

**NATIONAL CAPITAL COMMISSION
REAL ESTATE MANAGEMENT DESIGN AND CONSTRUCTION BRANCH**

SENTIER DE L'ÎLE SECTION REPAIR

Reference Number: DC-5355-02

August 2016

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END OF SECTION

Item	Description	Units	Qty	Units Price	Amount
1	Mobilization and general requirements.	1	lump sum		
2	Tree pruning and shrub removal	1	lump sum		
3	Removals of asphalt pathway and granular base and existing soil	700	m3		
4	Backfilling	640	m3		
5	Granular 'A' base - 150mm	55	m3		
6	HL3 Asphalt Pathway	240	m2		
7	Topsoil and finish grading	18	m3		
8	Sodding	200	m2		
				Total	\$ -
				TVQ	\$ -
				TPS	\$ -
				Total tender amount:	\$ -

Basis of Payments

- .1 Payment at the price per item listed in the Tender Form shall be full compensation for all labour, services and equipment as well as the supply, delivery and installation of all materials required for the proper execution of this contract.

ITEM NO. 1 - MOBILIZATION, OVERALL GENERAL REQUIREMENTS

- .1 This item includes all general requirements to complete the project including general instructions, shop drawings, safety measures, environmental protection, protection of existing vegetation to remain, temporary facilities, temporary fencing, traffic control, cleaning and reinstatement at completion of the project. All turf reinstatement to be sodding.
- .2 Included in this lump sum price are all the general requirements identified on the drawings and specifications and all those required to complete the work of this contract not covered under specific items.
- .3 Included in this lump sum price are the completion of record drawings at the end of the Contract for provision to the Contract Administrator
- .4 This item will not be measured but will be paid on a lump sum basis upon the following schedule.
 - .1 70% for substantial completion of this item
 - .2 30% for completion and supply of Contract record drawings

ITEM NO. 2 – TREE PRUNING

- .1 This item consists of pruning branches that prevent site access with the approval of the NCC representative.
- .2 This item also includes the pruning of any trees damaged as a result of the work of this Contract.
- .3 This item will not be measured but will be paid on a lump sum basis.

ITEM NO. 3 – EXCAVATION & REMOVAL OF ASPHALT PATHWAY, GRANULAR BASE AND EXISTING SOIL

- .1 This item consists of the stripping, common excavation and backfilling as indicated or specified otherwise.
- .2 This item includes the hauling, handling and placing, shaping, compacting and trimming of earth and excess material and the management of excess material.
- .3 This item consists of removing the existing asphalt pathway, including the various unknown layers of patches completed previously.
- .4 This item also consists of removing the pathway's granular base.
- .5 This item also includes the removal of all excavated non reusable or surplus material, from the site to an approved disposal facility.

- .6 This item will not be measured but will be paid on a lump sum basis.

ITEM NO. 4 – BACKFILLING

- .1 This item consists of the supply and placement of approved imported fill and rough grading allowing for finished ground elevations and specified surface treatments.
- .2 This item includes the proof rolling of the exposed surface, and the sub-excavation as required of any soft areas encountered during proof rolling.
- .3 This item will be measured and paid per cubic meter of installed fill.

ITEM NO. 5 - GRANULAR A

- .1 This item consists of the supply, placement and compaction of OPSS Granular A required for the construction of the sub base course for the pathway to the extent indicated and specified in the contract documents.
- .2 This item also includes the supply and application of water for compaction.
- .3 This item will not be measured but will be paid on a lump sum basis.

ITEM NO. 6 - HL3 ASPHALT PATHWAY

- .1 This item consists of the supply, placement and compaction of HL3 Asphalt for the reconstruction of the new asphalt pathway as indicated on the drawings and contract documents.
- .2 This item includes tack coat required at all asphalt joints as indicated on the drawings and contract documents.
- .3 This item includes any sampling and testing as required by the Contract Administrator.
- .4 This item includes line markings.
- .5 This item will be measured for payment by square metre (m²)

ITEM NO. 7 – TOPSOIL AND FINISH GRADING

- .1 This item consists of supply, installation, compaction and fine grading of stockpiled and imported topsoil to the extent indicated and specified in the contract documents.
- .2 This item will not be measured but will be paid on a lump sum basis.

ITEM NO. 8 – SODDING

- .1 This item consists of the supply, installation and maintenance of sod to reinstate areas along the proposed pathway alignment as indicated in the contract documents.

PAY ITEMS DESCRIPTION

- .2 This item will not be measured but will be paid on a lump sum basis based upon the following schedule:
 - .1 60% for supply and installation
 - .2 40% for satisfactory maintenance and establishment of sodded areas.

END OF SECTION

1.1 TIME OF COMPLETION

- .1 Commencement of preliminary work (detour signage, staging, etc) will be permitted immediately upon notification of acceptance of your offer. Ensure proper signage and warning objects for any pathway changes. Construction can begin immediately after contract award. Substantial completion of work is expected within **one (1) month** of start date.
- .2 On-site work shall be limited from Monday to Friday, unless otherwise approved by the Contract Administrator.

1.2 SCOPE OF WORK

- .1 Work under this contract covers the work involved in fixing two problems areas of the pathway where settlement has been an ongoing problem. Both pathway sections are located between the boulevard Maisonneuve and Rue Arthur-Guertin in Gatineau, Québec and includes, but is not limited to, the following:
 - .1 Tree protection
 - .2 Tree pruning
 - .3 Traffic control plan and detour signage
 - .4 Coordination with City of Gatineau Traffic Operations
 - .5 Temporary security fencing
 - .6 Removal of asphalt pathway and granular base
 - .7 Excavation and backfilling
 - .8 Grading and earthfill
 - .9 New granular (Granular A)
 - .10 New asphalt pathway
 - .11 Topsoil and finish grading
 - .12 Sodding

1.3 SPECIAL CONSTRUCTION REQUIREMENTS

- .1 The Contractor will be responsible to protect the subgrade at all times during construction and in particular following moderate to heavy rainfall. Construction traffic on exposed subgrade should be prohibited or limited to equipment which will not damage subgrade.
- .2 The Contractor will be responsible to ensure that the equipment utilized in the clearing and grubbing operations, site preparation, excavation and stripping of topsoil and pathway construction does not cause any damage or disturbance to the subgrade.
- .3 Any damaged subgrade areas caused as a result of construction traffic or construction techniques must be repaired by the Contractor as part of this contract and at no additional cost to the National Capital Commission.
- .4 The Contractor shall be responsible as part of the tender price for the stripping and reuse of topsoil and approved fill material, or the removal from the site of all excavated non reusable or excess material as well as the supply and placement of all required imported fill material required to execute the work of this contract.

- .5 The Contractor shall not strip additional topsoil material, beyond the actual topsoil layer existing on site, without the prior authorization and approval of the Contract Administrator if deemed essential by the latter. The Contractor will not be compensated for any additional stripping and/or additional earth or granular backfill materials required as a result of over-excavations not approved and authorized by the Contract Administrator prior to undertaking work.

1.4 CODES, PERMITS AND STANDARDS

- .1 Standards referred to in this Specification (CGSB, CSA, ASTM, OPSD, CHBDC etc.) may be examined at the following location:
Public Works and Government Services Canada
Standards and Specifications Branch
Place du Portage - Phase 3, 11 Laurier Street
Gatineau, Quebec
K1A 0S5
- .2 Perform work in accordance with the National Building Code of Canada 1995 and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
- .3 Work to meet or exceed requirements of:
 - .1 contract documents
 - .2 specified standards, codes and referenced documents
- .4 Obtain and pay for permits, inspector approvals, and other licenses required for this project and also pay any charges incidental to such permits. Provide copy of permits to the NCC Representative.
- .5 Contractor is to obtain an entry permit from the National Capital Commission, Stephane Wojciechowski, 613-239-5678 ext. 6028

1.5 DEFINITIONS

- .1 Wherever the term "Contract Administrator" appears throughout this specification, it shall be construed to mean an Inspector representing the National Capital Commission and including a duly named consultant on their behalf.
- .2 Wherever the terms "or equal", "or approved equal" appear after specific types of materials and items throughout this specification, they shall be construed to mean as being equal in the opinion of the Contract Administrator, in material content, workmanship and quality to that designated as being the minimum acceptable standard, and that the Contract Administrator's written approval must be obtained prior to submitting an alternative, 7 days before close of tender.

1.6 TAXES

- .1 Include in the tender amount, all sales and other taxes levied by the Federal, Provincial and Municipal government or other authority. There will be no refunds made by the National Capital Commission to the Contractor for taxes paid by the Contractor.

1.7 PROTECTION

- .1 Provide and maintain guardrails, fences, barricades, lights and other devices required for protection of workmen and public in accordance with the requirements of Provincial and Local by-laws and the Canadian Construction Safety Code.
- .2 Protect existing structures against damage until completion of work.
- .3 Take all precautions to protect vegetated areas and specimen trees from any damage.

1.8 DAMAGES

- .1 Damages caused to existing plant material, landscaping, lawns, roadways, pathways, structures, finishes and public utilities due to work of this contract, will be restored to their original condition, replaced or adequate compensation made to affected parties by the Contractor.
- .2 It is understood that restored or replaced work includes, labour, equipment and material costs.
- .3 The restored or replaced work shall be completed within 7 days of notification by the Contract Administrator.

1.9 CUTTING, FITTING AND PATCHING

- .1 Execute cutting, fitting and patching of work that may be a requirement to make work fit properly together, to receive or be received by other work.
- .2 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.
- .3 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.

1.10 SITE VISIT

- .1 Parties intending to submit tenders on the work must visit the site and obtain for themselves all information pertaining to existing conditions affecting the proper execution and completion of the work. The submission of a tender shall be deemed as proof that the tenderer and his sub-trades have complied with this requirement. After claims for additional compensation will not be entertained for any items of labour, equipment or materials required to complete the work that could have been reasonably ascertained by a Site Examination.

1.11 WORKMANSHIP

- .1 It is a requirement of this contract that qualified tradesmen execute each type of work specified.
- .2 Example: Landscape contractor for landscape work, mason for stonework, carpenter for carpentry work, etc.
- .3 Work unsatisfactorily completed by unqualified tradesmen will be redone and paid for by the Contractor.

1.12 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy each of following:
 - .1 Contract drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change orders.
 - .5 Other modifications to Contract.
 - .6 Field test reports.
 - .7 Manufacturer's installation and application instructions.
 - .8 Copy of current and approved work schedule.

1.13 WORK SCHEDULE

- .1 Provide within 10 working days after Contract award, in form acceptable to Contract Administrator, detailed schedule showing anticipated progress stages and final completion of work within time period specified in Contract documents.
- .2 Interim reviews of work progress based on work schedule will be conducted as decided by Contract Administrator and schedule updated by Contractor in conjunction with and to approval of Contract Administrator.

- .3 Work on pipe culverts and storm sewer extension must be scheduled during dry periods to minimize the amount of water handling.

1.14 CONTRACTOR'S USE OF SITE

- .1 Limited to area immediately surrounding work and areas designated by the Contract Administrator for material stockpiling and work equipment parking.
- .2 Do not unreasonably encumber site with materials or equipment during construction.
- .3 Move stored products or equipment interfering with operations of N.C.C., other contractors or agencies and the general public.
- .4 Obtain and pay for use of additional storage or work areas needed for operations.
- .5 Where security is reduced by work, provide temporary means to maintain security of area at all times.

1.15 SETTING-OUT OF WORK

- .1 The Commission shall furnish the Contractor with the reference co-ordinates necessary for laying out the work of this contract (see attached). **The Contractor shall employ survey personnel with experience in the use of coordinates to physically lay out work utilizing a total station survey system.**
- .2 Contractor shall assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .3 Provide devices needed to lay out and construct work. Supply such devices as required to facilitate Contract Administrator's inspection of work.
- .4 Supply stakes and other survey markers required for laying out work.
- .5 **Contractor must obtain Contract Administrator's approval of pathway centre-line prior to commencing work.**

1.16 PROJECT MEETINGS

- .1 Contract Administrator will arrange project meetings and assume responsibility for setting times and recording and distributing minutes.

1.17 EXISTING SERVICES

- .1 Before commencing work, establish location and extent of service lines in area of work and notify Contract Administrator of findings.
- .2 Where unknown services are encountered, immediately advise Contract Administrator and confirm findings in writing.
- .3 Where work involves adjusting of existing services, carry out work as directed by the Contract Administrator.
- .4 Make good and pay for damage to existing utility lines resulting from work.

1.18 TRAFFIC CONTROL

- .1 Do not infringe on adjacent roads, sidewalks, ramps, loading zones or interfere with normal traffic flow in carrying out the work. If it is necessary to disrupt traffic or occupy those thoroughfares for purposes of unloading materials, etc., obtain permission from the Contract Administrator and abide by his instructions regarding the manner, time and delays necessary to carry out these operations. Incidental costs (e.g. for permits, signage, public notification of lane closures, etc) conforming to these requirements will be paid by Contractor.
- .2 Provide a suitable system of protective barricades, lane markings, signs, lights and other such devices to warn and channel traffic and wherever necessary, the services of a flagman to direct and control traffic. Carry out protection in accordance with the requirements of the

Provincial and Local by-laws having jurisdiction over this type of work.

- .3 Where appropriate, provide pathway closed signage.
- .4 Printed signage must be provided in both French and English
- .5 The proposed methods and systems of traffic control and maintenance provisions together with supporting sketches must be submitted to the Contract Administrator upon request following tender closing.

1.19 ADDENDA

- .1 Answers to questions directed to the Contract Administrator, and any amendments to the drawings and specifications during the tender period will be communicated in the form of addenda to all general contractors tendering. Such addenda to be considered as and read as part of the specifications and thereby included in the contract documents.

1.20 ADDITIONAL DRAWINGS

- .1 The Commission may furnish additional drawings to the Contractor to assist in the proper execution of the work. These additional drawings will be issued for clarification purposes only. Such drawings shall have the same meaning and intent as if they were included with the plans referred to in Contract Documents.

1.21 CONTRACT DOCUMENTS

- .1 Drawings and specifications are complementary. Items shown or mentioned in one and not in the other are deemed to be included in the contract work.
- .2 If the drawings and specifications differ, the Contract Administrator shall give preference to the Contract document thereof, that best insures the attainment of this contract's objectives.

1.22 PAYMENT

- .1 This is a unit price contract. Any minor or miscellaneous items indicated on the drawings as being part of the work of this contract must be included by the Contractor in his overhead and indirect charges and incorporated into the unit price bid.
- .2 No separate payment will be made for work performed in respect to any of the special provisions where there is no specific pay item on the schedule of prices. The cost of these works must be appropriated among, and included in, the lump sum bid price.

1.23 ADVERTISING

- .1 No advertising will be permitted on this project.

1.24 COMPACTION OF MATERIALS

- .1 The thickness of granular and crushed stone materials shown on the drawings shall be the real thickness after the materials have been compacted as specified.

1.25 RECORD DRAWINGS

- .1 As work progress, maintain, accurate record to show deviations from contract documents.
- .2 Just prior to Contract Administrator's inspection for issuance of final certificate of completion, supply one (1) set of white prints with all major and minor deviations neatly inked in. The Contract Administrator will provide two (2) sets of clean white prints for this purpose.

1.26 GUARANTEES AND WARRANTIES

- .1 Before completion of work, collect all manufacturer's guarantees and warranties, and deposit to Contract Administrator.

END OF SECTION

PART 1 - GENERAL

1.1 References

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
- .2 Province of Ontario Occupational Health and Safety Act and Regulations for Construction Projects, R.S.O. [1990 as amended 213/91].

1.2 Submittals

- .1 Submit site-specific Health and Safety Plan prior to award of contract. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in the scope of work.
- .2 Submit copies of reports or directions issued by Federal and Provincial health and safety inspectors.
- .3 Submit copies of incident and accident reports.
- .4 Submit Material Safety Data Sheets (MSDS) to Contract Administrator.
- .5 Names of personnel and alternates responsible for site safety and health, hazards present on site, and use of personal protective equipment.

1.3 Safety Assessment

- .1 Perform site specific safety hazard assessment related to project.

1.4 General Requirements

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Contract Administrator may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.5 Responsibility

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.6 Compliance Requirements

- .1 Comply with Ontario Health and Safety Act and Regulations for Construction Projects.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.7 Unforeseen Hazards

- .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, and follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province of Ontario having jurisdiction. Advise Contract Administrator verbally and in writing.

- 1.8 Posting of Documents
 - .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province of Ontario having jurisdiction, and in consultation with Contract Administrator.
- 1.9 Correction of Non-Compliance
 - .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Contract Administrator.
 - .2 Provide Contract Administrator with written report of action taken to correct non-compliance of health and safety issues identified.
 - .3 Contract Administrator may stop Work if non-compliance of health and safety regulations is not corrected.
- 1.10 Work Stoppage
 - .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.
- 1.11 Personnel Health, Safety, And Hygiene
 - .1 Training: Ensure personnel entering site are trained in accordance with specified personnel training requirements.
 - .2 Personal Protective Equipment:
 - .1 Workers in direct contact with the existing soil within park shall wear a dust mask and gloves along with the other standard PPE.
 - .2 PPE and protective clothing must be kept clean and well maintained.
 - .3 Dispose of or decontaminate PPE worn on site at end of each workday.
- 1.12 Excavating
 - .1 The Contractor shall ensure no person enters an excavation unless another worker is working above ground close to the excavation or to the means of access to it.
 - .2 The Contractor shall arrange the locating and marking of gas, electrical and other services prior to commencing an excavation.
 - .3 The Contractor shall obtain approval from Consultant before arranging the shut off and disconnection of a service that may pose a hazard.
 - .4 The Contractor shall comply with the requirements of Section 230 to 242, O. Reg. 213/91, OHSAA..
- 1.13 Chemicals
 - .1 The Contractor must provide a list of all chemicals to be used on site and a copy of the Material Safety Data Sheet (MSDS) for each chemical to the Consultant prior to being brought onto the job site.
 - .2 The Contractor must ensure each chemical container brought on site is clearly labelled with the identity of the chemical, information for the safe handling of the chemical and the location of the MSDS.
 - .3 The Contractor must ensure adequate measures are taken to control the distribution, within the application area or throughout the building, of fumes/vapours before applying flammable, noxious or volatile materials.
 - .4 The Contractor may be required to schedule the application of hazardous materials which might affect the well-being of any workers or disrupt work of other Contractors and cannot

be adequately controlled to prevent such occurrences to evening or weekend periods.

- .5 The Contractor must ensure workers wear the required personal protective equipment (respiratory protection, protective clothing, hand protection, eye/face protection, etc.) when working with chemicals.
- .6 The Contractor must ensure the safe use and disposal of all chemicals that they are using. No chemicals and/or chemical waste product shall be disposed of on site without prior approval of Consultant.
- .7 The Contractor may not store chemicals and compressed gas cylinders on site without approval of the Consultant. If approved, the Contractor must ensure incompatible chemicals are stored separately.

PART 2 - PRODUCTS

2.1 Not Used

PART 3 - EXECUTION

3.1 Not Used

END OF SECTION

PART 1 - GENERAL

- 1.1 Related Work
- .1 Shrub and Tree Preservation Section 32 01 91
- 1.2 Fires
- .1 Fires and burning of rubbish on site not permitted.
- 1.3 Disposal of Wastes
- .1 Burying of rubbish and waste materials on site not permitted.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .3 Waste will be managed in accordance with OPSS 180 and Ontario regulation 558.
- 1.4 Site Clearing and Plant Protection
- .1 Protect trees and plants on site and adjacent properties where indicated.
- .2 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .3 Minimize stripping of soil.
- .4 Where heavy equipment is used around trees, protect trees with temporary fencing.
- .5 Restrict shrub removals to area indicated or designated by Contract Administrator.
- .6 **No clearing or close cut clearing shall take place within the avoidance time period for nesting habitat removal from April 15 to August 15.**
- 1.5 Shrub and Tree Preservation
- .1 Shrub and tree preservation per Section 32 01 91.
- 1.6 Archaeological and Heritage Resources
- .1 If any archaeological or heritage resources are discovered on NCC lands during the work of this Contract, the Contractor shall stop work immediately and the NCC construction manager, the NCC resident archaeologist (Ian Badgley, 613-239-5678 ext.5751) and the Ontario Ministry of Tourism, Culture and Sport (613-742-3360) should be contacted immediately and will determine the appropriate course of action.
- .2 In the event that human remains are discovered, all work in the area should cease immediately, and the construction manager and RCMP (613-993-8887) should be contacted immediately to determine the appropriate course of action.
- 1.7 Work Adjacent to Waterways
- .1 Do not operate construction equipment in watercourses.
- .2 Do not dump excavated fill, waste material or debris in watercourses.
- .3 Do not skid logs or construction materials across watercourses.
- 1.8 Watercourse Protection
- .1 The Contractor shall ensure that no contamination, waste or other substances which may be detrimental to marine life or quality of water shall enter the watercourse as either direct or indirect result of construction and the Contractor shall meet all requirements of Government authorities or agencies with respect to environmental protection.
- .2 The Contractor shall be prepared to immediately clean up any spills of contamination, waste or other substances which may be either detrimental to marine life or quality of water. In the event of a spill,

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the Contractor shall immediately commence a clean-up operation. The Contractor shall be liable for all damages and/or charges laid which result, either directly or indirectly, from the spill, or contamination of any kind which results from their construction operations.

- .3 The Contractor shall not make any claim for extra compensation for the cost of fulfilling the obligations set out herein.
- .4 No in-water works shall take place within the spawning and nursery period from March 15th to July 1st.

1.9 Pollution Control

- .1 Maintain temporary erosion and pollution control features installed under this contract.
- .2 Control emissions from equipment and plant to local authorities emission requirements.
- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

1.10 Hazardous Material Spill

- .1 Spills of petroleum, oils, or lubricants (POLs) may occur. Spill response kits should be kept on hand at all times during the construction work so that any leaks or spills that might occur can be promptly contained and cleaned up.
- .2 Spills should be reported to the NCC Emergency Line 613 239-5353, as required.
- .3 Refuelling and maintenance of the equipment should be done in a designated paved location.
- .4 The Contractor shall be prepared to immediately clean up any spills of contamination, waste or other substances which may be either detrimental to marine life or quality of water. In the event of a spill, the Contractor shall immediately commence a clean-up operation. The Contractor shall be liable for all damages and/or charges laid which result, either directly or indirectly, from the spill, or contamination of any kind which results from their construction operations.
- .5 The Contractor shall not make any claim for extra compensation for the cost of fulfilling the obligations set out herein.

1.11 Erosion and Sediment Control Plan

- .1 Within 2 weeks of award of Contract, the Contractor shall submit an Erosion and Sediment Control Plan. The plan shall indicate how the Contractor intends to provide for securing the site against erosion and siltation problems for the full duration of the construction period, i.e. from start of construction to final completion. The Contractor shall not proceed with excavation in or near waterways, drainage channels or wetland areas until approval of the erosion and sediment control plan is received from the Contract Administrator.
- .2 A copy of the Erosion and Sediment Control Plan shall be present on-site at all times. The Contractor shall ensure that all workers, including sub-contractors, are aware of the importance of the erosion and sediment control measures and are informed of the consequences of the failure to comply with the requirements of all Regulatory Agencies.
- .3 The Contractor shall exercise reasonable care to ensure that sediment run-off does not enter the watercourse. Berms, silt fences and other best management practices, as determined by the Contractors site work methods, shall be constructed at appropriate locations to ensure that turbidity shall be kept to a minimum as determined by the Government authorities and agencies.
- .4 The minimum erosion and sediment controls shall be:
 - .1 Limit the extent of exposed soils at any given time.
 - .2 Revegetate exposed areas as soon as possible.
 - .3 Provide temporary protection of exposed slopes 3H:1V or steeper and more than 3 metres height with plastic or mulch material approved by Contract Administrator.
 - .4 Install filter cloth between frame and cover on all catchbasins and manholes that will be affected by run-off from the site.
 - .5 A silt fence shall be installed around the perimeter of all stockpiles of any soil to be used or

removed from the site. Stockpiles shall be located outside of the floodplain and in locations approved by Contract Administrator.

.6 Erosion and sediment control measures shall be inspected, maintained and repaired weekly and after every rainfall event.

.7 All water from trench excavations shall be pumped into an approved sedimentation pond for settlement prior to discharge into the river.

.5 Erosion and sediment control will be reviewed as an item during the weekly site meeting. The status of the work will be recorded by the Contract Administrator in the meeting minutes.

1.12 Review Agencies

.1 Various concerned Government agencies may be on site during construction and the Contractor shall provide easy access and meet the requirements of those agencies without delay.

END OF SECTION

TEMPORARY FACILITIES

PART 1 - GENERAL

1.1 Access

- .1 With Contract Administrator present, prepare photographic inventory of the original condition of all locations where temporary facilities are to be built by the Contractor. Submit a bound record copy of the photographic inventory with locations, labels and descriptions of existing features to the Contract Administrator prior to commencing any work on the temporary facilities.
- .2 Provide and maintain adequate access to the project site.
- .3 Build and maintain temporary roads and temporary watercourse crossings where required or indicated subject to approval of the Contract Administrator. Remove temporary access roads and reinstate site following completion of work.
- .4 If authorized to use existing roads or pathways for access to project site, maintain such roads for duration of contract and make good damages resulting from the Contractor's use of roads or pathways.

1.2 Sanitary Facilities

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

1.3 Water Supply

- .1 Arrange, pay for and maintain temporary water supply in accordance with governing regulations and ordinances.

1.4 Removal of Temporary Facilities

- .1 Remove temporary facilities from site unless directed otherwise by Contract Administrator.
- .2 All areas disturbed shall be reinstated by the Contractor to its original condition at the Contractor's expense and to the Contract Administrator's satisfaction.

END OF SECTION

PART 1 - GENERAL

1.1 General

- .1 Use new material and equipment unless otherwise specified.
- .2 Within 7 days of written request by Contract Administrator, submit following information for materials and equipment proposed for supply:
 - .1 Name and address of manufacturer.
 - .2 Trade name, model and catalogue number.
 - .3 Performance, descriptive and test data.
 - .4 Manufacturer's installation or application instructions.
 - .5 Evidence of arrangements to procure.
- .3 Use products of one manufacturer for material and equipment of same type or classification unless otherwise specified.

1.2 Manufacturer's Instructions

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

1.3 Delivery and Storage

- .1 Deliver, store and maintain packaged material and equipment with manufacturer's seals and labels intact.
- .2 Prevent damage, adulteration and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected material and equipment from site.
- .3 Store material and equipment in accordance with suppliers instructions.
- .4 Touch-up damaged factory finished surfaces to Contract Administrator's satisfaction. Use primer or enamel to match original. Do not paint over name plates.

1.4 Contractor's Options for Selection of Materials for Tendering

- .1 Materials specified by referenced standard, select any material that meets or exceeds the specified standard.
- .2 Where materials are required to be listed on the "Canadian General Standards Board, Qualified Products List" select any manufacturer so listed.
- .3 Materials specified by "Prescriptive" or "Performance" specification, select any material meeting or exceeding specification.
- .4 Materials specified by naming one or more materials, select any material named. For the purpose of these specifications, the term "Acceptable Material" is deemed to be a complete and working commodity as described by a manufacturer's name, catalogue number, trade name or any combination thereof.
- .5 When materials are specified by a Standard, Prescriptive or Performance specification, upon request of the Contract Administrator, obtain from manufacturer an independent testing laboratory report, showing that the material or equipment meets or exceeds the specified requirements.

1.5 Substitution

- .1 No substitutions will be permitted without prior written approval of Contract Administrator.
- .2 Proposals for substitutions to be made in accordance with Instructions to Bidders. Such requests must include statements of respective costs of items originally specified and the proposed substitution.
- .3 Proposals will be considered by Contract Administrator if:
 - .1 Materials selected by tenderer from those specified, are not available.
 - .2 Delivery date of materials selected from those materials specified would unduly delay completion of contract, or
 - .3 Alternative material to those specified, which are brought to the attention of and considered by Contract Administrator as equivalent to the material specified and will result in a credit to the Contract amount.
- .4 Should proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on project. Pay for design or drawing changes required as result of substitution.
- .5 Amounts of all credits arising from approval of substitutions will be determined by Contract Administrator and Contract Price will be reduced accordingly.

1.6 Acceptability of Materials

- .1 All and only "acceptable" materials, as defined by Construction Materials Board Form 1 are eligible for use in this project. CMB Form 1 forms part of Contract documents.

END OF SECTION

CLEANING

PART 1 - GENERAL

- 1.1 Conduct cleaning and disposal operations to comply with local ordinances and anti pollution laws.
- 1.2 Disposal of mineral spirits, oil or paint and varnish solvents in storm or sanitary drainage systems is prohibited.
- 1.3 Prevent accumulation of wastes which create hazardous conditions.
- 1.4 Cleaning During Construction
 - .1 Maintain project grounds and public properties free from accumulations of waste materials and rubbish on a daily basis.
 - .2 Remove waste materials and rubbish from site and haul to an approved dump site.
 - .3 Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not interfere with operation of roads and pathways.
- 1.5 Final Cleaning
 - .1 Remove grease, dirt, dust, stains and other foreign materials from finished surfaces.
 - .2 Broom clean paved surfaces; rake clean other surfaces of grounds, to satisfaction of Contract Administrator.
 - .3 Clean project site in preparation for substantial completion inspection and final inspection.

END OF SECTION

PART 1 – GENERAL

1.1 Cleaning During Construction

- .1 Maintain project grounds and public properties free from accumulations of waste materials and rubbish on a daily basis.
- .2 Remove waste materials and rubbish from site and haul to an approved dump site.
- .3 Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not interfere with operation of roads and pathways.

1.1 General Conditions

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

1.2 Related Work

- .1 Excavating and Backfilling Section 31 23 10
- .2 Site Grading Section 31 23 13

1.3 Definitions

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

- work.
- .11 Rock: natural beds or massive fragments, of the hard, stable, cemented part of the earth's crust, igneous, metamorphic, or sedimentary in origin, which may or may not be weathered, and includes boulders having a volume of 1 m or greater.
 - .12 Swamp material: materials within the swamp excavation limits, except those defined as rock, and excludes stone masonry, natural wood and manufactured materials.
 - .13 Waste: excess material managed by re-use or as disposable fill.
 - .14 Waterbody: any body of water or watercourse or wetland, or a portion thereof, and excludes ditches other than those functioning as natural watercourses.

PART 2 - PRODUCTS

Not applicable

PART 3 - EXECUTION

3.1 Construction

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

END OF SECTION

PART 1 - GENERAL

- 1.1 Related Work Specified Elsewhere
 - .1 Environmental Protection Section 01 35 43
 - .2 Management and Disposal of Excess Material Section 01 74 21
 - .3 Clearing and Grubbing Section 31 11 00
- 1.2 Protect existing items designated to remain and materials designated for salvage and relocation. In event of damage, immediately replace such items or make repairs to approval of Contract Administrator and at no additional cost to the Commission.
- 1.3 Site Conditions
 - .1 Contractor to contact appropriate utilities to verify presence and location of all overhead and underground services and establish location for all such services in the field before commencing work. Report any discrepancies to Contract Administrator.

PART 2 - PRODUCTS - Not applicable

PART 3 - EXECUTION

- 3.1 Preparation
 - .1 Inspect site and verify with Contract Administrator items designated for removal and items to be preserved.
 - .2 Locate and protect utility lines. Preserve in operating condition active utilities traversing site.
 - .3 Notify utility companies before starting any work involving relocation, dismantling or demolition.
- 3.2 Removal
 - .1 Remove items indicated on drawings.
 - .2 Do not disturb adjacent items designated to remain in place.
- 3.3 Removal of pavements:
 - .1 Square up adjacent surfaces to remain in place by saw cutting or other approved method.
 - .2 Protect underlying granular materials where shown.
- 3.4 Salvage and Relocation
 - .1 Carefully dismantle items indicated for salvage or relocation. Stockpile salvaged materials at locations as directed by Contract Administrator.
 - .2 Items to be salvaged include forest litter.
- 3.5 Disposal of Material
 - .1 Dispose of materials not designated for salvage or re-use in work, off-site.
- 3.6 Restoration
 - .1 Upon completion of work, remove debris, trim surfaces and leave work site clean.
 - .2 Reinstate areas and existing works outside areas of demolition to match condition of adjacent, undisturbed areas.

END OF SECTION

PART 1- GENERAL

- 1.1 Related Work Specified Elsewhere
- .1 General Instructions Section 01 11 00
 - .2 Environmental Protection Section 01 35 43
 - .3 Site Work Demolition and Removals Section 02 41 13
- 1.2 Utility Lines
- .1 Before commencing work, establish location and extent of underground utility lines in area of excavation. Notify Contract Administrator of findings.
 - .2 Advise Contract Administrator to re-route existing lines in area of excavation. Costs for such work will be paid by Owner.
 - .3 Record locations of maintained and re-routed underground utility lines.
 - .4 Make good and pay for damage to existing utility lines resulting from work.
- 1.3 Protection
- .1 Protect bottoms of excavations from softening. Should softening occur, remove softened soil and replace with material as directed by Contract Administrator.
 - .2 Protect bottoms of excavations from freezing.
 - .3 Provide adequate protection around bench markers, layout markers, survey markers, and geodetic monuments.
 - .4 Provide protection to ensure no damage to existing facilities and equipment situated on site.
 - .5 Effect approved measures to minimize dust as a result of this work.
 - .6 Do not stockpile excavated material to interfere with site operation or drainage.
- 1.4 Compaction Densities
- .1 Compaction densities are percentages of maximum densities obtainable from ASTM D698-70.
- 1.5 References
- .1 Ontario Provincial Standard Specification (OPSS)
 - .1 OPSS 1010 Material Specification for Aggregates –Select Subgrade Material.

PART 2 - PRODUCTS

- 2.1 Materials
- .1 Backfill: shall be Select Subgrade Material conforming to OPSS 1010.
- 2.2 Stockpiling
- .1 Stockpile fill materials in areas designated by Contract Administrator. Stockpile topsoil and granular materials in a manner to prevent segregation. Protect stockpiled fill material from freezing.
 - .2 Protect fill materials from contamination.

PART 3- EXECUTION

- 3.1 Excavating
- .1 Excavate to elevations and dimensions indicated for installation, construction and inspection of work specified.
 - .2 Excavate all vegetation and surficial organic material (topsoil, rootmat, peat, etc.)
 - .3 Excavate to well defined lines to minimize quantity of fill material required.
 - .4 Earth bottoms of excavations to be dry undisturbed soil, level, free from loose or organic matter.

EXCAVATION AND BACKFILLING

- .5 Notify Contract Administrator when bottom of excavation is reached
- .6 Obtain Contract Administrator's approval of completed excavation.
- .7 Keep excavation free of water while work is in progress.
- .8 Protect open excavations against flooding and damage due to surface run off.
- .9 Provide sediment control measures in accordance with Section 01 35 43 and as indicated elsewhere in the contract.
- .10 Excavation must not interfere with normal 45 degree splay of bearing from bottom of any footing.
- .11 When complete, have Contract Administrator inspect excavations to verify soil bearing capacity, depths and dimensions.
- .12 Correct unauthorized excavation at no extra cost as follows:
 - .1 Fill under bearing surfaces with Select Subgrade Material compacted to 95% SPMDD as directed by Contract Administrator.
- .13 Do not disturb soil within branch spread of trees or shrubs that are to remain. If excavating through roots, excavate by hand and cut roots with sharp saw.
- .14 Remove concrete masonry, paving, walks, rubble and other obstructions encountered in course of excavation.
- .15 Dispose of all excavated non re-usable material off site.
- .16 Do not obstruct flow of surface drainage or natural watercourses.

3.2 Backfilling

- .1 Do not commence backfilling until areas of work to be backfilled have been inspected and approved by Contract Administrator.
- .2 Areas to be backfilled and backfill material must be free from debris, snow, ice, water or frozen ground.
- .3 Prior to installation of granular materials, compact existing subgrade to obtain required bearing capacity. Remove "**soft**", unstable or weak subgrade materials and fill with approved material.
- .4 Backfill simultaneously each side of walls and other structures to equalize soil pressures.
- .5 Where temporary unbalanced earth pressures are liable to develop on walls or other structures, erect bracing or shoring to counteract unbalance, and leave in place until removal is approved by Contract Administrator.
- .6 Place and compact fill materials in continuous horizontal layers not exceeding 300 mm compacted depth. Compact to at least 95% Standard Proctor Maximum Dry Density. Compact each layer before placement of the next layer.
- .7 Use methods to prevent disturbing or damaging buried services. Make good any damage.

3.3 Inspection and Testing

- .1 Testing of materials and compaction will be carried out by testing laboratory designated by Contract Administrator.
- .2 Contract Administrator will pay costs for inspection and testing.

3.4 Surplus Material

- .1 Dispose of surplus material not required for backfill, grading or landscaping, off site.
- .2 Dispose of material unsuitable for fill, grading or landscaping off site.

END OF SECTION

PART 1 - GENERAL

- 1.1 Related Works Specified Elsewhere
 - .1 Excavation and Backfilling Section 31 23 10
 - .2 Topsoil and Finish Grading Section 32 91 21
- 1.2 Protection
 - .1 Prevent damage to fencing, trees, landscaping, natural features, bench marks, existing buildings, existing pavement, subgrade, surface or underground utility lines remaining. Make good any damages.
- 1.3 References
 - .1 Ontario Provincial Standard Specification (OPSS)
 - .1 OPSS 1010 Material Specification for Aggregates – Select Subgrade Material.

PART 2 - PRODUCTS

- 2.1 Materials
 - .1 Imported Fill: shall be Select Subgrade Material conforming to OPSS 1010.
 - .2 Native Fill: selected native fill material from excavation or other sources, approved by Contract Administrator for use intended, unfrozen and free from rocks larger than 50 mm, cinders, ashes, sods, refuse or other deleterious materials.

PART 3 - EXECUTION

- 3.1 Grading
 - .1 Rough grade to levels, profiles, and contours allowing for surface treatment as indicated.
 - .2 Imported fill shall be used for the two significant fill areas on slope.**
 - .3 Place and compact fill materials in continuous horizontal layers not exceeding 300 mm compacted depth.
 - .4 Compact to at least 95% Standard Proctor Maximum Dry Density.
 - .5 Compact each layer before placement of the next layer.
 - .6 Rough grade to the following depths below finish grades:
 - .1 100 mm for seeded and sodded areas;
 - .2 50 mm for areas to be reinstated with salvaged forest litter;
 - .3 As indicated for paved surfaces, footings and foundations.
 - .7 Grade swales to depth as indicated or maintain 0.5% slope minimum.
 - .8 Prior to placing fill over existing ground, scarify surface to depth of 150 mm. Moisture content of fill and existing surface to be approximately the same to facilitate bonding.
 - .9 Remove any unstable subsoil encountered and reestablish subgrade with Select Subgrade Material as indicated in Section 31 23 10. Obtain approval of Contract Administrator prior to excavation of unstable subsoils.
 - .10 Compact filled and disturbed areas to 95% Standard Proctor Density and to ASTM D 698-78.
 - .11 Do not disturb soil within branch spread of trees to remain.
- 3.2 Testing
 - .1 Inspection and testing of soil compaction will be carried out by testing laboratory designated by Contract Administrator.

.2 Cost of tests will be paid by Commission.

3.3 Surplus Material

.1 Dispose of surplus material off site.

.2 Remove material unsuitable for fill, grading or landscaping off site.

END OF SECTION

PART 1 - GENERAL

- 1.1 Related Work Specified Elsewhere
 - .1 Site Work Demolition and Removals Section 02 41 13
 - .2 Clearing and Grubbing Section 31 11 00

PART 2 - MATERIALS

- 2.1 Barriers: barriers to consist of steel T-rail posts 40 x 40 x 5 x 2440 mm., at 1800 mm o.c., with wood slat snow fencing attached to posts with 9 gauge wire, 13 per post.

PART 3 - EXECUTION

- 3.1 Trees and Shrubs to be Retained
 - .1 Unless otherwise indicated on the drawings or instructed on site by the Contract Administrator, retain and protect all existing trees and shrubs on site. Do not remove any plant without the express authorization of the Contract Administrator.
- 3.2 Protection of Existing Trees
 - .1 Do not disturb or compact grade within the canopy of trees or shrubs to remain. Avoid unnecessary traffic, dumping and storage of materials over root zones.
 - .2 Minimize stripping of soil or excavation within 3 metres of existing trees.
- 3.3 Installation of Barriers
 - .1 Install barriers around all Butternut trees (a federally designated endangered species) located within 3 metres of the proposed edge of pathway or limit of grade changes. The location of all butternut will be flagged in the field by the Contract Administrator.
 - .2 Install barriers minimum 1 metre from trunk of Butternut trees. Increase distance where space allows.
 - .3 Barriers to be installed prior to the start of any other work on the project site.

END OF SECTION

PART 1 – GENERAL

1.1 Related Work

- | | | |
|----|----------------------------|------------------|
| .1 | Excavating and Backfilling | Section 31 23 10 |
| .2 | Pathway Construction | Section 32 11 30 |

1.2 References

- | | |
|----|---|
| .1 | Ontario Provincial Standard Specification (OPSS): |
| .1 | OPSS 1010 Material Specification for Aggregates – Granular A and B. |

PART 2 – PRODUCTS2.1 Materials -
General Requirements

- | | |
|-----|---|
| .1 | Any granular materials specified for the various works, on the drawings or in other sections of the specifications or by direction of the Contract Administrator, shall conform to this material specification for the class of granular material required. |
| .2 | The materials shall be selected or produced from pits or quarries to conform to the requirements specified herein for each class of granular materials. |
| .3 | Material retained on the number 4 sieve shall consist of hard durable particles or fragments of stone or gravel. |
| .4 | Materials that break up when alternatively frozen and thawed or wetted and dried shall not be permitted. |
| .5 | Fine aggregate passing the Number 4 sieve shall consist of natural or crushed sand, and, material passing the Number 200 sieve shall consist of fine mineral particles. |
| .6 | The material shall be free from vegetable matter and lumps or balls of clay. |
| .7 | The material shall be non-plastic and non-frost susceptible. |
| .8 | Blending to obtain the correct gradation will be permitted when the Contractor demonstrates that he can produce a correct gradation and has a plant capable of producing to the satisfaction of the Contract Administrator. |
| .9 | The Contractor shall advise the Contract Administrator two weeks in advance of the intent use of any of the specified materials to allow sufficient time for sampling and testing. The Contractor shall submit samples of granular materials to be used in the works if so requested by the Contract Administrator. |
| .10 | Approval of a sample does not mean acceptance of the whole |

GRANULAR MATERIALS

source. Each load of material received at the job site shall be subject to all the requirements of that material.

- .11 All gradation requirements are shown as percentage by weight passing U.S. Standards Sieves, A.A.S.H.O. M-92-65.

2.2 Materials:
Specific Requirements

- .1 Granular "A":
 - .1 This material shall conform to OPSS 1010.
- .2 Granular "B" Type II
 - .1 This material shall conform to OPSS 1010
- .3 Granular "D" (stonedust):
 - .1 This material shall be crushed rock screenings or stone dust.
 - .2 Gradation Requirements:

<u>Sieve</u>			<u>% Passing</u>
9.5	mm	(3/8")	100
4.75	mm	(No. 4)	50-100
1.18	mm	(No. 16)	20-55
300	um	(No. 50)	10-30
75	um	(No. 200)	0-12

- .4 Select Subgrade Material (SSM):
 - .1 As per Section 31 23 10.

END OF SECTION

PART 1- GENERAL

- | | | |
|-------------------|--|------------------|
| 1.1 Related Works | .1 Excavating and Backfilling | Section 31 23 10 |
| | .2 Geotextiles | Section 31 32 21 |
| | .3 Granular Materials | Section 32 11 23 |
| | .4 Concrete Sewer and Pipe Culverts | Section 33 42 13 |
| 1.2 Protection | .1 Prevent damage to buildings, landscaping, curbs, sidewalks, roads and trees. Make good on any damage. | |

PART 2- PRODUCTS

- | | |
|---------------|---|
| 2.1 Materials | .1 Granular "A": as per Section 32 11 23 |
| | .2 Granular "B" Type II as per Section 32 11 23 |
| | .3 Granular "D" as per Section 32 11 23 |
| | .4 Geotextiles as per Section 31 32 21 |

PART 3- EXECUTION

- | | |
|-----------------------|--|
| 3.1 Layout of Pathway | .1 Notify Contract Administrator after completion of each stage and receive approval of layout prior to proceeding to next stage.
Stages: |
| | .1 Staking of centerline. |
| | .2 Subgrade |
| | .3 Sub-base |
| | .4 Prior to laying of Granular D, Contract Administrator to inspect alignment and grades |
| | .2 All curves shall be true. No tangents shall be accepted at the beginning or end of curves. Obtain approval of Contract Administrator on site during work. |
| 3.2 Inspection | .1 Check graded subgrade for conformity with elevations and sections before placing granular base materials and obtain approval of Contract Administrator. |
| | .2 Proof roll graded subgrade surface with a heavy smooth drum roller (weight and type of roller to be approved by Contract Administrator). |
| | .1 Check for unstable areas. |
| | .2 Check for areas requiring additional compaction. |
| | .3 Notify Contract Administrator of unsatisfactory conditions. |
| 3.3 Sub-base | .1 Refer to Section 31 23 10, Excavating and Backfilling |
| 3.4 Geotextile | .1 Place Geotextiles (where indicated) on compacted sub-grade in accordance with Section 31 32 21 |
| 3.5 Base Course | .1 Place Granular 'A' and Granular 'B' base materials to compacted thickness as indicated. |

- .2 Place in layers not exceeding 150mm compacted thickness. Compact each layer to 100% maximum dry density as determined by Standard Proctor Density.
- .3 Obtain approval of Contract Administrator prior to laying of stonedust .

3.6 Surface Course

- .1 Place stonedust surface course to compacted thickness as indicated and compact to 98% SPMDD.

3.7 Reinstatement of Edges

- .1 Reinstatement edges of pathway with approved earth fill and topsoil as indicated.

END OF SECTION

PART 1 - GENERAL

- 1.1 Related Works Specified Elsewhere
 - .1 Excavating and Backfilling Section 31 23 10
 - .2 Granular Materials Section 32 11 23
 - .3 Pathway Construction Section 32 11 30

- 1.2 References
 - .1 Ontario Provincial Standard Specification (OPSS):
 - .1 310, 311
 - .2 City of Ottawa Special Provisions 2009:
 - .1 F-3104
 - .3 City of Ottawa Standard Detailed Drawings 2009:
 - .1 R-10

- 1.3 Protect existing items designated to remain and materials designated for salvage and relocation. In event of damage, immediately replace such items or make repairs to the satisfaction of Contract Administrator and at no additional cost to the Commission.

- 1.4 Site Conditions
 - .1 Contractor to contact appropriate utilities to verify presence and location of all overhead and underground services and establish location for all such services in the field before commencing work. Report any discrepancies to Contract Administrator

- 1.5 Basis of Payment
 - .1 Basis of payment clauses included in references are deleted in their entirety and will be measured and paid as per Section 01 10 00 – Pay Items Description

PART 2 - PRODUCTS

- 2.1 Materials
 - .1 Performance Graded HL3 Hot Mix Asphalt – as specified in Item List:
 - .1 This material shall conform to OPSS 310 as amended by City of Ottawa Special Provisions F-3104
 - .2 Tack Coat
 - .1 This material shall conform to OPSS 310 as amended by City of Ottawa Special Provision F-3107

PART 3 - EXECUTION

- 3.1 Asphalt Paving
 - .1 The Contractor shall notify the Contract Administrator five (5) days prior to paving.
 - .2 The Contractor must obtain the Contract Administrators approval before placing any asphalt.
 - .3 Asphalt is to be placed to thicknesses, grades and lines as shown on plans or as indicated by the Contract Administrator
 - .4 The Contractor paving shall be conducted as specified in OPSS 310 or as directed by the Contract Administrator
 - .5 Step joints shall be used as indicated where new asphalt will connect to existing pavement

3.2 Quality Control and Assurance

- .1 OPSS 310 sub-sections 310.07.01 and 310.07.05 are deleted in their entirety.
- .2 The Contractor must supply a minimum of one (1) quality assurance sample and one (1) referee sample to the Contract Administrator. The samples shall be randomly chosen or as directed by the Contract Administrator. The Contract Administrator may request additional samples.
- .3 The samples shall be delivered within 4 hours to a location as specified by the Contract Administrator.
- .4 Samples shall be accompanied by the City of Ottawa 'Quality Assurance Sample Data Sheet' for Hot Mix Asphalt and completed to the satisfaction of the Contract Administrator.

3.3 Compaction

- .1 Compaction requirements shall be as specified in OPSS sub-section 310.08.015.03 and meet the requirements specified in OPSS 310, Table 9, to the satisfaction of the Contract Administrator
- .2 The Contractor shall conduct the compaction testing and supply the Contract Administrator with the results.

END OF SECTION

PART 1 - GENERAL

- 1.1 Related Works Specified Elsewhere
 - .1 Site Work Demolition and Removals Section 02 41 13
 - .2 Asphalt Paving Section 32 12 16
- 1.2 Basis of Payment
 - .1 Basis of payment clauses included in references are deleted in their entirety and will be measured and paid as per Section 01 10 00 – Pay Items Description

PART 2 - PRODUCTS

- 2.1 .1 Paint:
 - .1 To CGSB 1-GP-74M, alkyd traffic paint.
 - .2 Color: yellow
 - .3 Upon request, NCC Representative will supply a qualified product list of paints applicable to work. Qualified paints may be used but NCC Representative reserves right to perform further tests.
 - .2 Thinner: to CGSB 1-GP-5M.
 - .3 Templates and Stencils: as required to produce symbols as indicated on drawings. Submit manufacturer's data including size of each stencil.
- 2.2 EQUIPMENT REQUIREMENT
 - .1 Paint applicator to be an approved pressure type mobile distributor capable of applying paint in single solid lines. Applicator to be capable of applying marking components uniformly, as rates specified, and to dimensions as indicated, and to have positive shut-off.

PART 3 - EXECUTION

- 3.1 CONDITIONS OF SURFACES
 - .1 Pavement surface to be dry, free from ponded water, frost, ice, dust, oil, grease and other foreign materials.
 - .2 Remove existing markings that will interfere with legibility of new painted lines and symbols.
- 3.2 APPLICATION
 - .1 Lay out pavement markings and obtain approval by NCC Representative.
 - .2 Unless otherwise approved by NCC Representative, apply paint only when air temperature is above 10°C, wind speed is less than 60 km/h and no rain is forecast within next 4 h.
 - .3 Apply traffic paint evenly at rate of 3 m²/L.
 - .4 Do not thin paint unless approved by NCC Representative.
 - .5 Symbols and letters to conform to dimensions indicated.
 - .6 Paint lines to be of uniform color and density with sharp edges.
 - .7 Width of paint lines to be 65 mm.
 - .8 Thoroughly clean distributor tank before refilling with paint.

3.3 TOLERANCE

- .1 Paint markings to be within plus or minus 12 mm of dimensions indicated.
- .2 Remove incorrect markings as indicated by NCC Representative.

3.4 PROTECTION OF WORK

- .1 Protect pavement markings until dry.

END OF SECTION

PARTIE 1 - GENERAL

1.1 Related Work Specified Elsewhere

- .1 Excavating & Backfilling Section 31 23 10
- .2 Seeding Section 32 92 20
- .3 Sodding Section 32 92 23

1.2 Testing

- .1 Obtain Contract Administrator's initial approval of imported topsoil at source.
- .2 Test existing and imported topsoil for NPK, Mg, soluble salt content, organic matter and pH value prior to delivery to site.
 - 1 Submit 0.5 kg sample of topsoil to testing laboratory and indicate intended use.
 - 2 Determine requirements for amendments to bring pH value of soil to 5.5 to 7.7 level.
 - 3 Submit two copies of soil analysis and recommendations for corrections to Contract Administrator.
- .4 Inspection and testing of topsoil will be carried out by testing laboratory designated by Contract Administrator.
- .5 National Capital Commission will pay cost of testing.

1.3 Scheduling of Work

- .1 Schedule placing of topsoil to permit immediate seeding and sodding operations.

PARTIE 2 - PRODUCTS

2.1 Materials

- .1 Stockpiled topsoil: see Section 31 23 10
- .2 Imported topsoil: friable loam, neither heavy clay nor of very light sandy nature containing minimum of 10% organic matter for sandy loams to maximum of 25% by volume. Free from subsoil, roots, grass, weeds, toxic materials, stones, foreign objects and an acidity range (Ph) of 5.5 to 7.5. Topsoil containing crabgrass, couch grass or other noxious weeds, not acceptable.
- .3 Lime: Ground agricultural limestone containing minimum 85% of total carbonates, 90% passing 1.0 mm sieve, 50% passing 0.125 mm sieve by weight.
- .4 Sulphur: Horticultural Grade

PARTIE 3 - EXECUTION

3.1 Preparation

- .1 Grade subgrade, eliminating uneven areas and low spots, ensuring positive drainage. Remove stones larger than 50 mm diameter and other deleterious materials. Remove subsoil that has been contaminated with oil, gasoline or calcium chloride. Dispose of removed materials as directed.
- .2 Cultivate entire area receiving topsoil to depth of 50 mm. Core aerate in those areas where equipment used for hauling and spreading has compacted subgrade. Do not cultivate soils around existing trees and shrubs.

TOPSOIL AND FINISH GRADING

3.2 Reuse of Existing Topsoil

- .1 Unless otherwise indicated existing stockpiled topsoil shall be used for all reinstatement. Imported sources of topsoil shall only be used when all approved sources of existing topsoil have been used.

3.3 Spreading of Topsoil

- .1 Do not spread topsoil until Contract Administrator has inspected and approved subgrade.
- .2 Spread topsoil with adequate moisture in uniform layers during dry weather over approved, dry, unfrozen subgrade, where seeding is indicated.
- .3 Bring topsoil up to finished grade.
- .4 Apply topsoil to the following minimum depths:
 - 1 100 mm for seeded and sodded areas.
 - 2 50 mm for forest litter only
- .5 Remove stones, roots, grass, weeds, construction materials, debris and foreign non-organic objects from topsoil.
- .6 Manually spread topsoil around trees, plants, surface utilities and other obstacles.

3.4 Soil Amendments

- .1 If required, apply lime, sulphur or other soil amendment at rate determined from soil sample test.
- .2 Mix soil amendment well into full depths of topsoil by cultivating.

3.5 Finish Grading

- .1 Fine grade entire topsoiled area to contours and elevations as indicated or as directed. Eliminate rough spots and low areas to ensure positive drainage.
- .2 Roll topsoil with 50 kg roller, minimum 900 mm wide, to compact and retain surface.
- .3 Leave surface smooth, uniform, firm against deep foot printing, with fine loose texture.

3.6 Surplus Material

- .1 Dispose of surplus topsoil not required for fine grading/landscaping off site.

END OF SECTION

1 General**1.1 RELATED SECTIONS**

- .1 Topsoil and Finish Grading Section 32 91 21

1.2 SCHEDULING

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

2 Products**2.1 MATERIALS**

- .1 Number One Turfgrass Nursery Sod: Sod that has been especially sown and cultivated in nursery fields as turfgrass crop.
.1 Turfgrass 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 cultivar(s).
.2 Turfgrass Nursery Sod quality:
.1 Not more than 2 broadleaf weeds or 10 other weeds per 40square metres.
.2 Density of sod sufficient so that no soil is visible from height of 1500mm when mown to height of 50mm.
.3 Mowing height limit: 35 to 65mm.
.4 Soil portion of sod: 6 to 15mm in thickness.
.2 Water :
.1 Potable.
.3 Pegs : 19 x 19 x 200 mm wooden pegs.

3 Execution**3.1 PREPARATION**

- .1 Verify that grades are correct and prepared in accordance with Section 32 91 21 - Topsoil and Finish Grading. If discrepancies occur, notify Contract Administrator and do not commence work until instructed by Contract Administrator.
.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 tolerance of plus or minus 8 mm, for Turfgrass Nursery Sod, surface to drain naturally.
.4 Remove and dispose of weeds; debris; stones 50 mm in diameter and larger; soil contaminated by oil, gasoline and other deleterious materials; off site.
.5 Cultivate fine grade approved by Contract Administrator to 25 mm depth immediately prior to sodding.

3.2 SOD PLACEMENT

- .1 Lay sod within 24 hours of being lifted.

- .2 Lay sod sections in rows, longitudinally, along contours of slopes, joints staggered. Butt sections closely without overlapping or leaving gaps between sections. Cut out irregular or thin sections with sharp implements.
- .3 Roll sod as directed by Contract Administrator. Provide close contact between sod and soil by light rolling. Use of heavy roller to correct irregularities in grade is not permitted.

3.3 SOD PLACEMENT ON SLOPES AND PEGGING

- .1 Start laying sod at bottom of slopes.
- .2 Lay sod sections longitudinally, along contours of slopes.
- .3 Peg sod on slopes steeper than 3 horizontal to 1 vertical, within 1 m of catch basins and within drainage channels. Place pegs as follows:
 - .1 100 mm below top edge at 200 mm on centre for first sod sections along contours of slopes.
 - .2 Not less than 9 pegs per square metre.
 - .3 Drive pegs to 20 mm above soil surface of sod sections.

3.4 MAINTENANCE DURING ESTABLISHMENT PERIOD

- .1 Perform following operations from time of installation until acceptance.
- .2 Water sodded areas in sufficient quantities and at frequency required to maintain optimum soil moisture condition to depth of 75 to 100 mm.
- .3 Cut grass to 50 mm when or prior to it reaching height of 75 mm. Remove clippings which will smother grassed areas as directed by Contract Administrator.
- .4 Maintain sodded areas weed free 95%.
- .5 Fertilize areas in accordance with fertilizing program. Spread half of required amount of fertilizer in one direction and remainder at right angles.

3.5 ACCEPTANCE

- .1 Turfgrass Nursery Sod areas will be accepted by Contract Administrator provided that:
 - .1 Sodded areas are properly established.
 - .2 Sod is free of bare and dead spots.
 - .3 No surface soil is visible from height of 1500mm when grass has been cut to height of 50 mm.
 - .4 Sodded areas have been cut minimum 2 times prior to acceptance.
- .2 Areas sodded in fall will be accepted in following spring one month after start of growing season provided acceptance conditions are fulfilled.

END OF SECTION

PART 1 – GENERAL

- 1.1 Related Work Specified Elsewhere
 - .1 Clearing and Grubbing Section 31 11 00
- 1.2 References
 - .1 Ontario Ministry of Agriculture and Food
 - .1 Pruning Ornamentals - 1992.
- 1.3 Qualifications
 - .1 Pruning shall be carried out by a certified arborist, as designated by the ISA.
- 1.4 Field Sample
 - .1 Do sample pruning acceptable to Contract Administrator to identify:
 - .1 Knowledge of target areas including branch bark ridge and branch collars.
 - .2 Technique for selection process and pruning used to establish desired form and shape for each species.
 - .2 Acceptance of work will be determined by Contract Administrator from field sample.

PART 2 - PRODUCTS

- 2.1 Pruning Equipment
 - .1 All pruning or cutting equipment shall be designed specifically for tree work and shall be clean, sharp, and in proper safe, working order. Pruning equipment shall be capable of producing clean, flush cuts without tearing or fraying the bark.
- 2.2 Disinfectant
 - .1 20% solution of sodium hypochlorite or 70% solution of ethyl alcohol.

PART 3 - EXECUTION

- 3.1 General
 - .1 Prune in accordance with Pruning Ornamentals, and as directed by Contract Administrator. Where discrepancies occur between standard and specifications, specifications govern.
 - .2 Tool maintenance:
 - .1 Ensure that tools are clean and sharp throughout pruning operation. Do not use tools which crush or tear bark.
 - .2 Disinfect tools before each tree is pruned.
 - .3 On diseased plant material disinfect tools before each cut.
 - .3 Notify immediately Contract Administrator of conditions detrimental to health of plant material or operations.
 - .4 Prune during plant dormant period or after leaves have matured. Avoid pruning during leaf formation, at time of leaf fall, or when seasonal temperature drops below minus 10°C.

TREE PRUNING

- .5 Retain natural form and shape of plant species.
- .6 Do not:
 - .1 Flush cut branches.
 - .2 Crush or tear bark.
 - .3 Cut behind branch bark ridge.
 - .4 Damage branch collars.
 - .5 Damage branches to remain.
- 3.2 Safety Pruning
 - .1 Remove dead, dying, diseased and weak growth from plant material designated by Contract Administrator in order to promote healthy growth and the safety of pathway users.
 - .2 Remove loose branches, twigs and other debris lodged in tree.
 - .3 For branches under 50 mm in diameter:
 - .1 Locate branch bark ridge and make cuts smooth and flush with outer edge of branch collar to ensure retention of branch collar. Cut target area to bottom of branch collar at an angle equal to that formed by line opposite to branch bark ridge.
 - .2 Make cuts on dead branches smooth and flush with swollen callus collar. Do not injure or remove callus collar.
 - .3 Do not cut lead branches unless directed by Contract Administrator.
 - .4 For branches greater than 50 mm in diameter:
 - .1 Make first cut on lower side of branch 300mm from trunk, one third diameter of branch.
 - .2 Make second cut on upper side of branch 500mm from trunk until branch falls off.
 - .3 Make final cut adjacent to and outside branch collar.
 - .5 Ensure that trunk bark and branch collar are not damaged or torn during limb removal. Repair areas which are damaged, or remove damaged area back to next branch collar.
- 3.3 Care of Wounds
 - .1 Shape bark around wound to an oblong configuration ensuring minimal increase in wound size. Retain peninsulas of existing live bark.
- 3.4 Clean-Up
 - .1 Collect and dispose of pruned material daily and remove from site.
 - .2 Dispose of woody material in accordance with Section 31 11 00, Clearing and Grubbing.

END OF SECTION