

**SPECIAL PROVISIONS – CONTRACT ITEMS SUPPLEMENTARY**

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## **A2. PRECONSTRUCTION SURVEY**

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

The Contractor will provide the City with a complete copy of the precondition survey including all CDs/DVDs and field reports together with any subsequent inspection report related to claims investigation forthwith.

The precondition survey must, upon the approval of the property owner and any tenants, include the taking of high resolution video or still photos of all properties inspected.

Upon written request of the property owner, the Contractor shall provide, at no additional costs, a copy of the Field Notes relating to their property only.

The Contractor shall submit to the City, for review and approval, a draft copy of the Notice to Residents for the precondition survey. Once approved by the City, the precondition survey Contractor shall submit on letterhead the final version of this notice. The City will arrange delivery of the initial letter as an attachment to the City's Notice of Construction. All additional notices for the precondition survey shall be delivered by the Contractor.

The complete precondition survey must include an entry for each property within the survey limits. An entry shall be:

- i. A completed inspection;
- ii. A letter or record of refusal by property owner and/or tenants who refuse a precondition inspection; or
- iii. A record of the precondition survey company's attempts to schedule an inspection if neither an inspection nor refusal are received.
  - As a minimum, the precondition survey company shall make three (3) attempts to inspect a property after the initial letter has been delivered by the City, specifically two (2) additional notices and a visit to the residence or business.
  - Each attempted contact shall be on a different day of the week and at a different time of day.
  - With the recorded attempts to schedule an inspection (dates and times), the precondition survey company must also include copies of the additional notices delivered to the properties.

The precondition survey shall be considered incomplete and payment for this item withheld until an entry for each property is included in the final survey package delivered to the City.

The limits of the properties to be included in the survey shall extend a minimum of 30 metres along each street beyond the limit of construction as noted on the contract drawings.

**The precondition survey must be completed prior to the commencement of construction.**

Basis for Payment

The lump sum price bid will be deemed to include any allowance to satisfy these provisions. Full payment will be made under this item in the first progress payment provided that a satisfactory survey is filed with the City.

**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 plan in accordance with the most recent amendments to the Occupational Health and Safety Act. 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 **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

## **The contractor is also advised of the following:**

- Work may commence April 23, 2019,
- Work **MUST** be completed by May 16, 2019 (the Thursday before the Victoria Day weekend),
- Hours of work 6:00am to 5:00pm,
- No weekend work permitted,
- 18 working days total,
- two-way traffic must be maintained at all times,
- construction site **MUST** be left in a safe condition at all times,

- This work may involve spot concrete base repair. In these cases, the concrete base must be doweled and poured immediately after the concrete removal.
- It will be the contractor's responsibility to verify if traffic signal loops are present. If traffic signal loops are present on any of the streets, the contractor will be required to coordinate their work with the Regional Traffic Department. The City will pay the Region directly for any associated costs.

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 and will be paid as part of the Completion payment. 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.

#### **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.

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.

#### 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, 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 the Granular 'A'.

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' under roads for base repairs and shall be placed at a depth specified in the contract and may be used for other purposes/as deemed necessary by the Contract Administrator. 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.

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 <u>after</u> the monthly Progress Payment has been finalized, for deliveries made within that month's Progress Payment period <b>will NOT be accepted.</b>
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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.

## **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 for Item B8e) shall also include the following:

- Any type of curb and/or gutter – match existing specifications.
- Required excavation to accommodate new installation, if not otherwise included in Contract Item SPCS B2 Earth Excavation. Any portion of the concrete road base that has to be removed to accommodate curb installation will be paid for under the base repair item.
- All asphalt removal (including temporary asphalt curbs/infills), disposal and restoration with HL8 HS minimum width 0.3m and a thickness of 75mm
- All required Granular “A” material and compaction

The unit prices bid for Item B8h) include what’s mentioned above and also the following:

- This item will be paid per catchbasin (ea).
- 1m on of curb to be included on either side of the side inlet catchbasin.
- Setting the side inlet catchbasin frame into place.

The Contractor shall take due precaution to protect fresh concrete from being damaged, marred or defaced, particularly at driveway entrances. In the event that the fresh 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.

### 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.

### **B11. ASPHALT MILLING**

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

B11a will be made for any milling of areas that require butt joints at paving limits, butt joints for driveways, etc. as well as any milling that is required for asphalt boulevards.

**Payment for item B11b will be made for any mainline milling of approx. 100mm thick. THE CONTRACTOR MUST TAKE INTO CONSIDERATION AND MAKE ALLOWANCES FOR MILLING CONCRETE ROAD BASE IN SOME LOCATIONS, IN ORDER TO ACHIEVE OUR 100mm REQUIREMENT, it is anticipated that no wire/rebar will be encountered during this process.**

Payment for item B11c will be made for any milling to remove ramps at crosswalks, catchbasins, manholes, driveway ends, etc., prior to paving.

It will be the contractor's responsibility to verify if traffic signal loops are present. If traffic signal loops are present on any of the streets, the contractor will be required to coordinate their work with the Regional Traffic Department prior to milling. The City will pay the Region directly for any associated costs.

The disposal of asphalt millings is the responsibility of the contractor. The unit price bid shall be deemed to have made due allowance for this requirement.

### 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 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 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.

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.

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.

The unit price bid for Item B14a)i HL3HS shall 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, or for any other reason deemed necessary by the Contract Administrator.

The unit price bid for Item B14a)i. shall also include the provision of placement of temporary ramping at wheelchair depressions, catch basins, manholes, driveways, at the limits of construction and other areas as instructed by the Contract Administrator.

The unit price bid for Item B14a)ii. HL8 HS shall include fine grading and compacting the granular base immediately prior to the placement of the base asphalt. This item will be used for the placement of HL8 HS in areas that require base asphalt repairs and granular

base repairs. The thickness of HL8 HS asphalt shall be placed to match the existing pavement thickness or directed by the Contract Administrator and is to be placed immediately after milling where base repairs are required.

If, due to delays, asphalt paving occurs in cold weather, there shall be no additional compensation for any heating, environmental charges or joint heating equipment that may be required to complete the work.

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.

**B17. ADJUST PAVING (STONE)**

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

As per the Niagara Peninsula Standard Contract Document, the Contractor shall replace any paving stones broken or damaged as a result of removal or stolen from the stockpile, at no additional cost to the contract.

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

The unit price bid shall include all Granular 'A' required to complete the boulevard/sidewalk restoration.

Basis for Payment

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

The unit price bid shall include the cost to supply and place a 50mm limestone screening bedding and a sharp course granular sand between the pavers.

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

### **B30. BASE REPAIRS – GENERAL (PROVISIONAL)**

In addition to the conditions stipulated in the Niagara Peninsula Contract Documents the following shall apply for the project:

- Pavement removal for base repairs shall include the removal and disposal of existing concrete pavement.
- The contractor shall note that some small base repair areas can be anticipated.
- Concrete base repair reinstatement to be a minimum of 200mm thick or if existing thickness is greater than 200mm match existing up to 250mm.

The unit price bid per square metre of base repair and shall incorporate the above mentioned provisions into the unit price bid for this item.

### **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 surface 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.

Line painting requirements on **all streets** will require coordination and consultation with the City's Manager of Transportation Engineering. All coordination for pre-marking and field reviews of proposed markings will be the contractor's responsibility.

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, C.E.T.**

Manager of Transportation Engineering, City of Niagara Falls  
Transportation Services;  
905-356-7521, ext. 5204  
[mbilodeau@niagarafalls.ca](mailto: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. GEOSYNTHETIC FIBREGLASS GRID PRODUCT – GLASGRID 8511  
PAVEMENT REINFORCEMENT SYSTEM**

Contact: Carolyn Alexander with Nilex at (416)346-6336 for pricing and ordering information. In addition it is the contractor's responsibility to contact Carolyn, minimum 3-4 days in advance to arrange for a Nilex site supervisor to be on site during GlasGrid 8511 installation.

This product must be installed throughout the entire pavement area between the HL8 binder course and the HL3 surface course as per manufacturer's installation requirements.

This product is to be placed on tack coat, contractor to ensure tack has cured prior to installation of the GlasGrid as per manufacturer's installation requirements.

The unit price for this item is to include the supply and placement of this product by the square meter (m<sup>2</sup>).

(INSERT GLAS GRID SPEC PAGE 1)

(INSERT GLAS GRID SPEC PAGE 2)

(INSERT GLAS GRID SPEC PAGE 3)

**B39. TRAFFIC PATTERN XD – IMPRINTED AGGREGATE REINFORCED  
PREFORMED THERMOPLASTIC PAVEMENT MARKING SYSTEM**

**Contact:** Mr. Doug Bain at HUB Surface Systems (416)540-9287 for pricing and scheduling. Only approved Traffic Pattern XD installers will be permitted for this project.

Clifton Hill Specifications (subject to change): Colour: Colonial Brick

Pattern: Offset Brick with Soldier

Traffic Pattern XD will be installed in three locations on Clifton Hill with the approximate dimensions per location being 11.50m X 7m.

**The Contractor will have to co-ordinate and make allowances for the required traffic control.**

The unit price for this item is to include the supply and placement of this product by the square meter (m<sup>2</sup>).

(INSERT TRAFFIC PATTERN XD PAGE 1)

(INSERT TRAFFIC PATTERN XD PAGE 2)

(INSERT TRAFFIC PATTERN XD PAGE 3)



## **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 (m<sup>3</sup>) shall include supply and placement of concrete in trench at any depth for whatever purpose as directed by the Contract Administrator.

### **P2. USE OF REGIONAL POLICE FOR TRAFFIC CONTROL**

At any intersection within the project limits and any of the cross streets within the project limits, in the interest of the safe movement of both vehicular and pedestrian traffic, the City or Region may require the use of Regional Police forces to undertake Traffic Control during certain Contractor operations. The need for utilization of Regional Police forces will be solely judged by the City, in consultation with the Contractor and/or Region as applicable.

This issue will be reviewed along with the Contractor's Traffic Control and Management Plan during the Pre-Construction Review Meeting. The scheduling and coordination of this work will be undertaken by the Contractor and the unit price bid shall be deemed to have made due allowance for this requirement.

### **P4. UNSHRINKABLE FILL**

The provisions of OPSS 1359 apply as amended herein.

All unshrinkable fill materials shall conform to the requirements of OPSS.MUNI 1350.

#### **Basis for Payment**

Payment at the unit price bid for this item shall include all labour, materials and equipment necessary to supply and place unshrinkable fill 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.

### **P9. USE OF HIGH EARLY STRENGTH CONCRETE**

The provisions of the Niagara Peninsula Standard Contract Document (NPSCD) Special provision and OPSS 350, 353 and 1350 shall apply except as amended herein:

- the unit bid price bid per cubic metre for the item is a **premium** payment for the use of accelerated strength in the concrete mix.
- The accelerated strength concrete cylinders shall be tested in conformance with the autogenous curing test procedure C of ASTM C684.
- The tested strength shall be no less than 75% of the design strength (e.g. 30Mpa) in 24 hours.
- The City's inspector shall be given a copy of the tickets from the concrete plant for all loads containing the accelerated strength concrete mix.