

SPECIAL PROVISIONS – CONTRACT ITEMS SUPPLEMENTARY

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A4. CONSTRUCTION LAYOUT

This line item shall include construction layout, photo as described herein.

a) Construction Layout

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document and OPSS.MUNI 100 GC 7.02, the following shall also apply:

The Contractor shall include in the lump sum cost for this item; the checking of all grades and alignment with the use of batter boards and boning rods or digital survey equipment to ensure proper adherence to design; re-staking of layout lost due to destruction or removals; any additional layout within the intent of the contract for minor revisions to the road, sidewalk, sewer design, etc.

An absolute minimum of 3 layout stakes shall be provided for any single line of layout. Maximum spacing of grade stakes shall be 15 metres for all layout and at all changes of grade and/or direction.

Layout for curb and gutter shall include offset stakes placed a maximum of 2 metres behind the proposed lip of gutter. Layout for curb shall also include the drop locations for all curb depressions, the bottom of slope shall be marked out, on site, prior to curb pour.

Catchbasin layout shall consist of 3 grade stakes installed in line with the inside back wall of the catchbasin (front face of curb) a center stake representing center of catchbasin and a 3 metre offset stake to the left and right of the center line stake.

Failure to comply with the above conditions will result in a reduction in payment to this item at the Contract administrator's sole discretion

Basis for Payment

As stipulated in the Niagara Peninsula Standard Contract Document.

b) Progress and Final Record Photography

The lump sum price bid shall include all labour, material and equipment required to complete the following:

On commencement of work and at monthly intervals thereafter, supply the Contract Administrator with clearly labeled and dated digital progress photographs on CD or memory stick.

Progress photographs are to be taken **daily** to detail construction progress and must be submitted with the Contractor's monthly payment draw request. The digital photographs must have been taken with at least eight (8) megapixels of resolution. Processing of progress payments will be contingent on satisfactory receipt of the required Progress Photographs.

On completion of the works, or at a time designated by the Contract Administrator, the Contractor is to undertake a “post-construction” photographic survey of the project site and submit a digital and printed copy of same to the Contract Administrator for review and acceptance. This photographic survey will form part of the Construction Record submission, as detailed below, and subject to the same provisions regarding acceptance.

Basis for Payment

The lump sum price bid will be deemed to include any allowance to satisfy these provisions, including any revisions and resubmission of information in order to satisfy the City’s requirements. For progress payment, ten percent (10%) of the lump sum bid price will be paid upon satisfactory receipt of the daily photos from the payment period. The balance will be paid upon receipt and approval of the final “post-construction” photographic survey of the project site in both digital and hard copy format.

A5. CLEARING AND GRUBBING

This line item shall include removal of existing trees, stumps, brush, shrubs & vegetation, as described herein.

a) Remove Existing Trees

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document and OPSS 201, the following shall also apply:

This item shall include the complete removal and disposal of all existing trees, as specified on the contract drawings, or as directed by the Contract Administrator. All trunks shall be removed to 300 mm below the finished boulevard grade or, in the case where existing tree roots may interfere with the installation of works in the contract, remove the entire root system and dispose offsite. The Contractor shall restore all disturbed areas at no additional cost to the contract.

Basis for Payment

Payment shall be as per the units indicated in the Schedule of Quantities and Unit Prices for each item noted.

b) Remove Existing Stumps

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document and OPSS 201, the following shall also apply:

This item shall include the complete removal and disposal of all existing tree stumps, as specified on the contract drawings, or as directed by the Contract Administrator. All stumps shall be removed to 300 mm below the finished boulevard grade or, in the case where existing tree roots may interfere with the installation of works in the contract, remove the entire root system and dispose offsite. The Contractor shall restore all disturbed areas at no additional cost to the contract.

Basis for Payment

Payment shall be as per the units indicated in the Schedule of Quantities and Unit Prices for each item noted.

A7. INSTALL, MAINTAIN AND REMOVE SILT CONTROL DEVICES (PROVISIONAL ITEMS)

This line item shall include catchbasin silt bags, light duty silt fence barriers, straw bale check dams and rock check dams, as described herein.

The Contractor shall place additional erosion protection as directed by the Contract Administrator or the Niagara Peninsula Conservation Authority.

a) Light Duty Silt Fence Barrier

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document and OPSS 805, the following shall also apply:

Prior to the start of construction, the Contractor shall place Temporary Silt Fence so as to prevent sediment carried by sheet flow from leaving the site and entering natural drainage ways and/or the storm sewer system. The Contractor shall install silt fences as indicated on the contract drawings, deemed appropriate in the field and as directed by the Contract Administrator.

During construction, the Contractor shall place Temporary Silt Fence at the base of stockpiled native and imported materials.

Basis for Payment

As stipulated in the Niagara Peninsula Standard Contract Document.

A8. CONSTRUCTION SIGNS, TRAFFIC CONTROL & TRAFFIC MANAGEMENT PLAN

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document, GC7.06 and OPSS 706, the following shall also apply:

Interference with normal flow of traffic shall be kept to a minimum. The Contractor shall be prepared to supply and erect any barricades and signs which may be required for complete control of both pedestrians and vehicular traffic including competent flag persons in accordance with Ontario Manual of Uniform Traffic Control Devices. The Contractor shall further provide a Traffic Control and Management Plan in accordance with the most recent amendments to the Occupational Health and Safety Act. The Traffic Control and Management Plan shall include drawings, plans, sketches, etc., illustrating the layout of typical signage. The lump sum price shall be deemed to have included this provision.

The Contractor shall also be responsible for supplying their hired help with any necessary safety and/or protective equipment required to perform the work safely.

A minimum of one lane of traffic shall be maintained at all times during construction. Two lanes of traffic shall be maintained at all other times. The Contractor's proposed sequencing and staging of works and operations is to make due allowance for this requirement. Work within intersections shall also be staged such that a minimum of one lane of traffic is maintained on the cross streets.

On **all streets**, one lane of traffic may be closed to traffic during construction, in accordance with the "Traffic Control Manual for Roadway Work Operations". At all other times, all lanes of traffic shall be maintained. Road closures of any kind will only be allowed on an exception basis, and only upon approval of the Project Manager. The Contractor must submit potential road closure requests to the City, in writing, at least one (1) week prior to implementation, for review and approval. Allowances for such operations must be made in the Contractor's Traffic Control and Management Plan; all associated costs will be the Contractor's responsibility.

It is of critical importance that all planned construction activities be coordinated with the City's Operational, Traffic, Parking and Transit Departments. Notification on at least a weekly basis of planned works (schedule) will be required to ensure that the necessary detour signage, parking accommodations, bus routing and maintenance activities account for the active work zones within the project area. The Contractor must also work closely with the City's Construction Inspector and Contract Administrator to keep affected property owners informed of potential impacts to their businesses and residences and to minimize disruption to access and servicing of properties by planned construction activities.

Winter Maintenance

The successful Contractor will be responsible for winter control maintenance in compliance with Provincial minimum maintenance standards for snow clearing, storage and removal, salting and sanding activities within the construction work zones during the course of the contract, including maintaining the sidewalks within the project area. All unit prices bid will be deemed to have included allowance for these provisions.

Property Access

Pedestrian access to all businesses and residences is to be maintained at all times whenever possible. Access closures are to be scheduled at least two (2) business days in advance between the City, the Contractor and the Business owner and/or Residents, including the type and form of any temporary access provisions. Any disruption to pedestrian access is to be kept to a minimum duration.

On **all Regional Roads** the Contractor will be required to backfill all their trench cut and install temporary restoration in accordance with the Regional Municipality of Niagara specifications at the end of the day's operations so that all lanes of two-way traffic can be maintained at night. All hazards and obstructions shall be properly barricaded and delineated with flashers in accordance with the Ontario Manual of Uniform Traffic Control Devices.

Communications

It will be the Contractor's responsibility to inform the various businesses and residences of, and/or the placement of no parking signs the day before, in order to reduce/eliminate any problems with parked vehicles that may interfere with their operations. Access to the abutting businesses and residences must be maintained at all times.

The Contractor shall advise the Police Department, Fire Department and Niagara Emergency Medical Service on a daily basis, with current status of the construction as it pertains to the passage of traffic within the contract limits.

The Contractor shall co-ordinate with Niagara Falls Transit to ensure minimum interruption to their bus schedules on **all streets**. Niagara Transit, school buses and garbage service vehicles will be given priority to maintain their schedule.

The Contractor shall also maintain/provide existing pedestrian access at all times to the businesses and residents during all phases of construction in an acceptable manner.

The traffic control signage requirements shall include the following:

Supply, locate, erect, operate, maintain, relocate as necessary and remove all necessary traffic signs, construction signs, including delineators, barricades and flashing lights, in accordance with the Ontario Traffic Manual (OTM) Book 7 and the latest edition of the "Traffic Control Manual for Roadway Work Operations - Field Edition".

The Contractor is responsible for the installation, daily maintenance and removal of all construction signage throughout the contract.

Regulatory signs and street name signs cannot be removed without approval from the City.

Any existing signs removed by the Contractor to accommodate construction shall be kept operational by placement on a temporary support.

All regulatory signs and street name signs will be replaced permanently by City forces.

Basis for Payment

In addition to the payment provisions noted in the Niagara Peninsula Standard Contract Document, the final ten percent (10%) of the lump sum price bid for this item will be held until project completion, contingent on the return of the Contract Signs in a condition satisfactory to the Contract Administrator. The lump sum price bid shall be deemed to include full compensation for all the provisions noted herein.

A9. CONTINGENCY ALLOWANCE

The Contractor shall include in their tender the indicated contingency allowance in the Form of Tender.

Basis for Payment

Payment from this item will only be made for additional work approved in writing by the Contract Administrator. Work completed before receipt of written approval will not be compensated.

A10. TREE PROTECTION FENCING

The provisions of OPSS.MUNI 801 shall apply except as amended or extended herein.

Protective barrier fencing shall be 1.2 m high wire or plastic mesh fencing outside of dripline of trees or groups of trees and other plants and shall be placed as indicated on the Contract Drawings or as directed by the Contract Administrator.

Tree protection barriers must be erected prior to the commencement of any construction activity that may injure a tree on the site and are to remain in place throughout the entire duration of the project. The contractor shall notify the contract administrator in writing prior to commencing any such activities to confirm that the tree protection barriers are in place.

If some fill or excavated material must be temporarily located near the tree protection barrier, a wooden barrier must be used to ensure no material enters the tree protection zone.

The tree protection barriers specified herein must remain in a condition satisfactory to the contract administrator until all site activities including landscaping are complete.

Do not attach rigging cables to trees.

Except at locations where specific procedures are included in Contract Documents do not alter grades around existing trees/plants without first obtaining approval from the Contract Administrator.

Measurement for Payment shall be as per OPSS.MUNI 801.

Basis for Payment shall be fifty (50) percent of the unit price will be paid upon installation. The balance will be paid upon removal.

B1. TEST PITS (PROVISIONAL ITEM)

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document, the following shall also apply:

Exploratory test holes shall be at locations and depths as directed by the Contract Administrator and must be witnessed by the Contract Administrator or assigned delegate.

Backfill shall be Granular 'A', compacted to 100% Standard Proctor Maximum Dry Density. Alternatively, clear stone may be used as backfill material where hydrovac

excavation equipment is used. Disposal of the excavated material shall be in accordance with Special Provisions – Contract Items Supplementary, Item B2.

The purpose of these test holes shall be to verify existing underground infrastructure where a design change is required or as determined by the Contract Administrator.

Basis for Payment

Payment at the unit price bid for this item shall include all labour, materials, equipment and Granular 'A' backfill, necessary to complete the work.

This item is provisional. Prior written approval must be provided by the Contract Administrator. Compensation will not be considered if written approval is not sought in advance.

B2. EARTH EXCAVATION

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document, OPSS.MUNI 206 and OPSS.MUNI 510, the following shall also apply:

Work under this item will also include the removal of asphalt, concrete, brick pavers and excavations of full road allowance widths as described herein.

- **Stripping of existing topsoil for trail construction is included in the Earth Excavation quantity.**
- **Placement and grading of stripped topsoil into shallow berms on site in the areas shown and as directed by the Contract Administrator. Topsoil shall not be placed within 3m of the dripline of trees to be preserved. Berm height shall not exceed 1m. Excess topsoil shall be disposed off-site as directed by the Contract Administrator and included in the unit price bid.**
- **Earth excavation for park features and site grading and development.**
- **Removal and disposal of unsuitable and excess material off site as directed by the Contract Administrator.**

The Contractor is responsible for sawcutting, excavating, separating and delivering any concrete or asphalt material to an approved recycling facility. Thickness of the concrete and asphalt will vary; however, no additional compensation will be made for the various depths. The removal of interlocking brick pavers shall also include removal of any concrete and/or granular base.

All asphalt and concrete must be sawcut. Sawcutting shall be to the limits shown on the construction drawings or as directed by the Contract Administrator.

Roadway/Pathway excavation shall be inclusive of all required excavation from property line to property line on all roadways and include any additional quantities, as shown on the contract drawings.

Basis for Payment

Payment at the unit price bid for this item shall include all labour, materials and equipment including sawcutting, and disposal of surplus or unsuitable excavated materials **including on-site grading of stripped/excavated material**, necessary to complete the work as noted on the contract drawings or as directed by the Contract Administrator.

B3. GRANULAR MATERIAL

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document, OPSS 314, 401 and 402, the following shall also apply:

All granular materials shall conform to the requirements of OPSS.MUNI 1010.

The unit price bid shall be complete compensation for the supply, hauling, placement, grading and compaction to the specified Standard Proctor Maximum Dry Density of Granular 'A', 'B' or 'M'.

This item will be utilized for the Granular 'A' material for bedding, cover and backfill of all items for the water distribution system, sanitary sewer and storm sewer system when specified in the contract or indicated on the contract drawings. Only virgin Granular 'A' will be accepted for pipe bedding and cover.

This item will be utilized for the Granular 'A' or Granular 'B' under roads, driveways, trails, concrete pads and sidewalks and shall be placed at a depth specified in the contract or as indicated on the contract drawings. Only virgin Granular 'A' will be accepted for road base.

This item will be utilized for the Granular 'M' for shoulder restoration and shall be placed at a depth as specified in the contract or as indicated on the contract drawings.

Granular 'A' or Granular 'B' must be installed on all road and sidewalk trenches to the existing grade to provide safe access. Granular 'M' must be installed on shoulders to the existing grade to provide safe access.

The Contractor will be responsible for maintaining granular surfaces until the restoration work is carried out. The Contractor must include in this unit price bid all labour and equipment to remove the excess granular from the trenches prior to final restoration, and delivery of the granular to a location specified by the Contract Administrator. The Contractor is responsible to remove the granular in a manner that avoids contamination of the granular with asphalt, concrete or native material. Any contaminated material shall be removed at the Contractor's expense. Any cost for these requirements must be included in the unit price bid for the granular.

The unit price bid for this item shall include the fine grading and compaction of the sub-base immediately preceding the placement of granular road/**Pathway** base material. No roadway/**Pathway** granular is to be placed until the subgrade elevation has been checked by the City's Inspector.

Payment for all material quantities shall be determined by net weight as recorded by a Government certified weigh scale. The supplier will be responsible for providing suitable scales for all materials to be weighed. Weigh bills (tickets), shall be provided for each load of granular in accordance with SPGS G32.

Weigh tickets received after the monthly Progress Payment has been finalized, for deliveries made within that month's Progress Payment period **will NOT be accepted.**

The onus shall be on the Contractor to ensure that the City's Inspector is furnished with all weigh tickets on a daily basis, since these will form the method of measurement.

Basis for Payment

As stipulated in the Niagara Peninsula Standard Contract Document and priced as per the breakdown of items as indicated in the Schedule of Quantities and Unit Prices.

Recycled Material

Recycled concrete (RCM) and asphalt (RAP) will not be permitted on this project.

Under no circumstances will recycled material of any kind be permitted for use as pipe bedding, pipe cover or road base material.

Recycled Granular

Consideration may be given for the use of recycled granular for deep trench backfill.

Where recycled material is imported as a substitution for virgin granular material, the cost savings will be shared between the Contractor and the Owner.

The successful Contractor shall submit a written proposal to utilize recycled granular to the Contract Administrator at the pre-construction review meeting. The Contractor must include with the written proposal certified copies of laboratory testing results confirming that the proposed recycled granular material conforms to the provisions of OPSS.MUNI 1010 for both composition (physical properties) and gradation as specified for Granular 'A'.

The City reserves the right to undertake any additional confirmatory testing it deems necessary, prior to approving the use of recycled material on this project. Therefore, access to the Contractor's recycled material stockpile(s) is to be made available for sampling and testing by a QA/QC testing company retained by the City to verify compliance with the above noted provision. The provisions of NPSCD General - Item G8 will apply to payment for testing in this regard.

Basis for Payment

Measurement for payment for recycled granular will be by the tonne (t).

Payment for all recycled granular quantities shall be determined by net weight as recorded by a Government certified weigh scale. The supplier will be responsible for supplying suitable scales for all recycled granular to be weighed. Triplicate numbered weigh bills shall be provided by the representative for each load of material as soon as delivery has been accepted.

Tenderers shall note that weigh bills for recycled granular materials will only be accepted for payment when delivery is made in the presence of the City's Inspector. Tenderers are advised to familiarize themselves with the Inspector's normal work hours.

All weigh tickets pertaining to all materials paid for by weight must show either "Tare and Net" or "Gross and Net" weights, if printimatic tickets are used. If printimatic tickets are not used, then the "Gross", "Net" and "Tare" must be given, otherwise the tickets will not be considered for payment.

No deliveries of recycled material to the site are to be made until written approval is received from the Contract Administrator. Approval will be subject to confirmation that the material complies with quality criteria and that cost savings will be shared between the Contractor and the Owner.

B6. SUBDRAIN (PROVISIONAL ITEM)

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Documents and OPSS 405, the following shall also apply:

The unit price bid shall include coring into all structures as required for the connection of the subdrains, regardless of the concrete thickness. The unit price bid shall also include all labour, materials and/or equipment necessary to make the subdrain connection to the outlet structure.

It is the Contractor's responsibility to satisfy themselves as to the existing conditions and make allowance in their unit price bid, accordingly.

Basis for Payment

As stipulated in the Niagara Peninsula Standard Contract Document and priced as per the breakdown of items as indicated in the Schedule of Quantities and Unit Prices.

B9. CONCRETE SIDEWALKS

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document and OPSS 351, the following shall also apply:

The unit price bid shall include all necessary equipment, materials and labour to excavate to subgrade, form, finish and cure 32 MPa concrete sidewalks to the specified thickness, on a 125mm granular base.

Commercial and industrial driveways shall also include wire mesh and an allowance to pour the drives in two (2) sections to allow access at all-time. As an alternative to two (2)

separate concrete pours, the Contractor may elect to use 'High Early Strength Concrete' at no additional cost to the contract provided approval from the businesses is provided.

The unit price bid shall also include provisions for cold weather work as noted in OPSS 351.

A flat obstacle free surface is desired, therefore, do not apply a trowel finish at the joints or provide 'Dummy' joints.

Expansion joints shall be set in place prior to pouring and shall be full depth, spaced 30.0m c/c maximum. Contraction joints shall be spaced 2.5m c/c maximum and are to be saw cut to 1/4 thickness of the slab. The City will not accept any variance in the joint spacing beyond a 50mm tolerance from that specified. Panels with a greater variance will be removed and replaced at the Contractor's expense.

Private concrete sidewalks will be constructed to match the existing or minimum 125mm depth, whichever is greater, and paid for under this item.

The Contractor is to adjust the sidewalk crossfall where required to allow for positive drainage from the driveway and housewalks. Where the new sidewalk has caused ponding, the Contractor shall remove and replace the sidewalk at no additional cost to the contract. The Contractor shall include the supply and installation of a bond breaker (either plastic or tar paper) when a new sidewalk is installed adjacent to the concrete curb. An expansion joint at this location is not required.

The Contractor shall take due precaution to protect the finished surface of freshly laid concrete sidewalk from being damaged, marred or defaced. In the event that the freshly placed concrete is marred or damaged in any way, the Contractor shall break out and replace the damaged sections. Patching or grinding of damaged, marred or defaced concrete will not be accepted. The unit price bid shall be deemed to have allowed for this contingency.

The unit price bid shall include drop sidewalk ramps at driveways as per OPSD 310.050 and at crossings.

Tactile warning plates shall be supplied and installed within concrete sidewalks at all road crossings in accordance with SPCS Item B34 and NPSCD Section 7 Standard Drawings.

Basis for Payment

Excavation to accommodate a grade difference greater than 75mm between an existing sidewalk elevation and the replacement sidewalk shall be paid for separately under the appropriate item in the Schedule of Quantities and Unit Prices, specifically Item B2 Earth Excavation.

Granular 'A' for sidewalk base shall be paid for under the appropriate B3 item in the Schedule of Quantities and Unit Prices.

Tactile Warning Surfaces shall be paid for under the appropriate item in the Schedule of Quantities and Unit Prices, specifically Item B34.

B10. SAWCUTTING PAVEMENT (PROVISIONAL ITEM)

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Documents, the following shall also apply:

This item shall also apply to additional sawcutting of asphalt and/or concrete where approved by the Contract Administrator and not otherwise referenced within the contract, the Special Provisions – Contract Items Supplementary specifications or noted on the contract drawings.

Basis for Payment

Measurement for payment will be made per linear metre as measured in the field. Payment will be made at the unit price bid in the Schedule of Quantities and Unit Prices.

All other sawcutting costs shall be included in the appropriate item as specified in NPSCD General - Item G13.

This item is provisional and requires prior written approval by the Contract Administrator. Compensation will not be provided if written approval is not sought in advance.

B13. ADJUSTMENT OF APPURTENANCES (PROVISIONAL ITEM)

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Documents and OPSS 408, the following shall also apply:

Payment for these works shall include the adjustment of existing (and remaining) maintenance holes, catchbasins, ditch inlets, valve chambers and/or valve boxes located within the road allowance. No payment will be made under this item for newly constructed appurtenances.

Under no circumstances shall HDPE adjustment units be used on this contract.

The unit price bid shall include all materials, equipment and labour necessary to ensure that the final elevation of each appurtenance matches the final elevation of the proposed asphalt works.

All structures are to be set to base asphalt elevation where the top lift of asphalt is to be completed under separate contract.

All costs associated, including the supply and installation of new frames, covers and grates, new valve/curb boxes, precast adjustment units, mortar or concrete, placement and compaction of Granular 'A' (as required) and Hot Mix Asphalt (as required), as well as any excavation and/or the breaking out of concrete within the road base, shall be deemed to have been included in the unit price bids under this item.

Replace Existing Valve/Curb Boxes

This item may be used where an existing valve and/or curb box cannot be successfully adjusted in the field and only upon written prior approval from the Contract Administrator.

No separate or additional payment will be made for the supply of materials and/or labour required to adjust new valve or curb boxes. Any and all costs associated with the adjustment of these valve and curb boxes shall be deemed to be included in the appropriate unit prices.

Replace Existing Maintenance Hole/Valve Chamber Frame & Cover, Catchbasin/Ditch Inlet Frame & Grate

Unless specifically identified on the contract drawings and in the Schedule of Quantities and Unit Prices any replacement of existing 'frame and covers' or 'frame and grates' must receive written prior approval from the Contract Administrator. Payment will not be entertained where the Contractor has failed to secure this approval.

Hinged catchbasin covers shall open away from the roadway.

Maintenance Hole/Valve Chamber frames and covers within the roadway shall be replaced with a **self-adjusting frame and cover** from either East Jordan Iron Works (Product No. 00302201) or Bibby-Ste-Croix (Auto Stable C-50MONT.) Follow manufacturer's installation recommendations. MH top elevation shall be set to blend with the surrounding grades.

Replacing the 'frame and cover' or 'frame and grate' of an existing (and remaining) maintenance hole/valve chamber or catchbasin/ditch inlet shall include the salvage and delivery of the existing frame and cover/grate to the City's Service Centre at no additional cost to the contract.

No separate or additional payment will be made for the supply of materials and/or labour required to adjust new frames and covers/grates on existing (and remaining) maintenance holes/valve chambers or catchbasins/ditch inlets. Any and all costs associated with the adjustment of these frames, covers and grates shall be deemed to be included in the appropriate unit prices.

Salvaged Materials

Salvaged frames, covers and grates and valve/curb boxes shall be delivered to the City's Service Centre at 3200 Stanley Ave, as directed by the Contract Administrator at no additional cost to the contract. Deliveries to the Service Centre must be made between 8:00 am - 4:00 pm, Monday to Friday.

Basis for Payment

The unit price bid shall include all materials, equipment and labour necessary to ensure that the final elevation of each appurtenance matches the final elevation of the proposed asphalt works.

B14. SUPPLY AND PLACE HOT MIX ASPHALT

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Documents and OPSS 310, the following shall also apply:

Clause 14.09 of the NPSCD for price adjustment provisions is not applicable under this contract.

All materials shall conform to the requirements of OPSS.MUNI 1003 and OPSS 1150.

At the limits of the proposed road works, the base asphalt thickness shall be increased to match the existing top course asphalt over distance of 2 metres. This provision shall be included in the unit price bid.

No extra payments will be made for any hand work involved in spreading or compacting the hot mix asphalt around radius, intersections, trench areas, areas between the existing asphalt and new gutters, curbs.

Basis for Payment

As stipulated in the Niagara Peninsula Standard Contract Document and priced as per the breakdown of items as indicated in the Schedule of Quantities and Unit Prices.

B15. ASPHALT WALKWAYS & DRIVEWAYS

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document, OPSS 311, OPSS 314, and Special Provisions – Contract Items Supplementary, Item B14, the following shall also apply:

Existing asphalt driveway depths are to be matched if thickness is greater than that specified in the Niagara Peninsula Standard Contract Document, which are deemed to be the minimum requirement.

The unit price bid for this item shall be complete compensation for the preparation and additional handwork that may be required **at Storybook nodes, to tamp/compact trail edges**, and to restore driveway aprons and driveways, as necessary, and as directed by the Contract Administrator.

The Contractor is to adjust the driveway gradient where required to allow for positive drainage from the driveway and housewalks. Where the restored driveway has created or caused ponding, the Contractor shall adjust and restore the driveway and gradient at no additional cost to the contract. Driveway gradient adjustments must not negatively impact vehicle access.

The Contractor must take all due precaution not to disturb any areas outside the limits required to complete the proposed works safely. Areas disturbed outside these limits will be repaired in accordance with the specifications outlined in this contract at the Contractor's own expense and solely at the discretion of the Contract Administrator.

Winter Work

The Contractor shall make due allowance in the unit price bid for the additional effort required to maintain asphalt driveways during winter construction.

The extent of the driveway restoration will be in accordance with the initial sawcut limit as approved by the Contract Administrator, prior to the asphalt driveway removal. Any subsequent asphalt damage, maintenance and/or repair will be the Contractor's responsibility at no additional cost to the contract. Once any part of the asphalt is removed to facilitate construction, the Contractor must inspect the driveway on a daily basis to remove any broken asphalt pieces and maintain an even granular surface so as to minimize the risk of damage to pedestrians, vehicles, snowploughs and/or snow blowers.

Services

Where the installation of sanitary services, cleanouts or water services requires the excavation of existing asphalt driveway, the entire driveway bay shall be removed from edge to edge and from the back of curb or sidewalk to a neat straight sawcut line behind the new installation. The sawcut line shall be made prior to all excavation or removals and shall be perpendicular to both edges of the driveway. The sawcut shall be made sufficiently behind the cleanout or curb stop to allow for the safe installation of the new service so as to provide a neat finished match line. Should this matchline become damaged, a new sawcut limit will be required and shall be completed at no additional cost to the contract (or Property Owner).

Curb boxes are to be set flush with the new driveway surface.

Trenches in the driveways shall be completely backfilled with Granular 'A' with all granular material compacted to 100% SPMDD.

Cleanouts in asphalt shall be installed to the finished asphalt grade complete with a flat cleanout cap flush with the finished surface.

Basis for Payment

The unit price bid shall include all necessary labour, materials and equipment to complete the work in accordance with the specifications of this contract including, but not limited to, sawcutting, removals, disposals, surface preparation, backfilling, grading, compaction, bond breaker and tack coat.

In addition to the above, the unit price bid will cover any required restoration work between the contract limits (property line) and building face, where directed by the Contract Administrator.

Payment for the supply and installation of cleanout caps, supply and placement of Granular 'A' and supply and placement of Hot Mix Asphalt shall be paid for separately under the appropriate item in the Schedule of Quantities and Unit Prices.

B16. CONCRETE PAVEMENT & DRIVEWAYS

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document and OPSS 350, the following shall also apply:

Existing concrete driveway depths are to be matched if thickness is greater than that specified in the Niagara Peninsula Standard Contract Document, which are deemed to be the minimum requirement.

The unit price bid for this item shall be complete compensation **for installation concrete pads for furniture and Storybook nodes and** to restore private driveways and driveways adjacent to sidewalk removals or as otherwise noted on the contract drawings or directed by the Contract Administrator.

The Contractor is to adjust the driveway gradient where required to allow for positive drainage from the driveway and housewalks. Where the restored driveway has created or caused ponding, the Contractor shall adjust and restore the driveway and gradient at no additional cost to the contract. Driveway gradient adjustments must not negatively impact vehicle access.

The Contractor must take all due precaution not to disturb any areas outside the limits required to complete the proposed works safely. Areas disturbed outside these limits will be repaired in accordance with the specifications outlined in this contract at the Contractor's own expense and solely at the discretion of the Contract Administrator.

Services

Where the installation of sanitary services, cleanouts or water services requires the excavation of existing concrete driveways, the entire driveway bay shall be removed from edge to edge and from the back of curb or sidewalk to a neat straight sawcut line behind the new installation. The sawcut line shall be made prior to all excavation or removals and shall be perpendicular to both edges of the driveway. The sawcut shall be made sufficiently behind the cleanout or curb stop to allow for the safe installation of the new service so as to provide a neat finished match line. Should this matchline become damaged, a new sawcut limit will be required and shall be completed at no additional cost to the contract (or Property Owner).

Curb boxes are to be set flush with the new driveway surface.

Trenches in the driveways shall be completely backfilled with Granular 'A' with all granular material compacted to 100% SPMDD.

Cleanouts in asphalt shall be installed to the finished asphalt grade complete with a flat cleanout cap flush with the finished surface.

Basis for Payment

The unit price bid shall include all necessary labour, materials and equipment to complete the work in accordance with the specifications of this contract including, but not limited to,

sawcutting, removals, disposals, surface preparation, backfilling, grading, compaction, and bond breaker.

In addition to the above, the unit price bid will cover any required restoration work between the contract limits (property line) and building face, where directed by the Contract Administrator.

Payment for the supply and installation of cleanout caps shall be paid for separately under the appropriate item in the Schedule of Quantities and Unit Prices.

Payment for the supply and placement of Granular 'A' shall be paid for separately under the appropriate items in the Schedule of Quantities and Unit Prices.

B18. GRANULAR DRIVEWAYS

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document and OPSS 314, the following shall also apply:

The Contractor is to note that the granular driveway thicknesses specified in the NPSCD are minimum requirements. Existing driveway depths are to be matched if greater.

All granular driveways are to be compacted to 100% Standard Proctor Maximum Dry Density.

The Contractor is to adjust the driveway gradient where required to allow for positive drainage from the driveway and housewalks. Where the restored driveway has caused ponding, the Contractor shall adjust and restore the driveway and gradient at no additional cost to the contract. Driveway gradient adjustments must not negatively impact vehicle access.

Basis for Payment

The unit price bid for this item shall be complete compensation to restore driveway aprons and driveways, as necessary, and as directed by the Contract Administrator.

Payment shall be as stipulated in the Niagara Peninsula Standard Contract Document and priced as per the breakdown of items as indicated in the Schedule of Quantities and Unit Prices.

B19. REGRADING OF DITCHES AND SWALES (PROVISIONAL ITEM)

In addition to the conditions stipulated in the Niagara Peninsula Contract Document and OPSS.MUNI 206, the following shall also apply:

This item shall be used for:

a. Existing Ditches and Swales

Cut and/or fill of existing ditches/swales in accordance with the contract drawings, regardless of cut/fill depths; and

b. New Ditches and Swales

Cut of new ditches/swales in accordance with the contract drawings, regardless of cut depths.

The work shall include excavating, hauling, handling and placing in embankments, shaping, compacting, trimming of earth material and the management of excavated material.

Excess and/or unsuitable excavated material related to cut/fill of existing and new ditches/swales shall be removed from site at no additional cost to the contract.

Basis for Payment

Measurement for payment will be per linear meter, measured along the centreline of the ditch or swale.

The unit price bid for this item shall be complete compensation to complete the work and includes removal and disposal of excess or unsuitable excavated material.

B21. TOPSOIL AND SOD

In addition to the conditions stipulated in the Niagara Peninsula Contract Document, OPSS 802 and OPSS 803, the following shall also apply:

All areas to be sodded shall be graded to provide proper drainage. Any areas on private property shall also be included.

All unnecessary damage to front lawns, boulevards or grass areas caused by the Contractor's carelessness shall be reinstated at his/her own expense.

Topsoil

Topsoil shall be a PREMIUM BLEND, weed free, and naturally sterilized through composting.

The blend shall consist of:

- 50% Triple Mix (30% mixture of topsoil, sands, and shredded wood mulch/30% mixture of black organic compost and manure/30% mixture of peat loam); and
- 50% Premium Topsoil (50% mixture of topsoil, sands, and shredded wood mulch/ 25% mixture of black organic compost/ 25% mixture of composted cow manure).

In general, the resulting topsoil mix should meet the following parameters:

pH:	6.5 – 7.5
Potassium:	100 – 120 ppm
Phosphorous:	15 – 30 ppm
Magnesium:	100 – 120 ppm
Organic Matter:	≥ 3%

Unless otherwise specified, the minimum depth of applied Premium Blend Topsoil shall be 100 mm.

Subsection 802.05.01 of OPSS 802, November 2010 is amended by the addition of the following:

The topsoil mix shall be tested to ensure there are no deficiencies with respect to fertility levels. A copy of the topsoil analysis report prepared by a certified agronomist shall be provided to the Contract Administrator. The report shall document soil fertility levels and identify any deficiencies and how they are to be rectified. Payment for this testing shall be included in payment under the respective topsoil Items.

If the topsoil does not meet fertility requirements the soils shall be treated with the required amendments as recommended by the topsoil analysis report at no additional cost.

Sod shall be a certified No. 1 cultivated turf grass sod, grown by a member in good standing with the Nursery Sod Growers Association of Ontario. Composition of sod shall be of improved proprietary Kentucky Bluegrass varieties.

Lay sod as soon as possible upon arrival on the site but within 48 hours of harvesting.

Handle sod in such a manner to prevent breaking or tearing. Do not lay damaged and broken pieces, but remove from site. Do not stretch during handling.

Place sod closely knit together in such a manner that no open joints are visible, or pieces overlapping. End joints of adjacent sod pieces shall be staggered.

Blend sod smoothly and uniformly with paved areas as detailed on drawings. No voids shall be left between the soil portion of the sod and the underlying ground surface.

When sodding adjacent to existing established grass areas, cut in as required to ensure a clean flush edge between new and existing sod.

Maintain sodded areas from time of installation until acceptance of work, but not less than thirty (30) days after installation and after at least one (1) mowing.

Maintenance shall include measures necessary to establish and maintain sodded areas in a healthy, vigorous growing condition, free of thin, poor or burned-out patches. Roll sodded areas, where necessary, to remove depressions and irregularities.

Mow grass regularly to maintain a maximum height of 60mm. Water, when necessary, with sufficient amounts to saturate the upper 100mm of topsoil and apply fertilizers when necessary.

Check sodded areas for diseases and weeds and take immediate measures to eliminate diseases and control weed growth.

Use chemicals for disease and weed control in strict accordance with the Pesticides Act & manufacturer's recommendations. Assume full responsibility for the use of such chemicals and repair, replace or remedy otherwise damage resulting from the use of such chemicals. Get necessary permits.

Re-sod areas which show deterioration or which are thin, bare or burned-out and repair damages resulting from erosion and washouts or any other causes.

At time of final review, all placed sod shall be healthy, actively growing and green in leaf colour. All placed sod shall be in the same location as originally placed and shall not have moved, eroded, slipped or sloughed. Sod shall show evidence of rooting into the underlying soil. The sod shall be of sufficient density that no surface soil is visible. There shall be no competitive growth beyond that detailed under 2.1, emerging from under the sod, at edges or between joints.

Basis for Payment

Measurement for payment shall be square metre of area topsoiled and sodded.

The unit price bid shall include all materials, equipment and labour necessary to complete the work and shall include grading and the supply and application of fertilizer and water necessary to ensure growth within the one year maintenance period.

B22. TOPSOIL, SEED AND MULCH

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document, Special Provisions – Contract Items Supplementary, Item B21, OPSS 802 and OPSS.MUNI 804, the following shall also apply:

All areas to be seeded shall be graded to provide proper drainage. Any areas on private property shall also be included.

All unnecessary damage to front lawns, boulevards or grass areas caused by the Contractor's carelessness shall be reinstated at his/her own expense.

Topsoil

Topsoil shall be a PREMIUM BLEND, weed free, and naturally sterilized through composting.

The blend shall consist of:

- 50% Triple Mix (30% mixture of topsoil, sands, and shredded wood mulch/30% mixture of black organic compost and manure/30% mixture of peat loam); and

- 50% Premium Topsoil (50% mixture of topsoil, sands, and shredded wood mulch/ 25% mixture of black organic compost/ 25% mixture of composted cow manure).

In general, the resulting topsoil mix should meet the following parameters:

pH:	6.5 – 7.5
Potassium:	100 – 120 ppm
Phosphorous:	15 – 30 ppm
Magnesium:	100 – 120 ppm
Organic Matter:	≥ 3%

Unless otherwise specified, the minimum depth of applied Premium Blend Topsoil shall be 100mm.

The topsoil mix shall be tested to ensure there are no deficiencies with respect to fertility levels. A copy of the topsoil analysis report prepared by a certified agronomist shall be provided to the Contract Administrator. The report shall document soil fertility levels and identify any deficiencies and how they are to be rectified. Payment for this testing shall be included in payment under the respective topsoil items.

If the topsoil does not meet fertility requirements the soils shall be treated with the required amendments as recommended by the topsoil analysis report at no additional cost.

Hydraulic Seed & Mulch

Hydraulic seed and mulch shall be placed in accordance with OPSS.MUNI 804.

The seed mix shall meet the requirements of the “Standard Roadside Mix” outlined in Appendix Table A-1 of OPSS.MUNI 804. Quality Assurance and specifically Performance Measures will be per OPSS.MUNI 804.08.01.

Basis for Payment

Measurement for payment shall be square metre of area topsoiled and seeded.

The unit price bid shall include all materials, equipment and labour necessary to complete the work and shall include grading and the supply and application of fertilizer and water necessary to ensure growth within the one year maintenance period.

B24. APPLICATION OF WATER FOR DUST CONTROL (PROVISIONAL ITEM)

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document, the following shall also apply:

Filling of water application vehicles from municipal hydrants will no longer be permitted. The City has installed a smart card water filling station, located across from the Service Centre located at 3200 Stanley Avenue.

The station is equipped with new technology allowing Contractors to pre-pay for water credit on a swipe card system that can be refilled once the card has been emptied. The cost of the swipe card is \$15.00 and may be purchased at the Service Centre. To set up a water filling account please contact Environmental Services at 905-356-7521, Extension 6322.

Water shall be applied by means of approved equipment capable of uniform and controlled distribution.

Basis for Payment

Water will be measured in cubic metres.

Payment at the unit price bid in the Schedule of Quantities and Unit Prices shall be deemed full compensation for all water, carrying, application and any other costs involved with this dust control operation.

This item is provisional. Prior written approval must be provided by the Contract Administrator. Compensation will not be provided if written approval is not sought in advance.

B39. SPECIMEN LIMESTONE ROCK

The contractor shall supply all materials, equipment and labour necessary to prepare the areas and place armour stones as shown on the Drawings and as specified herein.

Armour Stones shall be quarried sound limestone or approved equivalent. Stones shall be approved at the quarry site and marked for delivery with minimum sizes as indicated on the contract drawing L07.

All ground layer stones shall be embedded a minimum of 150mm below finished grade. Stones that are cracked or broken upon placement shall be replaced at the Contractor's expense.

Armour stone shall be virgin quarry material with a minimum density of 2.5 tonne per cubic meter.

Basis for Payment

Payment at the unit price bid in the Schedule of Quantities and Unit Prices shall be full compensation for all equipment, labour and materials required to do the work.

Excavation and the supply and placement of Granular material shall be paid for separately under the appropriate item in the Schedule of Quantities and Unit Prices.

B40. FENCING AND GATES

Item B40a) Shall include removal of existing fence, installation of new end posts as required, etc. as shown on the Contract Drawings or directed by the Contract Administrator. Payment for fence removal and disposal off site will be per linear metre,

Item B40b) Shall include supply and install new terminal posts at the ends of removed fencing in accordance with OPS 772 and 1541. Fence and gate details shall follow OPSD 972.102, 972.130 and 972.132. Posts shall be installed plumb and straight, and all scratches shall be repaired with zinc rich paint of an approved colour.

Item B40c) Shall include supply and install of galvanized chain link gates in accordance with OPS 772 and 1541. Fence and gate details shall follow OPSD 972.102, 972.130 and 972.132. Posts shall be installed plumb and straight, and all scratches shall be repaired with zinc rich paint of an approved colour. It is anticipated that new gates to be installed in existing backyard fences may be confirmed prior to construction. Location and quantities are approximate and will be determined in the field.

Item B40d) Shall include the supply of all labour, equipment and material required for the installation of a new pressure treated wood fence per detail on drawing L07 and shall comply with the City of Niagara Falls Standards and in accordance with Engineering drawings, including mechanical connections to adjacent fences where required.

Item B40e) Shall include new gates including all labour, materials and equipment required to complete the work in compliance with City of Niagara Falls Standards and in accordance with Engineering drawings. The quantity noted in the bid form is approximate, and is subject to change during construction. Location and quantities are approximate and will be determined in the field.

Item B40f) Shall include removal, disposal and reconnection of barbed wire at 6508 Carolyn Avenue and as directed by the Contract Administrator. The unit priced bid shall include all hardware required to reconnect existing barbed wire in accordance with OPS 772 and 1541.

Basis for Payment

Payment shall be as per the units indicated in the Schedule of Quantities and Unit Prices for each item noted.

B41. TRAIL HEAD SIGNAGE & P-GATE INSTALLATION

Contractor shall coordinate with the City to pick-up Trail Head Signs & P-Gates from Fairview Cemetery. A minimum of three (3) days notice shall be given to the City.

The unit price bid for this item shall include the supply of all labour, equipment and material required for the installation of a Trail Head Sign as per Park Detail D10-441-03 and set (2ea) of P-Gates as per detail PD2-2.

L1. LANDSCAPING

In addition to the conditions stipulated in the Niagara Peninsula Contract Document, OPSS 802, the following shall also apply:

Payment shall be made under this item for the supply and installation of plants in accordance with the Contract Drawings.

All planting and related work shall be done by experienced, qualified personnel, under the direction and supervision of foremen with at least five (5) years of horticultural and planting experience.

All trees shall be nursery grown, true to type and structurally sound, with straight trunks and leaders intact, and be well and characteristically branched for the species, Root balls shall not be cracked, broken, or damaged. All plants shall be free of disease, insect infestation, rodent damage, sun scald, frost cracks and other abrasions or scars to the bark. They shall be densely foliated when in leaf and have healthy developed root systems. Plant names shall be in conformity with that accepted in the nursery trade.

Substitutions for the specified plants will not be accepted unless approved in writing by the Contract Administrator. The Contract Administrator reserves the right to reject any plant material, whether planted or not, which does not conform to the specifications. Do not remove any labels from plants until they have been inspected and approved by the Engineer.

All debris, clay lumps, roots and stones over 50 mm in diameter and other extraneous matter shall be removed from excavated soil to be used in backfill and disposed of offsite.

This item includes grading and reinstatement of the planting area adjacent to Shriners Creek and retaining wall.

Shredded bark mulch free of any granular and organic material will be applied over planting pit areas of trees and throughout shrub beds in accordance with the Contract Drawings. A sample of the mulch to be used shall be submitted to the Engineer for approval.

Maintain all plant material and assume full responsibility for protection of all planted areas until final acceptance of all project work. Keep planted areas free of weeds at all times. Remove all debris, broken branches, etc., and maintain planted areas in neat condition at all times. Water plants as necessary with sufficient quantities of water to moisten the entire root system.

Submit a written warranty to the effect that all materials and workmanship be guaranteed for a period of two (2) years following project completion. All plants that are dead, or not

in a healthy, satisfactory growing condition, or which in any way do not meet the requirements of the specifications, shall be replaced by the Contractor at the Contractor's expense. All required replacements shall be as originally specified. The warranty on replacement plant material shall be extended for a period equal to the original warranty period.

Final inspection of all plantings shall be made at the end of the specified warranty period. Stakes and all staking material shall be removed at the end of the warranty period. The Contract Administrator or Owner reserves the right to extend Contractor's warranty responsibilities for an additional year if, at end of initial warranty period, plant condition is not sufficient to ensure future health.

PROVISIONAL ITEMS

NOTE: Provisional items have been included within this contract in an effort to receive competitive pricing in the unlikely event that they may be required during construction. These items may be related to any infrastructure works (Roads/Sewer/Watermain) within the specific Section of the Schedule of Quantities and Unit Prices and as such have been separated within these supplementary specifications.

All Provisional Items must be approved by the Contract Administrator.

P1. 32MPA CONCRETE

This concrete shall have minimum 28 day strength of 32 MPa. The price indicated in the Schedule of Quantities and Unit Prices per cubic metre (m³) shall include supply and placement of concrete in trench at any depth for whatever purpose as directed by the Contract Administrator.

P5. 19MM CLEAR STONE

All 19mm clear stone materials shall conform to the requirements of OPSS.MUNI 1010.

Basis for Payment

Payment at the unit price bid for this item shall include all labour, materials and equipment necessary to complete the work for supplying and placing the 19mm clear stone as shown on the contract drawings or as directed by the Contract Administrator.

Payment will be by the tonne, based on submitted weigh tickets for same.