

SPECIAL PROVISIONS – CONTRACT ITEMS SUPPLEMENTARY

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A4. CONSTRUCTION LAYOUT

This line item shall include construction layout, 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.

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.

A7. INSTALL, MAINTAIN AND REMOVE SILT CONTROL DEVICES

This line item shall include catchbasin silt bags, light duty silt fence barriers, filter sock 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) Catchbasin Silt Bags

Prior to the start of construction, the Contractor shall place Silt Bags (*such as the Layfield's Catch Basin Sediment Traps (CBST's) or approved equal*) on all existing catchbasins that may be affected by the proposed construction.

Silt Bags shall be checked daily, maintained over the course of the construction and removed only once hydro seed or sod restoration has minimized the risk of erosion related to the construction activities; the Contract Administrator must approve the removal. All reasonable care must be taken to avoid any sediment from entering the catchbasin as the traps are removed.

Sediment that collects within the temporary sediment control facilities shall be removed when the facility is half full.

Basis for Payment

For progress payment, fifty (50) percent of the lump sum price will be paid upon installation with the balance to be paid upon removal of all silt control devices.

b) 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.

c) Filter Sock Check Dam

In addition to the conditions stipulated in OPSS 805, the following shall also apply:

The Contractor shall install filter sock check dams where indicated on the contract drawings. The Contractor shall conduct daily inspections on all check dams and shall conduct additional inspections after each significant rainfall. Repairs shall be made promptly and sediment shall be removed when it reaches one half the dam height or sooner. Silt removal is to be undertaken with care to minimize downstream sedimentation.

The check dams shall be removed only once hydro seed or sod restoration has minimized the risk of erosion related to the construction activities; the Contract Administrator must approve the removal. All reasonable care must be taken to avoid downstream sedimentation during removal of the straw bale check dams.

Basis for Payment

For progress payment, fifty (50) percent of the lump sum price will be paid upon installation with the balance to be paid upon removal of all silt control devices.

A8. CONSTRUCTION SIGNS, TRAFFIC AND PEDESTRIAN 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.

Construction Staging

One parking lot must remain open at any one time. The contractor shall reconstruct the the south parking lot adjacent to Loretto Catholic and Kate S. Durdan Schools first. 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 these requirements. Work within intersections shall also be staged such that a minimum of one lane of traffic is maintained on the cross streets.

The Contractor must work closely with the City's Construction Contract Administrator to keep affected property owners, school and soccer association informed of potential impacts to their operations and to minimize disruption to access and servicing of properties by planned construction activities. It will be the Contractor's responsibility to ensure all affected parties are notified of upcoming disruptions and access restrictions.

Temporary Construction Fencing

Areas under construction must be fully fenced at the construction perimeter with a rigid fence such as Quick Fence, or suitable equivalent acceptable to the Contract Administrator. The Contractor to be aware that the areas to be constructed are normally used by the neighbouring elementary school children who use the park as a route between the school and the surrounding residences. The contractor shall erect and maintain safety measures accordingly to restrict public access to the construction site.

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 park amenities, school and residences to be maintained at all times whenever possible. Access closures are to be scheduled at least five (5) business days in advance with the Contract Administrator, including the type and form of any temporary access provisions. Any disruption to pedestrian access is to be kept to a minimum duration.

Communications

It will be the Contractor's responsibility to inform the Contract Administrator regarding 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.

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 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.

Contract Signs

In addition to the requirements noted in the Special Provisions - General, Item G29, Project Sign Board, the following shall also apply to this item:

Prior to the start of construction, the City will order two (2) Contract Signs for the project, prepared in accordance with Dwg No. NFS-A04. The Contractor will pick-up and install the signs (including the building/assembly of the stand) in locations as directed by the Contract Administrator, and then will be responsible for daily maintenance of the signs throughout the Contract. After contract completion, the Contract Signs are to be returned to the Municipal Service Centre on Stanley Avenue. Any costs incurred by the City to restore, repair or replace the Contract Signs due to damages or losses occurring during the period while the signs are on-site, will be the Contractor's responsibility. From time to time during the contract, the Contractor may be required to move the sign locations, as directed by the Contract Administrator.

Custom Signs

At the discretion of the Contract Administrator, the Contractor shall arrange for the manufacture and installation of custom wayfinding signage for pedestrian and vehicular traffic. Custom signs are to be installed within two (2) business days once notice has been given by the Contract Administrator for the requirement of such signs.

Maintenance, removal and disposal of all custom signage shall be included in the unit price bid for this item.

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.

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.

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 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. Plotted cross-sections, where not included within the Issued for Tender drawing set, shall be available upon request.

Basis for Payment

Payment at the unit price bid for this item shall include all labour, materials and equipment and disposal of surplus or unsuitable excavated materials, 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', and 'B' plus additional granular materials specified for Riprap and for the Bioswales.

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' and Granular 'B' under roads, parking lots, driveways, 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.

Granular 'A' must be installed on all road and sidewalk trenches 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 base material. No roadway granular is to be placed until the subgrade elevation has been checked by the City's Inspector or his representative.

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.

B7. INSTALLATION OF CULVERT

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Documents B7 and OPSS 421, the following shall also apply:

The unit bid price for this item shall include all labour, equipment and materials required for the supply and installation of culvert as noted in contract drawings. The bid item shall also include any required excavation, saw-cutting of asphalt and minor ditching required for the installation of the culvert. Bedding, cover and backfill for the culvert shall be Granular 'A' and shall be included in the unit prices.

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.

B8. CONCRETE CURB & GUTTER

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Documents and OPSS 353, the following shall also apply:

The unit prices bid shall also include sawcutting and excavation to accommodate new installation, if not otherwise included in Contract Item SPCS B2 Earth Excavation.

New curb joining existing curb shall be installed as per NFS-B03, as shown on the detail contract drawing sheet.

The Contractor shall take due precaution to protect green concrete from being damaged, marred or defaced, particularly at driveway entrances. In the event that the green concrete is marred or damaged in any way, the Contractor shall breakout 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 made due allowance for this requirement.

A total tolerance (or elevation variance) of 3mm will be accepted as a reasonable variance from the specified curb and gutter elevations. If the total tolerance is exceeded, the Contractor shall, at their own expense, remove and replace the concrete curb and gutter to the satisfaction of the Contract Administrator, at no additional cost to the contract.

The exact location of dropped curbs as shown on the construction drawings will be deemed to be included in Item A4 Construction Layout. Adjustments in the field will be conducted by the Contract Administrator or the City's representative.

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.

Supply and installation of steel bars as shown on Dwg. NFS-B03 at all catchbasin and curb repair sections shall be paid for under the appropriate items.

B10. SAWCUTTING PAVEMENT (PROVISIONAL)

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.

B12. APPLICATION OF TACK COAT

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Documents B12, the following shall also apply:

The unit bid price for this item shall include all labour, equipment and materials required to apply tack coat between hot mix asphalt layers. Tack coat shall be applied to all surfaces (vertical and horizontal plane) at a rate of 0.20kg/m² for new surfaces (between layers). Tack coat shall be applied at edge of sawcut asphalt at Park entrance Driveway as noted on contract drawings and described herein.

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.

B13. ADJUSTMENT OF APPURTENANCES

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 surface (finished) asphalt elevation.

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 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.

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.

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.

Where materials are to be salvaged and delivered to the City's Service Centre, 50% of the unit price bid shall be paid upon removal of the item and the remainder shall be paid upon receipt of the item at the Service Centre.

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.

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.

Item B14a) shall include the supply and placement of the HL3 HS surface course asphalt for North parking lot at the minimum thicknesses specified in the schedule of quantities and unit prices. This shall also include any hand work required to form a temporary asphalt curb to match the concrete curb and gutter at catchbasin sections where the concrete curb and gutter is not installed.

Item B14a)ii. shall be utilized for the supply and placement of the HL8 HS base course asphalt for North parking lot at the minimum thicknesses specified in the schedule of quantities and unit prices.

Item B14b)i. shall include the supply and placement of HL3 HS surface course asphalt for South parking lot at the minimum thicknesses specified in the schedule of quantities and unit prices. This shall also include any hand work required to form a temporary asphalt curb to match the concrete curb and gutter at catchbasin sections where the concrete curb and gutter is not installed.

Item B14b)ii. shall include shall be utilized for the supply and placement of the HL8 HS base course asphalt for South parking lot at a thickness specified in the schedule of quantities and unit prices.

Item B14c)i. shall include shall be utilized for the supply and placement of the HL3 HS surface course asphalt for Park Entrance Driveway at a thickness specified in the schedule of quantities and unit prices. This shall also include any hand work required to form a temporary asphalt curb to match the concrete curb and gutter at catchbasin sections where the concrete curb and gutter is not installed.

Item B14c)ii. shall include shall be utilized for the supply and placement of the HL8 HS base course asphalt for Park Entrance Driveway at a thickness specified in the schedule of quantities and unit prices.

Item B14d)i. shall include shall be utilized for the supply and placement of the HL3 HS surface course asphalt at specified pathways at a thickness specified in the schedule of quantities and unit prices.

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 PATHWAY

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 pathway 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 to restore driveway aprons, driveways and pathways, as necessary, and as directed by the Contract Administrator.

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

B19. REGRADING OF DITCHES AND SWALES

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 / New Ditches & Swales

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

B20. HAND LAID RIPRAP WITH FILTER CLOTH

In addition to the conditions stipulated in the Niagara Peninsula Contract Document, OPSS 511, the following shall also apply:

The unit bid price for this item shall include all labour, equipment and materials required for Riprap to be placed as noted on the contract drawings, and as directed by the Contract Administrator. Riprap shall be 150mm in size and to be placed to a minimum depth of 150mm over filter fabric. Wherever riprap is to be placed, the ground is to be over-excavated, so that the finished surface of the riprap is even with the adjacent surface. All fallen trees and debris are to be removed from area of riprap before placement of filter fabric.

Filter fabric to be Terrafix 270R filter cloth or approved equivalent.

Basis for Payment

The unit price bid for this item shall include labour equipment and materials to install riprap and filter fabric and shall include the over excavation and disposal of surplus material.

Measurement for payment will be in square metres.

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 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.

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.

B24. APPLICATION OF WATER FOR DUST CONTROL

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.

B27. REMOVAL OF EXISTING ITEMS

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

Chain Link Fence

This bid item shall include all equipment, labour and materials required for the removal and disposal of the existing chain link fence. The chain link fence shall be removed as noted on contract drawings. No payment will be made under this item for newly constructed chain link fence.

Hydro Pole and Guy Wires

The work shall include all labour materials and equipment required for the removal and disposal of the poles and guy wires identified in the contract drawings.

Pole for the purposes of this specification shall include the pole (any material), base, underground or above ground supports (such as guy wires), cables, wires, distribution boxes, arms, luminaires, traffic signals, junction boxes, transformers, meters, or any other equipment directly attached to or associated with the pole.

It is the Contractor's responsibility to confirm and coordinate with the respective utility regarding any specific requirements necessary to support and protect the pole during removal. The unit price bid shall have made due allowance for this requirement.

Ditch Culvert

The work for this item shall include the labour, materials and equipment required for the removal and disposal of the existing culverts as noted on the contract drawings. The work shall also include any excavation required for the removal of the culvert. No payment will be made under this item for newly installed culvert.

Wood Bollards

This item shall include all labour, materials and equipment required for the removal and disposal of existing wood bollards as noted on the contract drawings. The work shall include any excavation required for the removal of the wood bollards. This item shall also include any required restoration after removal of wood bollards, including any backfilling. Any backfilling required shall be completed with approved native soil. Restoration shall be completed to the satisfaction of the Contract Administrator.

Concrete Parking Wheel Stop Curbs

This item shall include all labour, materials and equipment required for the removal and disposal of existing concrete parking wheel stop curbs as noted on the contract drawings.

Basis for Payment

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

B28. CHAIN LINK FENCE

In addition to the conditions stipulated in the Niagara Peninsula Standard Contract Document and OPSS 772, the following shall also apply

This bid item shall include all equipment, labour and materials required for the supply and installation of chain link fence as noted on the contract drawings. The chain link fence shall match existing chain link fence and shall be approved by the Contract Administrator. Post holes are to be filled with concrete and fence posts installed in concrete to match existing chain link fence. Line and grade of chain link fence shall be as noted on contract drawings.

Fence and parking entrance gate post foundations to be installed as per manufactures specifications. Minimum post depth to be 1.2m.

Parking entrance gate to include hinges and latches to secure the gate in the open and closed positions.

Shop drawings of the fence and the parking entrance gate to be provided to the Contract Administrator for approval, prior to installation.

No payment will be made under this item for removal of existing chain link fence.

Basis for Payment

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

B36. REMOVE, STORE AND REINSTATE

This item shall be used for the careful removal, storage and reinstatement of items noted on the contract drawings. Any item damaged for any reason shall be replaced at the expense of the Contractor as directed by the owner.

Signs

This item shall be used for the careful removal, storage and reinstatement of signs, other than traffic or regulatory signs, as noted on the contract drawings. Where the sign is not the property of the City of Niagara Falls, the Contractor shall seek the Owner's permission before removal.

This item shall include all labour, materials and equipment necessary to remove the sign, store the sign for the required duration, and complete the reinstatement of the sign to existing or better condition. Reinstatement will include any underground/aboveground support and/or base requirements as directed by the Owner.

If the sign is damaged, the Contractor shall notify the Owner. The Contractor shall repair or replace the sign in accordance with the Owner's requirements at no additional cost to the contract.

Boulders

This item shall be used for the relocation of boulders as noted on the contract drawings.

This item shall include all labour, materials and equipment necessary to move the boulders and complete the reinstatement of the boulders to existing or better condition. Reinstatement will include any underground/aboveground support and/or base requirements as directed by the Owner.

If the landscape item is damaged, the Contractor shall notify the Owner. The Contractor shall repair or replace the landscape item in accordance with the Owner's requirements 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.

B37. LINE PAINTING

In addition to the conditions stipulated in OPSS 710 the following shall also apply:

This specification covers the requirements for the application of pavement markings onto the base course asphalt and shall include surface preparation, pre-marking and placement of markings that will remain visible until such time that the top lift of asphalt is applied; typically the following construction season.

Markings that are faded will be required to be reapplied at no additional charge to the contract to ensure the safety of the motoring public.

Only traffic paint approved by the Ministry of Transportation of Ontario shall be used.

- Organic Solvent Based Traffic Paint shall be in accordance with OPSS 1712;
- Water-Borne Traffic Paint shall be in accordance with OPSS 1716; and
- Traffic Paint Reflectorizing Glass Beads shall be in accordance with OPSS 1750.

Spray equipment shall be used for the application of the both the solvent based or water-borne traffic paint, specifically a self-propelled lane line marking machine capable of producing top quality marking with true edges free from waviness or variations and conforming to the MUTCD. The equipment shall also be provided with a glass bead dispenser to apply overlay glass beads at the recommended rate.

The pavement surface must be at least 5°C (for solvent based paint) or 10°C (for water borne paint) and the paint temperature shall be between 40°C and 70°C at the time of application.

The rate of application for overlay glass beads per litre of traffic paint shall be:

% Volume Solids of Traffic Paint	Glass Beads Required (kg)
40-56	0.7
57-70	0.8

Only traffic markings containing 150g/l of VOC's or less will be permitted between May 1, through to October 15. Therefore, the type of paint used will be determined by the date of application.

Pavement pre-marking shall be undertaken by the Contractor and approved by the Owner prior to the application of permanent markings. The unit price bid shall be deemed to have made allowance for these processes.

It is the Contractor's responsibility to coordinate a field review of the pre-markings through the City's Manager of Transportation Engineering directly.

Mathew Bilodeau

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Transportation Services;
905-356-7521, ext. 5204
mbilodeau@niagarafalls.ca

Basis for Payment

The unit price bid shall be full compensation for all necessary labour, materials and equipment to complete the work in accordance with the specifications.

B38. REPLACEMENT PARKING LOT TREES

In addition to the conditions stipulated in the Niagara Peninsula Contract Document A6, the following shall also apply:

The unit prices bid for proposed tree planting include all labour, equipment and materials necessary to for supply and placement of trees on parking lot islands as noted on contract drawings. The work shall also include grading and the supply and application of fertilizer and water necessary to ensure growth within one-year maintenance period.

The work shall include the supply and planting of proposed trees as per contract drawings. The species of the replacement trees shall be Sunburst Honeylocust of at least 60mm caliper.

The Contractor shall be responsible for protection of tree including roots and limbs during transport to site and planting.

Basis for Payment

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

C10. BIO-RETENSION SWALES

The unit price bid shall be full compensation for all necessary labour, materials and equipment for completion of the proposed bio-retention swales. The work shall include grading and the supply and application of fertilizer and water necessary to ensure growth within one-year maintenance period.

The work shall include:

- a) Supply and placement of 900mm gravel. Gravel shall consist of 50mm diameter clear stone.
- b) Supply and placement of 100mm pea gravel. Pea gravel shall consist of 3-10mm diameter clear stone.
- c) Supply and placement of 500mm filter media.

Bio-retention (Filter Media) Material Composition shall consist of:

<u>Sand:</u>	<u>85-88%</u>
<u>Fines:</u>	<u>8-12%</u>
<u>Organics:</u>	<u>3-5%</u>

- d) Supply and placement of 100mm of topsoil, in accordance with contract drawings.
- e) Supply and placement of water-resistant grass seed mix on graded swale topsoil in accordance with contract drawings. Seed mix design to be provided to the Contract Administrator for approval, two (2) weeks prior to application.
- f) Supply and placement of Filter Cloth. Composition shall consist of Terrafix 270R® or equivalent, approved by the Contract Administrator.

Bio-retention (Filter Media) Material Composition shall consist of:

<u>Sand:</u>	<u>85-88%</u>
<u>Fines:</u>	<u>8-12%</u>
<u>Organics:</u>	<u>3-5%</u>

Basis for Payment

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

C11. FLUSH EXISTING STORM PIPE

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

This bid item shall include all labour, equipment and materials required to complete flushing of the culverts and the existing storm pipe with a high-pressure hose. The existing storm pipe shall be flushed from headwall to first storm maintenance hole (on school property), as shown on contract drawings. The first flushing is required upon completion of culvert installations and grading and restoration of swales and bio-retention swales on site. A second flushing may be required prior to warranty holdback, as directed by the Contract Administrator.

Basis for Payment

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

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.

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.

P6. VERTICAL & HORIZONTAL CONTROL MONUMENTS

Payment at the unit price bid for this item shall be complete compensation to install monuments damaged or removed by the Contractor, or as otherwise directed by the City.

P7. TRENCH OR ROAD SUB-EXCAVATION

The provision of OPSS 314 shall apply as amended or extended herein. The unit price indicated in the Schedule of Quantities and Unit Prices shall include all sub-excavation below the required trench bottom or unsuitable sub-grade material, any additional sheathing and shoring required, disposal of excavated material as specified in SPCS B2. The supply and placement of 50mm crusher-run stone in the trench or sub-grade compacted to 100% Standard Proctor Maximum Dry Density is also included in the price indicated.

Basis for Payment

Payment will be made by a field measurement in cubic meters (m³) calculated by average end areas. No payment will be made for sub-excavation beyond specified limits.

P10. STREET SWEEPING & CLEANING

The provision of G23 shall apply as amended or extended herein.

Upon approval of the contract administrator, the contractor shall clean roadways using a Vacuum Street Sweeper followed by a flusher truck to remove the dirt residue. Material collected during the sweeping operation shall be disposed of as per the provisions of OPSS 180.

This item is not intended to replace the contractor's responsibility for daily/regular site maintenance (G23, NPSCD) such as removing heavy dirt, debris and mud-tracking from roadways. Rather, this item shall be used only for situations where specialized street sweeping and cleaning equipment may be required, over-and-above general cleaning.

Basis of Payment

Payment at the unit bid price shall be full compensation for all labour, equipment and materials to do the work.