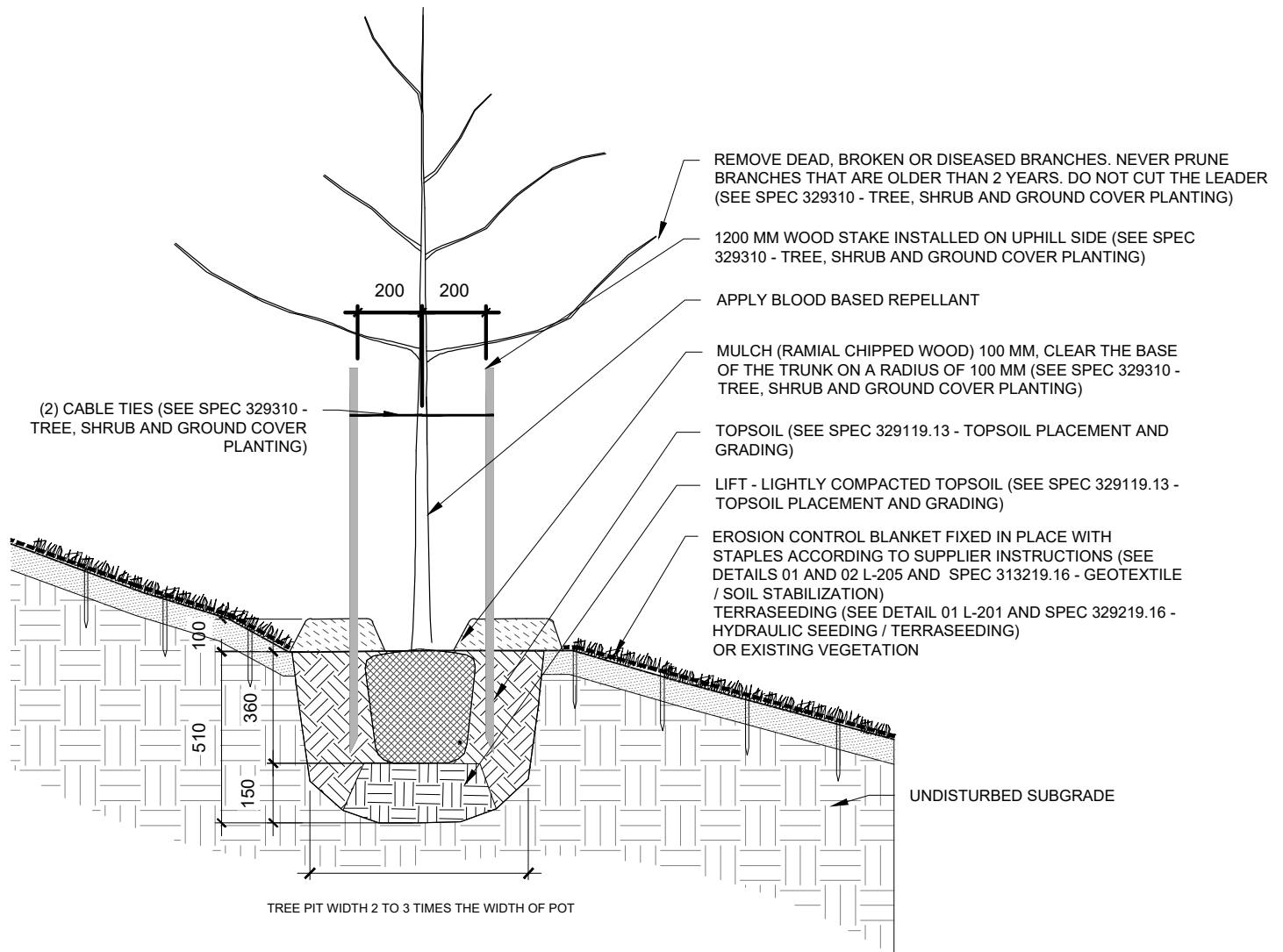


### NOTE

1. APPLY REPELLANT TO ENSURE EVEN COVERAGE OF ALL PARTS OF THE PLANT (STEM, BRANCHES, AND LEAVES)
2. MUST BE APPLIED EVERY 2 TO 4 WEEKS DURING GROWING SEASON
3. APPLIED ONCE DURING DORMANT PERIODS.
4. FREQUENCY OF APPLICATION MAY VARY OR BE EXTENDED IF EFFICIENCY IS MONITORED.

# 4. Standard Construction Drawings for maintenance

## Potted Deciduous Tree Planting on Gentle Slope



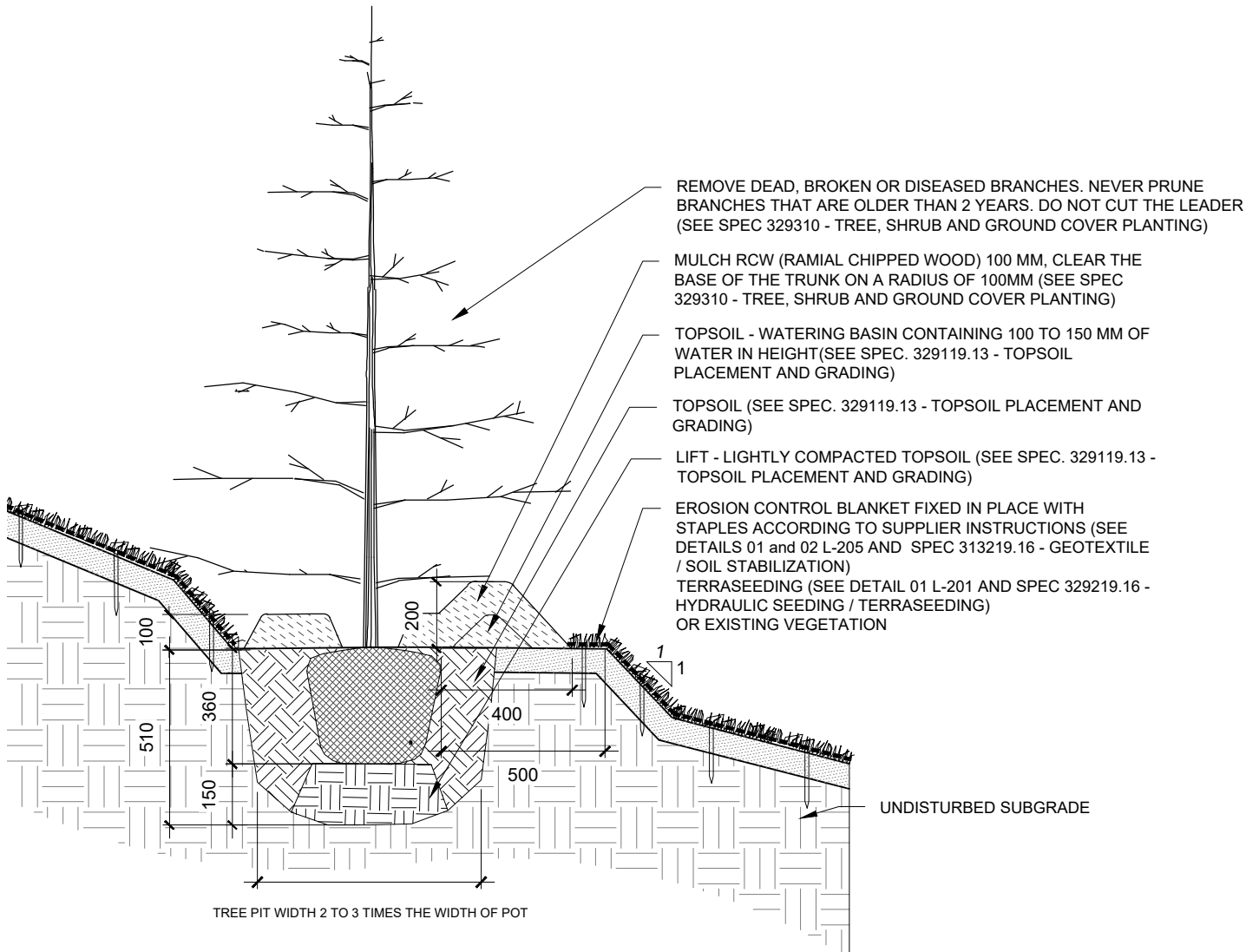
01 POTTED DECIDUOUS TREE PLANTING ON GENTLE SLOPE DETAIL SECTION  
L-203

### NOTE

1. APPLY REPELLANT TO ENSURE EVEN COVERAGE OF ALL PARTS OF THE PLANT (STEM, BRANCHES, AND LEAVES)
2. MUST BE APPLIED EVERY 2 TO 4 WEEKS DURING GROWING SEASON
3. APPLIED ONCE DURING DORMANT PERIODS.
4. FREQUENCY OF APPLICATION MAY VARY OR BE EXTENDED IF EFFICIENCY IS MONITORED.

# 4. Standard Construction Drawings for maintenance

## Potted Conifer Tree Planting on gentle/ Slope

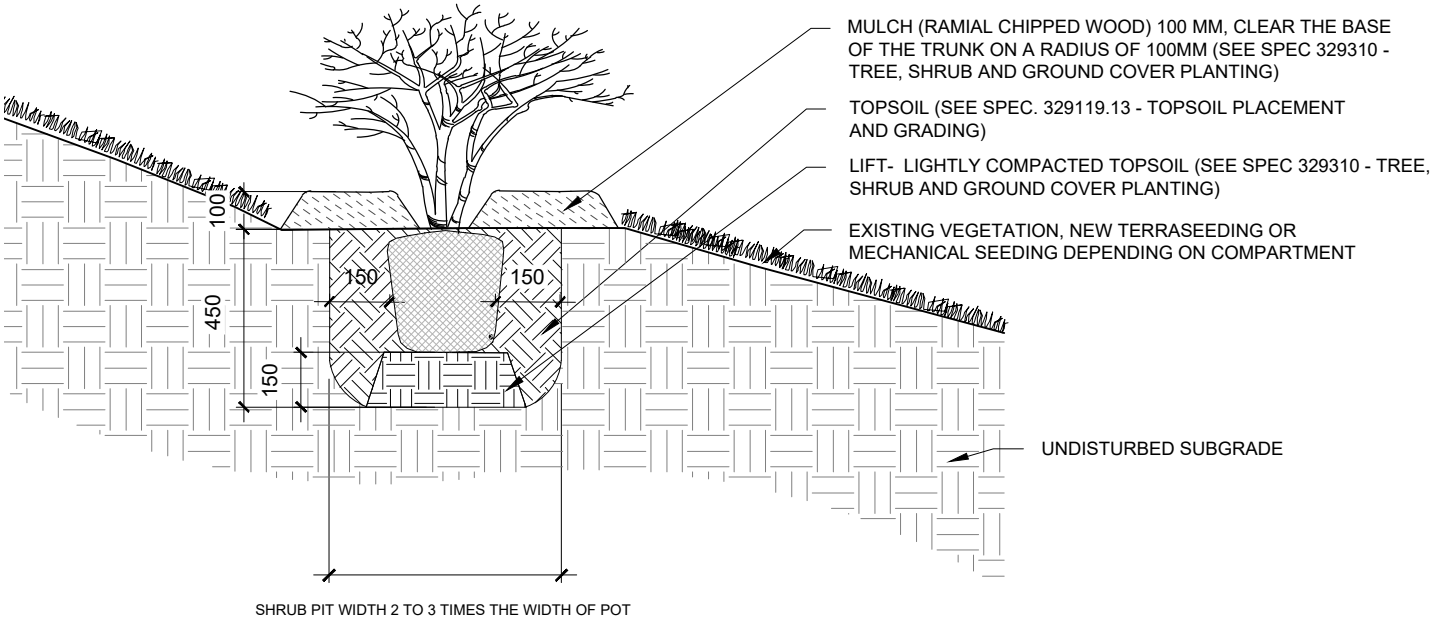


01 POTTED CONIFER TREE PLANTING ON GENTLE SLOPE DETAIL SECTION  
L-204



# 4. Standard Construction Drawings for maintenance

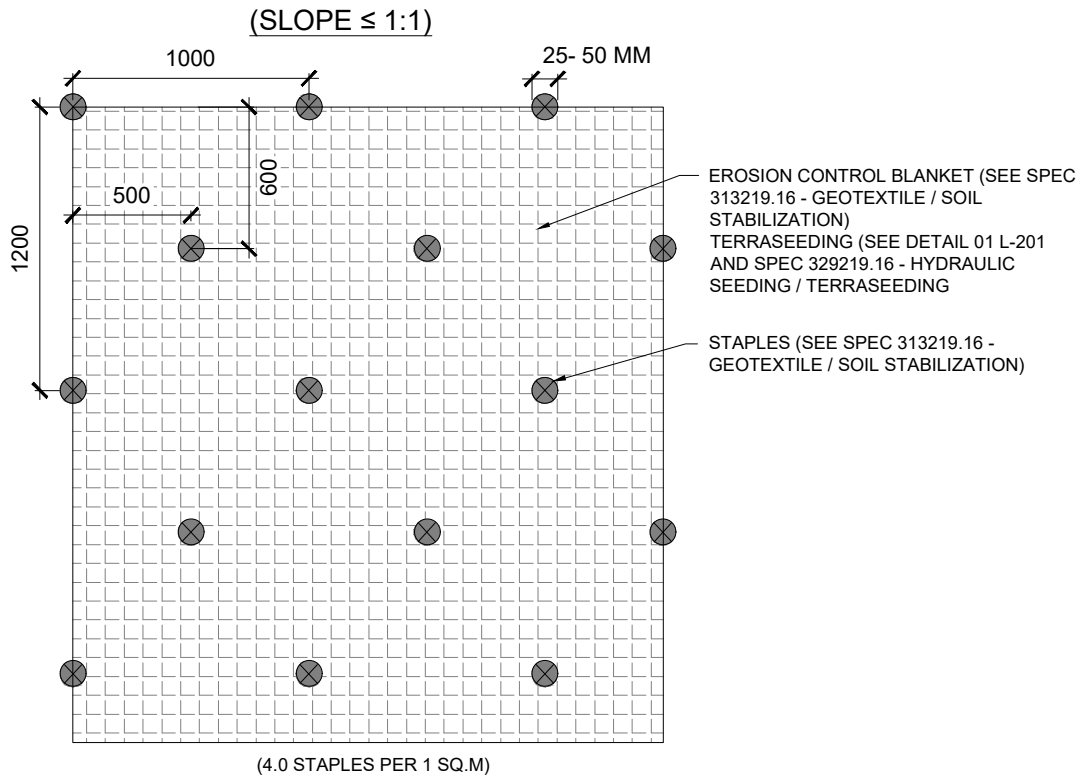
## Potted Shrub Planting on Gentle Slope



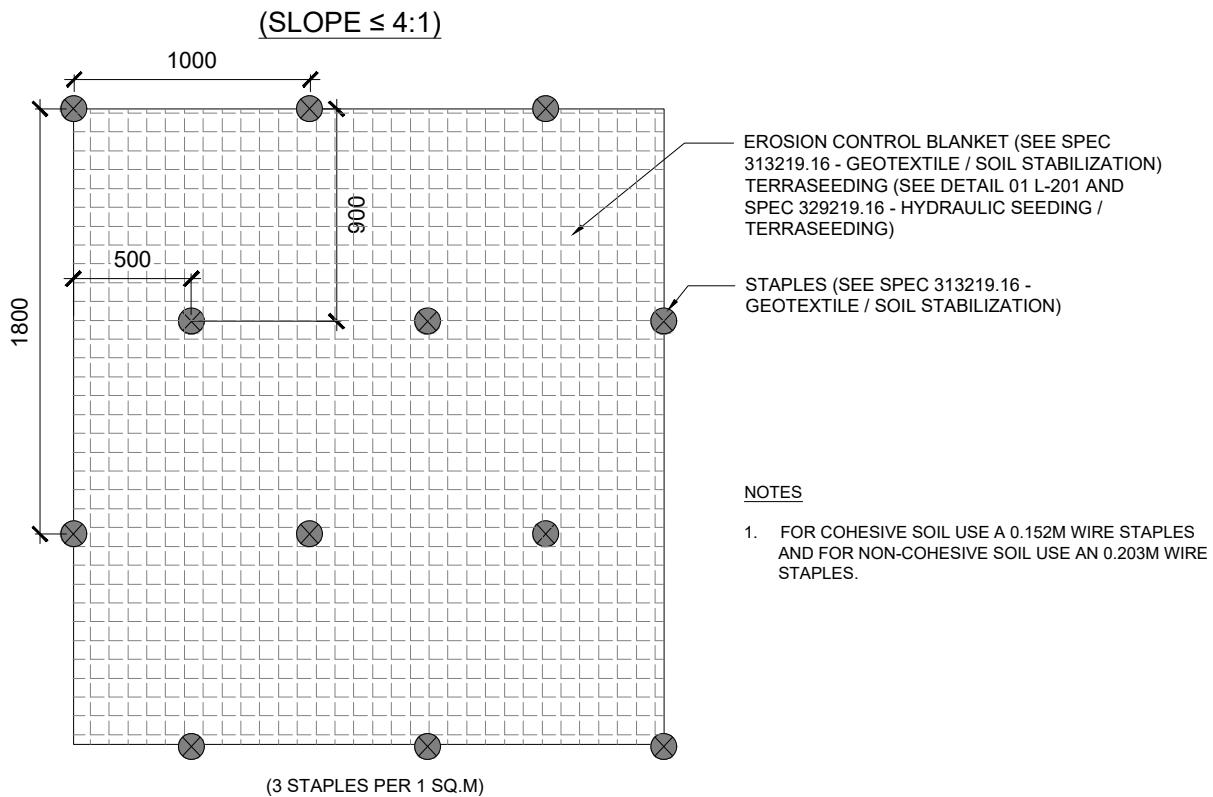
02 POTTED SHRUB PLANTING ON GENTLE SLOPE DETAIL SECTION  
L-204

# 4. Standard Construction Drawings for maintenance

## Erosion control blanket Installation



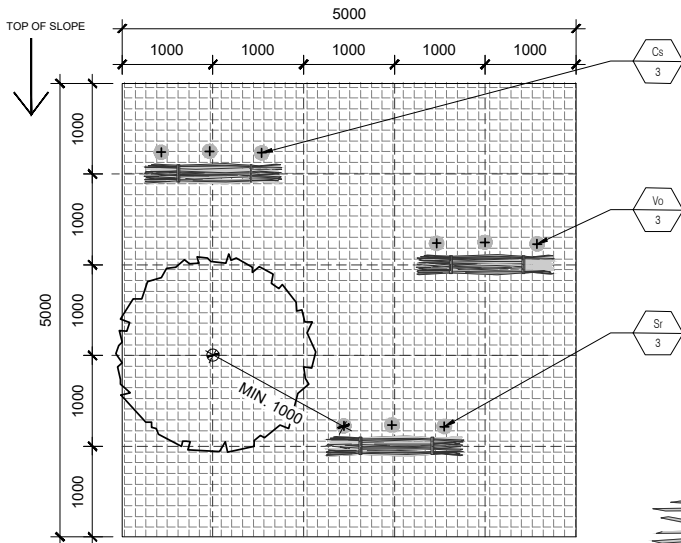
01 EROSION CONTROL BLANKET INSTALLATION ON SLOPE  $\leq$  4:1 DETAIL PLAN L-210






02 EROSION CONTROL BLANKET INSTALLATION ON SLOPE  $\leq$  1:1 DETAIL PLAN L-205

# 4. Standard Construction Drawings for maintenance

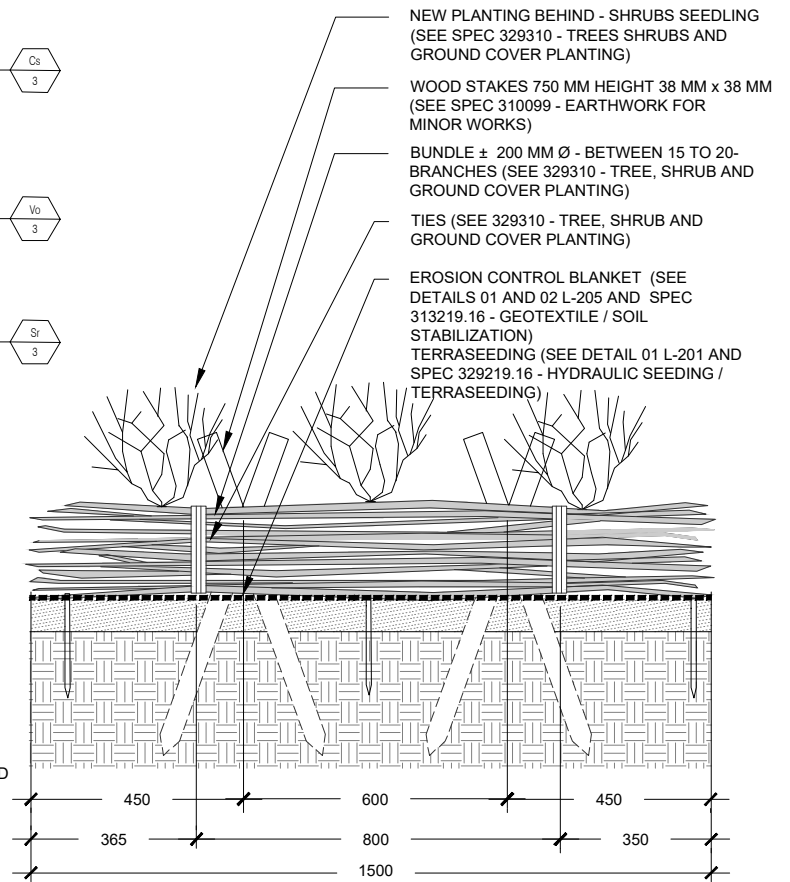
## Live Branch Bundles



### LEGEND

-  BUNDLE ± 200 MM Ø - BETWEEN 15 TO 20 BRANCHES (SEE 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
-  SHRUBS SEEDLING (SEE DETAIL 03 L-201 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
-  EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION)  
TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)

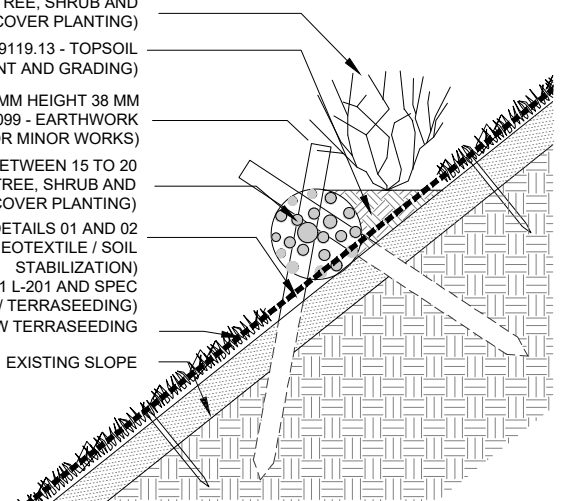
03 L-205 LIVE BRANCH BUNDLES DETAIL PLAN



04 L-205 LIVE BRANCH BUNDLES DETAIL SECTION

- SHRUBS SEEDLING (SEE SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- TOPSOIL (SEE SPEC 329119.13 - TOPSOIL PLACEMENT AND GRADING)
- WOOD STAKES 750 MM HEIGHT 38 MM X38MM (SEE SPEC 310099 - EARTHWORK FOR MINOR WORKS)
- BUNDLE ± 200 MM Ø - BETWEEN 15 TO 20 BRANCHES (SEE 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION)
- TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)
- EXISTING VEGETATION OR NEW TERRASEEDING

EXISTING SLOPE



05 L-205 LIVE BRANCH BUNDLES DETAIL SECTION

## 4. Standard Construction Drawings for maintenance

### General guidelines for grid planting/compartment

#### GENERAL GUIDELINES FOR GRID PLANTING / COMPARTMENT

##### 1. MINIMAL PLANTING DISTANCE FROM EXISTING VEGETATION

TYPE OF PLANTING	LARGE TREES	SMALL TREES	CONIFERS	SMALL CONIFERS	SHRUBS
TREE WHIPS	2M	1M	2M	2M	1M
BARE ROOTS CONIFERS	2M	2M	3M	2M	1M
SHRUB SEEDLINGS	2M	1M	2M	2M	1M

##### 2. TYPICAL PLANT SPACING (CENTER TO CENTER)

- TREE WHIPS: 1,5 M
- SHRUB SEEDLINGS: 45 CM (6 PER/ M2)
- BARE-ROOT CONIFERS: 1,5 M

##### 3. PLANT SPECIES PLANTING

- REGROUP - SHRUBS FROM THE SAME SPECIES IN GROUPS OF 3 / 6 / 9
- VARY PLANTINGS TO CREATE NATURAL EFFECT
- DISTRIBUTE TREES EVENLY IN OPEN SPACES TO CLOSE CANOPY
- PLANT IN AREAS CREATED BY INVASIVE PLANTS REMOVALS
- REPOSITION THE PROPOSED PLANTS DEPENDING ON THE PRESENCE OF ROOTS, ROCKS AND OTHER OBSTACLES

##### 4. PLANTABLE ZONE TO BE VALIDATED BY SITE INSPECTION

##### 5. TYPICAL PLANTING TO BE ADAPTED AROUND EXISTING PLANTS ON SITE

## 4. Standard Construction Drawings for maintenance

# 5. Compartment Planting and Stabilization Methods for Maintenance

# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

### Characteristics of the Interventions

Interventions in 2021 included all reforestation works, soil stabilization, as well as the stabilization of the Lovers' Walk remains. The maintenance manual refers to the reforestation efforts and the stabilization of the slope using logs and wire mesh.

The reforestation efforts and other interventions are prescribed in two ways: compartmental planting and situation-specific planting.

Compartment plantings are selected according to the specific characteristics as described in the compartment descriptions. They are divided in three sections, the top, middle and the bottom of the slope. The top of the slope is the flatter part of the slope, located between the trail along the top of the escarpment and the steep slopes. The middle of the slope is the steep slope area of the escarpment and comprises most of the site. The bottom of the slope is the area between the bottom of the escarpment and the multi-purpose trail.

Situational features are specific to certain areas of the escarpment. These include constructions such as the Lovers' walk, relics or stairs, the presence of slopes, the presence of crevices created by gullying or the creation of a pollinator meadow.

The maintenance plan does not include erosion control using logs or wire mesh. Reference should be made to the structural engineer for these elements.

### Description of the compartments

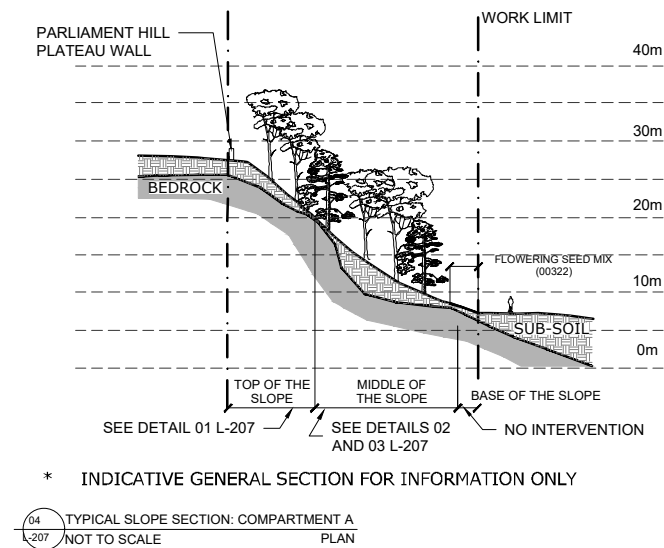
The north slope of the escarpment is divided in six compartments according to their site specifications – topography, soil, quantity of rock face and vegetation. The analysis leading to the division of these areas has been determined with geological and vegetation surveys and analysis.



# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

### Compartment A



Compartment A is located along the eastern side of the escarpment, starting at the east slope stairs on Wellington Street. It is the compartment with the lowest slope steepness, consequently it has no erosion control methods using wood logs. This area was the site of a pilot project in 2015 and has younger plants resulting from this reforestation effort. The area is partly populated by younger plants and has a dense vegetation cover with heavily shaded areas throughout. The exception is the top of the slope, which is open to sunlight.

A large quantity of invasive plants was removed from the compartment, most of them situated on the top of slope and along the east slope stairs on Wellington Street (pea shrub, honeysuckle, and buckthorn). They will require cutbacks until they are completely eradicated.

Also, a large water seep in this compartment requires specific monitoring. Investigations regarding the origin of the water are ongoing.

#### Deciduous trees

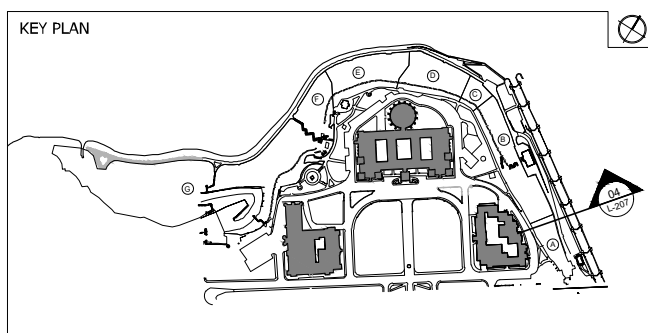
Key	Latin name
AS	<i>Acer saccharum</i>
BA	<i>Betula alleghaniensis</i>
CC	<i>Carya cordiformis</i>
OV	<i>Ostrya virginiana</i>
TA	<i>Tilia americana</i>

#### Large shrubs

Key	Latin name
Ac	<i>Amelanchier canadensis</i>
Pv	<i>Prunus virginiana</i>

#### Small shrubs

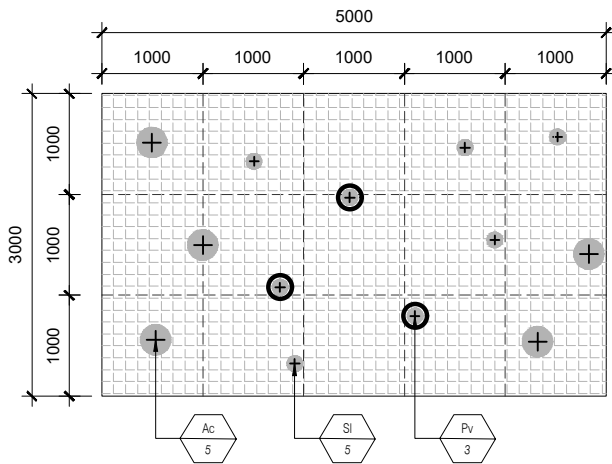
Key	Latin name
DI	<i>Diervilla lonicera</i>
Po	<i>Physocarpus opulifolius</i>
Ra	<i>Rhus aromatica</i>
Sa	<i>Symphoricarpos albus</i>
SI	<i>Spiraea latifolia</i>



# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

### Compartment A



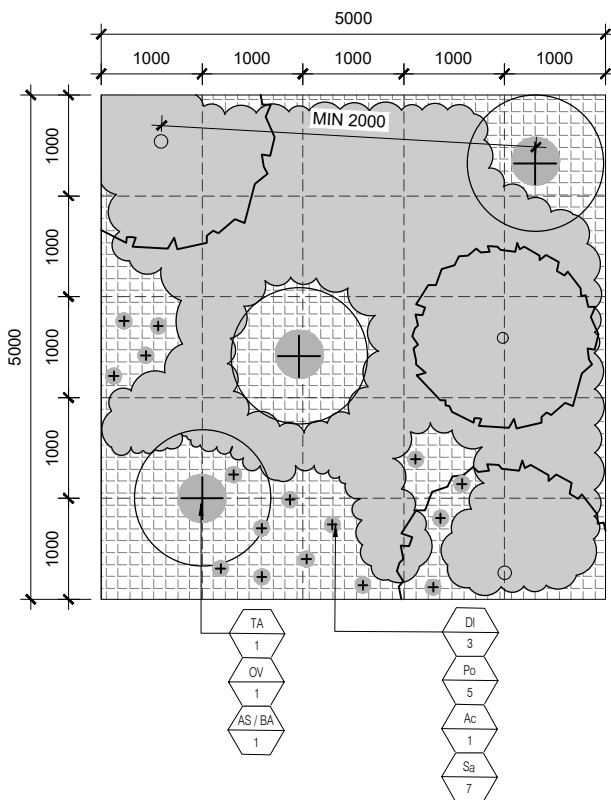
01 L-207 COMPARTMENT A: NEW TOP-OF-SLOPE VEGETATION  
SCALE: 1:75 PLAN

#### LEGEND

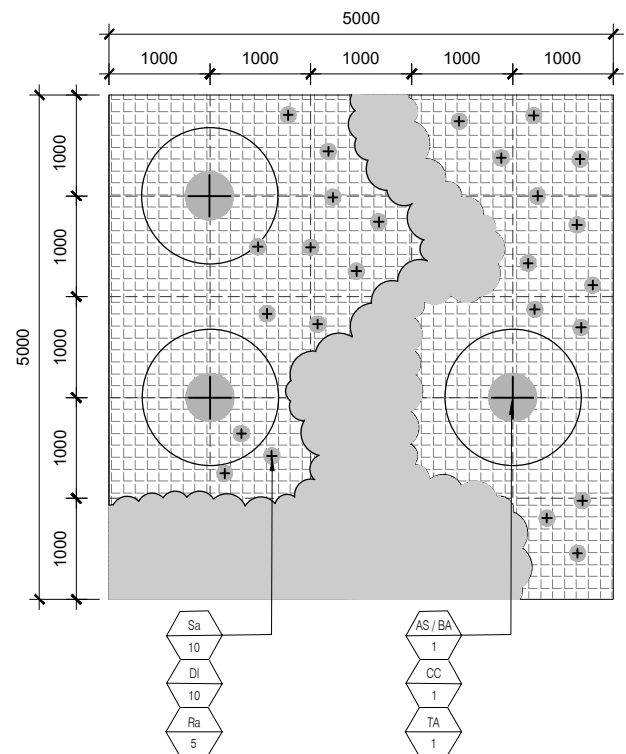
- ⊕ DECIDUOUS TREE WHIPS (SEE DETAIL 01 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊕ SHRUBS SEEDLING (SEE DETAIL 02 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ▨ EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION)
- ▨ TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)

#### NOTE

1. SEEDED EROSION CONTROL BLANKET IN ALL SURFACES EXCEPT ZONES WITH CEDAR LOGS (SEE SITUATION 6)
2. REPOSITION COIR MAT FROM 2015 PILOT PROJECT WHERE NEEDED. IF EXISTING EXISTING COIR MAT IS DECAYED
3. FOR MID-OF-SLOPE SEE ALSO PLANTING SITUATIONS 1, 2 AND 15
4. IN INSTANCES WHERE SLOPE CONDITIONS MAKES PLANTING DENSITY IN GRID 02-L207 DIFFICULT TO MAINTAIN, PRIORITISE THE PLANTING OF Ac AND DI. USE LEFTOVER PLANT MATERIAL TO INCREASE DENSITY IN THE VICINITY OF STAIRS AT BEGINNING OF COMPARTMENT A AND AT THE BOTTOM OF COMPARTMENT A.
5. ALTERNANTE BETWEEN AS AND BA RANDOMLY THROUGHOUT COMPARTMENT A.



02 L-207 COMPARTMENT A: NEW MID-OF-SLOPE PLANTING UNDER TREE CANOPY  
SCALE: 1:75 PLAN

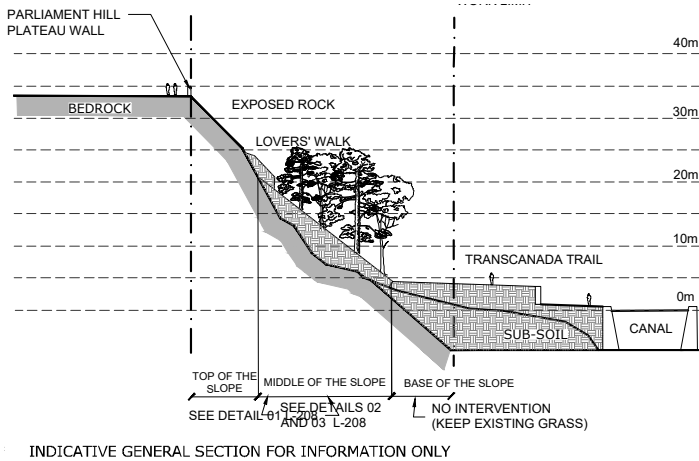


03 L-207 COMPARTMENT A: NEW MID-OF-SLOPE PLANTING IN CANOPY OPENINIGS AFTER TREE CUTS  
SCALE: 1:75 PLAN

# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

### Compartment B



INDICATIVE GENERAL SECTION FOR INFORMATION ONLY

04 L-208 TYPICAL SLOPE SECTION: COMPARTMENT B NOT TO SCALE SECTION

#### Deciduous trees

Key	Latin name
AP	<i>Acer pensylvanicum</i>
AS	<i>Acer saccharum</i>
BA	<i>Betula alleghaniensis</i>
CC	<i>Carya cordiformis</i>
OV	<i>Ostrya virginiana</i>
TA	<i>Tilia americana</i>

#### Coniferous trees

Key	Latin name
TO	<i>Thuja occidentalis</i>

#### Large shrubs

Key	Latin name
Ac	<i>Amelanchier canadensis</i>
Pv	<i>Prunus virginiana</i>
Rt	<i>Rhus typhina</i>
Cs	<i>Cornus sericea stolonifera</i>

#### Small shrubs

Key	Latin name
Au	<i>Arctostaphylos uva-ursi</i>
DI	<i>Diervilla lonicera</i>
Po	<i>Physocarpus opulifolius</i>
Ro	<i>Rubus odoratus</i>
Sa	<i>Symphoricarpos albus</i>
SI	<i>Spiraea latifolia</i>
Sp	<i>Sambucus pubens</i>

Compartment B is located along the Rideau Canal between compartment A and the first lock. The area includes a large portion of Lovers' Walk and the remnants of an old, deteriorated staircase. A large section of the compartment has been stabilized with wood logs.

This portion was planted with Norway maples in the 1990s making them the dominant species of the compartment. As such, very little undergrowth was present before the reforestation project of 2021 due to the heavy shade cause by them.

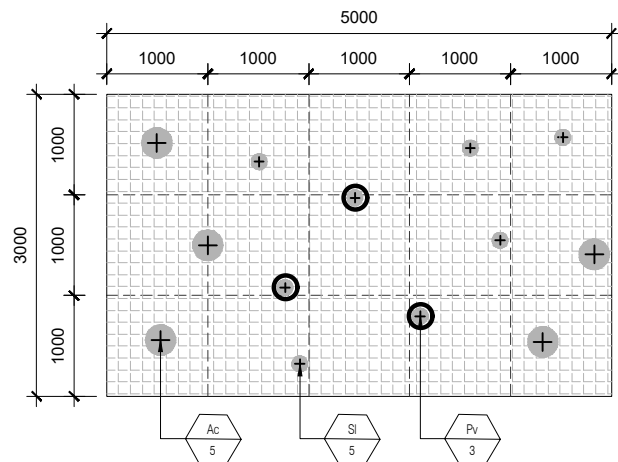
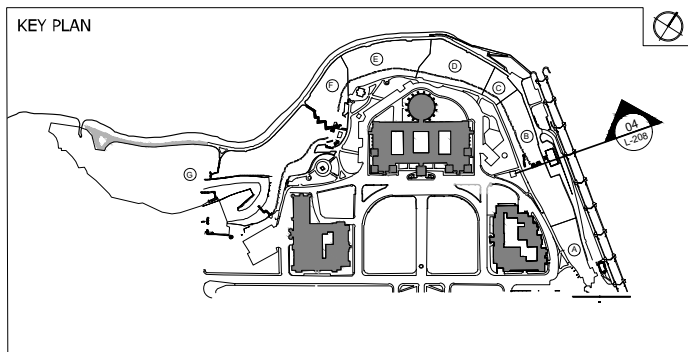
As in compartment A, many invasive plants were removed, especially on the top of the slope. They require regular cutbacks until they are completely eradicated.

#### LEGEND

- ⊕ DECIDUOUS TREE WHIPS (SEE DETAIL 01 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊗ BARE ROOT CONIFERS (SEE DETAIL 01 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊕ SHRUBS SEEDLING (SEE DETAIL 02 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊞ EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION)
- ⊞ TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)

#### NOTE

1. SEE SPEC 329310 - TREE, SHRUB AND GROUND COVER
3. SEEDED EROSION CONTROL BLANKET IN ALL SURFACES EXCEPT ZONES WITH CEDAR LOGS (SEE SITUATION 6)
4. FOR TOP-OF-SLOPE PLANTING SEE ALSO PLANTING SITUATIONS 1, 6, 7 AND 15
5. FOR MID-OF-SLOPE SEE ALSO PLANTING SITUATIONS 1, 2, 3, 5 AND 6

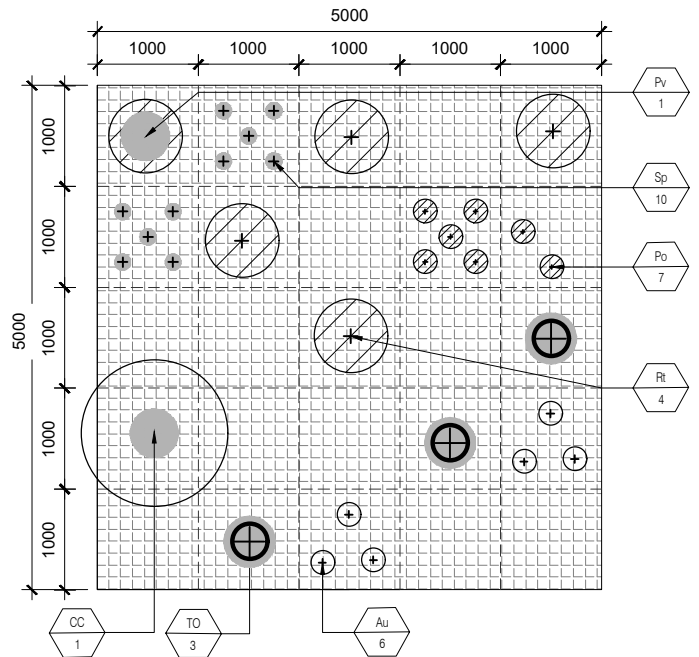
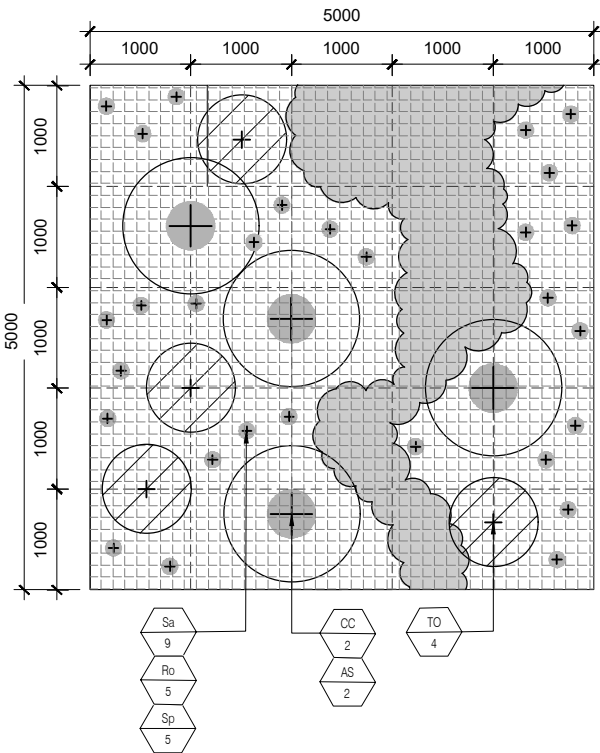
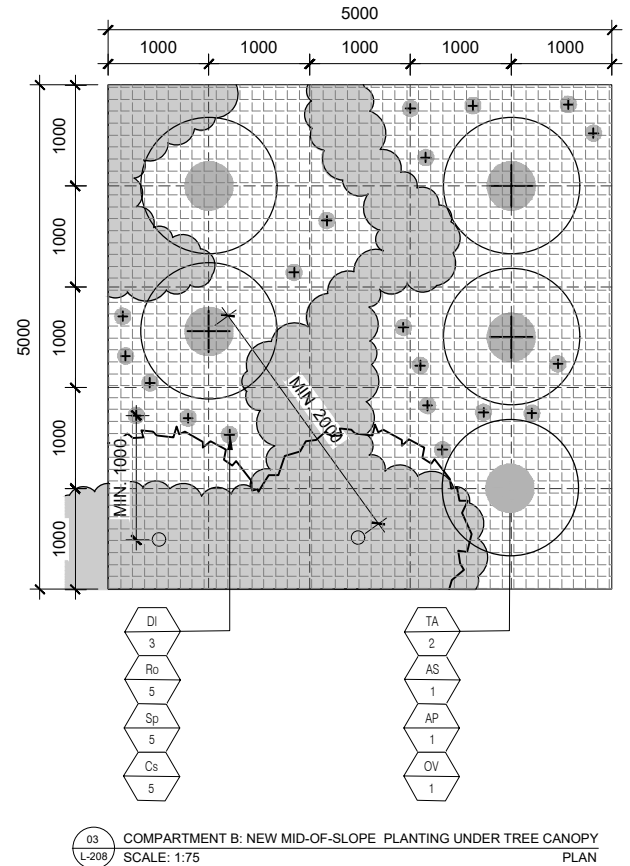
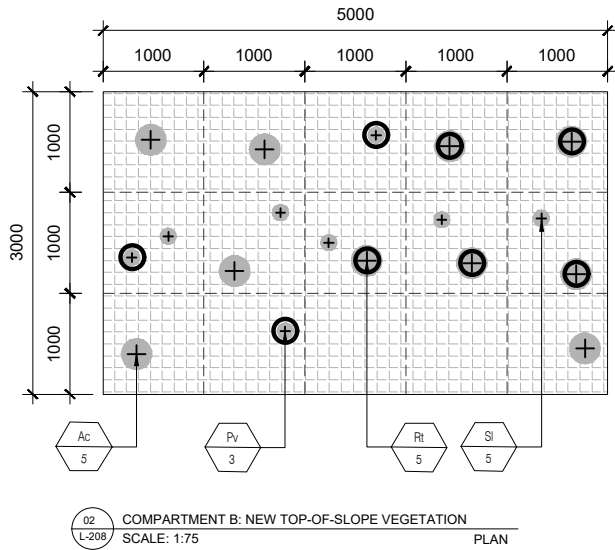


01 L-208 COMPARTMENT B: NEW TOP-OF-SLOPE VEGETATION SCALE: 1:75 PLAN

# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

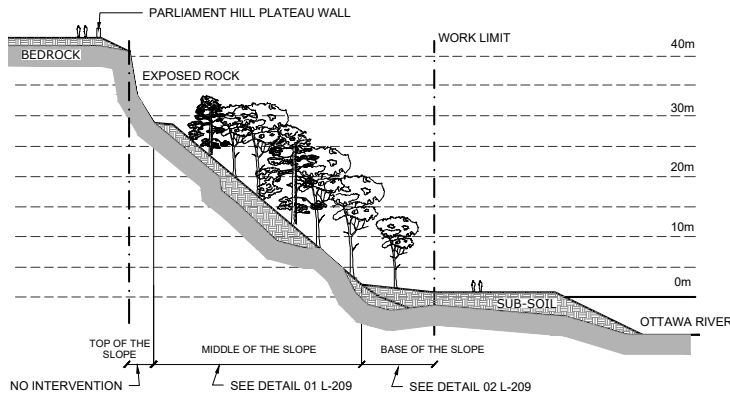
### Compartment B



# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

### Compartment C



\* INDICATIVE GENERAL SECTION FOR INFORMATION ONLY

01 L-209 TYPICAL SLOPE SECTION: COMPARTMENT C SECTION NOT TO SCALE

#### Deciduous trees

Key	Latin name
AR	Acer rubrum
CC	Carya cordiformis
OV	Ostrya virginiana
PD	Populus deltoides
SD	Sorbus decora

#### Coniferous trees

Key	Latin name
TO	Thuja occidentalis

#### Large shrubs

Key	Latin name
Au	Arctostaphylos uva-ursi
Ca	Cornus alternifolia
Cs2	Cornus sericea stolonifera
Jv	Juniperus virginiana
Ra	Rhus aromatica
Tc	Taxus canadensis

Compartment C is the smallest compartment in size and is located at the meeting point of the Rideau Canal and Ottawa river. The average slope is very steep, and the exposed bedrock occupies large sections of it.

A portion of the compartment, beneath the rockface near the pedestrian path at the bottom and above the rockface was not planted due to a high security risk of rockfalls.

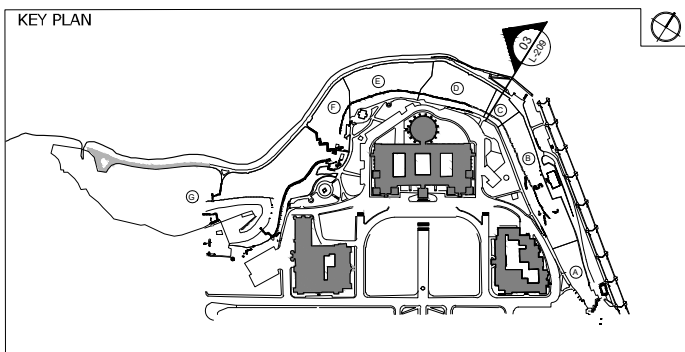
Most of the mature canopy is Manitoba and Norway Maple.

#### LEGEND

- ⊕ DECIDUOUS TREE WHIPS (SEE DETAIL 01 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊗ BARE ROOT CONIFERS (SEE DETAIL 01 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊕ SHRUBS SEEDLING (SEE DETAIL 02 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ▨ EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION)
- ▨ TERRASEEDING (SEE DETAIL L-202 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)
- ⊕ POTTED DECIDUOUS TREES (SEE DETAIL 02 L-203 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊗ POTTED SHRUBS (SEE DETAIL 02 L-204 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ▨ MECHANICAL SEEDING (SEE SPEC 329219.13 - MECHANICAL SEEDING)
- ▨ SODDING (SEE SPEC 329223 - SODDING)

#### NOTE

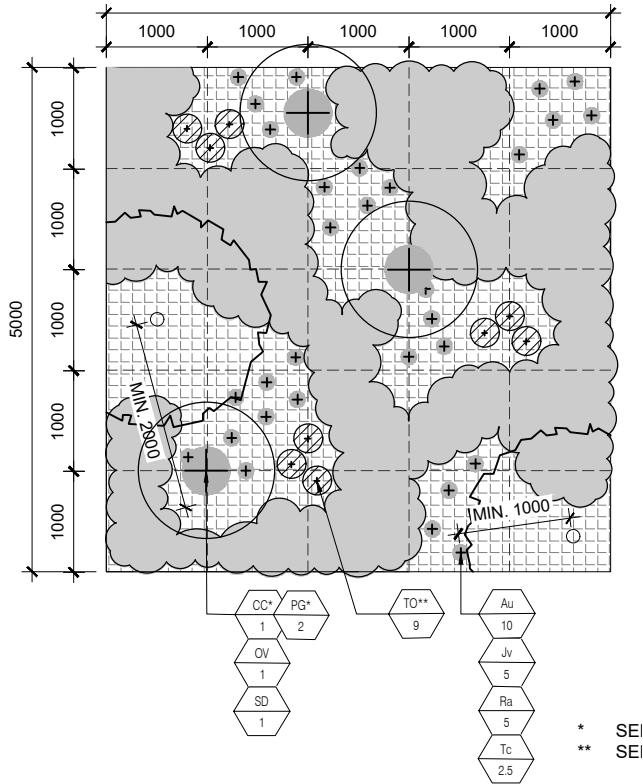
1. PLANT NEW TREES AT A MINIMUM DISTANCE OF 4 M FROM ANY TREE.
2. SEEDED EROSION CONTROL BLANKET IN ALL SURFACES EXCEPT ZONES WITH CEDAR LOGS (SEE SITUATION 6)
3. FOR MID-OF-SLOPE SEE ALSO PLANTING SITUATIONS 4 AND 6
4. FOR BASE-OF-SLOPE SEE ALSO PLANTING SITUATIONS 4 AND 10
5. ALTERNATE BETWEEN 2 PICEA GLAUCA AND 1 CARYA CORDIFORMIS
6. THUJA OCCIDENTALIS PLANTING DISTANCE: 300MM C/C



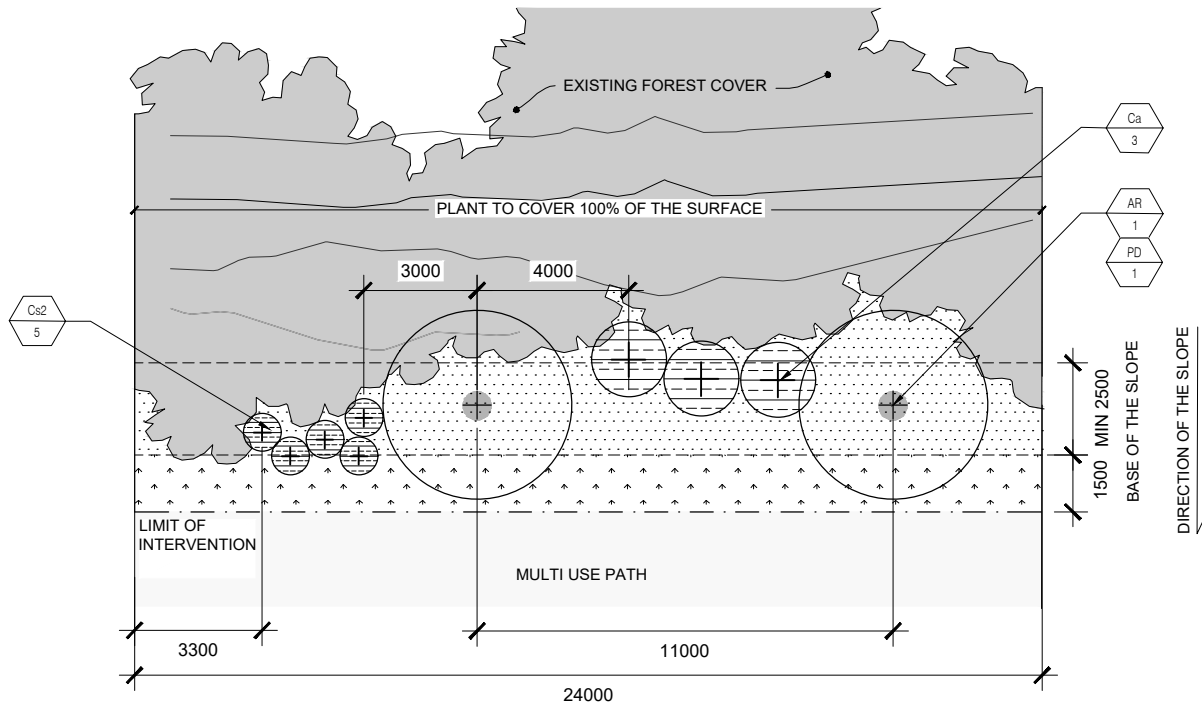
# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

### Compartment C



01 COMPARTMENT C: NEW MID-OF-SLOPE PLANTING UNDER TREE CANOPY  
L-209 SCALE: 1:75 PLAN



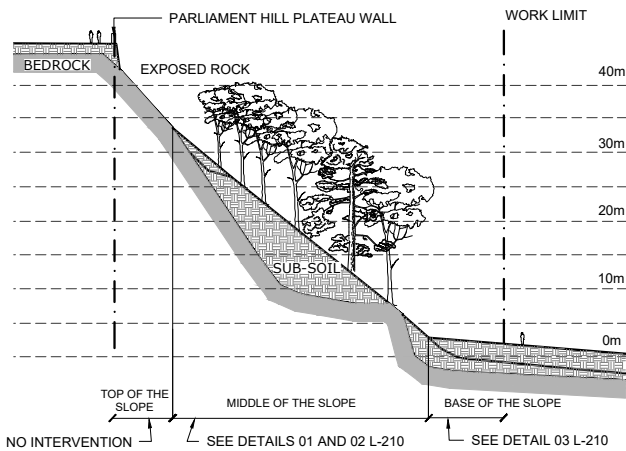
02 COMPARTMENT C: NEW BASE-OF-SLOPE PLANTING  
L-209 SCALE: 1:200 PLAN



# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

### Compartment D



\* INDICATIVE GENERAL SECTION FOR INFORMATION ONLY

04 TYPICAL SLOPE SECTION: COMPARTMENT D  
L-210 NOT TO SCALE SECTION

#### Deciduous trees

Key	Latin name
AR	Acer rubrum (7Gal)
BA	Betula alleghaniensis
BP	Betula populifolia
OV	Ostrya virginiana
PD	Populus deltoides
QM	Quercus macrocarpa

#### Coniferous trees

Key	Latin name
PG	Picea glauca
TO	Thuja occidentalis

#### Large shrubs

Key	Latin name
Cs2	Cornus sericea stolonifera
Pv	Prunus virginiana
Rt	Rhus typhina

#### Small shrubs

Key	Latin name
Am	Aronia melanocarpa
DI	Diervilla lonicera
Jv	Juniperus virginiana
Po	Physocarpus opulifolius
Ra	Rhus aromatica
Rb	Rosa blanda
Ro	Rubus odoratus
SI	Spiraea latifolia
Sp	Sambucus pubens

Compartment D is located behind the Center Block Building, east of the Library of Parliament. The compartment has a steep slope throughout, whilst the top of slope is comprised entirely of a rockface and a plateau near the pedestrian path. As such, a large portion of the compartment has erosion control with wood logs.

The canopy is dominated by Norway and Manitoba Maples. Many invasive shrubs such as honeysuckle and buckthorn were eliminated from this area and will require monitoring. Also, riverbank grape has been cut to ground and will require monitoring as well to ensure newly planted vegetation thrives.

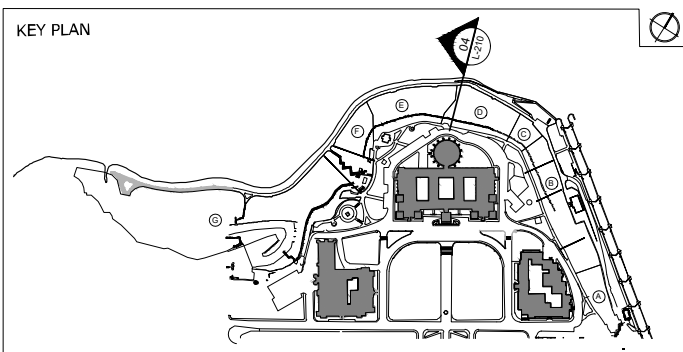
A flowering meadow has been planted at the plateau between the bottom of the escarpment and the multiuse path. Remnants of a Steam plant have been solidified and need to be protected. No works can occur within a 5-meter radius of the site.

#### LEGEND

- ⊕ DECIDUOUS TREE WHIPS (SEE DETAIL 01 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊗ BARE ROOT CONIFERS (SEE DETAIL 01 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊕ SHRUBS SEEDLING (SEE DETAIL 02 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊞ EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION)  
TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)
- ⊕ POTTED DECIDUOUS TREES (SEE DETAIL 02 L-203 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊗ POTTED CONIFERS TREES (SEE DETAIL 01 L-204 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊞ POTTED SHRUBS (SEE DETAIL 02 L-204 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊞ MECHANICAL SEEDING (SEE SPEC 329219.13 - MECHANICAL SEEDING)
- ⊞ SODDING (SEE SPEC 329223 - SODDING)

#### NOTE

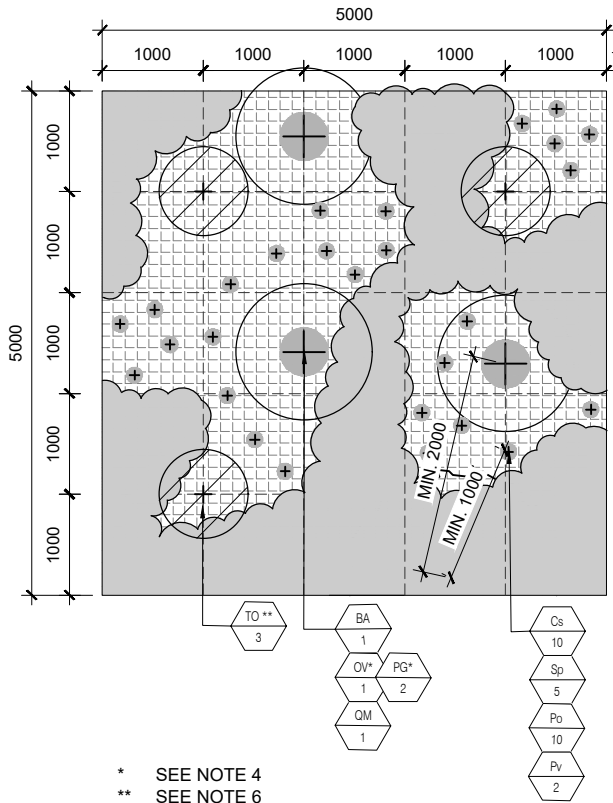
1. SEEDED EROSION CONTROL BLANKET IN ALL SURFACES EXCEPT ZONES WITH CEDAR LOGS (SEE SITUATION 6)
2. FOR MID-OF-SLOPE SEE ALSO PLANTING SITUATIONS 1, 2, 3, 4, 6, 8, 10 AND 15
3. FOR BASE-OF-SLOPE SEE ALSO PLANTING SITUATIONS 3, 10, 14 AND 16
4. ALTERNATE BETWEEN OSTRYA VIRGINIANA AND PICEA GLAUCA FOR SUBSEQUENT GRIDS. PICEA GLAUCA TO BE PRIORITISED IN SHALLOW SOIL (IN PLUG FORMAT).
5. PLANTING DISTANCE FOR SI PLUGS IS 500mm C/C
6. IN SHALLOW SOIL :
  - 6.1. UNDER CANOPY DOUBLE THE QUANTITY OF THUJA OCCIDENTALIS IN SMALL PLUG FORMAT AT APPROXIMATELY 500mm C/C
  - 6.2. OPEN CANOPY REPLACE QUERCUS MACROCARPA WITH RHUS TYPHINA



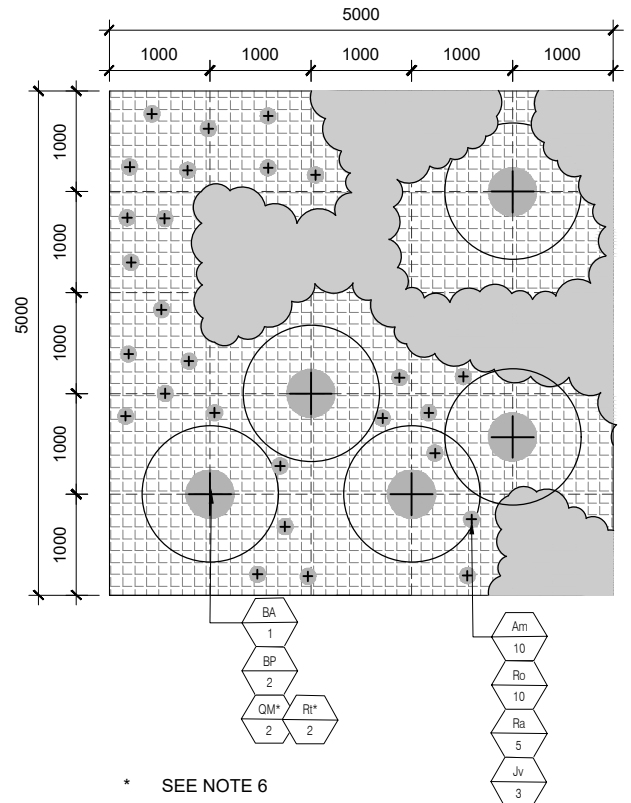
# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

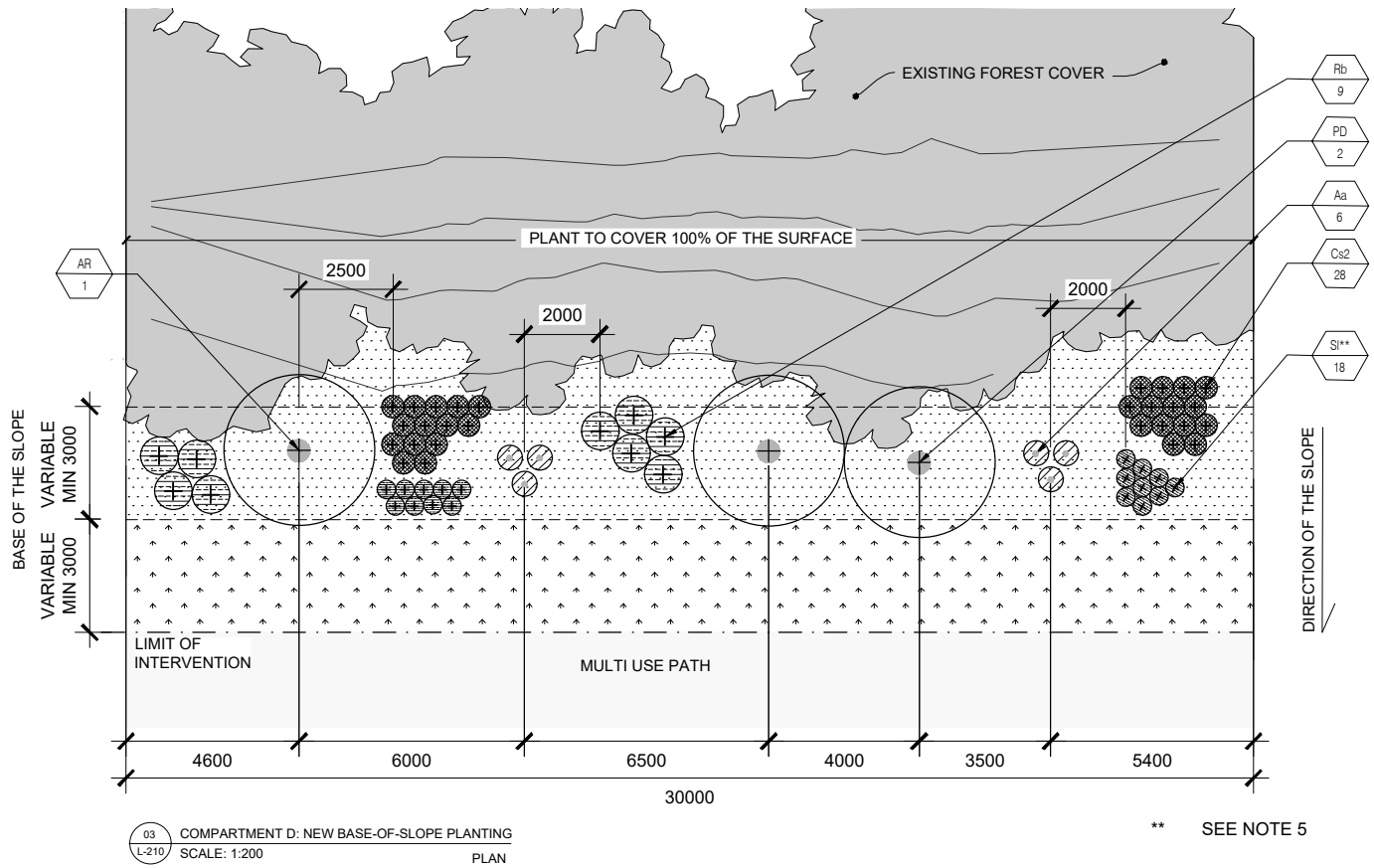
### Compartment D



01 L-210 COMPARTMENT D: NEW MID-OF-SLOPE PLANTING UNDER TREE CANOPY  
SCALE: 1:75  
PLAN



02 L-210 COMPARTMENT D: NEW MID-OF-SLOPE PLANTING IN CANOPY OPENINGS AFTER TREE CUTS  
SCALE: 1:75  
PLAN

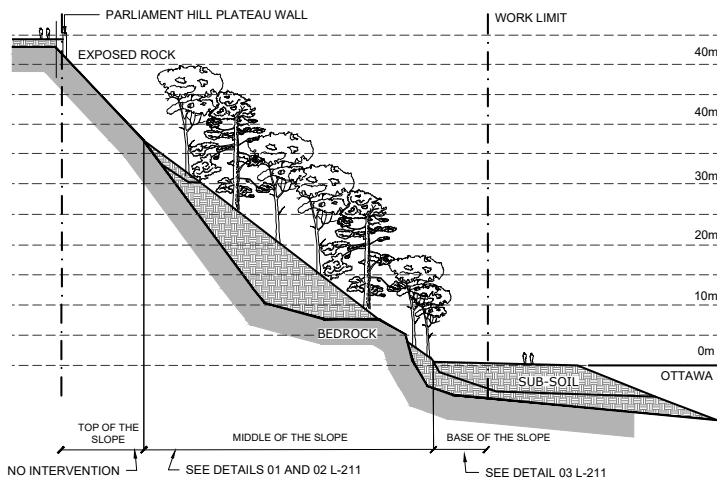




# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

### Compartment E



\* INDICATIVE GENERAL SECTION FOR INFORMATION ONLY

04 TYPICAL SLOPE SECTION: COMPARTMENT E  
L-211 NOT TO SCALE SECTION

#### Deciduous trees

Key	Latin name
BA	Betula alleghaniensis
BP	Betula populifolia
QM	Quercus macrocarpa

#### Coniferous trees

Key	Latin name
TO	Thuja occidentalis
PG	Picea glauca
PS	Pinus strobus

#### Large shrubs

Key	Latin name
Pv	Prunus virginiana
Rt	Rhus typhina

#### Small shrubs

Key	Latin name
Cs	Cornus sericea stolonifera
DI	Diervilla lonicera
Jv	Juniperus virginiana
Po	Physocarpus opulifolius
Ra	Rhus aromatica
Sa	Symphoricarpos albus
SI	Spiraea latifolia
Sp	Sambucus pubens

Compartment E is located behind the Center Block Building, west of the Library of Parliament.

As in compartment D, the compartment is steep and wood logs installed for erosion control occupy most of the compartment.

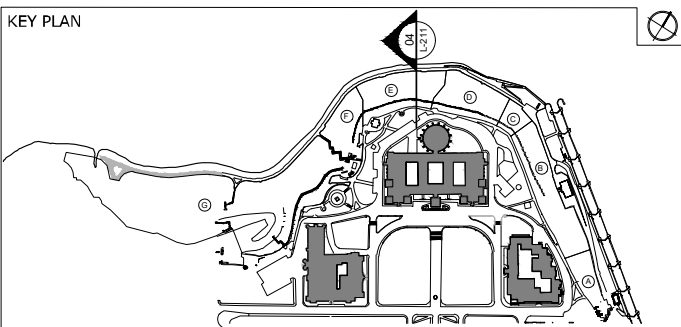
The vegetation from this compartment is characterized by a large population of European buckthorn. The removal of which is staggered with the new plantings over a period of multiple years and will require monitoring. Extra care must be taken during this process as this invasive plays a significant role maintaining the soil in place.

#### LEGEND

- ⊕ DECIDUOUS TREE WHIPS (SEE DETAIL 01 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊗ BARE ROOT CONIFERS (SEE DETAIL 01 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊕ SHRUBS SEEDLING (SEE DETAIL 02 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ▨ EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION) TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)
- ⊕ POTTED SHRUBS (SEE DETAIL 02 L-204 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ▨ MECHANICAL SEEDING (SEE SPEC 329219.13 - MECHANICAL SEEDING)
- ▨ SODDING (SEE SPEC 329223 - SODDING)

#### NOTE

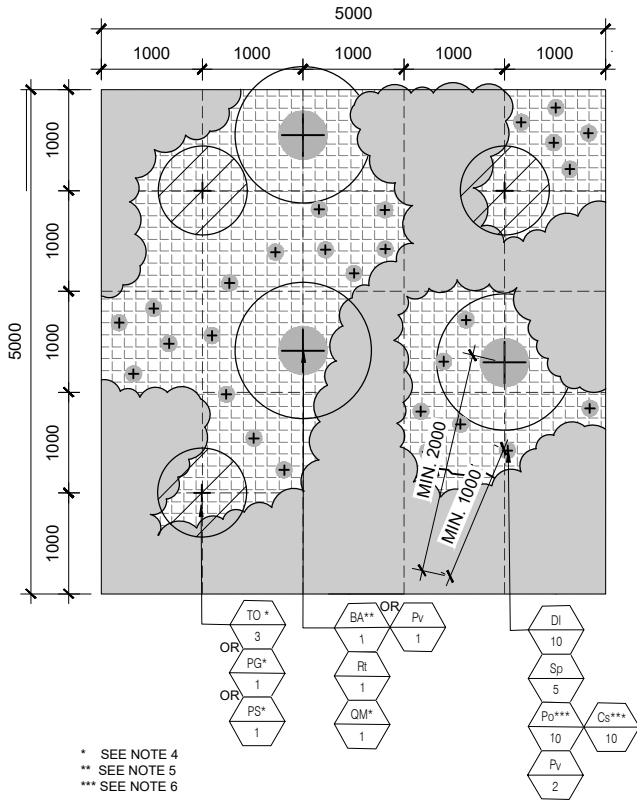
1. SEEDED EROSION CONTROL BLANKET IN ALL SURFACES EXCEPT ZONES WITH CEDAR LOGS (SEE SITUATION 6)
2. FOR MID-OF-SLOPE SEE ALSO PLANTING SITUATIONS 1, 2, 3, 4, 6, 13 AND 15
3. FOR BASE-OF-SLOPE SEE ALSO PLANTING SITUATIONS 3, 4 AND 12
4. IN SHALLOW SOIL REPLACE THUJA OCCIDENTALIS WITH :  
- THUJA OCCIDENTALIS - TO OF A45 FORMAT  
OR  
- PICEA GLAUCA - PG OF A15 FORMAT  
OR  
- PINUS STROBUS - PS OF A15 FORMAT
5. IN ROCKY SOIL REPLACE WITH :  
- BETULA POPULIFOLIA - BP OF 1/GAL  
OR  
- BETULA POPULIFOLIA - BP OF A15 FORMAT (2:1 RATIO)
6. USE CORNUS SERICEA STOLONIFERA (Cs) TO COMPLETE ALOCATON IF PHYSOCARPUS OPULIFOLIUS (Po) IN STOCK IS INSUFFICIENT.
7. IN SHALLOW SOIL REPLACE QUERCUS MACROCARPA WITH SMALLER FORMAT OF A15.



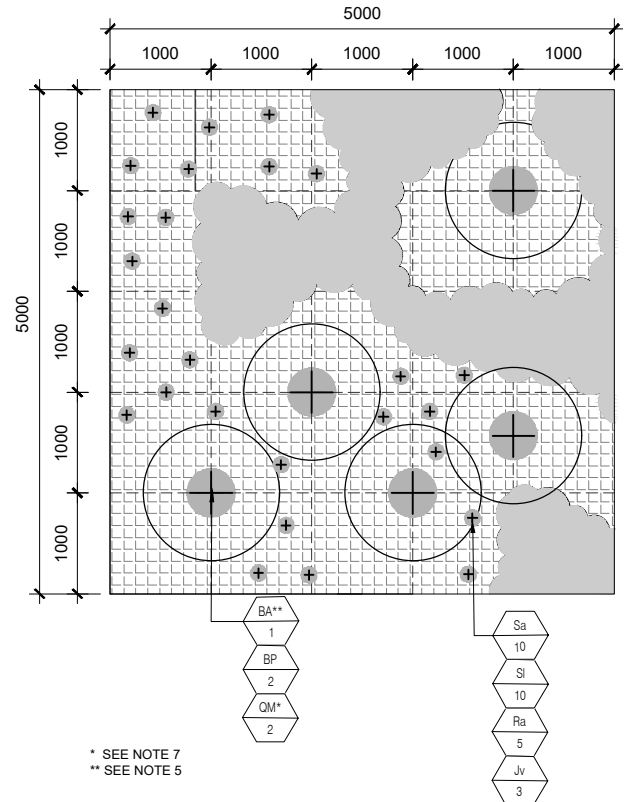
# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

### Compartment E



01 COMPARTMENT E: NEW MID-OF-SLOPE PLANTING UNDER TREE CANOPY  
SCALE: 1:75  
PLAN

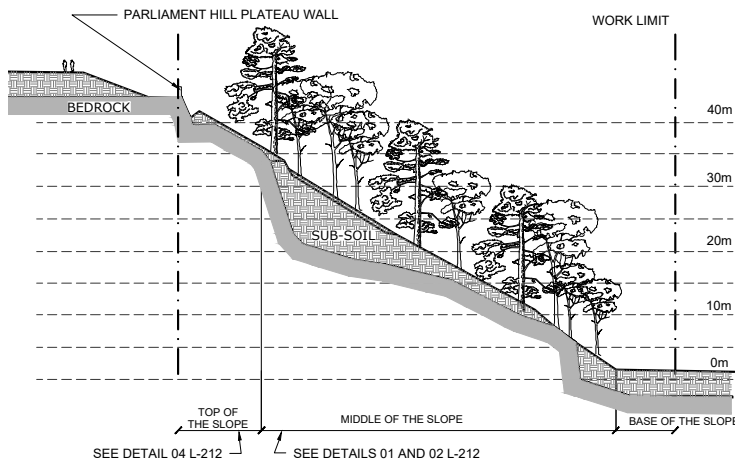


02 COMPARTMENT E: NEW MID-OF-SLOPE PLANTING IN CANOPY OPENINIGS AFTER TREE CUTS  
SCALE: 1:75  
PLAN

# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

### Compartment F



\* INDICATIVE GENERAL SECTION FOR INFORMATION ONLY

05 TYPICAL SLOPE SECTION: COMPARTMENT F  
L-212 NOT TO SCALE

#### Deciduous trees

Key	Latin name
PSE	Prunus serotina
OV	Ostrya virginiana

#### Coniferous trees

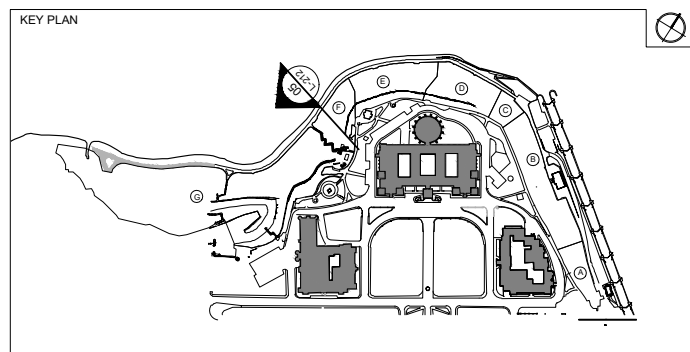
Key	Latin name
TO	Thuja occidentalis
PS	Pinus strobus

#### Large shrubs

Key	Latin name
Pv	Prunus virginiana
Rt	Rhus typhina
Ac	Amelanchier canadensis

#### Small shrubs

Key	Latin name
Sp	Sambucus pubens
Po	Physocarpus opulifolius
DI	Diervilla lonicera
Ra	Rhus aromatica
Cs	Cornus sericea stolonifera
Ro	Rubus odoratus



Compartment F is determined by a rocky area at the Western portion of the site and stops at the area surrounding the staircase. It is the sunniest compartment.

There is a diversified plant population around the staircase due to previous planting efforts.

As for compartment E, the vegetation from this compartment is characterized by a large population of European buckthorn. The elimination of this invasive plant will be extended over the next years. The same monitoring will be necessary.

Existing erosion control measures have been installed in the past, comprising various erosion control mats and should be kept intact.

#### LEGEND

- DECIDUOUS TREE WHIPS (SEE DETAIL 01 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- BARE ROOT CONIFERS (SEE DETAIL 01 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- SHRUBS SEEDLING (SEE DETAIL 02 L-202 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION) TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)
- POTTED SHRUBS (SEE DETAIL 02 L-204 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- MECHANICAL SEEDING (SEE SPEC 329219.13 - MECHANICAL SEEDING)
- SODDING (SEE SPEC 329223 - SODDING)

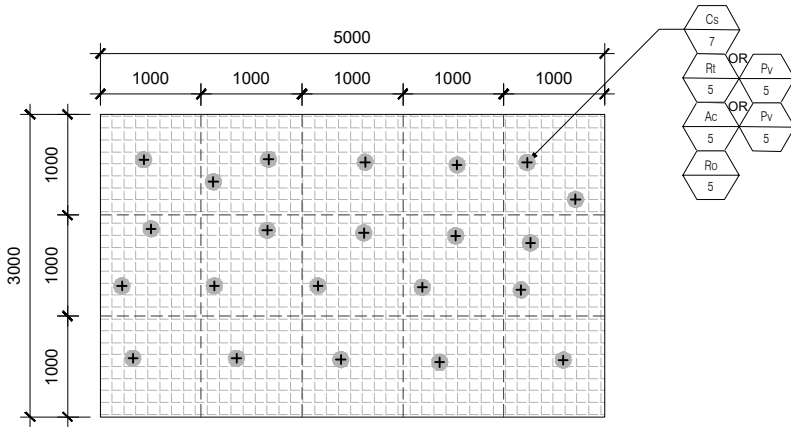
#### NOTE

1. SEEDED EROSION CONTROL BLANKET IN ALL SURFACES EXCEPT ZONES WITH CEDAR LOGS (SEE SITUATION 6)
2. FOR TOP-OF-SLOPE SEE ALSO PLANTING SITUATION 2
3. FOR MID-OF-SLOPE SEE ALSO PLANTING SITUATIONS 1, 6, 9, 11 AND 15
4. FOR BASE-OF-SLOPE SEE ALSO PLANTING SITUATIONS 3, 4 AND 13

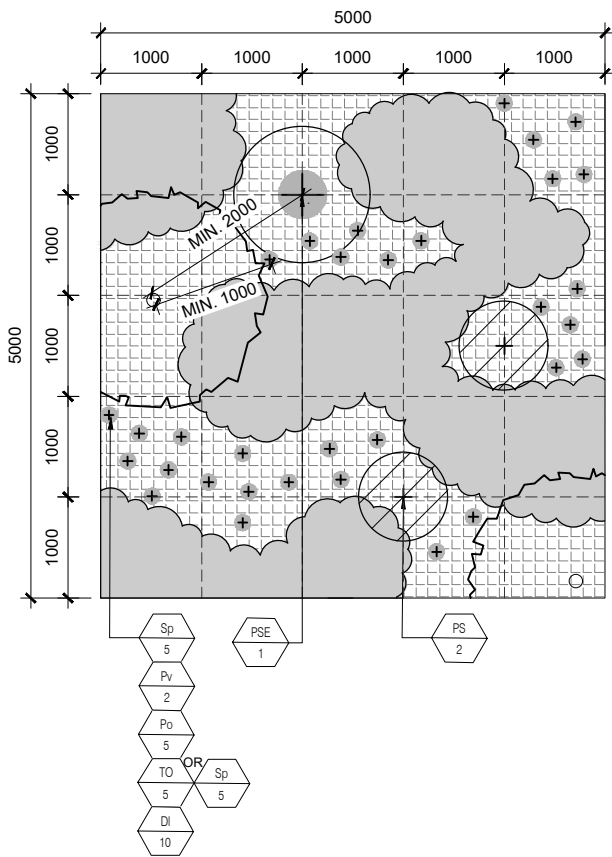
# 5. Compartment Planting and Stabilization Methods for Maintenance

## Annex II Compartment Planting Strategy

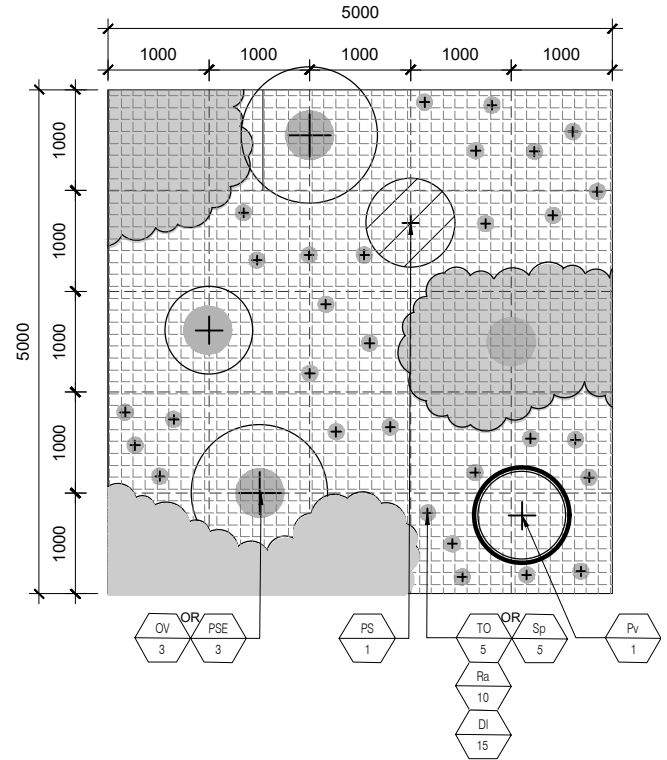
### Compartment F



04 COMPARTMENT F: NEW TOP-OF-SLOPE PLANTING  
L-212 SCALE: 1:75 PLAN



01 COMPARTMENT F: NEW MID-OF-SLOPE PLANTING UNDER TREE CANOPY  
L-212 SCALE: 1:75 PLAN



02 COMPARTMENT F: NEW MID-OF-SLOPE PLANTING IN CANOPY OPENINGS AFTER TREE CUTS  
L-212 SCALE: 1:75 PLAN

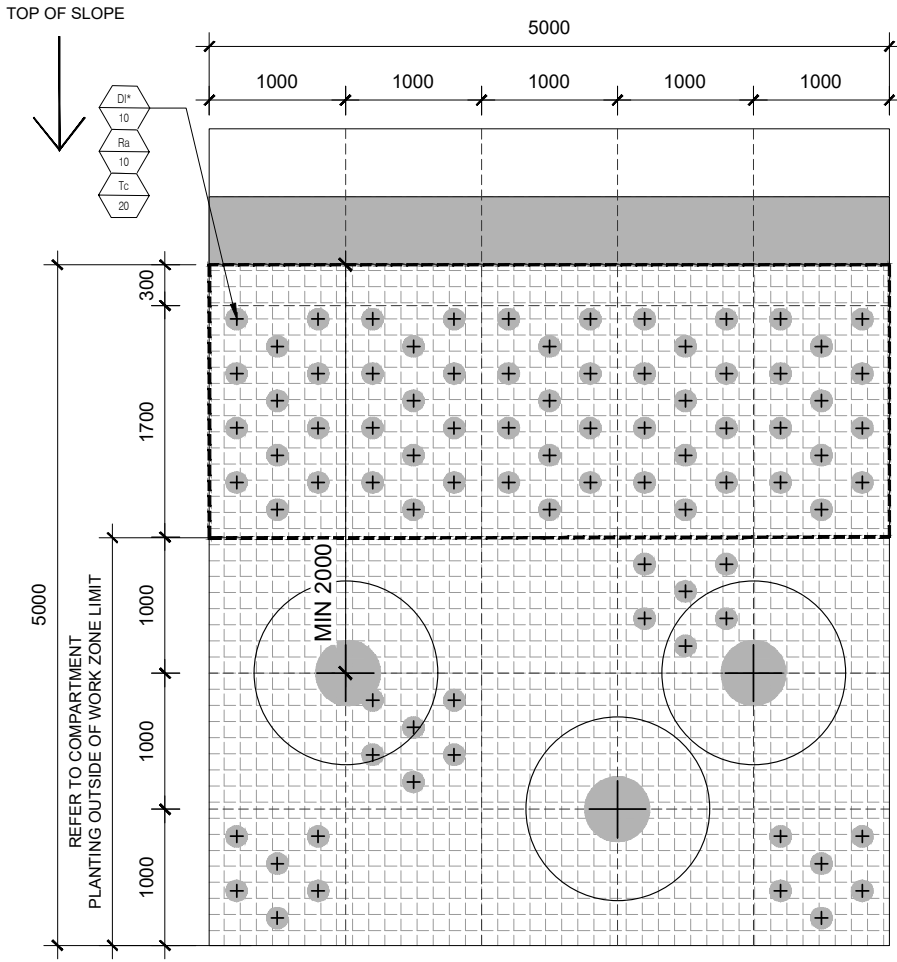


# 6. Situational Planting and Stabilization Methods for Maintenance

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 1 Zone Below Lovers' Walk



\* SEE NOTE 1

01 SITUATION 1  
L-213 SCALE: 1:50 PLAN



#### LEGEND

- LOVERS' WALK REMAINS
- SHRUBS SEEDLING (SEE DETAIL 02 L-202 AND SPEC 329310 -TREE, SHRUB AND GROUND COVER PLANTING)
- EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION)  
TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)
- SITUATION WORK ZONE LIMIT

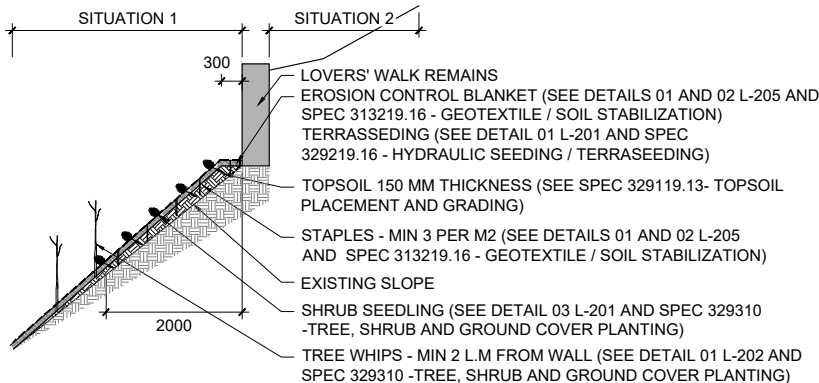
#### NOTE

1. WHEN USING A45 INSTEAD OF A15 FORMAT APPLY A INCREASE QUANTITY IN A 2:1 RATIO

COMPARTIMENT	PLANTS
A-E	10 DI, 10 Au, 20 Sa
F	10 DI, 10 Ra, 20 Tc

#### Small shrubs

Key	Latin name
Au	Arctostaphylos uva-ursi
DI	Diervilla lonicera
Ro	Rubus odoratus
Sa	Symphoricarpos albus
Tc	Taxus canadensis



02 SITUATION 1  
L-213 SCALE 1:100 SECTION



# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 1 Zone Below Lovers' Walk

Existing Conditions	Soil	Topography	Sunlight	Tree	Shrub	Ground Cover
	Type: Loam/gravel talus Texture: Sandy Moisture: dry to mesic soil Stability: Soil creep occurring	90%	Shade	Dominant: Norway maple, White Elm Sub-Dominant: Red ash, Sugar Maple	Dominant: Exotic shrubs Honeysuckle, Lilac, Sumac, Buckthorn	Dominant: Thicket Creeper, Riverbank Grape Sub-Dominant: Nodding fescue
	Invasive Plants	Wildlife	Habitat	Landscape Value	Cultural Values	Archaeological Potential
	70% canopy Norway Maple 73% understory Honeysuckle	Snakes, Birds, Rodents and small mammals may be present or pass through	Small mammal hole that has the potential to be used by snakes at the base of the slope + Abundant leaf	Existing walls are a highly visible element of the landscape, and contribute significantly to the value of the site.	Visible from Rideau Canal and walkway	Remnants of Lovers' Walk (retaining wall, pathway and access stairs)

**Notable Features:** The existing remnants of the Lovers' Walk are the most visible and enduring structural intervention on the forest slope, particularly the retaining walls. Visibility of the walls from the walkway below is an important consideration. Norway Maple monoculture dominates this Eastern facing slope of Compartment B, crowding the canopy and casting heavy shade on the surface below, which has largely eliminated native understory growth.

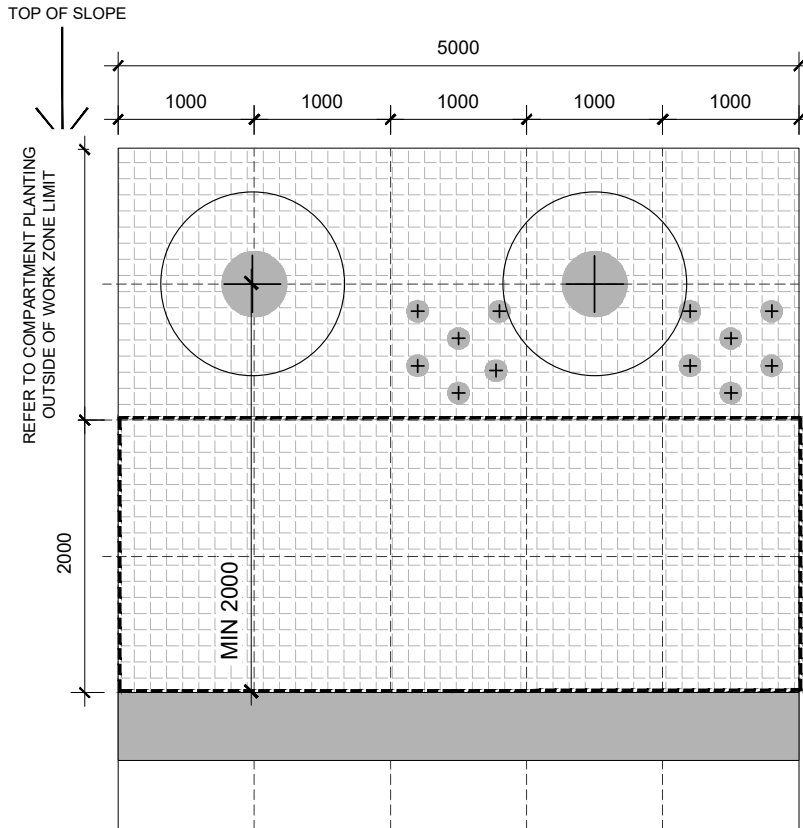
**Restoration Objective:** To retain soil at the base of the existing wall without hiding it.

Implementation	Soil	Slope	Cleaning	Tree Planting	Shrubs Planting	Ground Cover
		Erosion Control Blanket	Remove all debris prior to work	Minimum 2m from wall	- Symphoricarpos albus - Diervilla lonicera - Arctostaphylos uva-ursi	Terraseeding under erosion control blanket
	Invasive Species	Wildlife Habitat	Trimming			
	Remove all seedlings (see 6.5 Invasive species List)	N/A	Planting: spring or autumn			
Post Work	Pruning requirements	Planting Care	Removals	Geotechnical Monitoring	Environmental Monitoring	
	N/A	Reseed in bare spots  Replace dead plants		Reposition Erosion Control Blanket with staples where needed	Invasive species: Refer to invasive plant management sheet.	

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 2 Zone Above Lovers' Walk



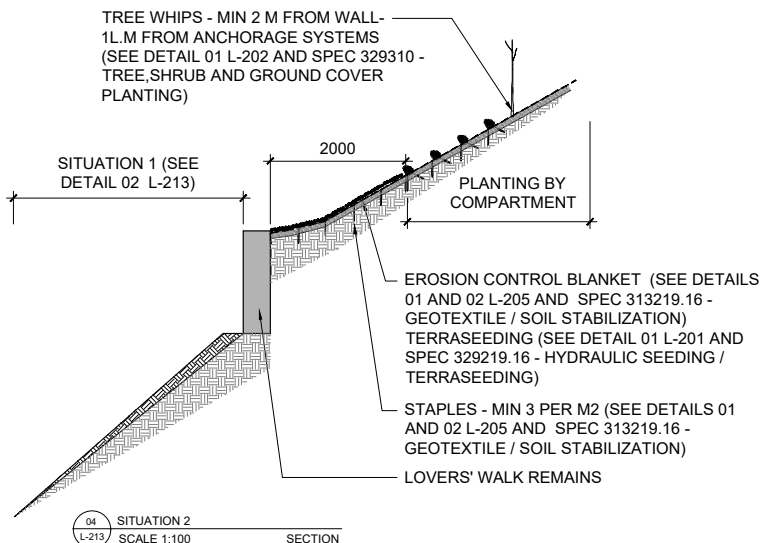
#### LEGEND

- LOVERS' WALK REMAINS
- EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION)
- TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)
- SITUATION WORK ZONE LIMIT

#### NOTE

1. FOR 2 L.M NEAR THE WALL, TERRASEEDING ONLY (SEE DETAIL 01 L-202 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)
2. TYPICAL PLANTING TO BE ADAPTED AROUND EXISTING PLANTS ON SITE

03 SITUATION 2  
L-213 SCALE: 1:50 PLAN



04 SITUATION 2  
L-213 SCALE: 1:100 SECTION

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 2 Zone Above Lovers' Walk

Existing Conditions	<b>Soil</b>	<b>Topography</b>	<b>Sunlight</b>	<b>Tree</b>	<b>Shrub</b>	<b>Ground Cover</b>
	Type: Loam/gravel talus Texture: Sandy Moisture: dry to mesic soil Stability: Soil creep occurring	90%	Shade	Dominant: Norway maple, White Elm Sub-Dominant: White Ash, Sugar Maple, Red ash	Dominant: Exotic shrubs Honeysuckle, Lilac, Sumac	Dominant: Thicket Creeper, Riverbank Grape Sub-Dominant: Nodding fescue
	<b>Invasive Plants</b>	<b>Wildlife</b>	<b>Habitat</b>	<b>Landscape Value</b>	<b>Cultural Values</b>	<b>Archaeological Potential</b>
	70% canopy Norway Maple 73% understory Honeysuckle,	Snakes, Birds, Rodents and small mammals may be present or pass through	Small mammal hole that has the potential to be used by snakes at the based of the slope + Abundant leaf	Existing walls are a highly visible element of the landscape, and contribute significantly to the value of the site.	Visible from Rideau Canal and walkway.	Remnants of Lovers' Walk (retaining wall, pathway and access stairs)

**Notable Features:** The existing remnants of the Lovers' Walk are the most visible and enduring structural intervention on the forest slope, particularly the retaining walls. Planting above the walls should highlight the remnants of this important landscape feature, and avoid obscuring elements of the walls. Norway Maple monoculture dominates this Eastern facing slope of Compartment B, crowding the canopy and casting heavy shade on the surface below, which has largely eliminated native understory growth. There is some accumulation of organic material behind the lip of the wall.

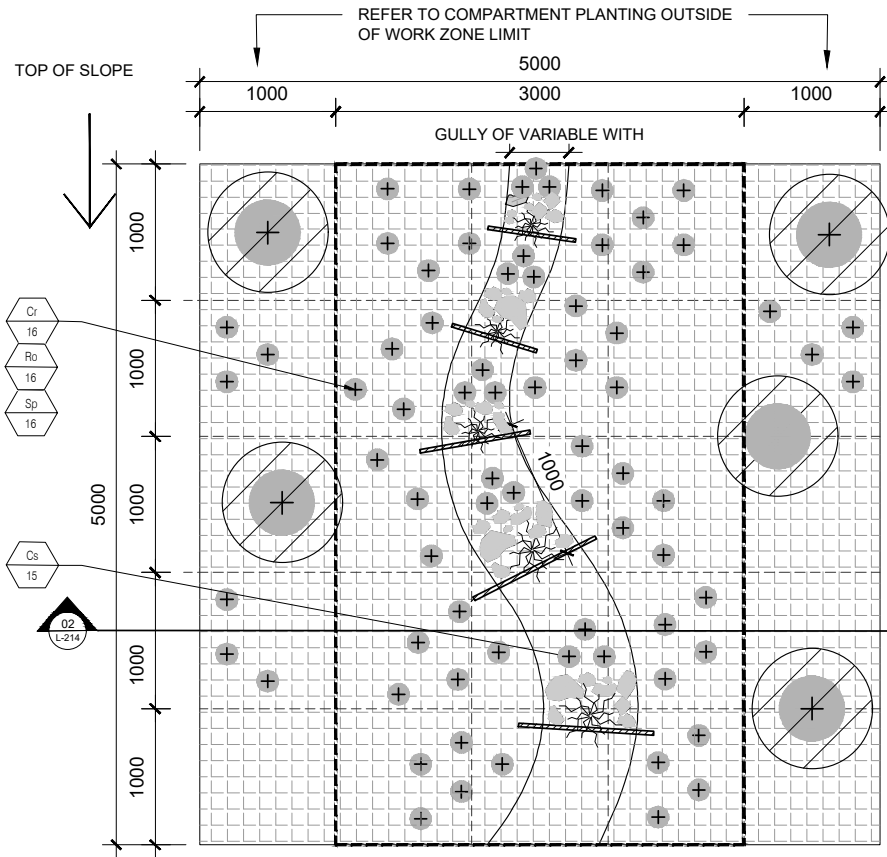
**Restoration Objective:** To keep area free of trees and shrubs above lovers walk to maintain wall stability

Implementation	<b>Soil</b>	<b>Slope</b>	<b>Cleaning</b>	<b>Tree Planting</b>	<b>Shrubs Planting</b>	<b>Ground Cover</b>
	No soil addition	Erosion Control Blanket	Remove all debris prior to erosion control blanket installation	Minimum 2m from wall	N/A	Terraseeding under erosion control blanket
	<b>Invasive Species</b>	<b>Wildlife Habitat</b>	<b>Triming</b>			
	On all surfaces except where perennials are planted	N/A	Planting: spring or autumn			
Post Work	<b>Pruning requirements</b>	<b>Planting Care</b>	<b>Removals</b>	<b>Geotechnical Monitoring</b>	<b>Environmental Monitoring</b>	
	N/A	Reseed in bare spots with forest mix	Remove tree and shrub seedlings within 2m upslope of lovers' walk remains.	Reposition erosion control blanket with staples where needed	Invasive species: Refer to invasive plants management sheet.	

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 3 Gully Erosion



#### LEGEND

- WOOD BRANCHES ANCHORED WITH A HORIZONTAL STAKE AND TIED TOGETHER (SEE SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- SOIL MIX FOR GULLIES (SEE SPEC 329119.13 - TOPSOIL PLACEMENT AND GRADING)
- SHRUBS SEEDLING (SEE DETAIL 03 L-201 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION)
- TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)
- SITUATION WORK ZONE LIMIT

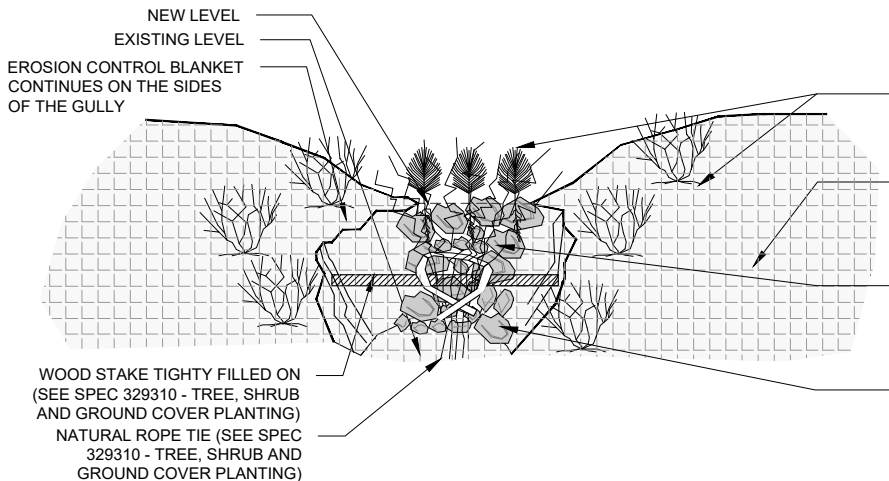
#### NOTE

1. TYPICAL PLANTING TO BE ADAPTED AROUND EXISTING PLANTS AND GULLY CONDITIONS ON SITE
2. IF GULLY IS SHALLOW:
  - PLANT 5 Cs IN STAGGERED PATTERN ACROSS GULLY EVERY 1M
  - DO NOT USE
    - BRANCHES
    - SOIL MIX FOR GULLIES
    - WOOD STAKE

#### Small shrubs

Key	Latin name
Cr	Cornus racemosa
Cs	Cornus sericea stolonifera
Ro	Rubus odoratus
Sp	Sambucus pubens

01 SITUATION 3  
L-214 SCALE: 1:50 PLAN



SHRUBS SEEDLING (SEE DETAIL 03 L-201 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)

EROSION CONTROL BLANKET (SEE DETAILS 01 AD 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION)

TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)

WOOD BRANCHES ANCHORED WITH A HORIZONTAL WOOD STAKE AND TIED TOGETHER WITH HEAVY JUTE ROPE (SEE SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)

CUT TRENCHES INTO THE GULLY AT 1 M INTERVALS, INSERT BUNDLED BRANCHES, FILL WITH SOIL MIX FOR GULLIES (SEE SPEC 329119.13 - TOPSOIL PLACEMENT AND GRADING)

WOOD STAKE TIGHTLY FILLED ON (SEE SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)

NATURAL ROPE TIE (SEE SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)

02 SITUATION 3  
L-214 SCALE: 1:50 ELEVATION

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 3 Gully Erosion

Existing Conditions	Soil	Topography	Sunlight	Tree	Shrub	Ground Cover
	Type: Loam/gravel talus Texture: silt-rock Moisture: dry to mesic soil Stability: Soil creep occurring	90%, Small gullies created by erosion	Partial-shade Shade	Dominant: Eastern white cedar, Balsam poplar, Manitoba Maple Sub-Dominant: Basswood	Dominant: Exotic shrubs (Tartarian Honeysuckle, Lilac, Buckthorn) Sub-Dominant: European buckthorn	Dominant: Thicket Creeper, Riverbank Grape
	Invasive Plants	Wildlife	Habitat	Landscape Value	Cultural Values	Archaeological Potential
	See invasive plants plan from 2021 project and most recent surveys	Snakes, Birds, Rodents and small mammals may be present or pass through	Small mammal hole that has the potential to be used by snakes at the based of the slope + Abundant leaf	None	Near pathways at base of slope. Highly visible.	Medium potential

**Notable Features:** Surface erosion and ravelling have caused pronounced gullies to develop in areas with a lack of established shrubs and groundcovers. Steep slopes, the presence of significant areas of exposed rock and accumulation of talus gravels at the toe of the slope define these areas. Soils are thin, and a high percentage of existing vegetation is invasive exotic species, both canopy and understory.

**Restoration Objective: Revegetation of gullies to stabilize soil and prevent erosion.**

Implementation	Soil	Slope	Cleaning	Tree Planting	Shrubs Planting	Ground Cover
	Add soil mix for gullies	- Rock troughs - Planting in gullies - Erosion control blanket on sides and at bottom	Remove all debris prior to erosion control blanket installation	N/A	Live Branches - Cornus sericea - Red osier dogwood  Shrubs seedling - Cornus racemosa - Rubus odoratus - Sambucus pubens	Terraseeding under erosion control blanket
	Invasive Species	Wildlife Habitat	Triming			
	Remove all seedlings (see 6.5 Invasive species List)	N/A	Live branches need to be installed in early spring before budding			
Post Work	Pruning requirements	Planting Care	Removals	Geotechnical Monitoring	Environmental Monitoring	
	N/A	Reseed in bare spots  Replace dead plants		- Reposition erosion control blanket where needed - reposition stakes where needed	Refer to invasive plants management sheet	



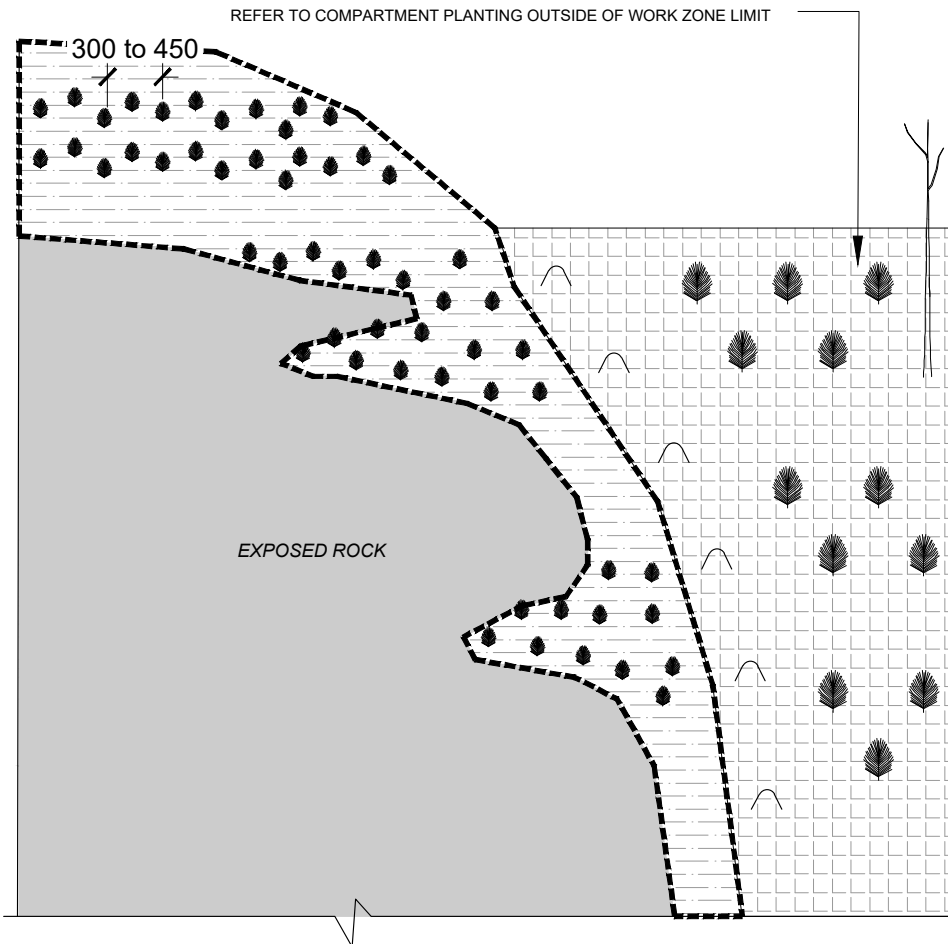
# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 4 Exposed Rock Face



COMPARTIMENT	PLANTS
B	6 dm, 4 ds, 22 ac
C	8 cg, 16 ac
D	16 pa, 16 ac
E	16 pa, 8 cg
F	16 pa, 8 cg



#### LEGEND

- PERENNIAL SEEDLING (SEE DETAIL 03 L-201 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- COMPOST (SEE SPEC 329119.13 - TOPSOIL PLACEMENT AND GRADING)
- SITUATION WORK ZONE LIMIT

#### NOTE

1. PLANT IN AVAILABLE AREAS AROUND THE ROCK FACES OR IN LARGE CRACKS INSIDE THE ROCK FACE.
2. PLANT AQUILEGIA CANADENSIS IN SUNNIER, MORE OPEN SPOTS.
3. PLANTINGS CAN BE DONE IN GROUPS OR INDIVIDUALLY DEPENDING ON AVAILABLE SPACE AND SOIL (MIN10CM)
4. RESULT SHOULD BE SPARSE PLANTINGS RATHER THAN CONTINUOUS FOR A MORE NATURAL LOOK.

#### Ground cover

Key	Latin name	c/c (mm)
ac	Aquilegia canadensis	300
cg	Campanula gieseckeana	300
dm	Dryopteris marginalis	450
ds	Dryopteris spinulosa	450
pa	Polystichum acrostichoides	300

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 4 Exposed Rock Face

Existing Conditions	<b>Soil</b>	<b>Topography</b>	<b>Sunlight</b>	<b>Tree</b>	<b>Shrub</b>	<b>Ground Cover</b>
	Type: Steep slope Texture: Silt-Rock Moisture: dry to mesic soil Stability: shallow soil depth to bedrock	160%, Some exposed rock Steep to sheer	Sun Partial-shade Shade	Refer to compartment	Refer to compartment	Refer to compartment
	<b>Invasive Plants</b>	<b>Wildlife</b>	<b>Habitat</b>	<b>Landscape Value</b>	<b>Cultural Values</b>	<b>Archaeological Potential</b>
	Refer to compartment	Snakes, Birds and Mammals (Groundhog)	Abundant leaf + underground openings and a brick wall (Snakes) and super-canopy trees (Birds)	These rock outcrops are a distinctive part of the escarpment landscape, both at the crest and base of the slope.	Highly visible due to lack of vegetation coverage. Marking crest and base of slope.	Medium potential

**Notable Features:** Pronounced limestone outcrops are visible across compartments C, D, E and F. Compartment C is particularly notable given the combination of steep slopes, numerous areas of exposed rock, significant gully erosion, and high concentration of Norway Maples which shade and eliminate surface vegetation, decreasing soil stability on the slopes. The close proximity of several outcrops to the riverside pathway makes this a highly visible situation.

**Restoration Objective: Revegetation of sides of exposed rock face.**

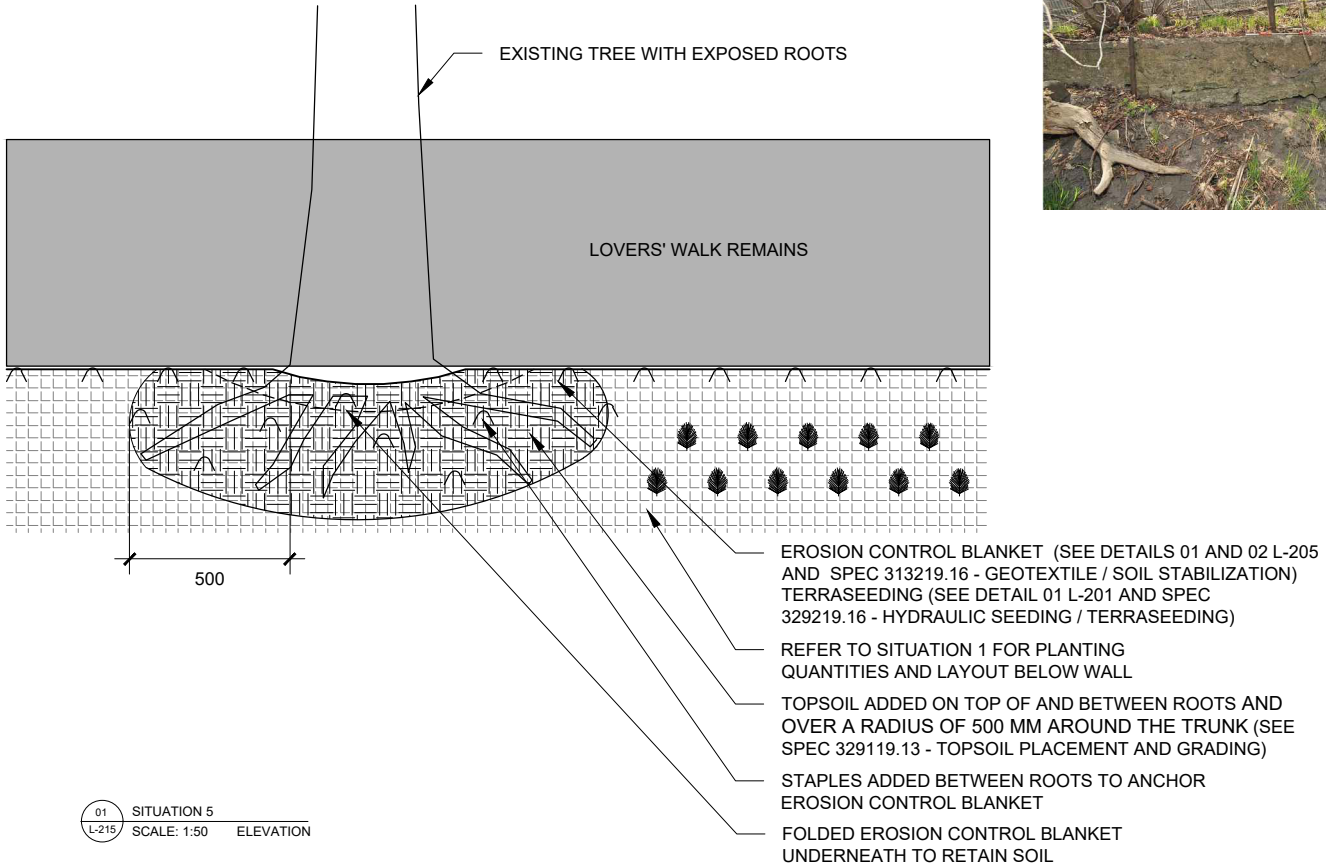
Implementation	<b>Soil</b>	<b>Slope</b>	<b>Cleaning</b>	<b>Tree Planting</b>	<b>Shrubs Planting</b>	<b>Ground Cover</b>
	Add compost	Erosion Control Blanket ends at closest point where staples can be installed correctly	Remove all debris prior to work	N/A	N/A	Perennial seedling - Dryopteris marginalis - Polystichum acrostichoides
	<b>Invasive Species</b>	<b>Wildlife Habitat</b>	<b>Triming</b>			
	Remove all seedlings (see 6.5 Invasive species List)	N/A	Spring or autumn			
Post Work	<b>Pruning requirements</b>	<b>Planting Care</b>	<b>Removals</b>	<b>Geotechnical Monitoring</b>	<b>Environmental Monitoring</b>	
	N/A	Reseed in bare spots  Replace dead plants	N/A	Reposition erosion control blanket with staples where needed	Refer to invasive plants management sheet.	



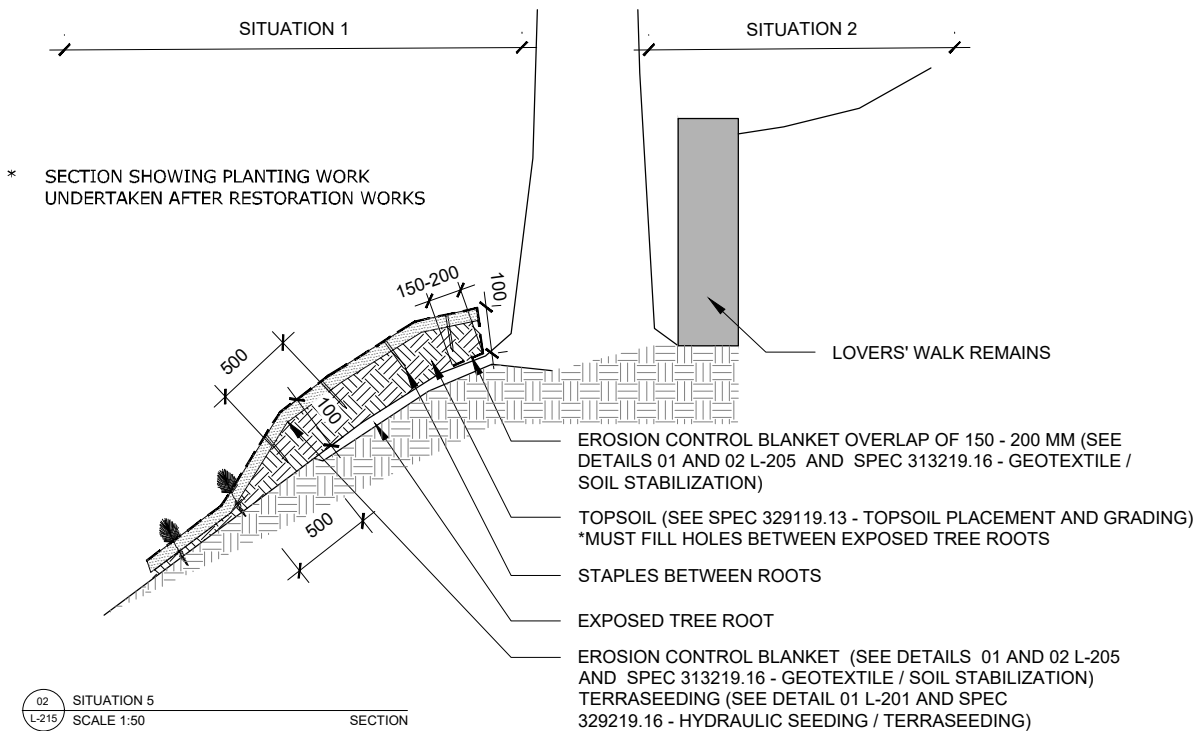
# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 5 Exposed Tree Roots



01 SITUATION 5  
L-215 SCALE: 1:50 ELEVATION



02 SITUATION 5  
L-215 SCALE: 1:50 SECTION

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 5 Exposed Tree Roots

Existing Conditions	<b>Soil</b>	<b>Topography</b>	<b>Sunlight</b>	<b>Tree</b>	<b>Shrub</b>	<b>Ground Cover</b>
	Type: Loam/gravel talus Texture: Sandy silt Moisture: dry to mesic soil Stability: Soil creep occurring	100-80%, with some exposed rock	Shade	N/A	N/A	N/A
	<b>Invasive Plants</b>	<b>Wildlife</b>	<b>Habitat</b>	<b>Landscape Value</b>	<b>Cultural Values</b>	<b>Archaeological Potential</b>
	N/A	Snakes, Bats and Mammals (squirrel, Groundhog...)	Abundant leaf + Wood and cement slabs + Tunnel under staircase (Snakes), Norway Maple snags (Bats)	Existing walls are a highly visible element of the landscape, and contribute significantly to the value of the site.	Visible from Rideau Canal and walkway	Remnants of Lovers' Walk (retaining wall, pathway and access stairs)

Notable Features: Refer to Situation 1B for typical situation at the base of the existing wall.

Existing trees in close proximity to/contact with the existing retaining wall, combined with surface erosion and ravelling from water runoff, lead to exposed root systems for some trees. Retention of these trees in their existing location is important both for the environmental health of the escarpment, and for the stability of the slope soils and the wall itself.

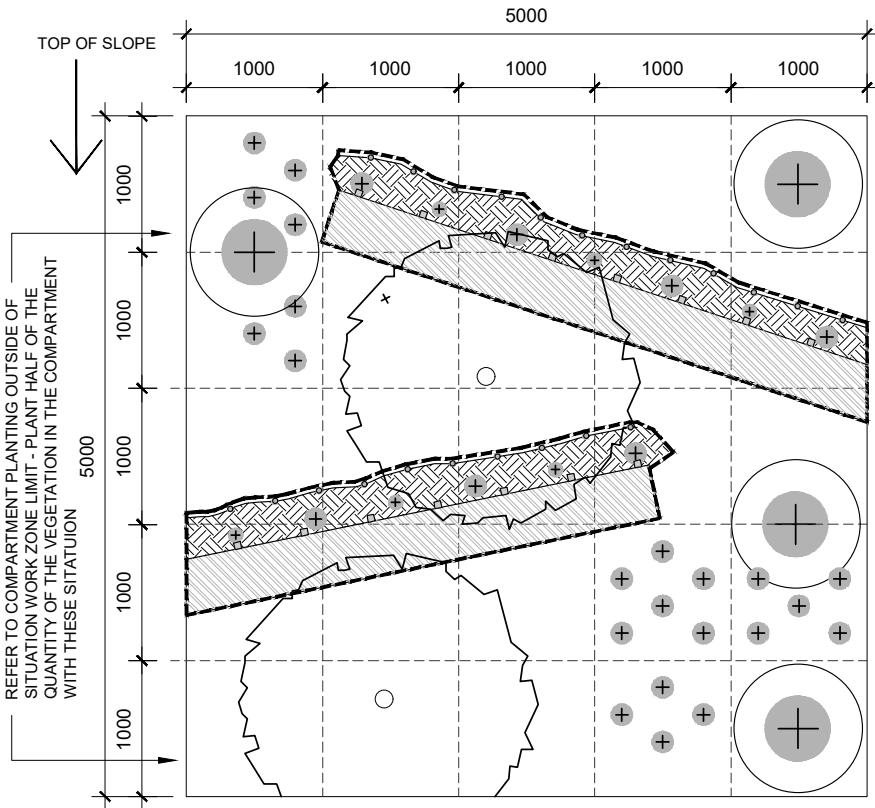
Restoration Objective: To stop erosion around tree root systems and keep roots covered by soil.

Implementation	<b>Soil</b>	<b>Slope</b>	<b>Cleaning</b>	<b>Tree Planting</b>	<b>Shrubs Planting</b>	<b>Ground Cover</b>
	Add topsoil between and on top of roots	Erosion control blanket	Remove all debris prior to erosion control blanket installation	N/A	N/A	Terraseeding under erosion control blanket
	<b>Invasive Species</b>	<b>Wildlife Habitat</b>	<b>Trimming</b>			
	Remove all seedlings (see 6.5 Invasive species List)	N/A	Spring or autumn			
Post Work	<b>Pruning requirements</b>	<b>Planting Care</b>	<b>Removals</b>	<b>Geotechnical Monitoring</b>	<b>Environmental Monitoring</b>	
	N/A	N/A	N/A	Reposition erosion control blanket with staples where needed	N/A	

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 6 Existing Slope Stabilization Measures With Tree Logs



03 SITUATION 6  
L-215 SCALE: 1:50 PLAN

COMPARTMENT	PLANTS
B	6 Au, 2.5 Ra, 6 pa
C	2 Aa, 6 cg
D	6 Au, 3.5 Ra, 1 Aa
E	3 Au, 5 DI, 6 pa
F	3 Au, 4 Ra, 1 Aa

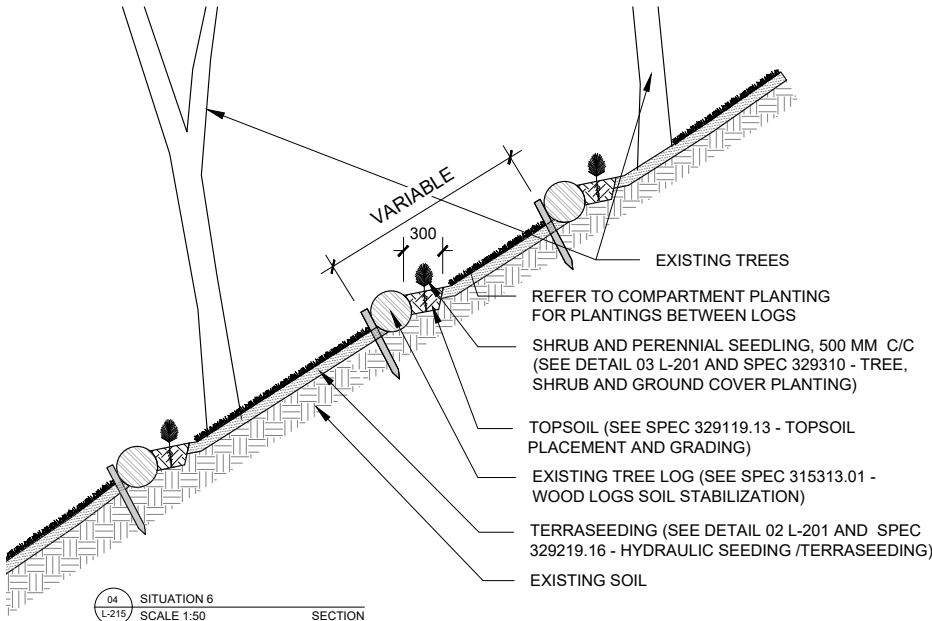


#### LEGEND

- EXISTING LOGS (SEE SPEC 315313.01 - WOOD LOGS SOIL STABILIZATION)
- 2" WOOD STAKES DIRECTLY UNDER LOGS TO HOLD LOGS IN PLACE 2/M (SEE SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- LIVE WOOD STAKES OF CORNUS 3/M (SEE SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- SHRUB SEEDLING PLANTED IN ADDED TOPSOIL (SEE DETAIL 03 L-201 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- PERENNIALS SEEDLING PLANTED IN ADDED TOPSOIL (SEE DETAIL 03 L-201 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- SITUATION WORK ZONE LIMIT

#### NOTE

1. COMPARTMENT PLANTING AROUND LOGS
2. NO EROSION CONTROL BLANKET IN AREAS BETWEEN OR WITHIN 1M OF EXISTING LOGS
3. NO EXCAVATIONS WILL BE MADE TO MAKE THE INTERVENTIONS, TOPSOIL WILL BE ADDED IN ERODED AREAS IN FRONT OF THE LOGS.
4. DETERIORATED LOGS NEED TO BE REPLACED. UNSTABLE LOGS NEED TO BE SECURED WITH STEEL RODS (SEE SPEC 313219.16 - GEOTEXTILE SOIL STABILIZATION)
5. PLANT TREE WHIPS A MINIMUM OF 750mm FROM LOGS



04 SITUATION 6  
L-215 SCALE: 1:50 SECTION

#### Small shrubs

##### Key Latin name

- Aa Amelanchier alnifolia
- Au Arctostaphylos uva-ursi
- DI Diervilla lonicera
- Ra Rhus aromatica

#### Ground cover

##### Key Latin name

- cg Campanula gieseckeania
- dm Dryopteris marginalis
- pa Polystichum acrostichoides

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 6 Existing Slope Stabilization Measures With Tree Logs

Existing Conditions	Soil	Topography	Sunlight	Tree	Shrub	Ground Cover
	Type: Loam/gravel talus Texture: Sandy-gravel Moisture: dry to mesic soil Stability: Soil creep occurring	80%	Shade	Refer to compartment	Refer to compartment	Refer to compartment
	Invasive Plants	Wildlife	Habitat	Landscape Value	Cultural Values	Archaeological Potential
	Refer to compartment	Snakes, Birds, Rodents and small mammals may be present or pass through	Plastic slope stabilization does not provide cover for snake or wildlife movement and may entangle small mammals.	None	Visible from Rideau Canal and walkway during spring and autumn	

**Notable Features:** Remnants of several previous slope stabilization efforts are present on the site. The resistance of Cedar logs to natural decomposition has led to build up of organic material on the uphill side of the logs, and scouring and erosion of the soil on the downhill side. These logs are hidden beneath snow during the winter months, but are highly visible during spring and autumn when the deciduous canopy trees are bare of leaves.

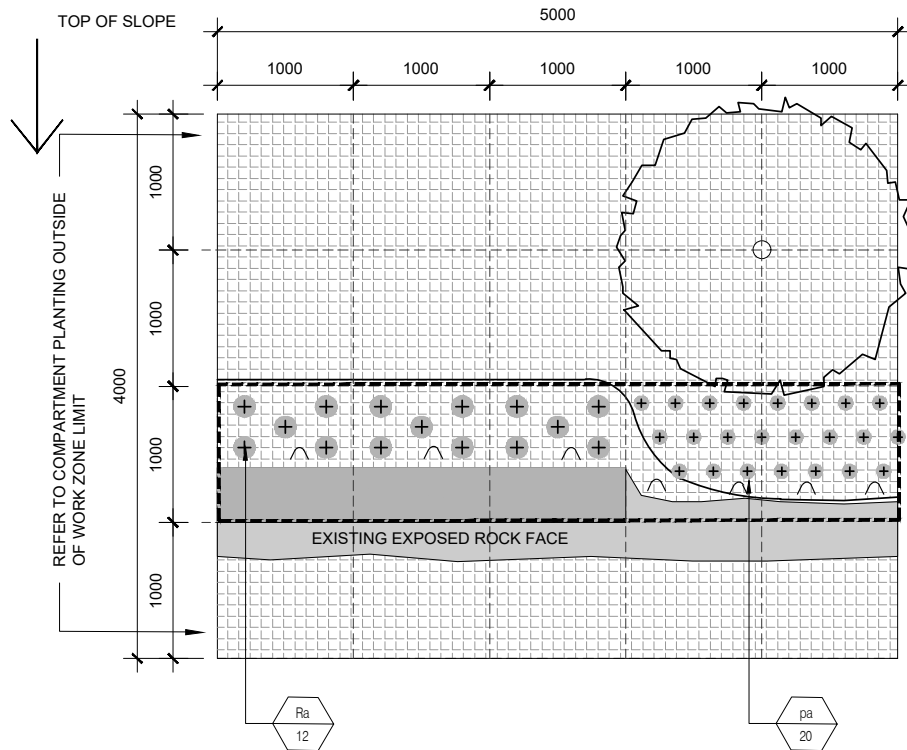
**Restoration Objective:** To establish ground cover, stabilize logs and minimize their visual impact

Implementation	Soil	Slope	Cleaning	Tree Planting	Shrubs Planting	Ground Cover
	Add topsoil to space below logs	Stabilization of logs with rebar	Remove all debris prior to work	N/A	Depending on compartment, see planting table	Perennials seedling, see planting table
	Invasive Species	Wildlife Habitat	Triming			
	Remove all seedlings (see 6.5 Invasive species List)	N/A	Early spring before budding			
Post Work	Pruning requirements	Planting Care	Removals	Geotechnical Monitoring	Environmental Monitoring	
	N/A	Ressed in bare spots , Replace dead plants		Verify logs and apply appropriate corrective measures (solidify stakes, reposition logs, etc)	Refer to invasive plants management sheet.	

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 7 Previous Renovation of Lovers' Walk



#### LEGEND

- ⊕ SHRUBS SEEDLING PLANTED IN ADDED TOPSOIL (SEE DETAIL 03 L-201 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ⊕ PERENNIALS SEEDLING PLANTED IN ADDED TOPSOIL (SEE DETAIL 03 L-201 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- ∧ STAPLES (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE SOIL STABILISATION)
- ▨ EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION) TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)
- SITUATION LIMIT WORK ZONE

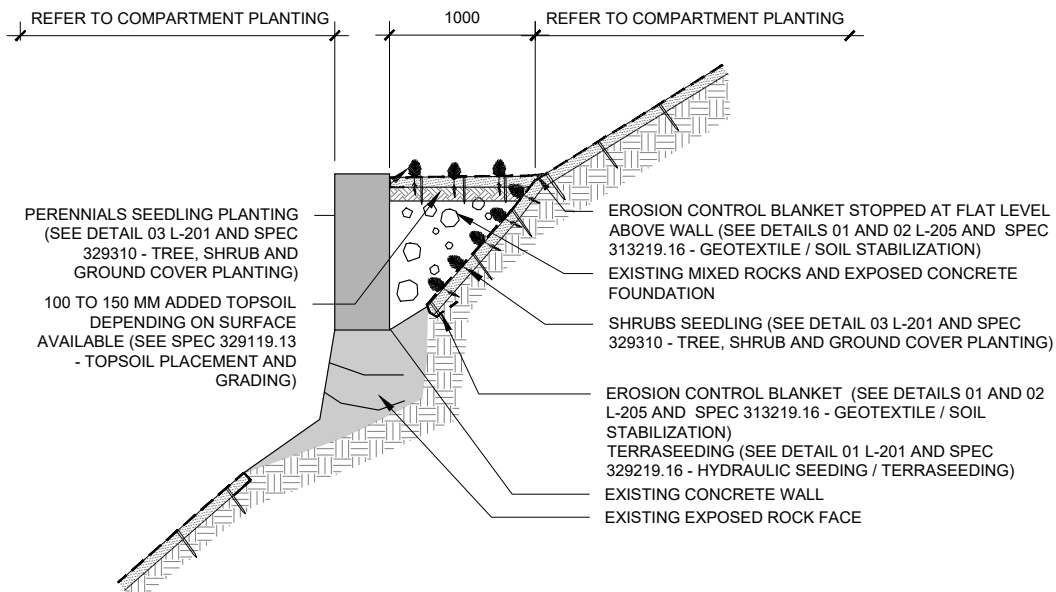
#### Small shrubs

**Key Latin name**  
Ra *Rhus aromatica*

#### Ground cover

**Key Latin name**  
pa *Polystichum acrostichoides*

01 SITUATION 7  
L-216 SCALE: 1:50 PLAN



02 SITUATION 7  
L-216 SCALE: 1:50 ELEVATION

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 7 Previous Renovation of Lovers' Walk

Existing Conditions	<b>Soil</b>	<b>Topography</b>	<b>Sunlight</b>	<b>Tree</b>	<b>Shrub</b>	<b>Ground Cover</b>
	Type: Loam/ gravel talus Texture: Sandy Moisture: dry to mesic soil Stability: Soil creep occurring	100-80%, with some exposed rock	Shade	Dominant: Norway Maple Sub-Dominant: Red Ash, Sugar Maple, Juglans cinerea	Dominant: Exotic shrubs (Honeysuckle, Lilac), Sumac	Dominant: Garlic Mustard, Eurasian Bluegrass
	<b>Invasive Plants</b>	<b>Wildlife</b>	<b>Habitat</b>	<b>Landscape Value</b>	<b>Cultural Values</b>	<b>Archaeological Potential</b>
	70% canopy Norway Maple 73% understory Honeysuckle, Lilac.	Snakes, Bats and Mammals (squirrel, Groundhog...)	Abundant leaf + Wood and cement slabs + Tunnel under staircase (Snakes), Norway Maple snags (Bats)	Walls and stairs form part of the Lovers' Walk, a character defining element of the site	Visible from Rideau Canal and walkway, as well as the Parliament Hill plateau	Remnants of Lovers' Walk (retaining wall, pathway and access stairs)

Notable Features: While the main retaining wall of the Lovers' Walk has been left largely unaltered, several of the auxiliary elements, including access stairs from the top and bottom of the slope, have been subject to engineering works to stabilize these deteriorating structures over the past several decades. Evidence of alterations is present throughout the compartment, often in the form of structural concrete additions to the original stonework. In many cases, the renovation works themselves are now in poor and deteriorating conditions.

Restoration Objective: To minimize the visual impact of the concrete wall and to prevent erosion around rock face with vegetation

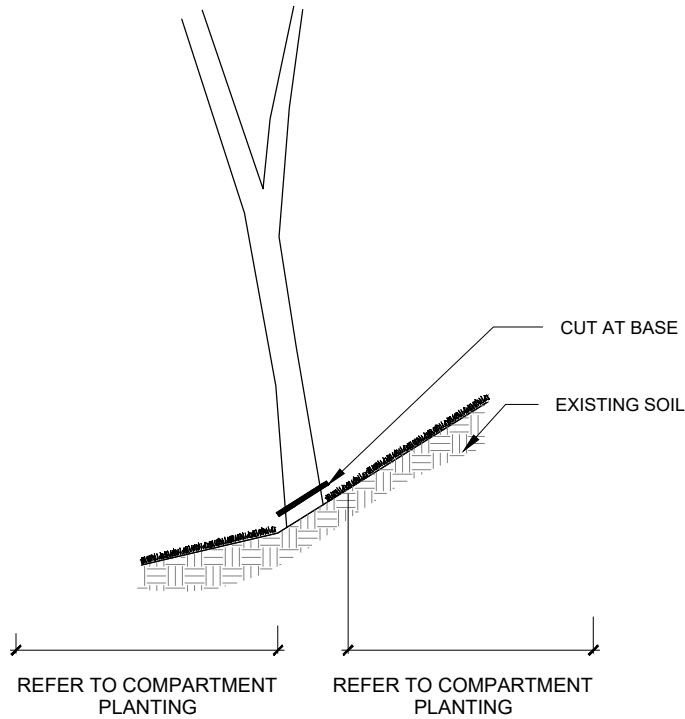
Implementation	<b>Soil</b>	<b>Slope</b>	<b>Cleaning</b>	<b>Tree Planting</b>	<b>Shrubs Planting</b>	<b>Ground Cover</b>
	Add topsoil behind top of wall, depending on surface available	Erosion control blanket	Remove all debris prior to work	N/A	Shrub seedling -Comptonia peregrina	Perennials seedling -Polystichum acrostichoide
	<b>Invasive Species</b>	<b>Wildlife Habitat</b>	<b>Triming</b>			
	Remove all seedlings (see 6.5 Invasive species List)	N/A	Spring / fall			

Post Work	<b>Pruning requirements</b>	<b>Planting Care</b>	<b>Removals</b>	<b>Geotechnical Monitoring</b>	<b>Environmental Monitoring</b>
	N/A	Ressed in bare spots , Replace dead plants	N/A	Reposition erosion control blanket with staples where applicable.	Refer to invasive plants management sheet.

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 8 Dangerous Dead Tree



#### NOTE

1. LEAVE STUMP IN PLACE FOR SLOPE STABILITY.
2. CREATE MULCH WITH BRANCHES.
3. THIS SITUATION CONCERNS DEAD TREE WITH THE FOLLOWING CHARACTERISTICS :
  - AT PROXIMITY FROM THE MULTI-USE PATH AND STAIRS.
  - WITH AN ANGLE OF MORE THAN 25%
  - SIGNS OF DECAY SUGGESTING IMMINENT FALL.
4. ALL OTHER DEAD TREES THAT ARE STABLE AND AT GOOD DISTANCE FROM THE MULTI-USE PATH AND STAIRS SHOULD BE KEPT IN PLACE.

03 SITUATION 8  
L-216 SCALE: 1:50 SECTION



# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 8 Dangerous Dead Tree

Existing Conditions	Soil	Topography	Sunlight	Tree	Shrub	Ground Cover
	Type: Loam/talus Texture: Sandy Moisture: dry to mesic soil Stability: Soil creep occurring	100-80%, with some exposed rock	Partial-shade Shade	N/A	N/A	N/A
	Invasive Plants	Wildlife	Habitat	Landscape Value	Cultural Values	Archaeological Potential
	N/A	Snakes, Bats and Mammals (squirrel, Groundhog...)	Abundant leaf + Wood and cement slabs + Tunnel under staircase (Snakes), Norway Maple snags (Bats)	Stumps play an important role in soil retention	None	Refer to compartments

**Notable Features:** Several dead trees have been located across the escarpment slopes. They should be cut to near ground level but with stumps left in the ground to aid soil retention. Some dead trees may still serve as habitats for wildlife.

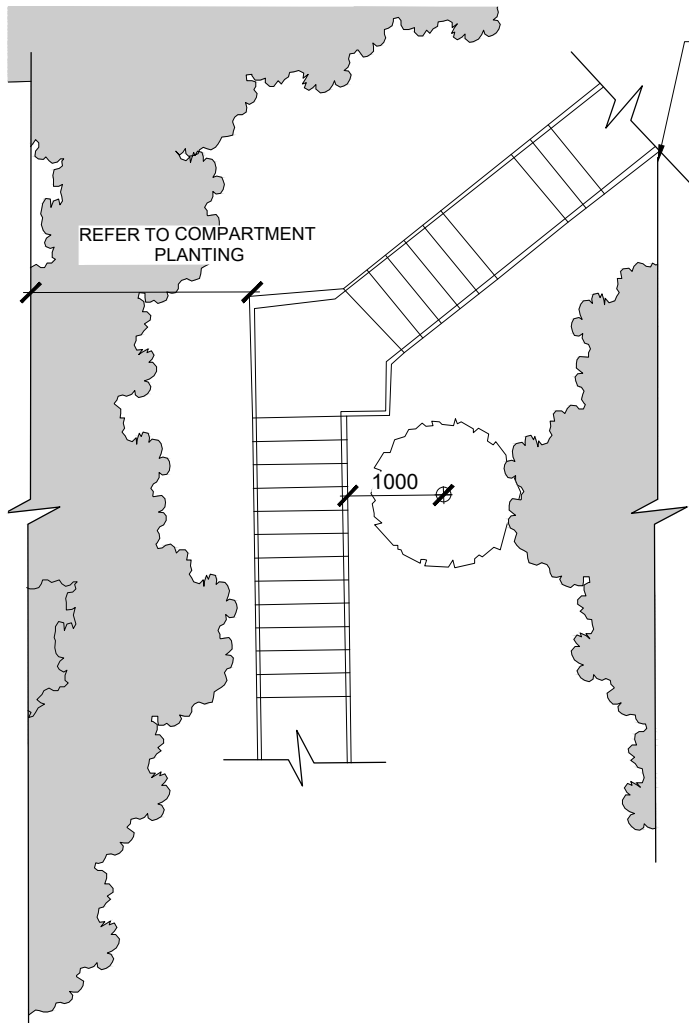
**Restoration Objective:** Cut dangerous dead trees and keep root system intact for they are important for slope stability.

Implementation	Soil	Slope	Cleaning	Tree Planting	Shrubs Planting	Ground Cover
	N/A	N/A	N/A	N/A	N/A	N/A
	Invasive Species	Wildlife Habitat	Triming			
	N/A	Verify presence of bird nests before any	Avoid tree cuts during nesting period Federal / NCC Nesting Window Apr 1 - Aug 31 City of Ottawa Nesting Window Apr 15- Aug 15			
Post Work	Pruning requirements	Planting Care	Removals	Geotechnical Monitoring	Environmental Monitoring	
	N/A	N/A	N/A	N/A	N/A	N/A

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 9 Pedestrian Stairs



END OF INTERVENTION AREA

#### NOTE

1. PLANT SHRUB SEEDLINGS IN BARE AREAS ONLY UNDER STAIRS (SEE DETAIL 03 L-201 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
2. KEEP EXISTING TREES AT MINIMUM 1 M FROM STAIRS
3. REMOVE ALL TREE SEEDLINGS REMOVED AND CUT TO GROUND ALL TREES UNDER AND WITHIN 1 M OF THE STAIRS CUT TO GROUND

PLANT LIST
25 Cr
20Cs
30 Po
15 Sp

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 9 Pedestrian Stairs

Existing Conditions	<b>Soil</b>	<b>Topography</b>	<b>Sunlight</b>	<b>Tree</b>	<b>Shrub</b>	<b>Ground Cover</b>
	Type: Loam Texture: Sand and small rocks Moisture: dry to mesic soil Stability: Soil creep occurring	50%, Exposed Rock	Sun Partial-shade	Dominant: White Cedar, Manitoba Maple, White Elm Sub-Dominant: Basswood, White Ash	Dominant: Honeysuckle, Staghorn Sumac Sub-Dominant: Snowberry, Dogwood	Dominant: Riverbank Grape, Eurasian Woodland Bluegrass
	<b>Invasive Plants</b>	<b>Wildlife</b>	<b>Habitat</b>	<b>Landscape Value</b>	<b>Cultural Values</b>	<b>Archaeological Potential</b>
	5% canopy Norway Maple 50% understory Manitoba Maple, Honeysuckle, Buckthorn, Lilac	Snakes, Birds, Bats	Abundant leaf + opportunities available at the base of the slope (snakes)	Highly visible from pathway, provides excellent views of Ottawa River	Close proximity to heavily trafficked public access route. Clear view of Parliament and	Possible Military Quarry

**Notable Features:** This situation is heavily disturbed from its natural state as a result of multiple structural interventions. The staircase forms a permanent gap in the canopy, allowing sunlight to reach the slope surface and encouraging dense understory growth. The stairs which will have limited potential to block the view of the water.

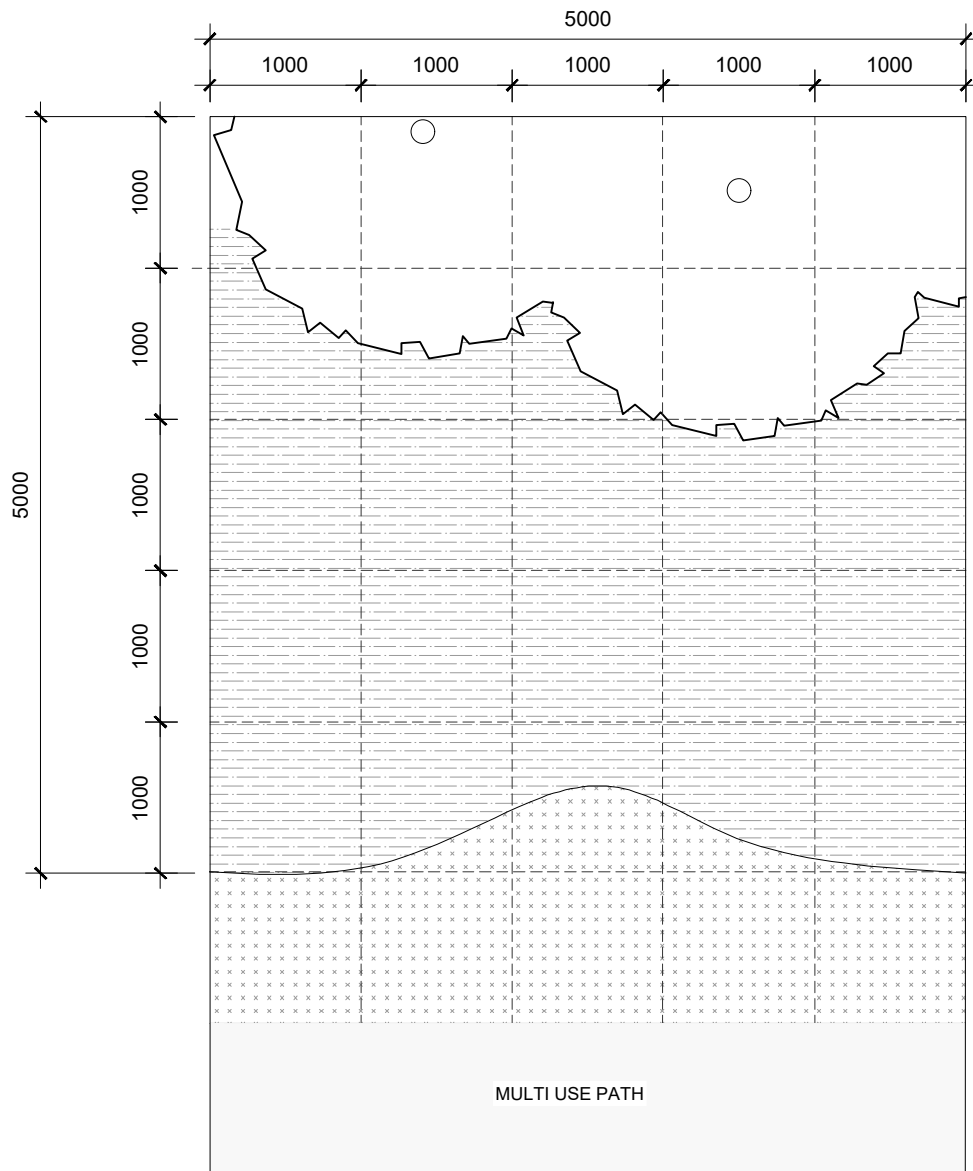
**Restoration Objective:** Thin (remove if invasive) shrubs to enhance visual impact of forest along the stairs.

Implementation	<b>Soil</b>	<b>Slope</b>	<b>Cleaning</b>	<b>Tree Planting</b>	<b>Shrubs Planting</b>	<b>Ground Cover</b>
	Add compost with planting	N/A	Remove all debris prior to work	N/A	Shrubs seedling -Cornus racemosa -Physocarpus opulifolius -Sambucus pubens	N/A
	<b>Invasive Species</b>	<b>Wildlife Habitat</b>	<b>Trimming</b>			
	Remove all seedlings (see 6.5 Invasive species List)	N/A	Spring or Autumn			
Post Work	<b>Pruning requirements</b>	<b>Planting Care</b>	<b>Removals</b>	<b>Geotechnical Monitoring</b>	<b>Environmental Monitoring</b>	
	Prune branches growing too close to staircase	Ressed in bare spots , Replace dead plants	N/A	N/A	Refer to invasive plants management sheet.	



# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 10 Talus Deposited by Erosion



#### LEGEND

-  EXISTING GRASS
-  COMPOST (SEE SPEC 329119.13 - TOPSOIL PLACEMENT AND GRADING)

#### NOTES

1. FOR PROTECTION MEASURE SEE SPECS 013595 - ARCHEOLOGICAL PROCEDURES AND 013591 - HISTORIC-PROTECTIVE MEASURES
2. IN THE CASE OF FINE PARTICULE (SAND) SURFACES, ADD 50 MM COMPOST BEFORE SEEDING. IN THE CASE OF LARGE PARTICULE (GRAVEL) SURFACES, DIGG 100MM AND REPLACE WITH TOPSOIL BEFORE SEEDING

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 10 Talus Deposited by Erosion

Existing Conditions	Soil	Topography	Sunlight	Tree	Shrub	Ground Cover
	Type: None Texture: Sand and gravel Moisture: dry to mesic soil Stability: Shallow soil depth to bedrock	<5%	Sun Partial-shade Shade	Refer to compartment	Refer to compartment	Refer to compartment
Existing Conditions	Invasive Plants	Wildlife	Habitat	Landscape Value	Cultural Values	Archaeological Potential
	50% canopy Norway Maple 40% understory Tartarian Honeysuckle, Lilac, Buckthorn, Manitoba maple	Snakes, Bats, Turtles	Little leaf litter (snakes) + Some short snags may provide limited habitat to bats and other wildlife	None	None	Medium potential

**Notable Features:** As a result of constant erosion and ravelling across the slopes from surface runoff, large talus deposits have built up at the base of the escarpment slope in several areas. Sometimes after significant storm events or flooding, the talus even covers the pedestrian pathway. No significant vegetation in talus area due to active erosion.

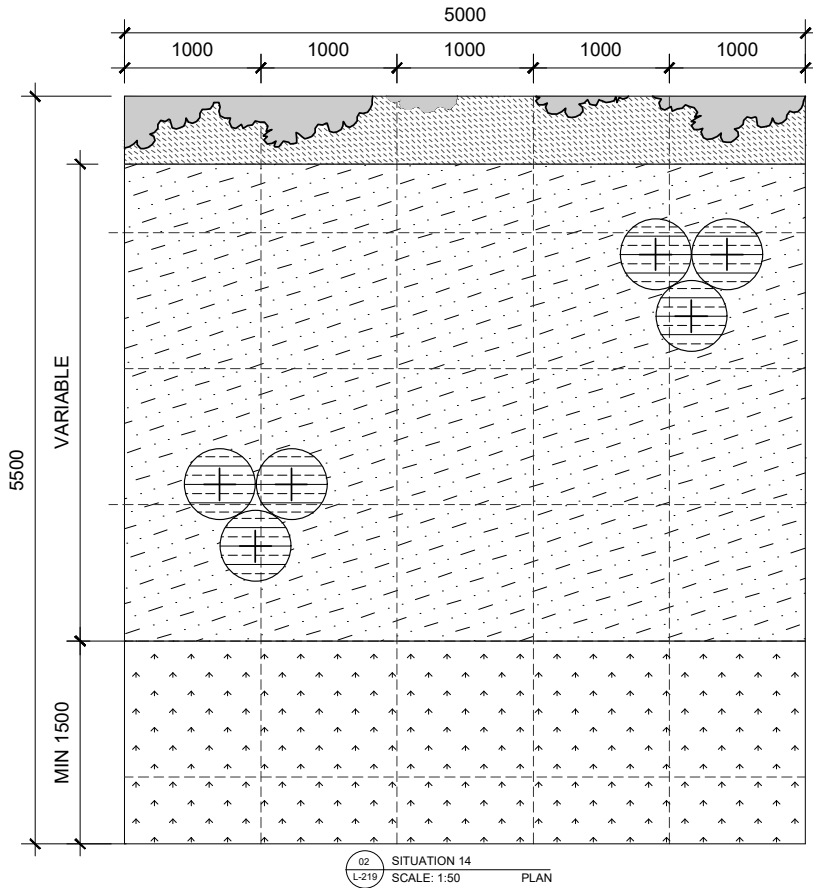
**Restoration Objective:** Enhance the visual appeal of this area and provided some ecological function to the deposition.

Implementation	Soil	Slope	Cleaning	Tree Planting	Shrubs Planting	Ground Cover
	Add compost or topsoil depending on talus particules	N/A	N/A	N/A	N/A	Seeding
Implementation	Invasive Species	Wildlife Habitat	Triming			
	Remove all seedlings (see 6.5 Invasive species List)	Potential habitat for turtles	Spring / fall			
Post Work	Pruning requirements	Planting Care	Removals	Geotechnical Monitoring	Environmental Monitoring	
	N/A	N/A	N/A	N/A	N/A	

# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 11 Creation of pollinator meadow habitat

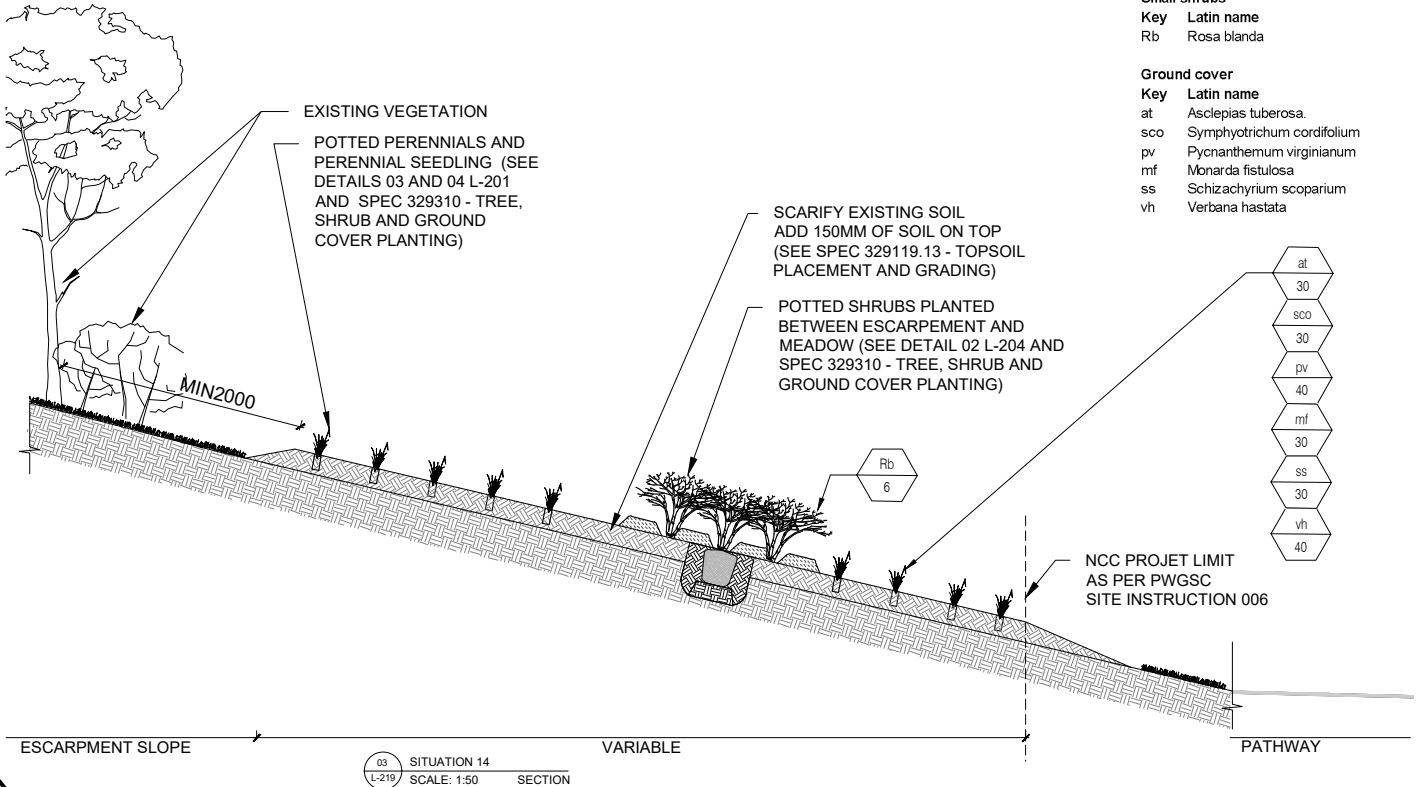


#### LEGEND

- POTTED SHRUBS - CONTINUOUS TRENCH (SEE DETAIL 02 L-204 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)
- POLLINATOR MEADOW ZONE- POTTED PERENNIALS AND PERENNIAL SEEDLING (SEE DETAILS 03 AND 04 L-201 AND SPEC 329310 -TREE, SHRUB AND GROUND COVER)
- SODDING (SEE SPEC 329223 - SODDING)
- MULCH (RAMIAL CHIPPED WOOD) 100 MM (SEE SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)

#### NOTES

1. REMOVE GRASS
2. KEEP 3M DISTANCE BETWEEN NEW TREES AND BAT OR BIRD BOXES)
3. KEEP 2 M DISTANCE FROM EXISTING TREES
4. ADD BIRD AND BAT BOXES FOR ALL THE SITUATION- EXACT LOCATION TO BE DECIDED ON SITE BY DEPARTMENT REPRESENTATIVE (SEE SPEC 323300 - SITE FURNISHINGS)



# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 11 Creation of pollinator meadow habitat

Existing Conditions	Soil	Topography	Sunlight	Tree	Shrub	Ground Cover
	Type: Loam Texture: Sandy silt and Rocks Moisture: dry to mesic soil Stability: Signs of erosion	30%	Sun Partial-shade	Dominant: Manitoba Maple White elm, Green Ash Sub-Dominant: Sugar Maple	Dominant: Common Lilac, Buckthorn, , Honeysuckle, White meadowsweet	Dominant: Riverbank Grape, Staghorn Sumac, Thicket Creeper,
	Invasive Plants	Wildlife	Habitat	Landscape Value	Cultural Values	Archaeological Potential
	40% canopy 50% understory Manitoba Maple, Lilac, Buckthorn, Dog stranging Vine	Snakes, Birds and Mammals (Groundhog)	Abundant leaf + underground openings and a brick wall (Snakes) and super-canopy trees (Birds)	Existing walls are a highly visible element of the landscape, and contribute significantly to the value of the site.	Element highly visible from pathway.	Steam plant

**Notable Features:** This area of cultural meadow is currently quite flat, large and contains primarily non-native species and turf grass. Its location at the bottom of escarpment is an opportunity.

**Restoration Objective:** Improve biodiversity with addition of pollinator meadow habitat

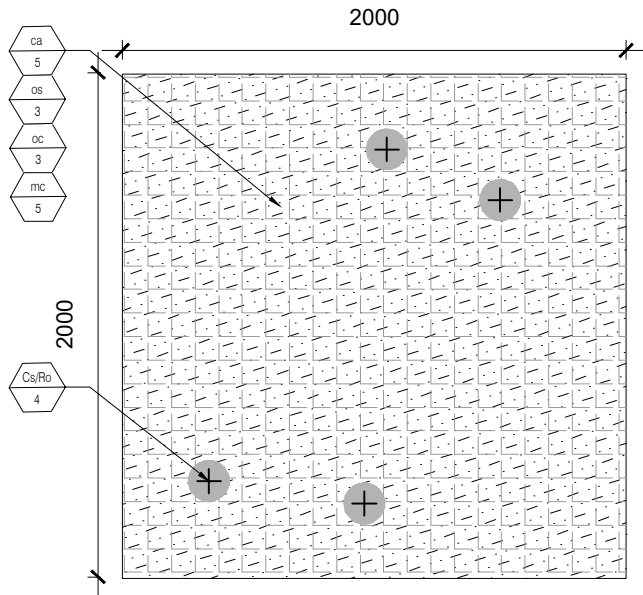
Implementation	Soil	Slope	Cleaning	Tree Planting	Shrubs Planting	Ground Cover
	Native soil enriched with compost- Add compost for planting	N/A	Remove all debris prior to work	N/A	Shrubs: -Rosa blanda	Perennials -Asclepias tuberosa - Symphyotchum cordifolium -Pycnanthemum virginianum -Monarda fistulosa -Schizachyrium scoparium -Verbana hastata
	Invasive Species	Wildlife Habitat	Triming			Sodding
	Remove all seedlings (Refer to invasive plants management sheet)	N/A	Spring or autumn			
Post Work	Pruning requirements	Planting Care	Removals	Geotechnical Monitoring	Environmental Monitoring	
	Prune dead branches of shrubs, cut grass	Replace dead plants add mulch in bare areas	N/A	N/A	Refer to invasive plants management sheet	



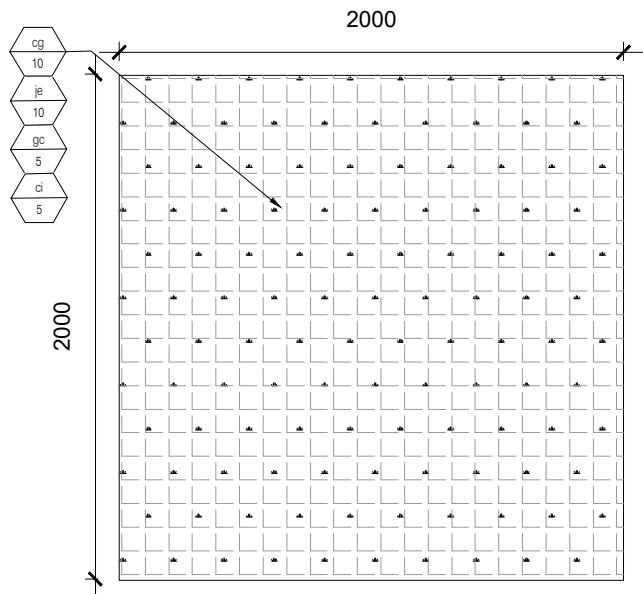
# 6. Situational Planting and Stabilization Methods for Maintenance

## Annex III Situational Planting and Stabilisation Methods

### SITUATION 12 Ground water seep



01a SITUATION 15a  
L-220 SCALE: 1:15 PLAN



01b SITUATION 15b VERY WET GROUNDWATER SEEP  
L-220 SCALE: 1:15 PLAN

#### LEGEND

POTTED PERENNIALS AND PERENNIAL SEEDLING  
(SEE DETAILS 03 AND 04 L-201 AND SPEC 329310 - TREE, SHRUB AND GROUND COVER PLANTING)

EROSION CONTROL BLANKET (SEE DETAILS 01 AND 02 L-205 AND SPEC 313219.16 - GEOTEXTILE / SOIL STABILIZATION)  
TERRASEEDING (SEE DETAIL 01 L-201 AND SPEC 329219.16 - HYDRAULIC SEEDING / TERRASEEDING)

#### NOTES:

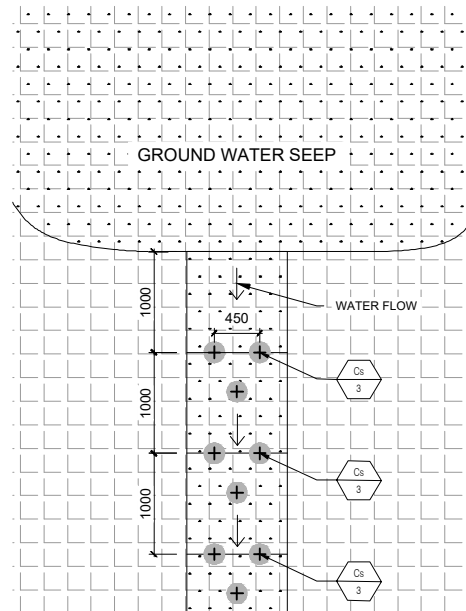
1. PLANT IN GROUPS OF 3 OR 5
2. PLANTING DISTANCES OF 300MM C/C FOR EXCEPT FOR OSMUNDA CINNAMOMEA AT 500MM C/C
3. PLANTS FROM COMPARTMENT PLANTING GRID:
  - Cs
  - Ro

#### Small shrubs

**Key Latin name**  
Ro *Rubus odoratus*  
Cs *Cornus sericea stolonifera*

#### Ground cover

**Key Latin name**  
ca *Carex aurea*  
mc *Mentha canadensis*  
oc *Osmunda cinnamomea*  
os *Onoclea sensibilis*  
cg *Chelone glabra*  
je *Juncus effusus*  
gc *Glyceria canadensis*  
ci *Carex intumescens*



01c SITUATION 15 WATER FLOW BELLOW GROUNDWATER SEEP  
L-220 SCALE: 1:50 PLAN

## 6. Situational Planting and Stabilization Methods for Maintenance

### Annex III Situational Planting and Stabilisation Methods

#### SITUATION 12 Ground water seep

Existing Conditions	Soil	Topography	Sunlight	Tree	Shrub	Ground Cover
	Saturated soil, presence of a thin layer of an oily sheen	30 - 40%	Shade	Dominant: Norway Maple Sub-Dominant: Red Ash, Sugar Maple, Juglans cinerea	Dominant: Exotic shrubs Honeysuckle, Lilac), Sumac	Dominant: Garlic Mustard, Eurasian Bluegrass
	Invasive Plants	Wildlife	Habitat	Landscape Value	Cultural Values	Archaeological Potential
	70% canopy Norway Maple 73% understory Honeysuckle, Lilac	Snakes, Bats and Mammals (squirrel, Groundhog...)	Due to the presence of water from the seep rodents and small mammals may frequent the area.	N/A	N/A	N/A

#### Notable Features:

- This seepage area does not contain natural vegetation and is covered by a thin layer of an oily sheen showing saturated soils.
- For groundwater seep in compartment A, source of water must be further investigated.

**Restoration Objective: Improve biodiversity with addition of native wetland plantings.**

Implementation	Soil	Slope	Cleaning	Tree Planting	Shrubs Planting	Ground Cover
	Add topsoil for planting	Erosion control blanket	Remove all debris prior to work	N/A	N/A	Perennials -Athyrum filix-femina -Carex aurea -Onoclea sensibilis -Pycnanthemum virginianum
	Invasive Species	Wildlife Habitat	Trimming			
	Remove all seedlings (see 6.5 Invasive species List)	N/A	Spring or autumn			
Post Work	Pruning requirements	Planting Care	Removals	Geotechnical Monitoring	Environmental Monitoring	
	Prune dead branches of shrubs, cut grass	Replace dead plants add mulch in bare areas	N/A	N/A	Refer to invasive plants management sheet	

# 7. Inventory data sheet

# 7. Inventory data sheet

Name		Date	
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Deciduous trees										
Key	Qty - A	Qty - B	Qty - C	Qty - D	Qty - E	Qty - F	Qty	Latin name	Nom commun en français	Common name
AR								Acer rubrum	Érable rouge	Red Maple
AS								Acer saccharum	Érable à sucre	Sugar Maple
BA								Betula allagheniensis	Bouleau jaune	Yellow Birch
BP								Betula populifolia	Bouleau gris	Grey Birch
CC								Carya cordiformis	Bitternut hickory	Bitternut Hickory
CCA								Crataegus canadensis	Aubépine canadienne	Hawthorn
OV								Ostrya virginiana	Ostryer de Virginie	Ironwood
PD								Populus deltoides	Peuplier Deltoïde	Eastern Cottonwood
PSE								Prunus serotina	Prunier tardif	Black cherry
QM								Quercus macrocarpa	Chêne à gros fruits	Bur Oak
TA								Tilia americana	Tilleuil d'amérique	American Basswood

Coniferous trees										
Key	Qty - A	Qty - B	Qty - C	Qty - D	Qty - E	Qty - F	Qty	Latin name	Nom commun en français	Common name
PS								Pinus strobus	Pin blanc	White Pine
TO								Thuja occidentalis	Thuja occidental	Eastern White Cedar

Large shrubs										
Key	Qty - A	Qty - B	Qty - C	Qty - D	Qty - E	Qty - F	Qty	Latin name	Nom commun en français	Common name
Ac								Amelanchier canadensis	Amélanchier du Canada	Serviceberry
Pv								Prunus virginiana	Prunier de Virginie	Choke Cherry
Rt								Rhus typhina	Vinaigrier	Sumac

Small shrubs and vines										
Key	Qty - A	Qty - B	Qty - C	Qty - D	Qty - E	Qty - F	Qty	Latin name	Nom commun en français	Common name
Au								Arctostaphylos uva-ursi	Raisin d'ours	Bear berry
Cr								Cornus racemosa	Cornouiller à grappe	Grey dogwood
Cs								Cornus sericea stolonifera	Cornouiller stolonifère	Redosier dogwood
Cs2								Cornus sericea stolonifera	Cornouiller stolonifère	Redosier dogwood
Cp								Comptonia peregrina	Comptonie voyageuse	Sweet fern
Cv								Clematis virginiana	Clématite de Virginie	Virgin's Bower
DI								Diervilla lonicera	Diervillée chevrefeuille	Northern bush honeysuckle
Jv								Juniperus virginiana	Genévrier commun	Eastern Red Cedar
Po								Physocarpus opulifolius	Ninebark	Physocarpa à feuille d'obier
Rb								Rosa blanda	Rosier inerme	Purple Flowering Raspberry
Ro								Rubus odoratus	Ronce odorante	Purple Flowering Raspberry
Sca								Shepherdia canadensis	Shepherdie du Canada	Russet Buffaloberry
Sc								Sambucus canadensis	Common elderberry	White Elderberry
Sp								Sambucus pubens	Common elderberry	Red Elderberry
Sa								Symphoricarpos albus	Symphorine blanche	Snowberry
SI								Spiraea latifolia	Staphyllier à trois folioles	Meadowsweet
St								Staphylea trifolia	Staphyllier à trois folioles	Bladdernut
Vm								Vaccinium myrtilloides	Bleuet sauvage	Velvet Leaf Blueberry
Vr								Vitis riparia	Vigne des rivages	Wild grape

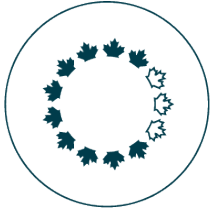
Ground Cover										
Key	Qty - A	Qty - B	Qty - C	Qty - D	Qty - E	Qty - F	Qty	Latin name	Nom commun en français	Common name
af								Athyrium filix-femina	Fougère femelle	Lady fern
at								Asclepias tuberosa	Asclépiade tubéreuse	Butterfly milkweed
ca								Carex aurea	Carex doré	Golden Fruit Sedge
cc								Carex crinita	Carex crépu	Fringed sedge
cca								Calamagrostis canadensis	Calamagrostide du Canada	Acutiflora bluejoint
dc								Deschampsia cespitosa	Déchampsie cespitose	Tuffed hairgrass
dm								Dryopteris marginalis	Dryoptère marginale	Marginal Wood Fern
iv								Iris versicolor	Iris versicolore	Blue Flag Iris
lc								Lobelia cardinalis	Lobélie cardinale	Cardinal flower
mf								Monarda fistulosa	Monarde fistuleuse	Wild bergamot
ml								Myosotis laxa	myosotis laxiflore	small forget-me-not
os								Onoclea sensibilis	Onoclée sensible	Sensitive fern
pa								Polystichum acrostichoides	Polystic faux-acrostic	Christmas Fern
pt								Pycnanthemum tenuifolium	Pycnanthème à feuilles étroite	Slender mountain mint
pv								Pycnanthemum virginianum	Menthe des montagnes	Common Mountain Mint
sco								Symphotrichum cordifolium	Aster à feuilles cordées	Hart Shaped Aster
sn								Solidago nemoralis	Verge d'or des bois	Wood Goldenrod
ss								Schizachyrium scoparium	Barbon à balai	Little blue stem
vh								Verbana hastata	Verveine hastée	Blue vervein

Special Observations	

# 8. Figure List

## 8. Figure List

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NATIONAL CAPITAL COMMISSION  
COMMISSION DE LA CAPITALE NATIONALE

**ANNEX "A-2"**  
*NCC Environmental Guidelines and Best Practices*



## **National Capital Commission (NCC) Environmental Guidelines and Best Practices**

This document summarizes the mitigation measures to be implemented during the various activities that will be undertaken as part of Maintenance contracts on National Capital Commission (NCC) lands. The NCC has a legal obligation under the *Impact Assessment Act (IAA)*, to determine if activities conducted on NCC lands, are likely to cause significant adverse environmental effects or other impacts. The maintenance activities outlined in this document are either not considered projects under the IAA or are projects set out in the Ministerial Order issued under subsection 88 (1) of IAA which are excluded from an environmental review as long as the activity does not include:

- Removal of or damage to known potential archaeological, paleontological, heritage, or architectural buildings, structures, or resources;
- Works that can disturb, harm, kill a species at risk protected under the *Species at Risk Act* or its habitat (*such as work in ecologically sensitive areas, removal of butternut or other protected trees, etc.*);
- Works that can disturb, harm, kill a migratory bird or its nest protected under the *Migratory Bird Convention Act* (*such as nest or tree removal, etc.*);
- Changes to any characteristic of a water body;
- Work in-water or placement of temporary or permanent fill in or near water and/or that may require a project review under the *Fisheries Act* (*such as addition of gravel or fill on pathways near water*);
- The loss of reduction of a wetland; and
- The disturbance of known or suspected subsurface contamination.

This list is not exhaustive and only includes constraints that are likely to apply to maintenance activities. Consult applicable legislation for further details and in case of discrepancies. If the maintenance activity is suspected to include any of the above, the CMO must be notified who will in turn contact the Chief, Environmental Assessment for assignment to an Environmental Officer for review (EIA\_Request@ncc-ccn.ca).

The mitigation measures outlined in this document are in accordance with the above regulations, NCC Policies and NCC's Sustainable Development Strategy. The NCC's Sustainable Development Strategy provides a focused agenda for national leadership in achieving an environmentally sustainable and climate resilient National Capital Region and serves as an overarching element to be included in all of the NCC's plans, strategies, policies and operations. The NCC is bound by the Federal Sustainable Development Act to implement the actions of its Sustainable Development Strategy, which are in line with the Federal Sustainable Development Strategy and the Greening Government Strategy.

All Contractors and contract management officers will be required to have basic training in the implementation of these environmental guidelines. It is important that these guidelines be strictly followed, as fines may be issued by the municipal, provincial and federal government in the event of noncompliance. The Contractor is responsible for ensuring compliance with all applicable laws and regulations. In the event of non-compliance, the NCC will seek repayment of these fines from the Contractor. The Contractor must follow all applicable provincial and municipal laws and regulations (including waste management, noise, pollution prevention, etc.).

### **General Environmental Guidelines to be followed for All Maintenance Activities**

The following measures and principles must be followed during all Maintenance work on NCC lands. Mitigation measures marked with an asterisk (\*) will require approval from the NCC prior to the start of the Maintenance activity or will require the Contractor to notify the NCC in the case of an accident or emergency. For these mitigation measures marked with an asterisk, the Contractor will contact the Contract Management Officer (CMO) to inform them of the type of work being undertaken. The CMO will then contact the relevant NCC specialists (e.g. environmental office, arborist, contaminated site specialists, biologists, archaeologist, etc.) to obtain their recommendations and any required approvals.

#### *Air Emissions and Noise*

- Minimize unnecessary idling of vehicles which can result in wasted fuel and the creation of greenhouse gases to the extent possible (refer to municipal by-laws).
- Meet all regulatory requirements for air emissions. Where required, an environmental compliance approval must be obtained from provincial authorities for stationary sources of air pollution (e.g. stacks, boilers, fume hoods).
- Use low-sulphur diesel or ethanol-based fuel wherever possible to reduce vehicle emissions.
- Regularly service vehicles and practice preventive maintenance to reduce vehicle emissions.
- Use renewable sources of electricity to prevent unnecessary emissions, when possible.
- Avoid performing any maintenance activities that have the potential to release dust or other particles during very dry or windy periods.
- Follow all applicable municipal noise by-laws and conduct construction within permitted hours.
- If possible, schedule noisy activities outside peak visitor season or adjust hours of noisy work to minimise disturbance to visitors using the area.

#### *Designated Substances*

- \*Prior to entering a building or structure under construction or renovation, contact the NCC to determine if any designated substances<sup>1</sup> are present.
- Where available, the CMO will provide the building Designated Substances Survey report to the Contractors to ensure recommendations are implemented. If no Designated Substances Survey report exists for the building to be repaired or maintained, the CMO will contact the NCC Contaminated Sites Team (Eric Soulard, Senior Manager, at [Eric.Soulard@ncc-ccn.ca](mailto:Eric.Soulard@ncc-ccn.ca) 613-239-5678 ext. 5418).
- Handle and dispose of all designated substances in accordance with all federal, provincial, and municipal requirements.
- Ensure employees are trained on the identification and handling of designated substances.

#### *Hazardous materials*

- Ensure compliance with any applicable requirements of *Canadian Environmental Protection Act* (and regulations made under this Act).
- Store all hazardous materials on NCC property in accordance with applicable regulations, standards and guidelines. Flammable materials must be stored in accordance with the National Fire Code of Canada.
- Ensure that Material Safety Data Sheets (MSDS) are readily available for all hazardous materials brought on to NCC property. All employees handling these materials must have received training on the Workplace Hazardous Materials Information System (WHMIS) and on proper handling, storage and disposal of these materials.
- Absorbent material must be available whenever liquid hazardous materials are being used on NCC property. Staff must be trained on how to use and dispose of this material in the event of a spill.
- Label and transport all hazardous materials in accordance with WHMIS requirements and provincial and federal regulations regarding the transportation of dangerous goods.
- Dispose of all hazardous wastes and containers which previously contained hazardous materials in accordance with provincial and federal regulations.
- Follow all recommendations found in applicable designated substance reports and the advice of the NCC.

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<sup>1</sup> As per *Ontario Regulation 490/09 Designated Substances* definition

## *Spills Procedure and Emergency Response*

### ***Spill prevention and readiness***

- Wash, refuel and service machinery and store fuel and other materials for the machinery at least 60m away from a waterway to prevent any deleterious substance from entering the water.
- Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
- All individuals performing work on NCC property are expected to be familiar with the general requirements for reporting and responding to environmental emergencies on NCC property.
- Spill response materials should be available wherever hazardous materials are used or stored. These spill response materials should be suitable in type and quantity to the type and quantity of hazardous materials being used at that location.
- Employees must be trained on how to use the spill material and equipment.

### ***Spill response***

- **All emergency situations MUST be reported immediately to 911 and then to the NCC 24 Hour Emergency Communications Service at 613 239-5353.** Any environmental spills (biological, chemical or petroleum based) must be reported to the NCC 24 Hour Emergency Communication Service at 613-239-5353.
- Spills must be contained and cleaned up in accordance with all federal, provincial, and local regulatory requirements. When safe to do so, immediately contain the spill with spill response materials stored on site. Contractor shall ensure any follow-up cleanup is conducted, in consultation with the NCC.
- All used absorbent material must be disposed of in accordance with applicable regulatory requirements.
- All spills must also be reported to the appropriate provincial authority where a spill: discharges to air, land or water; is in excess of normal usage; has escaped its means of containment; or has been combined with other products affecting its chemical stability which could cause an adverse effect (i.e. negative impact on health, environment or property). If applicable, coordinate reporting with the NCC.
- Complete NCC spill report and send to Environmental Services ([eric.soulard@ncc-ccn.ca](mailto:eric.soulard@ncc-ccn.ca)) within 24 hours of the spill. The Spill Report must be completed by following the Emergency Operational Procedure in place. The Spill Report should also be submitted to the NCC Contract Manager and it should provide all details on the spill.

## *Wildlife*

- Workers will avoid wilfully disturbing any wildlife at the site.
- \*If an animal is found inside a structure or is trapped in the work area, contact the CMO who seek the advice of the NCC specialists (e.g., biologists, environmental officers, conservation officers) on the best course of action.
- Allow any animals (mammals, birds, amphibians, and reptiles) spotted during the work to safely leave the site on their own. Workers shall not attempt to capture or handle animals. Notify the NCC CMO if there is a specific wildlife issue in the work area (e.g., injured animal).
- Use natural light to work as much as possible. Turn off all lights except those required for safety reasons at the end of each day. If working at night, avoid light trespass into the sky or neighboring areas through methods such as using shielded or full cut-off lights.
- Keep the site clean and free of any garbage or food scraps that may attract animals or alter their behaviour.
- Do not cut vegetation (including trees) and naturalized meadows (e.g. Class C) between April 8<sup>th</sup> and August 28<sup>th</sup>, which corresponds to the core migratory bird breeding and nesting season. If, by exception the NCC requires that vegetation in non-lawn areas be cut between April 8<sup>th</sup> and August 28<sup>th</sup> the NCC will require an area search for evidence of bird nesting.
- \*If excavation or compaction activities are planned to occur in areas with high sun exposure, in exposed or lightly vegetated areas (including gravel and soil) within 250 m of waterbodies during the turtle nesting season (May – July), consult the NCC to determine the need for installation of reptile exclusion fencing to prevent turtles from nesting.
- The Contractor is never to disclose information related to the location of species at risk or sensitive ecological areas (e.g. nests, roosts or dens) to the general public without NCC authorization.
- Record, and report to the contracting officer, any bird-window collisions observed on NCC lands. Record the date and time of the collision, the building address or location, the species of bird (if known) or a description of the bird, and the side of the building where the collision took place (i.e. north, east, south, west). Collect any dead or injured birds in a paper bag and contact Safe Wings Ottawa (613-216-8999) for further instructions.

- Follow the [NCC's Bird-Safe Design Guidelines](#) for landscaping near buildings.

### *Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control<sup>2</sup>*

- \*If the activity may release sediment, soil, or any other potentially polluting chemical or product to a wetland, waterway or sewer: develop and implement an Erosion and Sediment Control Plan and an Emergency Response Plan.
  - Install all required sediment and erosion control measures before starting work to prevent sediment from entering the watercourse. Regularly inspect during debris removal or after significant rain event, strong winds, or flooding and make all necessary repairs if any damage occurs.
  - Remove and reinstate to natural conditions upon completion of works.
- Plan activities near water so that materials, such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals do not enter the watercourse or wetland.
- Minimize any clearing of riparian or wetland vegetation: use existing trails, roads or cut lines wherever possible to avoid disturbance to the riparian vegetation and prevent soil compaction. When possible, prune or top the vegetation instead of grubbing/uprooting.
- Do not remove natural vegetation, woody debris, rocks, sand or other materials from the banks, the shoreline or the bed of the wetland or waterbody below the ordinary high-water mark or 30 m of a waterbody or wetland without prior approval from the NCC. If material is removed, set it aside and return it to the original location once construction activities are completed. Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks.
- Revegetate as soon as possible within the growing season. If unfeasible, stabilize disturbed areas with erosion control blankets to keep the soil in place and prevent erosion in water bodies. Leave blankets in place until immediately before the commencement of revegetation work. Use erosion and sediment control products made of 100% biodegradable materials (e.g., jute, sisal or coir fibre) when possible. Ensure backing materials are also biodegradable.
- Avoid operating equipment or disturbing vegetation and soils on meander bends, braided streams, alluvial fans, active floodplains or any other area that is inherently unstable and may result in erosion and scouring of the stream bed or the built structures.
- Whenever possible, operate machinery on dry land above the wetland boundary, high-water mark<sup>3</sup>, on ice, or from a floating barge in a manner that minimizes disturbance to the banks and bed of the wetland or waterbody.
- Limit machinery fording of the wetland or watercourse to a one-time event (i.e., over and back), and only if no alternative crossing method is available
  - If repeated crossings of the watercourse are required, construct a temporary crossing structure.
- Use temporary crossing structures or other practices to cross streams or waterbodies with steep and highly erodible (e.g., dominated by organic materials and silts) banks and beds. For fording equipment without a temporary crossing structure, use stream bank and bed protection methods (e.g., swamp mats, pads) if minor rutting is likely to occur during fording.
- Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering ditches, storm sewers or watercourses, i.e. a minimum of 30 m from any of these features and using spill pans or other devices.
- Locate materials storage sites and equipment parking at a minimum distance of 30 m from any waterbody, watercourse or wetland.
- Do not store any excavated soils within 30m of a watercourse or wetland. If no other staging area is available, erect a silt fence around the material to minimize erosion.
- **\*Perform any work in or near watercourses outside fish spawning period** and periods of high flooding. Timing windows to conduct projects in or around water may vary by province, species or watercourse and are established by Fisheries and Oceans Canada (DFO) or provincial authorities to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed.
- Avoid maintenance activities during wet and rainy periods.

<sup>2</sup> Mitigation measures have been adapted from the mitigation measures to avoid causing harm to fish and fish habitat provided by the Department of Fisheries and Oceans Canada <http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures-eng.html>

<sup>3</sup> The usual or average level to which a body of water rises at its highest point. In flowing waters (e.g., rivers, streams) this refers to the "active channel/bank-full level" which is often the 1:2 year flood flow return level. In inland lakes and wetlands it refers to those parts of the water body, bed and banks that are frequently flooded by water so as to leave a mark on the land and where the natural vegetation changes from predominately aquatic vegetation to terrestrial vegetation (excepting water tolerant species). For reservoirs this refers to normal high operating levels (i.e. full supply level).

### *Trees*

- \*Do not cut any tree (with a diameter at breast height (DBH) of 10cm or greater) without prior authorization from the NCC.
- When applying mulch, ensure that a 2 to 5 cm gap around the bark is maintained (do not apply mulch directly against the bark), and maintain mulch to a depth of 5 to 10 cm; the mulch should minimally be applied in a 30 cm diameter area around trees and shrubs.
- Appropriately dispose of trees or shrub clippings, branches, or log pieces that show signs of disease or pests following all federal, provincial, and municipal regulations in order to minimize spread of the disease or pest (e.g. Dutch elm disease, emerald ash borer, etc.). Where possible (i.e. forested areas), compost healthy material on-site (see below-pruning).
- Respect a minimum distance of 2 meters from any trees when excavating or installing structures. Species at risk including but not limited to Butternut, Rock Elm, or Black Maple likely require greater distance.
- Install protectors around all trees susceptible of being damaged by machinery. \*If damages are done to a tree, it must be reported to the CMO who will advise on applicable measures (e.g. proper pruning of the branch, replacement of the tree, report to applicable authorities, etc.) to be implemented by the Contractor.
- Avoid parking vehicles or machinery, storing any materials, excavating, or aerating, or any other work that can disturb or compact the soil and damage roots within the dripline of any trees.
- Protect any federally or provincially protected tree species (seedling, sapling or tree). Implement all necessary protective measures, such as flagging the tree or installing protectors at the dripline of the tree to ensure they are not damaged or cut, including the critical root zone. If flagging the tree, use highly visible flagging tape (using a pre-determined colour) to clearly identify the tree and remove tape once work is completed. These species include, but are not limited to, Butternut (*Juglans cinerea*) in both Quebec and Ontario and Rock Elm (*Ulmus thomasii*) and Black Maple (*Acer nigrum*) in Quebec. The presence of such species should be reported to the CMO. \*Never prune or cut these species or trees without authorisation from the NCC (ECCC permits will be required).
- Do not prune or cut down any trees or other vegetation between April 8<sup>th</sup> and August 28<sup>th</sup>, which corresponds to the core migratory bird breeding and nesting season. If, by exception the NCC requires that vegetation is to be cut between August 8<sup>th</sup> and 28<sup>th</sup> the NCC will be required to conduct an area search for evidence of nesting.
- Conduct any pruning according to established best practices. At a minimum, the following guidelines apply:
  - Use pruning shears, loppers or a pruning saw;
  - Prune at the collar (a thicker area approximately 2-3cm from the base of the branch). Avoid pruning flush with the main branch/trunk.
  - Cut at a slight angle to prevent water from entering or accumulating in the cut;
  - Section branches to a maximum length of 1 m;
  - In forested areas, disperse branches in the adjoining forest, taking care not to damage understory vegetation, to allow the organic matter to decompose.

### *Soil Compaction*

- Confine traffic to paved or gravelled surfaces; where this is not possible, confine traffic to the driest areas or the straightest path avoiding low areas, and mark the route so the designated path of travel is visible to equipment operators. Remove markers at the end of the works.
- When using heavy machinery, use weight bearing materials (e.g. swamp mats, metal plates, spreading mulch, wood fibre blankets, geotextile membranes, and granular material) or other methods to avoid ruts and compaction. Weight bearing materials should be promptly removed once the project has been completed.
- Select wider tires for equipment and properly adjust tire pressure to match loads; use dual axle equipment instead of single axle when operating heavy equipment or loads off hard surfaces.

### *Invasive Species*

- Retain and protect native vegetation in and around project activity and minimize soil disturbance as much as possible to prevent germination and establishment of invasive species.
- Before entering and exiting a site, clean away sludge, dirt, and plant material from equipment and tools and tracked vehicles before leaving a site infested with invasive species to minimize the spread. Ensure clean vehicles and tools prior to entering an NCC valued ecosystem or valued habitat. High pressure air hoses, mobile cleaning stations which retain water runoff, and brushes or brooms are acceptable cleaning methods ([Clean Equipment Protocol for Industry](#))
- Train workers to identify exotic invasive species present on site, when possible.

- Follow the [Ontario Invasive Plant Council's Best Management Practice](#) guides for the management of invasive species. Try to eliminate invasive plant species in order to reduce their chance of propagation, as possible. No plant listed on the Ontario Invasive Plant Council's list shall be planted.

### *Pesticides*

- \*Do not apply any pesticides for cosmetic purpose on NCC lands (as per NCC Policy adopted in 2012). If a pesticide application is required on NCC lands, it must have received prior authorization from the NCC and be in full compliance with all federal pesticides legislation and regulations as well as be in full compliance with all provincial requirements (*Ontario Pesticide Act* and the *Quebec Pesticide Act*, depending on the province where the activity is taking place).

### *Heritage Resources*

- \*Prior to any work on a building, confirm with the CMO that the building is not designated or recognized by the Federal Heritage Building Review Officer (FHBRO). The CMO shall contact the NCC's Heritage Program for further assistance.

### *Site Reinstatement*

- To prevent weed germination and establishment, retain native vegetation in and around project activity and keep soil disturbance to a minimum consistent with project objectives.
- Remove all materials at the end of the works, and the site should be reinstated to its original conditions, or better, including the restoration of both topsoil and native vegetation. Seed mixtures are to follow the NCC portfolio approved seeding, sodding or mulch.
- Revegetation must be done as soon as possible within the growing season. If unfeasible, the Contractor must stabilize disturbed areas with erosion control blankets to keep the soil in place and prevent erosion in water bodies. Blankets must be removed only at the end of the revegetation work.
- All tree or vegetation debris that may fall or enter any water bodies must be removed immediately

### *Waste*

- Waste collected from on-site recycling and compost bins:
  - Dispose of all waste collected from recycling bins at a recycling facility and all waste collected from compost bins at a composting facility. When contamination rates preclude the waste from being accepted at the appropriate facility, the Contractor must report this to the CMO.
- Waste generated by contractor activities:
  - Recyclable materials (paper, cardboard, glass, aluminum and plastics) must be disposed of at a recycling facility;
  - Leaf and yard waste must be disposed of at a facility that composts leaf and yard waste;
  - Landscaping products that will not be reused should be disposed of at a facility that recycles such products (e.g., wood, gravel, stones, etc.)
  - All hazardous waste (e.g. lubrication oils, batteries, propane cylinders, etc.) must be sealed completely, stored safely, and disposed of appropriately at a facility that is licensed to accept it.
  - The Contractor must track and disclose all waste diversion rates to the NCC using the Waste Diversion Report for NCC Lands.
  - Contain paint flakes, abrasives, and other waste materials for safe disposal.
  - Any waste that does fall into a waterbody will be immediately retrieved, provided worker safety is not compromised, and if removal can be done without excessive disturbance of bottom sediment.
  - Contain wastes prior to and during transport; cover waste loads during transportation.

- Dispose of solid waste in accordance with all applicable environmental laws. Be aware of any restrictions or prohibitions in force at the disposal site. Where in effect, follow all municipal recycling and composting procedures

*Public Experience*

- If possible, schedule noisy activities outside peak visitor season or adjust hours of noisy work to minimise disturbance to visitors using the area.
- Close and mark the work site and safety hazards with appropriate signage while active construction, repair or maintenance is underway; consider temporary detours or reroutes as appropriate.
- If closing the area is not possible, maintain a safe working distance between work activities and visitors. If traffic control is required, a flag person should manage traffic through the construction/hazard area.
- Visitor access trails and roads outside the construction area must be free of construction materials, waste, machinery and equipment.



### *Excavation*

**If works require digging or excavation, contact the CMO to verify the presence of soil or groundwater contamination, or archeological or paleontological resources, prior to the start of subsurface activities. Confirm the location of all utility locates (public, private, NCC).** Provide the CMO with details on the location of the digging, and the type of work to be performed (e.g. whether the trench be deepened or widened compared to what was previously excavated).

- Do not store any excavated soils within 30m of a watercourse or wetland. If no other staging area is available, a silt fence should be erected around the material to minimize erosion and to exclude reptiles and amphibians. Cover any excavated soils that remain on site overnight with a tarp.
- Do not excavate within the dripline of a tree. \*If excavation must be performed within a dripline, then contact the CMO so that they can verify mitigation measures for potential damage to trees, and whether federally protected species are present. Excavation within the dripline of a Butternut tree or other federally protected species (see above section on Trees) cannot proceed without a permit from Environment Canada.
- The workers must check excavations daily for trapped wildlife, and while excavating (particularly in semi-urban and rural areas) for hibernating wildlife or wildlife with young; if present, all work in the area must stop immediately and the CMO must be informed as soon as possible. The CMO will communicate with the NCC biologist for further instruction or assistance. Construction staff should not attempt to capture or handle most kinds of wildlife, unless an animal is in imminent peril or is injured and cannot wait for rescue by qualified personnel. Improper handling can result in injuries to both workers and wildlife, and may in some cases contravene provincial or federal legislation.
- If evidence of paleontological resources are discovered during excavation or digging activities, all work in the area must stop immediately and the CMO must be informed as soon as possible. The CMO will communicate with the environmental assessment team (EA request inbox at [EIA\\_Request@ncc-ccn.ca](mailto:EIA_Request@ncc-ccn.ca)). Work must not resume in the area until protection measures for the resources are implemented.

### *Contaminated Soils and Groundwater (for works that require excavation)*

- \*If works require digging or excavation, contact the CMO to verify the presence of soil or groundwater contamination prior to the start.
  - If soil or groundwater contamination is present, analytical testing prior to off-site disposal may be required.
  - No soils from a contaminated site may be reused elsewhere.
  - Management and disposal of contaminated soils will follow all applicable regulations and guidelines.
  - The contractor is responsible for ensuring health and safety of workers potentially exposed to contaminated sites.
- If any evidence of contaminated or deleterious soils is discovered at the site (e.g. bricks, ash, metals, debris, strong odour, oily sheen, etc.) the NCC must be notified immediately.
- Refer to “Excavation” for information about wildlife. Do not store any excavated soils within 30m of a watercourse or wetland.

### *Archaeological Resources (for works that require excavation)*

- \*Prior to the start of any digging or excavation activities, contact the CMO to verify the presence of archaeological potential.
  - If the excavation does not involve any alteration to the footprint of previous excavation, then no archaeological investigation or monitoring is required.
- If any evidence of archaeological resources or human remains are discovered during excavation for Maintenance activities, all work at the location concerned must be halted immediately and Ian Badgley, Archaeologist, NCC Heritage Program (613-239-5678, Ext. 5751, [ian.badgley@ncc-ccn.ca](mailto:ian.badgley@ncc-ccn.ca)) must be notified forthwith. Work shall not be resumed at that location until measures for the protection of those resources or remains have been put in place.

### *Climate Mitigation and Adaptation*

- To reduce carbon emission, new fleet vehicle purchases should be zero-emissions or hybrid vehicles where these options exist and are economically and operationally viable from a life-cycle perspective.
- The Contractor must track and disclose fuel consumed by fleet and other motorized equipment for NCC contracts using the Fuel Consumption Reporting Form provided to the Contractor.

- The NCC will conduct Climate Risk and Vulnerability Assessments on its assets and properties, as required. Climate adaptation measures may be established for NCC assets or properties based on the outcome of these assessments and will be communicated to Contractors if they are applicable to the work being carried out under the contract. Contractors must respect and comply with these climate adaptation measures.
- Any work carried out on buildings must be in line with the NCC Sustainable Development Strategy requirements for net-zero carbon buildings and renovations. Climate mitigation measures established under the NCC's Net-Zero Real Property Portfolio Plan, a GHG reduction Life Cycle Cost Analysis or any other climate mitigation planning document will be communicated to the Contractor if they are applicable to the work being carried out under the contract. Contractors must respect and comply with these climate mitigation measures.

**Table 1: Mitigation Measures for Maintenance Contracts**

To use this table, find the Maintenance activity being performed on the leftmost column, and apply the mitigation measures specified. Mitigation measures marked with an **asterisk (\*)** will require approval from the NCC Contract Management Officer (CMO) prior to the start of the maintenance activity or will require the Contractor to notify the CMO in the case of an accident or emergency. The CMO will then be responsible to contact relevant NCC specialists (e.g. environmental officer, arborist, contaminated site specialists, biologists, archaeologist, etc.) to obtain their recommendations.

**Important note:** The replacement, installation or construction of new fixtures, structures, or systems (e.g. culverts, tile drainage systems, electrical conduits, underground pipes, etc.) is not covered under this guide, and must be reviewed separately under the *Impact Assessment Act*. If your work involves new construction, contact the CMO. - **pollution prevention and to protect the environment, human life and health from toxic substances**

Maintenance Activity	Potential Environmental Effects	Mitigation Measures
<b>Landscape Management</b>		
<b>Turf:</b> <ul style="list-style-type: none"> <li>- machine and manual cutting</li> <li>- trimming</li> <li>- watering</li> <li>- edging</li> <li>- top dressing</li> <li>- seeding or overseeding</li> <li>- aerating</li> <li>- fertilizing</li> <li>- etc.</li> </ul>	<ul style="list-style-type: none"> <li>o Excess or improper application of fertilizers can cause environmental degradation of water bodies and aquatic life</li> <li>o Potential damage, destruction of disturbance to species (or their nest, habitat), including those protected under the <i>Species at Risk Act</i> or provincial legislation, during cutting.</li> <li>o Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i> during cutting.</li> <li>o .</li> </ul>	<ul style="list-style-type: none"> <li>o See General Environmental Guidelines for:                             <ul style="list-style-type: none"> <li>• <i>Air Emissions and Noise;</i></li> <li>• <i>Wildlife;</i></li> <li>• <i>Migratory Birds;</i></li> <li>• <i>Trees;</i></li> <li>• <i>Soil Compaction; and</i></li> <li>• <i>Pesticides;</i></li> </ul> </li> <li>o Do not apply fertilizers or other products containing phosphorus or nitrogen within 15m of a watercourse or water body.</li> <li>o Avoid any application of fertilizer prior to a significant (&gt;20mm) rain event and do not exceed manufacturer recommended application rate.</li> <li>o When mowing within 15 m of any watercourse, use a mulching mower or collect turf clippings and compost them where possible to avoid them entering watercourses.</li> </ul>
<b>Tree/shrub:</b> <ul style="list-style-type: none"> <li>- safety and maintenance</li> <li>- pruning</li> <li>- trimming</li> <li>- cultivating</li> <li>- edging</li> <li>- mulching</li> <li>- removal</li> <li>- winter protection</li> <li>- etc.</li> </ul>	<ul style="list-style-type: none"> <li>o Potential damage to trees or shrubs protected under the <i>Species at Risk Act</i> or provincial legislation.</li> <li>o Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i>.</li> <li>o Improper disposal of diseased trees or shrubs may spread invasive pests, diseases or pathogens</li> <li>o Improper pruning may decrease tree health.</li> </ul>	<ul style="list-style-type: none"> <li>o See General Environmental Guidelines for:                             <ul style="list-style-type: none"> <li>• <i>Air Emissions and Noise;</i></li> <li>• <i>Wildlife;</i></li> <li>• <i>Trees;</i></li> <li>• <i>Soil Compaction; and</i></li> <li>• <i>Site Reinstatement;</i></li> </ul> </li> <li>o Protect and flag any federally or provincially protected tree species (seedling, sapling or tree) to prevent damage or accidental removal. Use highly visible flagging tape (using a pre-determined colour) to clearly identify the tree and remove tape once work is completed. Presence of such species should be reported to the CMO.</li> </ul>

Maintenance Activity	Potential Environmental Effects	Mitigation Measures
		<ul style="list-style-type: none"> <li>○ *Obtain approval from the NCC prior to tree pruning, cutting or removal. It is prohibited to prune or fell any at risk tree species (live or dead) protected by provincial and/or federal law, unless a permit is first obtained from the appropriate department, ministry or agency. A permit request to the responsible authority must first be obtained by the NCC.</li> <li>○ Remove any tree or vegetation debris that may fall or enter water bodies without delay and with as little disturbance as possible. to</li> <li>○ If working in Gatineau Park, for trees that are removed, cut trees or saplings (non-diseased) in 1-meter lengths and disperse them into the surrounding forest on NCC property.</li> <li>○ *If removing tree stumps, contact the CMO as associated excavation may affect archaeological resources and may require testing and disposal if it is located on a contaminated site.</li> </ul>
<p><b>Annual, bulb, and perennial:</b></p> <ul style="list-style-type: none"> <li>- mowing of daffodils</li> <li>- planting/removing</li> <li>- watering</li> <li>- fertilizing</li> <li>- cultivating</li> <li>- edging</li> <li>- hand weeding</li> <li>- pinching</li> <li>- rouging</li> <li>- winter protection</li> <li>- plant division</li> <li>- etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ Excess or improper application of fertilizers can cause environmental degradation of water bodies and aquatic life.</li> <li>○ Improper disposal of plants may spread invasive pests, diseases or pathogens.</li> </ul>	<ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for:                             <ul style="list-style-type: none"> <li>● <i>Invasive species;</i></li> <li>● <i>Soil Compaction; and</i></li> <li>● <i>Pesticides</i></li> </ul> </li> <li>○ Do not apply fertilizers or other products containing phosphorus or nitrogen within 15m of a watercourse or water body.</li> <li>○ Dispose appropriately of removed plants that show signs of disease or pests following all federal, provincial, and municipal regulations in order to minimize spread of the disease or pest. Collect healthy clippings and compost on-site, where possible.</li> <li>○ Plant only non-invasive plant species and preferably native species for ornamental purposes. Consult invasive species lists before the introduction of a new ornamental species.</li> </ul>
<p><b>Non-desirable vegetation / nest / small animal control<sup>4</sup>:</b></p> <ul style="list-style-type: none"> <li>- inspecting and removing as needed.</li> </ul>	<ul style="list-style-type: none"> <li>○ Potential damage to species protected under the <i>Species at Risk Act</i> or provincial legislation.</li> <li>○ Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i>.</li> <li>○ Pesticides (herbicides, insecticides, or fungicides) may harm or kill non-target species.</li> <li>○ Accidental spread of invasive species.</li> </ul>	<ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for:                             <ul style="list-style-type: none"> <li>● <i>Wildlife;</i></li> <li>● <i>Trees;</i></li> <li>● <i>Invasive species; and</i></li> <li>● <i>Pesticides</i></li> </ul> </li> <li>○ Ensure that the small nuisance animals are not a species protected under the <i>Species at Risk Act</i>, the Ontario <i>Endangered Species Act</i>, Quebec <i>Loi sur les espèces menacées ou vulnérables</i> or the <i>Migratory Birds Convention Act</i>.</li> <li>○ *Never disturb, damage, or destroy an active bird nest or bat roost. Generally, if migratory birds nesting or bat roosting in buildings and are a cause for concern, it is recommended that Contractors identify how the birds or bats enter the building. In the case of a nest/roost occupied or formerly used by a species at risk, the contractor must contact the CMO, who will contact an environmental officer from the environmental</li> </ul>

<sup>4</sup> Animals causing material damage to the NCC’s Assets

Maintenance Activity	Potential Environmental Effects	Mitigation Measures
		<p>assessment team for advice, as a <i>Species at Risk Act</i> permit may be required prior to blocking entries to the building, even after birds or bats have left the nest/roost.</p> <ul style="list-style-type: none"> <li>○ Where the presence or effects of the nuisance animal(s) may create a dangerous situation, contact the CMO who will be advised by the NCC environmental services on the best course of action.</li> <li>○ Seek written authorization from the NCC for any exceptional circumstances requiring application of pesticides, herbicides, insecticides or fungicides. All activities that take place on NCC lands must be in full compliance with all federal pesticides legislation and regulations as well as be in full compliance with the requirements under the <i>Ontario Pesticide Act</i> and the <i>Quebec Pesticide Act</i>, depending on the province where the activity is taking place. Use only products registered by Agriculture and Agri-Food Canada under the <i>Pest Control Products Act</i>.</li> </ul>
<p><b>All surfaces:</b></p> <ul style="list-style-type: none"> <li>- inspecting</li> <li>- reporting</li> <li>- sweeping</li> <li>- removing hazards (e.g. leaves, encroaching vegetation, etc.)</li> <li>- providing emergency services such as accident clean-ups</li> <li>- Accidental releases of harmful substances</li> <li>- etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ Accidental spills may degrade environmental quality and have the potential to spread contamination.</li> </ul>	<ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>● <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control; and</i></li> <li>● <i>Spills Procedure and Emergency Response</i></li> <li>● <i>Public Experience</i></li> </ul> </li> <li>○ *Work performed in or within 30 m of water or drain that connects to a sewer or watercourse may require a permit from the Ontario or Quebec provincial and/or federal government. The Contractor must contact the CMO to verify permit requirements with the NCC environmental services.</li> </ul>
<p><b>Asphalt surfaces:</b></p> <ul style="list-style-type: none"> <li>- daily inspection, reporting, and secure any deficiencies <ul style="list-style-type: none"> <li>○ e.g. bumps</li> <li>○ cracking</li> <li>○ culvert and ditch problems</li> <li>○ drainage problems</li> <li>○ erosion</li> <li>○ manhole</li> <li>○ catch basin problems</li> <li>○ etc.</li> </ul> </li> <li>- provide emergency pothole/sinkhole fillings.</li> <li>- Etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ Accidental spills will degrade environmental quality and have the potential to spread contamination.</li> <li>○ The release of sediment and/or chemicals during Maintenance activities that take place in or near water may adversely affect fish, fish habitat, and/or water quality.</li> </ul>	<ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>● <i>Air Emissions and Noise;</i></li> <li>● <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control;</i></li> <li>● <i>Public Experience</i></li> <li>● <i>Spills Procedure and Emergency Response; and</i></li> <li>● <i>Wildlife;</i></li> </ul> </li> </ul> <p>Mix asphalt should away from the site or should be prepared on paved surfaces to minimize the effects of a spill. Dispose of excess asphalt off-site at a location that meets all regulatory requirements.</p>
<p><b>Concrete/masonry surfaces:</b></p> <ul style="list-style-type: none"> <li>- Re-setting and correcting of:</li> </ul>	<ul style="list-style-type: none"> <li>○ Accidental spills will degrade environmental quality.</li> </ul>	<ul style="list-style-type: none"> <li>● See General Environmental Guidelines for:</li> <li>● <i>Air Emissions and Noise;</i></li> </ul>

Maintenance Activity	Potential Environmental Effects	Mitigation Measures
<ul style="list-style-type: none"> <li>○ Curbs</li> <li>○ Gutters</li> <li>○ concrete steps</li> <li>○ exposed aggregate</li> <li>○ granite sets</li> <li>○ pavers</li> <li>○ interlocks</li> <li>○ flag stones</li> <li>○ cobblestones</li> <li>○ patio stones</li> <li>○ etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ Accidental spills will degrade environmental quality and have the potential to spread contamination.</li> <li>○ Damage to heritage resources by affecting character-defining elements</li> </ul>	<ul style="list-style-type: none"> <li>● <i>Spills Procedure and Emergency Response;</i></li> <li>● <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control;</i></li> <li>● <i>Trees;</i></li> <li>● <i>Site Reinstatement;</i></li> <li>● <i>Heritage Resources; and</i></li> <li>● <i>Excavation (if applicable) including:</i> <ul style="list-style-type: none"> <li>○ <i>Contaminated soils;</i></li> <li>○ <i>Archaeological resources</i></li> </ul> </li> <li>○ Use pre-mixed concrete or mix concrete away from the site or on paved surfaces if only small quantities (e.g. for minor repairs) are required. Dispose of excess concrete at an off-site at a location that meets all regulatory requirements.</li> <li>○ Concrete mixing activities must take place over tarps and a minimum of 30 meters from waterbodies. Fresh, wet, uncured concrete and concrete dust must not come into contact with waterbodies.</li> <li>○ Wash concrete trucks and/or other equipment used for mixing concrete at least 30 m away from a watercourse or wetland.</li> <li>○ Collect wash water from concrete trucks and recycle it back into truck for disposal off-site at a location meeting all regulatory requirements.</li> <li>○ Concrete leachate is alkaline and highly toxic to fish and aquatic life. Measures must be taken to prevent the incidence of concrete products and concrete leachate from entering the watercourse. Maintain complete isolation of all cast-in-place concrete and grouting from fish-bearing waters for a minimum of 48 hours if ambient air temperature is above 0°C and for a minimum of 72 hours if ambient air temperature is below 0°C or until significantly cured to allow the pH to reach neutral levels. Avoid project activity during wet weather conditions.</li> <li>○ When performing gutter repairs or cleaning, ensure that no deleterious substance or debris falls and remains into the gutter system or storm sewer.</li> </ul>
<p><b>Gravel / granular / stone dust / natural / decorative surfaces:</b></p> <ul style="list-style-type: none"> <li>- Levelling</li> <li>- Grading</li> <li>- etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ The release of sediment and/or chemicals during Maintenance activities that take place in or near water may adversely affect fish, fish habitat, and/or water quality.</li> <li>○ The release of particulate matter may adversely affect air quality.</li> <li>○ Damage to species at risk nests as a result of excavated exposed soil.</li> </ul>	<ul style="list-style-type: none"> <li>● See General Environmental Guidelines for:</li> <li>● <i>Air emissions and Noise;</i></li> <li>● <i>Public Experience</i></li> <li>● <i>Soil Compaction;</i></li> <li>● <i>Wildlife;</i></li> <li>● <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control; and</i></li> <li>● <i>Site Reinstatement;</i></li> <li>● <i>Excavation (if applicable) including:</i> <ul style="list-style-type: none"> <li>○ <i>Contaminated soils;</i></li> <li>○ <i>Archaeological resources</i></li> </ul> </li> <li>○ If working near water:</li> </ul>

Maintenance Activity	Potential Environmental Effects	Mitigation Measures
		<ul style="list-style-type: none"> <li>○ *Work performed in or near water may require a permit from the provincial (Ontario or Quebec) and/or federal government. Contact the CMO to verify permit requirements with the NCC environmental services.</li> <li>○ Do not increase footprint or add no new fill below the high-water mark, unless previously authorized by the NCC.</li> <li>○ * Install reptile and amphibian exclusion fencing.</li> </ul>
<p><b>Wood surfaces (except over waterways):</b></p> <ul style="list-style-type: none"> <li>- Repairing</li> <li>- Replacing parts of</li> <li>- maintaining structural integrity</li> <li>- sanding</li> <li>- painting</li> <li>- etc.</li> </ul> <p>Note: For wood surfaces over waterways (such as boardwalks, bridges, and docks) Refer to “Bridges, boardwalks and docks” below.</p>	<ul style="list-style-type: none"> <li>○ Accidental spills will degrade environmental quality and have the potential to spread contamination.</li> </ul>	<ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for:                             <ul style="list-style-type: none"> <li>● <i>Air emission and Noise; and</i></li> <li>● <i>Spills Procedure and Emergency Response;</i></li> </ul> </li> <li>○ Ensure proper storage, management and use of materials to minimize spills.</li> <li>○ Do not use treated wood on surfaces used in the preparation or consumption of food (picnic tables, bird feeders), that could be in direct contact with drinking water or that will be used by people (benches, wooden structures for children).</li> <li>○ Avoid any painting prior to a rain event.</li> </ul>
<p><b>Lighting and electrical:</b></p> <p>Examples:</p> <ul style="list-style-type: none"> <li>- distribution boxes</li> <li>- electrical panels</li> <li>- aboveground and underground electrical conduits and wiring</li> <li>- light standards</li> <li>- etc.</li> </ul> <p>Activity:</p> <ul style="list-style-type: none"> <li>- inspecting</li> <li>- repairing</li> <li>- securing</li> <li>- replacing parts of</li> <li>- replacing entire structure <b>if</b> associated with an existing building or structure</li> <li>- providing line locates</li> <li>- providing immediate repairs</li> <li>- reporting</li> </ul>	<ul style="list-style-type: none"> <li>○ Accidental erosion of soil that is stored near water may adversely affect fish, fish habitat, and/or water quality.</li> <li>○ Improper disposal of hazardous materials could degrade environmental quality and have an impact on health and safety.</li> <li>○ Damage to tree roots or trees as a result of excavation.</li> <li>○ Damage to archaeological resources as a result of excavation.</li> <li>○ Damage to heritage resources by affecting character-defining elements</li> <li>○ Spread of contaminated groundwater or soils during excavation.</li> <li>○ Health and safety effects from the exposure to contaminated soils or hazardous substances.</li> </ul>	<ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for:                             <ul style="list-style-type: none"> <li>● <i>Air Emissions and Noise;</i></li> <li>● <i>Spill procedure and emergency response;</i></li> <li>● <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control;</i></li> <li>● <i>Trees;</i></li> <li>● <i>Soil Compaction;</i></li> <li>● <i>Site Reinstatement;</i></li> <li>● <i>Heritage Resources; and</i></li> <li>● <i>Excavation (if applicable) including:</i> <ul style="list-style-type: none"> <li>○ <i>Contaminated soils;</i></li> <li>○ <i>Archaeological resources</i></li> </ul> </li> </ul> </li> <li>○ *Ensure proper disposal of hazardous materials (e.g. lamps, ballasts) in accordance with provincial and federal regulations.</li> </ul>



Maintenance Activity	Potential Environmental Effects	Mitigation Measures
<p>- etc.</p> <p><b>Drainage infrastructure</b> Ex:</p> <ul style="list-style-type: none"> <li>- catch basins</li> <li>- manholes</li> <li>- underground pipes</li> <li>- ditches</li> <li>- side slopes</li> <li>- embankments</li> <li>- drainage channels</li> <li>- tile drains</li> <li>- subsurface drains</li> <li>- tunnels</li> <li>- etc.</li> </ul> <p>Activity:</p> <ul style="list-style-type: none"> <li>- inspecting</li> <li>- reporting</li> <li>- cleaning</li> <li>- erosion / flood control prevention</li> <li>- providing line locates</li> <li>- water level control</li> <li>- removing surface water</li> <li>- replacing parts of</li> <li>- etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ Release of sediment and/or chemicals to water</li> <li>○ Damage to tree roots or trees as a result of excavation.</li> <li>○ Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i>.</li> <li>○ Potential harm to water quality, fish and fish habitat protected under the <i>Species at Risk Act</i> or/and the <i>Fisheries Act</i> and potential harm to other species protected under the <i>Species at Risk Act</i> (such as turtles)</li> <li>○ Damage to archaeological resources as a result of excavation.</li> <li>○ Spread of contaminated groundwater or soils during excavation.</li> <li>○ Health and safety effects from the exposure of contaminated soils.</li> </ul>	<ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for:                             <ul style="list-style-type: none"> <li>● <i>Air Emissions and Noise;</i></li> <li>● <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control;</i></li> <li>● <i>Soil compaction;</i></li> <li>● <i>Site Reinstatement;</i></li> <li>● <i>Spills procedure and emergency response;</i></li> <li>● <i>Wildlife;</i></li> <li>● <i>Trees; and</i></li> <li>● <i>Excavation (if applicable) including:</i> <ul style="list-style-type: none"> <li>○ <i>Contaminated soils;</i></li> <li>○ <i>Archaeological resources</i></li> </ul> </li> </ul> </li> <li>○ *Avoid any disturbance to tree roots or excavation within the dripline of any tree. If excavation within tree dripline must be performed, contact the CMO so that they can verify mitigation measures for potential damage to trees and for the presence of species at risk.</li> <li>○ *Ensure there is no increase in footprint or new fill below the high-water mark.</li> <li>○ <b>*Perform work and routine clean-out of drainage channels outside fish spawning period</b> and periods of high flooding. Timing windows<sup>5</sup> to conduct projects in or around water may vary by province, species or watercourse and are established by Fisheries and Oceans Canada (DFO) to protect fish, including their eggs, juveniles, spawning adults and/or the organisms upon which they feed. Avoid Maintenance activities during wet and rainy periods.</li> <li>○ <b>Respect mitigation measures provided by the Department of Fisheries and Oceans Canada<sup>6</sup> to avoid harm to fish.</b></li> <li>○ The following measures should be applied during bridge cleaning:                             <ul style="list-style-type: none"> <li>● Adequately seal drains and open joints before sweeping to prevent material from falling into the watercourse. Sweep bridges thoroughly before washing.</li> <li>● Clean and remove debris and sediment from drainage devices and dispose of the material in a way that will prevent it from entering the watercourse.</li> <li>● Direct wash-water past the ends of the bridge deck to a vegetated area to remove suspended solids, dissipate velocity and prevent sediment and other deleterious substances from entering the watercourse. If this cannot be achieved, use silt fences or other sediment and erosion control measures to prevent wash-water from entering the watercourse.</li> </ul> </li> </ul>

<sup>5</sup> Timing windows by province are available on DFO website [<http://www.dfo-mpo.gc.ca/pnw-ppc/timing-periodes/index-eng.html>] and must be confirmed with NCC Environmental Officer.

<sup>6</sup> Department of Fisheries and Oceans Canada mitigation measures to avoid causing harm to fish and fish habitat: <http://www.dfo-mpo.gc.ca/pnw-ppc/measures-mesures-eng.html>

Maintenance Activity	Potential Environmental Effects	Mitigation Measures
		<ul style="list-style-type: none"> <li>• When extracting water from a watercourse, ensure the intakes of pumping hoses are equipped with an appropriate device to avoid entraining and impinging fish. Before releasing de-watering discharge to the environment, the water may require filtering through bags made of geotextile fabric or discharging clean water across onsite vegetated buffer areas and in some cases settling ponds may be required.</li> <li>• Remove paint or protective coatings in a manner that prevents any paints, paint flakes, primers, blasting abrasives, rust, solvents, degreasers or other waste material from entering the watercourse.</li> <li>• Use measures such as barges or shrouding to trap and prevent blasting abrasives, protective coatings, rust and grease from entering the watercourse.</li> <li>• Contain paint flakes, abrasives, and other waste materials for safe disposal.</li> <li>• Store, mix and transfer paints and solvents on land and not on the bridge to prevent these materials from entering the watercourse in the event of a spill.</li> <li>• Never clean equipment in the watercourse or where the wash-water can enter the watercourse.</li> <li>• Unless the debris accumulation is an immediate threat to the integrity of the piers and abutments, time debris removal to avoid disruption to sensitive fish life stages by adhering to appropriate fisheries timing windows<sup>7</sup> (see the Ontario In-Water Construction Timing Windows), with the exception of ice build-up removal.</li> <li>• Limit the removal of material to that which is necessary to protect piers and abutments.</li> <li>• Remove debris by hand or with machinery operating from shore or a floating barge.</li> </ul>
<p><b>Culverts</b></p> <ul style="list-style-type: none"> <li>- Maintenance work such as manual or mechanical removal of accumulated debris, reinforcing eroded inlets and outlets.</li> </ul> <p>Does <b>NOT</b> include any of the following ( NCC prior approval will be requirements, including determination under the Impact Assessment Act and DFO consultation) :</p> <ul style="list-style-type: none"> <li>- extending/replacing the existing culvert</li> <li>- realigning the watercourse</li> <li>- installing a culvert liner or support struts</li> </ul>	<ul style="list-style-type: none"> <li>o Potential harm to water quality, fish and fish habitat protected under the <i>Species at Risk Act</i> or/and the <i>Fisheries Act</i></li> <li>o Accidental spills will degrade environmental quality.</li> <li>o Accidental spills will degrade environmental quality.</li> </ul>	<ul style="list-style-type: none"> <li>o See General Environmental Guidelines for:                         <ul style="list-style-type: none"> <li>• <i>Air Emissions and Noise;</i></li> <li>• <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control;</i></li> <li>• <i>Spill procedure and emergency response</i></li> <li>• <i>Trees;</i></li> <li>• <i>Soil Compaction;</i></li> <li>• <i>Site Reinstatement;</i></li> <li>• <i>Wildlife; and</i></li> <li>• <i>Invasive species</i></li> </ul> </li> <li>o *Complete work outside of the Timing windows<sup>8</sup>, unless accumulated material (i.e., branches, stumps, other woody materials, garbage, ice build-up, etc.) is preventing the passage of water and/or fish through the structure.</li> <li>o Do not circulate vehicles (e.g. vacuum truck) beyond the boundaries of the work site and leave equipment, waste or other materials, even temporarily without the prior authorization of the CMO. Use existing trails, roads, or cut lines wherever possible to avoid disturbance to the riparian vegetation.</li> <li>o Never allow machinery to circulate within any watercourse.</li> </ul>

<sup>7</sup> Timing windows by province are available on DFO website [<http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/index-eng.html>] and must be confirmed with NCC Environmental Officer.

<sup>8</sup> Timing windows by province are available on DFO website [<http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/index-eng.html>] and must be confirmed with NCC Environmental Officer.

Maintenance Activity	Potential Environmental Effects	Mitigation Measures
<ul style="list-style-type: none"> <li>- replacing damaged or destroyed bevel ends</li> <li>- any dredging, infilling, (e.g., filling scour pools) or excavation of the channel upstream or downstream of the culvert</li> <li>- the use of explosives.</li> <li>- temporary or permanent increase in the existing footprint below the ordinary high-water mark</li> </ul>		<ul style="list-style-type: none"> <li>○ Use only clean materials (e.g., rock, coarse gravel, wood, steel, snow) for work and activities.</li> <li>○ Limit the removal of accumulated material (i.e., branches, stumps, other woody materials, garbage, etc.) to the area within the culvert, immediately upstream of the culvert and to that which is necessary to maintain culvert function and fish passage.</li> <li>○ Remove accumulated material and debris slowly to allow clean water to pass, to prevent downstream flooding and reduce the amount of sediment-laden water going downstream. Gradual dewatering will also reduce the potential for stranding fish in upstream areas.</li> <li>○ If water (from the truck) is flushed through the culvert, flush at low volumes (gently) as to prevent sedimentation and impacts downstream.</li> <li>○ *If install cofferdams<sup>9</sup> and work in the dry prior to vacuuming is required (for example, if there is a risk of downstream sedimentation), consult the NCC for Impact Assessment review and approval prior to the installation. .</li> <li>○ Ensure that temporary structures and environmental protection devices allow sufficient free movement of water at all times to maintain fish habitat functions (feeding, fry rearing, spawning) downstream from the work site. Take the necessary measures to prevent impacts (e.g. flooding, dewatering, suspended solids, erosion) upstream and downstream of the work site.</li> <li>○ Remove all sludge, dirt, sand, rocks, grease, and any other solid or semi-solid material resulting from the cleaning operation at the downstream end of the culvert being cleaned (either manually or with suction). Maintains record of the amount and type of material removed for each culvert in a format approved by the CMO.</li> <li>○ Keep debris in enclosed containers at all times and remove from the site at the end of each day or when the containers are full for appropriate disposal. Under no circumstances will the Contractor be allowed to accumulate debris, etc. on site of work beyond the stated time.</li> </ul>
<p><b>Bridges, boardwalks and docks</b></p> <p>Ex:</p> <ul style="list-style-type: none"> <li>- bridges</li> <li>- boardwalks over watercourse or wetland</li> <li>- docks</li> <li>- etc.</li> </ul> <p>Activity:</p> <ul style="list-style-type: none"> <li>- inspecting</li> </ul>	<ul style="list-style-type: none"> <li>○ Release of sediment and/or chemicals to water</li> <li>○ Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i>.</li> <li>○ Potential harm to water quality, fish and fish habitat protected under the <i>Species at Risk</i> or/and the Fisheries Act</li> </ul>	<ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for:                             <ul style="list-style-type: none"> <li>● <i>Air Emissions and Noise;</i></li> <li>● <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control;</i></li> <li>● <i>Trees;</i></li> <li>● <i>Soil Compaction;</i></li> <li>● <i>Site Reinstatement; and</i></li> <li>● <i>Spills procedure and emergency response</i></li> </ul> </li> </ul>

<sup>9</sup> Cofferdams are temporary barriers built to allow the dewatering of an area of surface water, usually for construction in the dry of another structure.

Maintenance Activity	Potential Environmental Effects	Mitigation Measures
<ul style="list-style-type: none"> <li>- reporting</li> <li>- cleaning</li> <li>- re-surfacing (removal of paint, staining or painting)</li> <li>- removing standing water</li> <li>- replacing parts</li> <li>- etc.</li> </ul> <p>This does <b>NOT</b> include in-water work</p>		<ul style="list-style-type: none"> <li>• For any works that involve the following, an authorization may be required from regulatory authorities, and may also require an Impact Assessment. Consult the CMO who will in turn liaise with NCC’s Environmental Assessment group:               <ul style="list-style-type: none"> <li>○ An activity referred in subsection 5(1) of the <i>Canadian Navigable Waters Act</i>.</li> <li>○ *An activity referred to in subsection 35(1) or 36(3) of the <i>Fisheries Act</i></li> <li>○ Any works requiring a cofferdam</li> </ul> </li> <li>○ Avoid Maintenance activities during wet and rainy periods. *Avoid maintenance activities on bridges or structures where nesting is likely during the core migratory bird breeding and nesting season (April 8th to August 28th). If work must proceed during this period, install netting or other appropriate systems prior to the arrival of birds in the spring, in order to prevent birds from initiating nesting on the structure.</li> <li>○ Do not use treated wood in or within 15m of water.</li> <li>○ Adequately seal drains and open joints before sweeping to prevent material from falling into the watercourse. Sweep bridges thoroughly before washing.</li> <li>○ Clean and remove debris and sediment from drainage devices and dispose of the material in a way that will prevent it from entering the watercourse.</li> <li>○ Direct wash-water past the ends of the bridge deck to a vegetated area to remove suspended solids, dissipate velocity and prevent sediment and other deleterious substances from entering the watercourse. If this cannot be achieved, use silt fences or other sediment and erosion control measures to prevent wash-water from entering the watercourse.</li> <li>○ When extracting water from a watercourse, ensure the intakes of pumping hoses are equipped with an appropriate device to avoid entraining and impinging fish.</li> <li>○ Remove paint or protective coatings in a manner that prevents any paints, paint flakes, primers, blasting abrasives, rust, solvents, degreasers or other waste material from entering the watercourse.</li> <li>○ Use measures such as barges or shrouding to trap and prevent blasting abrasives, protective coatings, rust and grease from entering the watercourse.</li> <li>○ Contain paint flakes, abrasives, and other waste materials for safe disposal.</li> <li>○ Store, mix and transfer paints and solvents on land and not on the bridge to prevent these materials from entering the watercourse in the event of a spill.</li> <li>○ Never clean equipment in the watercourse or where the wash-water can enter the watercourse.</li> <li>○ Unless the debris accumulation is an immediate threat to the integrity of the piers and abutments, time debris removal to adhere to Timing windows<sup>10</sup>, with the exception of ice build-up removal.</li> <li>○ Limit the removal of material to that which is necessary to protect piers and abutments.</li> <li>○ Remove debris by hand or with machinery operating from shore or a floating barge.</li> </ul>
<p><b>Plumbing, irrigation, and water</b> Examples:</p>	<ul style="list-style-type: none"> <li>○ Spread of contaminated groundwater or soils during excavation.</li> </ul>	<ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for:               <ul style="list-style-type: none"> <li>○ <i>Air Emissions and Noise</i>;</li> </ul> </li> </ul>

<sup>10</sup> Timing windows by province are available on DFO website [<http://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/index-eng.html>] and must be confirmed with NCC Environmental Officer.

Maintenance Activity	Potential Environmental Effects	Mitigation Measures
<ul style="list-style-type: none"> <li>- decorative fountains</li> <li>- drinking fountains</li> <li>- outdoor faucets</li> <li>- underground and aboveground water and sewer lines</li> <li>- pit toilets</li> <li>- washroom facilities</li> <li>- pump systems</li> <li>- irrigation controls lines and heads</li> <li>- control panels</li> <li>- etc.</li> </ul> <p>Activities:</p> <ul style="list-style-type: none"> <li>- inspecting</li> <li>- installing</li> <li>- cleaning</li> <li>- testing</li> <li>- repairing</li> <li>- maintaining</li> <li>- replacing parts of</li> <li>- water testing</li> <li>- providing portable toilets</li> <li>- providing locates</li> <li>- etc.</li> </ul>	<ul style="list-style-type: none"> <li>o Accidental spills will degrade environmental quality.</li> <li>o Accidental erosion of soil that is stored near water may adversely affect fish, fish habitat, and/or water quality.</li> <li>o Damage to archaeological resources as a result of excavation.</li> <li>o Damage to heritage resources by affecting character-defining elements</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control</i></li> <li>• <i>Spill protection and emergency response;</i></li> <li>• <i>Trees;</i></li> <li>• <i>Soil Compaction;</i></li> <li>• <i>Site Reinstatement;</i></li> <li>• <i>Climate Mitigation and Adaptation</i></li> <li>• <i>Heritage resource; and</i></li> <li>• <i>Excavation (if applicable) including:</i> <ul style="list-style-type: none"> <li>o <i>Contaminated soils;</i></li> <li>o <i>Archaeological resources</i></li> </ul> </li> </ul> <p>o *Prior to the start of any digging or excavation for the repair of water and sewer lines, irrigation lines or heads, or any other subsurface plumbing, irrigation, or water fixture, contact the CMO to verify the presence of soil or groundwater contamination and archaeological potential.</p>
<p><b>Fixtures, furniture and buildings</b> (NCC furniture only – fences, stone walls, walls, guardrails, barricades, flags, bollards, garbage receptacles, signs, NCC buildings, kiosks, etc.):</p> <ul style="list-style-type: none"> <li>- Installation</li> <li>- Inspecting</li> <li>- Repairing</li> <li>- Replacing</li> <li>- Cleaning</li> <li>- removing graffiti</li> <li>- painting</li> <li>- staining</li> <li>- displacing furniture</li> <li>- etc.</li> </ul>	<ul style="list-style-type: none"> <li>o Accidental spills will degrade environmental quality.</li> <li>o Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i>.</li> <li>o Dispersion of hazardous and designated substances (e.g. asbestos, lead, mercury, silica, urea formaldehyde foam insulation, vinyl chloride, PCBs, arsenic, etc.) in the environmental and potential adverse human health effects</li> <li>o Damage to archaeological resources as a result of excavation.</li> <li>o Damage to heritage resources by affecting character-defining elements</li> </ul>	<ul style="list-style-type: none"> <li>o See General Environmental Guidelines for: <ul style="list-style-type: none"> <li>• <i>Air Emissions and Noise;</i></li> <li>• <i>Designated substances;</i></li> <li>• <i>Hazardous materials</i></li> <li>• <i>Wildlife;</i></li> <li>• <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control;</i></li> <li>• <i>Trees;</i></li> <li>• <i>Site Reinstatement;</i></li> <li>• <i>Climate Mitigation and Adaptation</i></li> <li>• <i>Archaeology resources; and</i></li> <li>• <i>Heritage resources; and</i></li> <li>• <i>Excavation (if applicable) including:</i> <ul style="list-style-type: none"> <li>▪ <i>Contaminated soils;</i></li> <li>▪ <i>Archaeological resources</i></li> </ul> </li> </ul> </li> </ul>

Maintenance Activity	Potential Environmental Effects	Mitigation Measures
		<ul style="list-style-type: none"> <li>○ *If any evidence of soil contamination at the site is discovered, notify the NCC immediately.</li> <li>○ Refer to the Spills Procedure and Emergency Response mitigation measures on page 2.</li> <li>○ Cease work if a nest is observed on a structure (e.g. buildings, kiosks, structure roof, etc.)</li> <li>○ Avoid any painting prior to a rain event.</li> <li>○ Avoid cleaning with products containing phosphates.</li> <li>○ *Consult the CMO from removal or demolition of a building located within 30 meters of a school, hospital or residential building to coordinate preparation of the required Impact Assessment.</li> </ul>
<p><b>Snow and ice control</b> (roadways and parking lots, walkways, pathways, sidewalks, steps and building access, buildings, utility service access, trails, lanes, fire lanes, open spaces, fields, etc.):</p> <ul style="list-style-type: none"> <li>- providing equipment and supplies</li> <li>- removing</li> <li>- blowing</li> <li>- plowing</li> <li>- shoveling</li> <li>- clearing</li> <li>- cleaning</li> <li>- sweeping</li> <li>- de-icing</li> <li>- stockpiling</li> <li>- transporting</li> <li>- disposing</li> <li>- providing floor control</li> <li>- emergency services</li> <li>- etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ Road salts enter the environment through losses at salt storage and snow disposal sites and through runoff and splash from roadways.</li> <li>○ Salt and sand from de-icing may adversely affect fish, fish habitat, and/or water quality as well as adversely affect vegetation, soil, wildlife and ecosystems.</li> <li>○ Accidental damage to trees.</li> </ul>	<ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for:                             <ul style="list-style-type: none"> <li>○ <i>Climate Mitigation and Adaptation</i></li> <li>○ <i>Water Quality, Fish, and Fish Habitat and Erosion and Sediment Control</i></li> </ul> </li> <li>○ Apply salt at rates that will ensure safety while minimizing amounts of salt applied.</li> <li>○ Where possible (such as on gravel roads and parking lots), apply sand or a mixture of salt and sand, in consultation with the CMO.</li> <li>○ If there is not enough space to store snow at edges of parking lots and pathways, dispose of removed snow at an authorized snow dumping facility.</li> <li>○ Locate snow storage sites such that meltwater that may contain salt is not directed towards waterbodies, water courses or wetlands. Do not dump snow originating from off-site on NCC property.</li> <li>○ Install snow fencing around trees susceptible to damage from snow removal and transport activities.</li> <li>○ Do not blow, plow, store, or shovel snow against trees or shrubs or towards waterbodies or wetlands.</li> </ul>
<p><b>Litter / recycling pick-up and cleaning:</b></p> <ul style="list-style-type: none"> <li>- collecting litter and debris</li> <li>- emptying waste receptacles</li> <li>- cleaning fixtures and furniture</li> <li>- sweeping and flushing hard surfaces</li> <li>- bridges and tunnels</li> <li>- removing graffiti and posters from all assets</li> </ul>	<ul style="list-style-type: none"> <li>○ Improper disposal of waste will degrade environmental quality.</li> </ul>	<ul style="list-style-type: none"> <li>○ Dispose of solid waste in accordance with all applicable environmental laws. The Contractor must be aware of any restrictions or prohibitions in force at the disposal site. Where in effect, follow all municipal recycling and composting procedures.</li> <li>○ Do not burn any waste on NCC property, with the following exception: Branches and trimmings may only be burned on NCC property with prior NCC authorization and with appropriate municipal permits for burning.</li> <li>○ If requested, for specific periods, report the total weights for waste, recycling and composting disposal.</li> <li>○ Never sweep or push litter or debris into water courses or wetlands.</li> <li>○ Remove all waste following the completion of works on a site.</li> </ul>

Maintenance Activity	Potential Environmental Effects	Mitigation Measures
<ul style="list-style-type: none"> <li>- removing vegetative and non-vegetative material in spring</li> <li>- removing spills</li> <li>- Etc.</li> </ul>		
<p><b>Activities carried out entirely within the interior of the building</b></p>	<ul style="list-style-type: none"> <li>○ Health and safety effects from the exposure to designated substances or hazardous materials.</li> <li>○ Potential damage to species protected under the <i>Species at Risk Act</i> or provincial legislation.</li> <li>○ Potential destruction of migratory bird nests which are protected under the <i>Migratory Bird Convention Act</i>.</li> </ul>	<ul style="list-style-type: none"> <li>○ See General Environmental Guidelines for:                             <ul style="list-style-type: none"> <li>● <i>Designated substances;</i></li> <li>● <i>Hazardous materials</i></li> <li>● <i>Climate Mitigation and Adaptation</i></li> <li>● <i>Wildlife; and</i></li> <li>● <i>Heritage resources</i></li> </ul> </li> <li>○ *Do not disturb or destroy an active bird nest or bat residence. Prior to undertaking work in buildings where bat or bird nesting is possible:                             <ul style="list-style-type: none"> <li>● Inspect buildings before construction or maintenance activities to ensure that no active bird nests are present and that there are no bats present. If present, advise the CMO who will in turn notify an NCC Environmental Officer. A survey by a qualified biologist for species protected under the <i>Species at Risk Act</i> or the <i>Migratory Birds Convention Act</i> may be required.</li> <li>● Work outside of nesting or hibernation periods.</li> <li>● If work is planned be done within these periods, implement exclusion measures of potential entries (i.e. netting, boarding) prior to these periods.</li> <li>● Train staff to identify Species at Risk that could occur in building. In the event a Species at Risk is encountered in the construction area or inside a structure and does not move from the site and construction activities would result in harm to the animal, stop all activities and notify the NCC (who may consult Environment Canada to discuss mitigation options).</li> <li>● Avoid cleaning with products containing phosphates, use environmentally friendly cleaning solutions where possible.</li> </ul> </li> </ul>

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## TENDER SECURITY REQUIREMENTS

1. The Bidder shall submit tender security with the tender in the form of a bid bond of 10%.
2. A bid bond shall be in an approved form, properly completed, with digital signature(s) and issued by an approved company whose bonds are acceptable to the NCC either at the time of solicitation closing or as identified on the list displayed at the following Website: <http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494> . The approved form for the bid bond is enclosed at the end of this document.
3. Tender security shall lapse or be returned as soon as practical following:
  - a. the solicitation closing date, for those Bidders submitting non-compliant tenders; and
  - b. the administrative tender review, for those Bidders submitting compliant tenders ranked fourth to last on the schedule of tenders; and
  - c. the award of contract, for those Bidders submitting the second and third ranked tenders; and
  - d. the receipt of contract security for the successful Bidder; or
  - e. the cancellation of the solicitation, for all Bidders.

## OBLIGATION TO PROVIDE CONTRACT SECURITY

1. The successful Contractor shall, at the Contractor's expense and within 14 days after the date that the Contractor receives notice that the Contractor's bid was accepted by the NCC, obtain and deliver Contract Security to the NCC in one form prescribed in TYPES AND AMOUNTS OF CONTRACT SECURITY.
2. If a part of the Contract Security provided is in the form of a labour and material payment bond, the Contractor shall post a copy of that bond at the site of the Work.
3. It is a condition precedent to the release of the first progress payment that the Contractor has provided the Contract Security as specified herein.
4. In addition to the limitation imposed in paragraph 4), the Contractor further acknowledges and agrees that it will not be entitled to have access to the site, nor to commence work pursuant to this contract until it has delivered the Contract Security as specified herein.

## TYPES AND AMOUNTS OF CONTRACT SECURITY

1. The **successful** Contractor shall deliver to the NCC before award of a contract:
  - a. Performance Bond and a Payment of Labour and Material Bond for each at 25% of year one (1) Total (including taxes) of the Contract ("Initial term of the bond"). Each bond is renewable annually for years 2, 3, and 4 of the Contract, and, for each of the option years (option years 1 and 2) if exercised.

2. A performance bond and a labour and material payment bond referred to in paragraph 1) shall be in a form and be issued by a bonding or surety company that is approved by the NCC.
  - a. The approved form for the performance bond is enclosed at the end.
  - b. The approved form for the labour and material payment bond is enclosed at the end.
  - c. The list of approved bonding or surety companies is displayed at the following Website:  
<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494> .

# BID BOND

	Bond Number _____
	Amount <span style="color: blue;">10%</span>

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

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

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

- (a) The Principal, should his tender be accepted within the period be specified by the NCC, or, if no period be specified, within ninety (90) days after closing date of the tender:
  - 1. does execute within a period specified by the NCC, or, if no period be specified therein, within fourteen (14) days after the prescribed forms are presented to him for signature, execute such further contractual documents, if any, as may be required by the terms of the tender as accepted; and does
  - 2. upon notification of acceptance of tender, furnish a Performance Bond and a Payment of Labour and Material Bond for each at 25% of year one (1) Total (including taxes) of the Contract ("Initial term of the bond"). Each bond is renewable annually for years 2, 3 and 4 of the Contract, and, for each of the option years (option years 1 and 2) if exercised ;
- (b) the Principal does pay to the NCC the difference between the amount of the Principal's tender and the amount of the Contract entered into by the NCC for the work, supplies and services which were specified in the said tender, if the latter amount be in excess of the former,

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

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

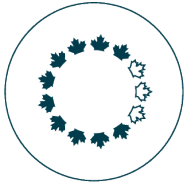
**PROVIDED FURTHER** that the Surety shall not be subject to any suit or action unless such suit or action is instituted and process therefore served upon the Surety at its Head Office in Canada, within twelve (12) months from the date of this bond.

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

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

Principal	
Witness	
Surety	

Note: Affix Corporate seal if applicable.



# NATIONAL CAPITAL COMMISSION COMMISSION DE LA CAPITALE NATIONALE

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## ANNEX “C” - SECURITY REQUIREMENTS

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### **Security Requirements**

NCC Corporate Security reserves the right to not award the Contract until such time as the contractor’s personnel core employees, **as well as any recurring subcontractors**, have obtained the required level of security screening as identified by NCC Corporate Security. In this case the level of security required will be **RELIABILITY**.

NCC Corporate Security reserves the right to refuse access to personnel who fail to obtain the required level of security screening. NCC Corporate Security has the responsibility into whom, and at what security clearance level, has authorized access to ops areas. NCC Corporate Security shall instruct the Contractor to remove from the Site of the Work any person employed by the Contractor for purposes of the Contract who, in the opinion of the Contracting Authority, is incompetent or is guilty of improper conduct, and the Contractor shall not permit a person who has been removed to return to the Site of the Work.

### **Security screening of individual**

NCC Corporate Security is ensuring that the proponent meets the appropriate security requirements and that all functions pertaining to NCC ops are addressed by conducting security screening. If proponent is accredited through Public Services and Procurement Canada (PSPC)/Canadian Industrial Security Directorate (CISD), or any other Federal entity or Crown Corporation, NCC Corporate Security may validate the security clearance of the proponent Team. NCC Corporate Security is an approved Federal Government source that may sponsor companies into the Industrial Security Program (ISP).

### **Fingerprinting**

The screening process includes fingerprinting for identification purposes. NCC Corporate Security can process fingerprints as forms are provided. Since July 1<sup>st</sup> 2015, the RCMP (Royal Canadian Mounted Police) replaced the name-based criminal record checks for the mandatory electronic fingerprinting for criminal record checks for federal government employment security screening.

The RCMP does not retain civil fingerprint submissions. Once the submission is completed it is deleted from the RCMP system. At no time are civil fingerprints populated in a database where they could be subject to further search.

### **Company Security Officer**

The contractor shall appoint a Company Security Officer (CSO)

Selection criteria for the CSO are the following:

They must be employees of the contractor’s firm;

### **Responsibilities of the Company Security Officer (CSO)**

The CSO responsibilities are the following:

Act as liaison between the NCC’s Corporate Security and the contractor to ensure coordination;

In collaboration with the NCC Corporate Security, identify the contractor’s personnel who will require access to NCC information/assets/sites **as well as any recurring subcontractors** (and their employees) who will require similar access and may not be supervised by the contractor at all times during such access. Ensure that accurate and complete Personnel Security Screening documentation is submitted to the NCC’s Corporate Security for the employees/subcontractors who have been identified;

Ensure that only persons who have been security screened to the appropriate level and who are on a “need-to-know basis” will have access to information and assets;

- The Contractor shall ensure that only authorized and security screened employees are given access to documents or records for which they have obtained the appropriate level of security clearance and that these employees treat these

documents, records, and the information contained therein, on a need-to-know basis and in accordance with their security classification or designation.

Ensure proper safeguard of all information and assets, including any information/assets entrusted to subcontractors;  
- Utmost care must be exercised by the Contractor to ensure the safeguarding of any material prepared or received in handling for the duration of this project.

- When the Contract, the Work, or any information referred pertaining to project, the Contractor shall, at all times, treat and safeguard the information as per their security classification or designation, in accordance with the Government Security Policy.

If a Security incident or suspected breach of security occurs, prepare and submit to NCC Corporate Security an occurrence report as soon as possible.

#### **Access to site**

All visits to site shall be coordinated with, and approved through NCC Corporate Security.

#### **Security of Information**

NCC Corporate Security reserves the right to request that the Contractor submit to an inspection of the premises on Document Safeguarding Capability (DSC) and/or IT Security, depending on the nature of the information it will be entrusted with. In the event that contractor does not meet the requirements to obtain the requested clearance, the contractor or subcontractor shall take the corrective measures recommended by NCC Corporate Security or the Public Services and Procurement Canada (PSPC)/Canadian Industrial Security Directorate (CISD) in order to meet these requirements.

The Contractor shall take all necessary steps to ensure that documents and records, or any information, are not copied, provided to, discussed, or disclosed in any manner whatsoever, to any person or entity, other than NCC personnel possessing the appropriate security level and authorization.

#### **Confidentiality and Safeguarding**

Any employee contracted by or employed by the contractor are forbidden to discuss issues pertaining to the project, including, but not limited to, to project's layout, design, content and security provisions, except as they relate to the direct provisions of services and Work under this Contract.

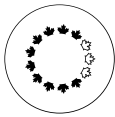
The contractor shall not publish or display any documents, photographs, site plans, maps or information related to the project (or collected during the project), in any medium (including the internet) unless authorized by the NCC. The contractor shall not disclose such material or information to third parties unless authorized by the NCC.

The contractor shall return to the NCC all copies of all site photographs and construction documents, site plans and maps related to the project, including those distributed to anyone associated to this contract.



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

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



New supplier / Nouveau fournisseur  Update / Mise à jour

Supplier No. / N° du fournisseur

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

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

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

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

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

**IMPORTANT: CHOOSE ONLY ONE OF THE FOLLOWING / CHOISIR SEULEMENT UNE DES OPTIONS SUIVANTES :**

(1) Sole proprietor / Propriétaire unique <input type="checkbox"/>	If sole proprietor, provide: / Si propriétaire unique, indiquez :	Last Name / Nom de famille	First name / Prénom	Initial / Initiale
(2) Partnership / Société de personnes <input type="checkbox"/>	(3) Corporation / Société <input type="checkbox"/>			
Business No. (BN) / N° de l'entreprise (NE) -	<b>OR / OU</b>	SIN / NAS -		
GST/HST / TPS et TVH	QST / TVQ (Québec)			
Number / Numéro : <input type="checkbox"/>	Number / Numéro : <input type="checkbox"/>			
Not registered / non inscrit <input type="checkbox"/>	Not registered / non inscrit <input type="checkbox"/>			
Type of contract / Genre de contrat	Contract for services only / Contrat de services seulement <input type="checkbox"/>			
	Contract for mixed goods & services / Contrat de biens et services <input type="checkbox"/>		Contract for goods only / Contrat de biens seulement <input type="checkbox"/>	
Type of goods and/or services offered / Genre de biens et / ou services rendus :				

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

**Please send a void cheque or bank letter with this form / Veuillez s.v.p. envoyer un spécimen de chèque ou lettre de banque avec ce formulaire**

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

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

E-mail address / Adresse courriel :

**PART 'E' - EMAIL ADDRESS TO SEND CONTRACTS / PARTIE 'E' - ADRESSE COURRIEL POUR ENVOYER LES CONTRATS**

E-mail address / Adresse courriel :

**PART 'F' - CERTIFICATION / PARTIE 'F' - CERTIFICATION**

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

**IMPORTANT**

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

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

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

**Supplier Tax Information**

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

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

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

**Direct deposit payment information**

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

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

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

**The advantages of direct deposit payment**

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

There are fewer risks of direct deposit payment being lost, stolen, or damaged as may happen with cheques.

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

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

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

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

Questions : Sylvie Monette, Superviseure aux comptes payable  
(613) 239-5678 poste 5156 ou [sylvie.monette@ncc-ccn.ca](mailto:sylvie.monette@ncc-ccn.ca)

**Renseignements sur le paiement par dépôt direct**

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

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

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

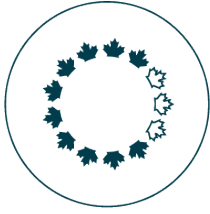
**Avantages du paiement par dépôt direct**

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

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

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





# NATIONAL CAPITAL COMMISSION COMMISSION DE LA CAPITALE NATIONALE

## APPENDIX “A” – Mandatory Requirements

1. Suppliers must comply fully with the following mandatory requirements.
2. Check that the page number is entered in the "Page Number" column for all information supporting each requirement.
- 3. Failure to clearly establish full compliance or to provide the requested documents will render the proposal as non-responsive.**

Item	Mandatory Requirement	Page Number (reference to technical proposal)
<b>M1 - Longstanding Employees :</b>	A minimum of two (2) onsite employees must have a minimum of five (5) years working with the company. Provide proof in the form of resumes and descriptions.	
<b>M2 - Arborist</b>	The Bidder must be an experienced arborist as certified by the International Society of Arboriculture (ISA) and/or a registered Professional Forester with Tree Risk Assessment Qualification (TRAQ) credentials from the ISA. Attach the arborist’s resumé and proof of certification in the form of a copy of the International Society of Arboriculture (ISA) certificate, or a certificate number, that will be verified via the ISA website credential check located at: <a href="http://www.treesaregood.org/findanarborist/verify">www.treesaregood.org/findanarborist/verify</a> Alternatively, provide proof of valid/current membership in the Ontario Professional Foresters Association as a full member Registered Professional Forester.	
<b>M3 - Class A Tree Climber/Arborist</b>	The Bidder must provide a proof of a certified arborist with a minimum of six (6) years’ experience in climbing, pruning, rigging operations, large tree removals, installing cable and brace systems, fertilizing, and air spade.	

	Attach a copy of the International Society of Arboriculture (ISA) certificate, or a Class A ISA certificate accompanied by a detailed résumé.	
<b>M4 - Class B Tree Climber/Arborist</b>	The Bidder must provide a proof of a certified arborist with a minimum of three (3) years' experience in climbing, pruning, rigging operations, large tree removals, installing cable and brace systems, fertilizing, and air spade. Attach a copy of the International Society of Arboriculture (ISA) certificate, or a Class A ISA certificate accompanied by a detailed résumé.	
<b>M5 - Ground workers</b>	The Bidder must provide a proof that the ground workers have a minimum of one (1) year's experience and have a valid chainsaw training certificate issued by a recognized organization. Attach a copy of the training certificate	

NCC-CCN

# Appendix “B” – Price Proposal Form

North Slope of Parliament Hill Escarpment Vegetation

Appendix “B” – Price Proposal Form

<b>1</b>	<b>Currency</b> .....	<b>3</b>
<b>2</b>	<b>Delivery of Financial Proposal</b> .....	<b>3</b>
<b>3</b>	<b>Financial Proposal</b> .....	<b>3</b>

## 1 Currency

All fees, hourly rates/unit prices and taxes submitted in this Price Proposal Form are to be in Canadian Dollars.

Unit fees to be inserted with an all-inclusive lump sum rate in Canadian dollars excluding taxes. All rates must be representative of the services/goods for each item.

## 2 Delivery of Financial Proposal

The Price Proposal Form should be submitted in email #2 (do not insert any other document in email #2). The unit rates/price and any other financial information identified in the said Price Proposal Form must not appear in the Technical Proposal.

Facsimile transmitted Financial Proposals will be treated as non-compliant and will receive no further consideration. However, where a formal Technical & Financial Proposal has been received on time at the specified email address, amendments thereto by email are acceptable provided that such amendments be also received prior to the Bid Solicitation closing date and time and only at the email [Bids-soumissions@ncc-ccn.ca](mailto:Bids-soumissions@ncc-ccn.ca) , and be signed and dated. All such amendments shall be addressed to the Contracting Authority and shall set forth complete details of all changes in order to be considered as an integral part of the Detailed Proposal. Note that revisions to the Price Proposal Form cannot be transmitted by fax and must be delivered to the noted email address clearly indicating ‘NCC tender file MA073 – Email no. 2 - Revision dated yyyy-mm-dd’.

## 3 Financial Proposal

The form identified as Appendix B shall be properly completed and signed.

**Corporation:** If this Detailed Proposal is made by a corporation, the full name of the company shall be accurately PRINTED in the space provided for that purpose (name of Bidder), the form shall be signed by the duly authorized representatives of the company.

**Partnership:** If this Detailed Proposal is made by a Partnership, the firm name or the business name shall be accurately PRINTED in the space provided for that purpose (Name of Bidder) and the names of all partners shall be PRINTED immediately under their respective signatures

**Sole Proprietorship:** If this Detailed Proposal is made by an individual carrying on business under a name other than his/her own, his/her business name together with the name of the sole proprietor shall be accurately PRINTED in the space provided for that purpose (Name of Bidder). In the event that the sole proprietor carries on business in his/her own name, he/she shall merely PRINT his/her name where indicated.

**Unsigned Appendix B Form received shall render the Bidder’s Proposal non-compliant, result in disqualification and shall receive no further consideration.**

TO: Procurement Services, National Capital Commission, [Bids-soumissions@ncc-ccn.ca](mailto:Bids-soumissions@ncc-ccn.ca)

Refer to NCC tender file MA073

I/We \_\_\_\_\_  
(Name of Bidder)

Business Address \_\_\_\_\_

I/We have carefully examined the Bid solicitation documents including site maps).

I/We hereby offer to provide the goods and services in a careful and workmanlike manner described in the NCC tender file # MA073 for the four (4) year GRAND TOTAL including all applicable taxes of:

**GRAND TOTAL** \$  
**\*(transferred from Contract Ceiling Price page 12)**

I/We undertake to enter into a Contract, incorporating all Terms and Conditions of the Bid Solicitation, for the execution of the goods and services if notified by the NCC of the acceptance of the Proposal. Award of this Bid Solicitation shall be in accordance with the Terms and Conditions identified in NCC tender file # MA073. I/We undertake to be bound by the Terms and Conditions of the Bid Solicitation and resulting Contract.

**SIGNATURE**

IN WITNESS WHEREOF I (WE) have hereunto set (my, our) hand (s)

This \_\_\_\_\_ day of \_\_\_\_\_, 2023.

Signed and sent by the Bidder in the presence of:

\_\_\_\_\_  
Signature of Bidder/Position    Signature of Witness

I have the authority to bind the corporation (for the Corporate Bidder)

**Note:** The Bidder consents to the public disclosure of its GRAND TOTAL by the NCC, and further agrees that it will have no right to claim against the NCC, its employees, agents or servants, or any of them, in relation to such public disclosure.

Contract Contact \_\_\_\_\_

Business Telephone \_\_\_\_\_

Email \_\_\_\_\_

**PRICE PROPOSAL FORM**

Item	Description	Unit of measurement (UoM)	Estimated Quantities A	Rates B	Extended totals C = Ax B
<b>TABLE 1 – Year 1 - 2023-2024 (date of contract award to March 31, 2024)</b>					
<b>1 - Professional Services</b>					
1A	Mobilization and General Requirements (equipment according to provincial codes, signs, security, protection equipment, permits, training and necessary licenses, etc.)	Lump Sum	1	\$	\$
1B	Arborist inspection and report	each	2	\$	\$
<b>2 - Stabilization Work</b>					
2A	<b>Soil stabilization</b> Three (3) ground person (live branch repairs, adjustment of stabilization logs, etc.)	Per hour	50	\$	\$
<b>3 - Reforestation management</b>					
3A	Invasive species removal <b>Three (3) ground person crew fully equipped comprised of:</b> <ul style="list-style-type: none"> <li>• One (1) Class “A” Climber</li> <li>• One (1) Class “B” Climber</li> <li>• One (1) Ground person</li> <li>• One (1) chip truck 1 ¾ tons or better with enclosed box (commercial 2.4 m (8 feet) box)</li> </ul> Chipper that can accommodate a 30 cm diameter wood	Per hour	50	\$	\$
3B	<b>General arboricultural Work</b> Three (3) ground person crew fully equipped comprised of: <ul style="list-style-type: none"> <li>• One (1) Class “A” Climber</li> <li>• One (1) Class “B” Climber</li> <li>• One (1) chip truck 1 ¾ tons or better with enclosed box (commercial 2.4 m (8 feet) box)</li> </ul> Chipper that can accommodate a 30 cm diameter wood	Per hour	65	\$	\$
3C	Tree cutting, pruning, removals, stumping, etc. <b>Three (3) ground person crew fully equipped comprised of:</b> <ul style="list-style-type: none"> <li>• One (1) Class “A” Climber</li> <li>• One (1) Class “B” Climber</li> <li>• One (1) chip truck 1 ¾ tons or better with enclosed box (commercial 2.4 m (8 feet) box)</li> </ul> Chipper that can accommodate a 30 cm diameter wood	Per hour	36	\$	\$

Item	Description	Unit of measurement (UoM)	Estimated Quantities A	Rates B	Extended totals C = AxB
<b>TABLE 1 – Year 1 - 2023-2024 (date of contract award to March 31, 2024)</b>					
<b>4 – Planting – Not required for Year 1</b>					
4A	Trees, shrubs and ground cover planting (including delivery, installation, maintenance and watering of plant material during the warranty period).	Per gallon pot	0	\$ 0	\$ 0.00
4B	Trees, shrubs and ground cover planting (including delivery, installation, maintenance and watering of plant material during the warranty period).	Per seeding	0	\$ 0	\$0.00
4C	Plant material - 15% Markup	Per gallon pot	0	\$ 0	\$ 0.00
4D	Plant material - 15% Markup	Per seeding	0	\$ 0	\$ 0.00
<b>5 - Equipment</b>					
5A	Specialized equipment: chipper, stump grinder, including qualified operator(s), fuel and permits.	Per hour	8	\$	\$
5B	Specialized equipment: aerial bucket truck, including qualified operator(s), fuel and permits.	Per hour	12	\$	\$
5C	Specialized equipment: water truck, including qualified operator(s), fuel and permits.	Per hour	10	\$	\$
<b>TABLE 1 – SUB-TOTAL</b>					\$
<b>HST – 13%</b>					\$
<b>TABLE 1 - TOTAL</b>					\$



Item	Description	Unit of measurement (UoM)	Estimated Quantities A	Rates B	Extended totals C = AxB
<b>TABLE 2 – Year 2 - 2024-2025 (April 1, 2024 to March 31, 2025)</b>					
<b>1 - Professional Services</b>					
<b>1A</b>	Mobilization and General Requirements (equipment according to provincial codes, signs, security, protection equipment, permits, training and necessary licenses, etc.)	Lump Sum	1	\$	\$
<b>1B</b>	Arborist inspection and report	each	2	\$	\$
<b>2 - Stabilization Work</b>					
<b>2A</b>	<b>Soil stabilization</b> Three (3) ground person (live branch repairs, adjustment of stabilization logs, etc.)	Per hour	50	\$	\$
<b>3 - Reforestation management</b>					
<b>3A</b>	Invasive species removal <b>Three (3) ground person crew fully equipped comprised of:</b> <ul style="list-style-type: none"> <li>• One (1) Class “A” Climber</li> <li>• One (1) Class “B” Climber</li> <li>• One (1) Ground person</li> <li>• One (1) chip truck 1 ¾ tons or better with enclosed box (commercial 2.4 m (8 feet) box)</li> </ul> Chipper that can accommodate a 30 cm diameter wood	Per hour	50	\$	\$
<b>3B</b>	<b>General arboricultural Work</b> Three (3) ground person crew fully equipped comprised of: <ul style="list-style-type: none"> <li>• One (1) Class “A” Climber</li> <li>• One (1) Class “B” Climber</li> <li>• One (1) chip truck 1 ¾ tons or better with enclosed box (commercial 2.4 m (8 feet) box)</li> </ul> Chipper that can accommodate a 30 cm diameter wood	Per hour	65	\$	\$
<b>3C</b>	Tree cutting, pruning, removals, stumping, etc. <b>Three (3) ground person crew fully equipped comprised of:</b> <ul style="list-style-type: none"> <li>• One (1) Class “A” Climber</li> <li>• One (1) Class “B” Climber</li> <li>• One (1) chip truck 1 ¾ tons or better with enclosed box (commercial 2.4 m (8 feet) box)</li> </ul> Chipper that can accommodate a 30 cm diameter wood	Per hour	36	\$	\$

Item	Description	Unit of measurement (UoM)	Estimated Quantities A	Rates B	Extended totals C = Ax B
<b>TABLE 2 – Year 2 - 2024-2025 (April 1, 2024 to March 31, 2025)</b>					
<b>4 – Planting – Not required for Year 2</b>					
4A	Trees, shrubs and ground cover planting (including delivery, installation, maintenance and watering of plant material during the warranty period).	Per gallon pot	0	\$ 0	\$ 0.00
4B	Trees, shrubs and ground cover planting (including delivery, installation, maintenance and watering of plant material during the warranty period).	Per seeding	0	\$ 0	\$0.00
4C	Plant material - 15% Markup	Per gallon pot	0	\$ 0	\$ 0.00
4D	Plant material - 15% Markup	Per seeding	0	\$ 0	\$ 0.00
<b>5 - Equipment</b>					
5A	Specialized equipment: chipper, stump grinder, including qualified operator(s), fuel and permits.	Per hour	8	\$	\$
5B	Specialized equipment: aerial bucket truck, including qualified operator(s), fuel and permits.	Per hour	12	\$	\$
5C	Specialized equipment: water truck, including qualified operator(s), fuel and permits.	Per hour	10	\$	\$
<b>TABLE 2 – SUB-TOTAL</b>					\$
<b>HST – 13%</b>					\$
<b>TABLE 2 - TOTAL</b>					\$

Item	Description	Unit of measurement (UoM)	Estimated Quantities A	Rates B	Extended totals C = AxB
<b>TABLE 3 – Year 3 - 2025-2026 (April 1, 2025 to March 31, 2026)</b>					
<b>1 - Professional Services</b>					
<b>1A</b>	Mobilization and General Requirements (equipment according to provincial codes, signs, security, protection equipment, permits, training and necessary licenses, etc.)	Lump Sum	1	\$	\$
<b>1B</b>	Arborist inspection and report	each	2	\$	\$
<b>2 - Stabilization Work</b>					
<b>2A</b>	<b>Soil stabilization</b> Three (3) ground person (live branch repairs, adjustment of stabilization logs, etc.)	Per hour	50	\$	\$
<b>3 - Reforestation management</b>					
<b>3A</b>	Invasive species removal <b>Three (3) ground person crew fully equipped comprised of:</b> <ul style="list-style-type: none"> <li>• One (1) Class “A” Climber</li> <li>• One (1) Class “B” Climber</li> <li>• One (1) Ground person</li> <li>• One (1) chip truck 1 ¾ tons or better with enclosed box (commercial 2.4 m (8 feet) box)</li> </ul> Chipper that can accommodate a 30 cm diameter wood	Per hour	50	\$	\$
<b>3B</b>	<b>General arboricultural Work</b> Three (3) ground person crew fully equipped comprised of: <ul style="list-style-type: none"> <li>• One (1) Class “A” Climber</li> <li>• One (1) Class “B” Climber</li> <li>• One (1) chip truck 1 ¾ tons or better with enclosed box (commercial 2.4 m (8 feet) box)</li> </ul> Chipper that can accommodate a 30 cm diameter wood	Per hour	65	\$	\$
<b>3C</b>	Tree cutting, pruning, removals, stumping, etc. <b>Three (3) ground person crew fully equipped comprised of:</b> <ul style="list-style-type: none"> <li>• One (1) Class “A” Climber</li> <li>• One (1) Class “B” Climber</li> <li>• One (1) chip truck 1 ¾ tons or better with enclosed box (commercial 2.4 m (8 feet) box)</li> </ul> Chipper that can accommodate a 30 cm diameter wood	Per hour	40	\$	\$

Item	Description	Unit of measurement (UoM)	Estimated Quantities A	Rates B	Extended totals C = AxB
<b>TABLE 3 – Year 3 - 2025-2026 (April 1, 2025 to March 31, 2026)</b>					
<b>4 – Planting</b>					
4A	Trees, shrubs and ground cover planting (including delivery, installation, maintenance and watering of plant material during the warranty period).	Per gallon pot	1000	\$	\$
4B	Trees, shrubs and ground cover planting (including delivery, installation, maintenance and watering of plant material during the warranty period).	Per seeding	5000	\$	\$
4C	Plant material - 15% Markup	Per gallon pot	1000	\$	\$
4D	Plant material - 15% Markup	Per seeding	5000	\$	\$
<b>5 - Equipment</b>					
5A	Specialized equipment: chipper, stump grinder, including qualified operator(s), fuel and permits.	Per hour	8	\$	\$
5B	Specialized equipment: aerial bucket truck, including qualified operator(s), fuel and permits.	Per hour	16	\$	\$
5C	Specialized equipment: water truck, including qualified operator(s), fuel and permits.	Per hour	10	\$	\$
<b>TABLE 3 – SUB-TOTAL</b>					\$
<b>HST – 13%</b>					\$
<b>TABLE 3 - TOTAL</b>					\$

Item	Description	Unit of measurement (UoM)	Estimated Quantities A	Rates B	Extended totals C = AxB
<b>TABLE 4 – Year 4 - 2026-2027 (April 1, 2026 to March 31, 2027)</b>					
<b>1 - Professional Services</b>					
<b>1A</b>	Mobilization and General Requirements (equipment according to provincial codes, signs, security, protection equipment, permits, training and necessary licenses, etc.)	Lump Sum	1	\$	\$
<b>1B</b>	Arborist inspection and report	each	2	\$	\$
<b>2 - Stabilization Work</b>					
<b>2A</b>	<b>Soil stabilization</b> Three (3) ground person (live branch repairs, adjustment of stabilization logs, etc.)	Per hour	50	\$	\$
<b>3 - Reforestation management</b>					
<b>3A</b>	Invasive species removal <b>Three (3) ground person crew fully equipped comprised of:</b> <ul style="list-style-type: none"> <li>• One (1) Class “A” Climber</li> <li>• One (1) Class “B” Climber</li> <li>• One (1) Ground person</li> <li>• One (1) chip truck 1 ¾ tons or better with enclosed box (commercial 2.4 m (8 feet) box)</li> </ul> Chipper that can accommodate a 30 cm diameter wood	Per hour	50	\$	\$
<b>3B</b>	<b>General arboricultural Work</b> Three (3) ground person crew fully equipped comprised of: <ul style="list-style-type: none"> <li>• One (1) Class “A” Climber</li> <li>• One (1) Class “B” Climber</li> <li>• One (1) chip truck 1 ¾ tons or better with enclosed box (commercial 2.4 m (8 feet) box)</li> </ul> Chipper that can accommodate a 30 cm diameter wood	Per hour	65	\$	\$
<b>3C</b>	Tree cutting, pruning, removals, stumping, etc. <b>Three (3) ground person crew fully equipped comprised of:</b> <ul style="list-style-type: none"> <li>• One (1) Class “A” Climber</li> <li>• One (1) Class “B” Climber</li> <li>• One (1) chip truck 1 ¾ tons or better with enclosed box (commercial 2.4 m (8 feet) box)</li> </ul> Chipper that can accommodate a 30 cm diameter wood	Per hour	25	\$	\$

Item	Description	Unit of measurement (UoM)	Estimated Quantities	Rates	Extended totals
			A	B	C = Ax B
<b>TABLE 4 – Year 4 - 2026-2027 (April 1, 2026 to March 31, 2027)</b>					
<b>4 – Planting</b>					
4A	Trees, shrubs and ground cover planting (including delivery, installation, maintenance and watering of plant material during the warranty period).	Per gallon pot	500	\$	\$
4B	Trees, shrubs and ground cover planting (including delivery, installation, maintenance and watering of plant material during the warranty period).	Per seeding	2500	\$	\$
4C	Plant material - 15% Markup	Per gallon pot	500	\$	\$
4D	Plant material - 15% Markup	Per seeding	2500	\$	\$
<b>5 - Equipment</b>					
5A	Specialized equipment: chipper, stump grinder, including qualified operator(s), fuel and permits.	Per hour	16	\$	\$
5B	Specialized equipment: aerial bucket truck, including qualified operator(s), fuel and permits.	Per hour	32	\$	\$
5C	Specialized equipment: water truck, including qualified operator(s), fuel and permits.	Per hour	10	\$	\$
<b>TABLE 4 – SUB-TOTAL</b>					\$
<b>HST – 13%</b>					\$
<b>TABLE 4 - TOTAL</b>					\$

YEARLY ESTIMATED TOTALS	
TABLE 1 – TOTAL (copy from p.6)	\$
TABLE 2 – TOTAL (copy from p.8)	\$
TABLE 3 – TOTAL (copy from p.10)	\$
TABLE 4 – TOTAL	\$
<b>GRAND TOTAL SUM OF TABLE 1 TO TABLE 4 = CONTRACT CEILING PRICE</b>	\$



**BIDDER'S CHECKLIST**

#	REQUIREMENT / TASK / INSERTION within Bidder's Bid	The Bidder is to check off this box confirming that they have included and/or attached the document or completed the requirement
1.	Ensure that your Technical Bid addresses all the points outlined in Appendix "A" -Mandatory Requirements. (email #1)	<input type="checkbox"/>
2.	Complete and sign Appendix "B" – Financial Bid (email #2)	<input type="checkbox"/>
3.	Ensure that your Technical Bid does not contain a copy of your Financial Bid	<input type="checkbox"/>
4.	Ensure that your Technical and Financial Bids are in separate emails	<input type="checkbox"/>
<b>Annexes/Appendices only required from the successful bidder for award of a contract</b>		
5.	Annex "D" Certificate of Insurance	<input type="checkbox"/>
6.	Annex "E" – Supplier – Direct deposit payment and tax information Form	<input type="checkbox"/>