



## Tender Addendum No. 3

This Addendum consists of 21 pages plus:

Enclosures:

- 1) Storm Sewer Design Sheet – 1 page
- 2) Pavement Structure – 1 page
- 3) OGS Unit Sketch – 1 page
- 4) Revised Schedule of Unit Prices (Addendum No. 3) – 17 pages
- 5) Electrical Plans – 5 pages
- 6) Landscape Drawings – 6 pages

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<b>Date</b>	March 26, 2020	<b>Project No.</b>	300050111.1200
<b>Project</b>	Berford Street Reconstruction and Streetscaping Improvement		
<b>To</b>	All Tenderers		

Please confirm that you have received this Addendum by Email to Sharon.Jungkind@rjburnside.com and Paul.Hausler@rjburnside.com

Please be advised of the following changes/additions to the Bid Documents and complete the addendum table on the first page of the Bid Form (Document B).

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1. Contractors are required to bid the project as specified, but under the circumstances surrounding the Covid-19 virus, the Town is prepared to consider changes to the scheduling and liquidated damages for delays. The tender closing date and time remains unchanged. Closing on Monday, March 30, 2020 at 3:00 p.m. The Town Hall hours are 8:30 a.m. to 4:30 p.m.

**Submissions can be placed in the drop box (next to the doors facing George Street).**

**Alternatively, Contractors can call the Town Hall Main Office Number 519-534-1400 ext. 100 to let us know they are leaving the package at the doors and must follow the following protocol. Set the submission package on the ground next to the door and step away from the entrance. Staff will immediately come to pick it up.**

2. It is preferred that prior to Bid Closing, Contractors shall notify in advance if they plan to submit a tender by emailing the Town at [lara.widdifield@southbrucepeninsula.com](mailto:lara.widdifield@southbrucepeninsula.com).
3. Due to the circumstances surrounding the Covid-19 virus bids will not be opened in Public as the Town Hall is closed. The Contract Administrator's office, will release unofficial total bid prices, on the Town's website, as soon as they are available.

The following is a list of replies to questions received by Contractors:

4. Q: What are the daily and max flows in the existing storm inside the construction limits?

A: Please refer to Sediment and Erosion Control Note #9 found on Drawing – GEN of the Drawing Set. Note #9 states:

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ANY DAMS, PUMPS, CULVERTS, OR ANY OTHER TEMPORARY MEASURES REQUIRED TO CONTROL THE FLOW. THE CONTRACTOR SHALL ASSESS THE RISK OF FLOODS, STORMS AND EVENTS THAT MAY AFFECT CONSTRUCTION AND DETERMINE THEIR OWN LEVEL OF RISK ASSOCIATED WITH ANY TEMPORARY WORK.

A copy of the Storm Sewer Design Sheet is attached.

5. Q: What are the daily and max flows in the existing sanitary manholes inside the construction limits?

A: The sanitary sewer design sheet is included on Contract Drawing # SAN1-Sanitary Catchment Plan. It is the responsibility of the Contractor to examine the existing conditions and size the temporary bypass pumping systems appropriately.

6. Q: Is there a preferred bi-pass pumping plan?

A: The Contractor will be responsible to provide recommendations for review by the Town and Engineer.

7. Q: Is there a preferred temporary watermain plan?

A: The Contractor will be required to provide a proposed temporary watermain plan for review by the Town and Engineer. It is anticipated that the Contractor will install a temporary main on each side of the street.

8. Q: Is the engineer going to provide layout of structures, curbs, sidewalks, etc.?

A: The Contractor shall be responsible for the layout of all structures and other work as required as per the appropriate OPS General Condition and Item A15 of the Special Provisions as amended. The Engineer will provide horizontal and vertical control only.

9. Q: Are you anticipating installing any personal drain connections into the storm system?

A: Yes. Installations are anticipated in accordance with Item E24.

10 Q: Is CCTV inspection required on the sanitary services? And if so, is lateral launch going to be required?

A: CCTV of each sanitary or storm service is not required. CCTV of the mainline sewer shall be conducted to identify service locations and to determine if there are rainwater leaders attached to the sanitary sewer in accordance with Items A9 and A10. In all cases where it is identified that rainwater leaders are attached to the sanitary sewer the service shall be identified to the Engineer and a storm service will be installed as directed by the Engineer.

11 Q: Do you have all the necessary approvals in place for the project to commence upon award?

A: We expect to have all approvals in place before award of the project.

12 Q: What is the minimum separation for water/sanitary services? What if minimum distance is not achievable at property line?

A: In accordance with Best Practices minimum separation between the water and sanitary services is to be 2.5m. In cases where this separation is not achievable the Engineer shall be notified and shall approve of any deviation from this guideline prior to installation.

13 Q: The contract states that removed asphalt is supposed to go to the town yard. Is it acceptable to pulverize asphalt in place and use it as trench/subgrade backfill?

A: No. All asphalt material (pulverized or simply removed) shall be delivered to the Town Yard.

14 Q: Our sign supplier is needing more specification on these signs:

Volunteer Fire Fighter, OPP Police, Way Finding Sign (multiple), Motorcycle parking, G216 signs.

I will need to know the sizing as I am assuming these will all be on hi intensity and aluminum.

A: Temporary way finding wood sign board shall consist of reflective sheeting/lettering and shall be 1.2 m by 2.4 m.

Permanent Volunteer fire fighter signs, OPP Police Signs and Motorcycle parking signs shall be metal, 30 cm by 45 cm and have reflective sheeting as per OTM Book 5.

15 Q: What is the time frame required to complete Stage 6 of the project?

A: Stage 6 shall be completed as described per the staging plan Contract Document D - Section D.1.2.

16 Q: Due to the Covid-19 virus, we're having several concerns about contract execution. (i.e., staffing issues, suppliers not being able to meet deadlines, start delays, government restrictions, etc.). What are your thoughts on this issue in regard to contract extensions and liquidated damages?

A: Contractors are required to bid the project as specified but under the circumstances surrounding the Covid-19 virus, the Town is prepared to consider changes to the scheduling and liquidated damages for delays.

17 Q: There appears to be a Tree missing in Detail LD5 on Drawing No. L6-Detail LD5. Being a street tree, they most likely will want staking to discourage vandalism, specially since the trees specified are small (50 mm compared to the usual 70mm). Need details on the staking.

A: Street Tree detail has been updated, see Page L6.

18 Q: I have concerns about the root barrier being wrapped around the hole tree pit. Because it is only a profile drawing, I will assume it will be only two sides and quote accordingly. The Root Barrier is installed to prevent damage to the sidewalks/curbs from the roots as they enlarge over time.

A: Yes, the root barrier is to prevent damage to sidewalk and curbs.

19 Q: Can you please confirm if the shade sail would require 1.5" webbing, 2" webbing, 1/8" stainless steel aircraft cable or 1/4" stainless steel cable?

A: The Shade Sail will require 1/4" stainless steel cable.

20 Q: Can you confirm the quantity of Sanitary MH 1200 mm is 24 ea.?

A: There are 25 sanitary MH's each one 1200 mm. The Schedule of Unit Prices will be amended accordingly.

21 Q: Can you confirm the quantity of 1200 mm storm manhole is 16 each? Are 1200 mm Manholes and 1200 mm CBMH's considered the same item?

A: There are 13- 1200mm Structures. A CBMH and a MH are considered the same as for the item.

22 Q: Are 1500 mm Manholes and 1500 mm CBMH's considered the same item?

A: Yes. A CBMH and a MH are considered the same item. 1500 mm MH needs to be increased to 5.

23 Q: What is the dia. of DCB421?

A: DCB 431 and DCB 421 shall be changed to 1500 mm CBMHs. The SUPs have been updated accordingly.

24 Q: Will all 104 sanitary services tie into existing service pipe away from the building? Will any interior work be required for sanitary service hook up?

A: The services will be connected outside the building as close to the building as directed by the Engineer. The quantity (104) is only an estimate and the final quantity will be determined by the results of the CCTV inspection.

25 Q: Will the tender closing date be extended?

A: No, the tender closing date remains on March 30, 2020.

26 Q: Confirm quantity of 1200 mm Sanitary Manholes.

A: There are 25 sanitary MH's each one 1200 mm. The Schedule of Unit Prices will be amended accordingly.

27 Q: What method is preferred for paint removal? Grinding or soda blast?

A: Special Provisions No. 30 and 31, bullet 9 specifies when grinding and/or soft abrasive methods are required.

An item for soda blasting has been added to the SUP.

28 Q: Regarding the Decorative Guardrail:

1. What gauge of metal for the 'T' Beam and saddles?
2. Any particular steel? Galvanized, stainless steel? Alloy?
3. What is an acceptable paint finish for the metal components? – can range from spray can to powder coated.
4. How many sides are there to the saddle? 2 or 4? Need hole dimensions and size of lag bolts or possibly threaded rod through the entire post?
5. What are the dimensions of the 'Wood Beam'?
6. What is the diameter size of the sonotube?
7. What are the Saddle dimensions? Or is off the shelf acceptable?

A: The Decorative Guardrail detail has been updated. Please see sheet L6.

29 Q: Storm Manhole 303 – Storm Manhole 320 is 450 mm Pipe. Drawings state concrete. What material should this stretch of pipe be?

A: As per Contract Document F Special Provisions Part E storm sewer pipe between 250 mm and 450 mm dia. shall be PVC or HDPE. The reference to concrete on the Drawing is incorrect.

30 Q: How is the Root Barrier within the planters to be included in our costs since Trees and Shrubs are separated in the Unit Pricing?

A: The cost of the root barrier shall be included with the cost of the barrier curb (planting bed) Item No. C 14 in the SUP.

31 Q: Please confirm quantities for the following Storm Sewer items. 250 mm, 300 mm, 450 mm (HDPE and CONC), 525 mm.

A: Quantities are confirmed as follows - 250 mm = 81.9 m, 300 mm = 201.3 m, 375 mm = 303.2 m, 450 mm = 152.6 m, 525 mm = 6.4 m. Pipe material is explained in SP E-7 to E16. The Schedule of Unit Prices will be amended accordingly.

32 Q: Stone and Timber Bench:

1. Is the top of the stone to be sawcut? (Really should be to get a true flat surface?)
2. Do they have a picture of an existing one?
3. What are the dimensions of the wooden slats – 2 x 2?
4. What is holding the slats together? A fabricated f? Or is the stone is strapped out with a 2x4?

A: Stone and Timber Bench detail has been updated. An allowance has been provided in the SUP for this item. Please see sheet L6.

34 Q: What is the pavement structure for the side streets? HL8 @ 50mm & HL3 @ 50mm?

A: The pavement structure for the side streets shall be 60mm depth base course asphalt and 40mm depth surface course asphalt.

35 Q: What is the anticipated width of the asphalt restoration behind the new sidewalk? What item is this paid under and do you have an estimated quantity?

A: The proposed material between the back of new sidewalk and base of buildings will be a coloured concrete adjustment strip (not asphalt). The work will be paid under Item C 18 in the SUP. The width varies. Please refer to Contract Drawings.

36 Q: Will traffic be detoured next year for the surface lift of asphalt?

A: Yes. Traffic will be detoured as per the conceptual detour plan.

37 Q: What is the depth of cold patch to be placed? Paid by the m2?

A: The Contractor shall assume a 50 mm depth of cold patch. We are not expecting to use cold patch over the winter shut down.

38 Q: Where did the PGAC spec come from? Typically, we use 58-28.

A: Due to the AADT, traffic loading and truck counts PGAC +58-34 at a minimum is to be used for all lifts of asphalt as noted on the tender drawings.

39 Q: I am hoping that you could provide me with the necessary site parameters or direct me to someone who has this information. Specifically, if you could provide me with the total catchment area draining to the unit, the corresponding composite runoff coefficient or % impervious value, and, if there is upstream flow attenuation, the peak flow conveyed to the unit, it would be greatly appreciated. Alternatively, you could send me the SWM report, which should have the OGS sizing information in an appendix.

A: We are requiring the Contractors to provide a price using the unit we have specified in our tender package and as such will not be providing any of our design parameters at this time. The design has been based on the unit that we have specified in the tender drawings.

If the Contractor wants to carry your unit in his bid he will run the risk that it may not be accepted. We are encouraging all bidders to cost the unit as specified. Upon award we can look at the data for your unit to determine if it is an acceptable alternative.

Alternately there is a section in the bid documents where the bidder can recommend an alternative product (Section 7.3 of the Instruction to Bidders). This however will not be considered in the determination of the successful bidder.

40 Q: Is there a diversion tee following the OGS unit for the 525 mm pipe?

A: The 525 mm pipe will now tee into the 1200 mm pipe downstream of the OGS unit as per the revised Drawing No. PP11 attached to this addendum. The connection shall be made as per the applicable OPS and Document F, Part E – Storm Sewers E 15 – 1200 DIA. CONCRETE STORM SEWER (50 D).

41 Q: Is there a substitute tree for *Prunus Maackii*? – this tree is difficult to source.

A: We will accept *Malus makamik* - Flowering Crabapple as a substitution.

42 Q: The *Potentilla Fruticosa* cannot be sourced in 1 gal pot. Usually 2 or 3 gallon. Please confirm the spec will be changed to 2 or 3 gallon.

A: 3 gallon pot is acceptable.

43 Q: Will sheet piling cofferdam be permitted on division street?

A: Yes. A sheet piling coffer dam will be acceptable provided that the design and construction is in accordance with the Occupational Health and Safety Act.

It is the responsibility of the Contractor to provide adequate assistance from a Geotechnical Engineer to ensure structural capacity and to ensure that there is no uplift or “boiling” of the excavation. It will be the Contractor’s responsibility to ensure that the sheet piling is deep enough to prevent flow from the outside into the excavation.

The Contractor will also be responsible to ensure that any structure, etc. within the vicinity of the works is protected from damage. Any damage to any structure as a result of the Contractor’s activities will be the responsibility of the Contractor.

44 Q: Can you confirm the units are correct for items ‘G’ and ‘H’?

A: The units are correct.

45 Q: The conduit and duct bank lengths appear to be off. Can you provide some clarification?

A: The Schedule of Unit Prices Part G – The decorative street lighting poles/and buried wiring will be installed from Frank Street to Division Street.

The section from Frank Street to Elm Street will remain as overhead street lighting; however new arms and fixtures will replace the existing. This change will supersede the design shown on the contract drawings.

The contract quantities for the above have been adjusted to reflect this clarification.

Note: The duct materials to be used in the duct bank shall be ESA approved.

46 Q: An example is item 'G16a' that has a length of 1,200mtrs. The site is only 400mtrs in length. There are similar in section 'H' as well for the intersections.

A: Reply provided in Question 45 above.

47 Q: In Addendum #1 there was mention of a streetlighting drawing that was to be provided in Addendum #2.

A: Additional electrical drawings are included with this Addendum.

48 Q: We did not receive the drawing set with Addendum #2.

A: Additional electrical drawings are included with this Addendum.

49 Q: Regards to Pavement Marking Item – could I get clarity on the following:  
Item C28 and C29, Temporary markings are to be performed in 2020 for winter shutdown? If so, would you not want two coats of paint?

A: Yes. Two coats of paint will be required for the winter shut down.

50 Q: Regards to Pavement Marking Item – could I get clarity on the following:  
Item C28 is this just for centerline and lane line, or is it also for stop bars, crosswalks.

A: All temporary line painting, including cross walks and stop bars, are included in this item.

51 Q: Regards to Pavement Marking Item – could I get clarity on the following:  
Items C24 to C27 are to be placed in 2021?

A: Yes. These are expected to be applied in 2021.

52 Q: Regards to Pavement Marking Item – could I get clarity on the following:  
Item C26, is this item for the 10cm yellow centerline and the 60cm stop bars?  
If so, have the 60cm stop bars been converted down to a 10cm linear line and added to centerline Meters

A: Item C26 shall be revised to include the following:

Item C26:

- a) Pavement Marking Durable, Line Work – 1500m, Plan Quantity
- b) Pavement Marking Durable, Stop Bars – 470m, Plan Quantity
- c) Pavement Marking Durable, Crosswalk Lines – 240m Plan Quantity

Special Provisions C24 thru to C31 inclusive shall be amended to include the following:



Any deviations to the layout of the pavement markings from the "Issued for Construction" Drawings will not be tolerated unless first approved by the Engineer.

The Schedule of Unit Prices has been updated and is included with this Addendum.

53 Q: Regards to Pavement Marking Item – could I get clarity on the following:  
What item are the 10cm crosswalk lines being price under? Should they not be Durable like the stop bars?

A: Please refer to Question/Answer 48 above.

54 Q: Regards to Pavement Marking Item – could I get clarity on the following:  
What lines and symbols are being obliterated and when?

A: All temporary and applicable permanent lines and symbols to facilitate placement of top course asphalt along Berford Street and side streets as well as to facilitate proper tie-ins to existing pavement markings as required and approved/directed by the Engineer.

55 Q: What are the requirements for coloured asphalt?  
a. Does the colour need to be added at the source (Asphalt Plant) or can the colour be applied on site after paving operations?

A: All colour needs to be added at the source to the mix. Colour applied at the site will not be accepted.

56 Q: Please provide a specification for maintenance of the garden beds, regarding watering and weeding.

A: Please refer to Part 75 - Trees, Shrubs and Groundcovers of this addendum below.

57 Q: Please provide an explanation on item C9 – Temporary Asphalt. Is this item to be used for paving the temporary staging connection areas?

A: Temporary asphalt item C9 is intended to be used for all temporary conditions. These conditions can include staging, providing temporary hard surface walking areas, winter shut down applications, etc.

All conditions and situations for placement of Temporary Asphalt must be approved by the Engineer prior to placement.

Placement thickness will be determined on a case by case basis as approved by the Engineer.

58 Q: Under what item is the granular for building the road make up at the temporary staging connection areas paid for?

A: The granulars used for the temporary staging connections and in other situations will need to be approved by the Engineer prior to placement and when approved, will be paid under the appropriate Gran A and B Items. Tickets will be collected to confirm tonnage.

59 Q: This project states that the PGAC requirement is PG 58-34. Would the customer reconsider using PG 58-28? This is the grade of asphalt that is traditionally used in this area for all MTO, County and Municipal projects.

A: Due to the AADT, traffic loading and truck counts PGAC +58-34 at a minimum is to be used for all lifts of asphalt as noted on the tender drawings. The pavement designs table from the contract drawings is attached.

60 Q: The decorative guardrail, there are no details for thickness of steel, etc., powder coating yes/no? Stainless steel hardware?

A: Decorative Guardrail detail has been updated. Please see sheet L6.

61 Q: There are 19 garbage cans on plan vs. 14 on list of unit pricing (and I am not able to get costing as their office in Quebec is closed).

A: The total has been revised to 20 garbage cans and has been reflected in the plan and unit pricing.

62 Q: No arm chairs on plan, it calls for 6 on list of unit pricing.

A: Arm chairs have been removed from unit pricing.

63 Q: I have been talking with owner at TensArch, and the specs. provided for the shade structure don't work?

A: This item will be considered a Design/Build item. The intention will be to work with TensArch (or equivalent manufacturer) to detail a sail shade structure to fit within the 6m x 2m space allotted in two locations. \$20,000 per sail structure is provided as an allowance for the design and construction of these items.

64 Q: We also need more detailing on the stone and wooden benches, if possible.

A: The Stone and Wood Bench detail has been updated. Please see sheet L6. An allowance has been provided for this item in the SUP.

65 Q: There is an error in their specifications and design, the posts and footings are much too small and would fail in any real wind or inclement weather.

A: See answer to question 65.

66 Q: The post diameter spec. should be 165mm or 6.5 inch OD.

A: See answer to question 65.

67 Q: The footings should be 600mm min down 1200mm minimum.

A: See answer to question 65.

68 Q: The two triangles are an inefficient design for Shade.

A: See answer to question 65.

69 Q: Please see below use of one Sail with varying posts heights. This gives the aesthetic, the efficiency in shape for wind and rain and also MAX shade. This is called a Hyperbolic parabola. It looks like triangles; however, is not. You create this design by having two posts at 15 foot, and two posts at 10 foot (above grade heights).

A: See answer to question 65

### Add New Special Provision

70. Addendum – Document F – **Item No. A 15, Construction Layout**, Special Provision shall be added to include the following:

The scope of Work shall be in accordance with OPSS.MUNI 100 and shall include, without limitation:

- Supply and installation of 38 mm x 38 mm x 1200 mm wooden stakes painted fluorescent orange solidly set along both sides of the limit of the Right-of-Way (ROW) perpendicular to the proposed centerline road alignment at even 20 m stations.
- Stakes shall also be provided for beginning, end and centerline of all curb radii's and structure locations (i.e. catch basins, maintenance holes, etc.).
- All stakes shall be clearly marked with permanent black marker with the station, offset to the proposed centerline of the road and cut or fill from top of stake to proposed finished centerline grade of the road. The station shall be marked on the roadside of the stake, offset to centerline of road on the backside of the stake and the cut/fill on one of the other sides of the stake.
- Radius stakes shall have the curb radius and station clearly marked.
- Every third stake shall also have the geodetic elevation marked as well as per the benchmarks provided by the Engineer.
- Where wooden stakes cannot be placed due to surface conditions other site specific methods will be considered such as "nail-and-flag", cut-cross, etc. through consultation with and approval by the Engineer.
- Markers or poles 1.2 to 1.5 m in height painted red on top shall be placed by the Contractor at each iron bar and monument to protect same.

The Contractor will also provide a report of all of the stakes giving all of the above information in spreadsheet format to the Engineer.

The Contractor shall be responsible for obtaining permission from property owners to place stakes on his or her property and for resetting of all stakes damaged, removed or lost due to construction activities, vandalism or any other activity or circumstance.

The Engineer shall provide the benchmark locations and elevations and identify the horizontal alignment in relation to existing legal survey monuments and ROW information as noted on the Contract Documents for the Contractor.

A copy of the base AutoCad files for the project will be available to the Contractor after the Contract is awarded at a cost of \$250 (including HST). A cheque payable to R.J. Burnside & Associates Limited must be provided before these AutoCad files can be released. At least five business days is required to provide this information in digital format on CD or through any other electronic means.

This electronic data is provided only to assist the Contractor with layout of the work. The Engineer does not guarantee the accuracy of this data and shall not be held responsible for any inaccuracies or omissions in this data. Any electronic data, i.e., AutoCad files, shall not form part of this Contract.

The Engineer shall be notified 24 hours in advance of any layout work carried out and shall check same if he so desires. Checking of layout or failure to do so on the part of the Engineer in no way relieves the Contractor of full responsibility for construction to the proper location, alignment and grade.

There shall be no measurement for payment and the unit for payment shall be Lump Sum.

Payment at the Contract unit price shall be full compensation for all labour, Equipment and Material to do the Work. For Progress Payment, 50% of the Contract Price will be paid upon initial completion of the layout to the Engineer's and Town's satisfaction. The balance will be pro-rated over the balance of the working period.

### **Replace Schedule of Unit Prices**

71. Schedule of Unit Prices Document B – Bid, Appendix G Issued with Addendum No. 1 shall be replaced with the attached revised **Schedule of Unit Prices (Addendum 3)**.

### **Add Electrical Plans**

72. Electrical Drawings - Add – **Issued For Tender Electrical Plan**, Drawing No. E001 Electrical Plan, E002 Electrical Plans, E003 Berford – Electrical Plans, E004 Electrical Design Details, and E005 Electrical Details.

### **Add Landscape Drawings**

73. Landscape Drawings - Add – **Issued for Third Addendum**, Streetscaping Plan, L1, L2, L3, L4, and Streetscaping Notes L5 & Streetscaping Details L6

### **Add Additional General Requirements**

74. Allowances

Document D, General Requirements shall be amended to include the following:

### **D1.34 Allowances**

- Expend each allowance as directed by Consultant in writing. Work covered by allowances shall be performed for such amounts and by such persons as directed by Consultant.
- Each allowance will be adjusted to actual cost as defined hereunder and the Contract Price will be amended accordingly by Contract Change Order.
- Progress Payments for Work and Products authorized under allowances will be made in accordance with the payment terms set out in the Conditions of the Contract.
- A schedule shall be prepared jointly by the Consultant and Contractor to show when items called for under allowances must be authorized by the Consultant for ordering purposes so that the progress of the Work will not be delayed.
- Cash allowances, unless otherwise specified, cover the net cost to the Contractor of services, Products, construction machinery and equipment, freight, handling, unloading, storage, installation where indicated, and authorized expenses incurred in performing the Work. Cash allowances shall not be included by a Subcontractor in the amount of their Subcontractor work.
- Supply and install allowances shall include:
  - Net cost of Products;
  - Delivery to Site;
  - Unloading, storing, handling of Products on Site;
  - Installation, finishing, and commissioning of Products;
  - Applicable taxes and duties, excluding GST.
- Where costs under a cash allowance exceed the amount of the allowance, the Contractor will be compensated for any excess incurred and substantiated.
- Progress payments on accounts of work authorized under cash allowances shall be included in the monthly certificate for payment.

Submit, before application for final payment, copies of all invoices and statements from suppliers and Subcontractors for work which has been paid from cash allowances.

### 75. Trees, Shrubs and Groundcovers

Document D, General Requirements shall be amended to include the following:

#### **D1.35 – Trees, Shrubs and Groundcovers**

##### 1.0 General

##### 1.1. Section includes:

- a) Labour, products, plant, tools, equipment and services necessary for the supply and installation of trees, shrubs, and groundcovers, as shown on the Contract Drawings and plant list.
- b) All Work shall be in accordance with the Contract Documents.

##### 1.2. References

- a) Canadian Standards for Nursery Stock (latest edition) published by the Canadian Nursery Landscape Association, except where specified otherwise.
- b) Plant Hardiness Zones in Canada (latest edition) published by Agriculture and Agri-Food Canada (AAFC).

### 1.3. Quality Assurance

- a) Qualifications: The Contractor shall have membership in Landscape Ontario, with a minimum of 5 years of experience in Work of this Section.
- b) All work of this Section shall be carried out by experienced personnel under the direction of a skilled foreman and in strict accordance with the specification and best horticultural practice.
- c) Make all materials available for inspections at source of supply and/or upon arrival on the site. Give timely notice, in writing, to the Consultant when such materials are available for inspection.
- d) Approval of plant materials at source of supply will not impair the right of the Consultant to reject plant materials during or after planting operations, that have been damaged, that have poor form and habit or that do not conform to the Contract Documents.
- e) Planting of materials prior to inspection by the Consultant will be the Contractor's responsibility and subject to rejection by the Consultant.
- f) Remove all rejected materials from the site immediately.
- g) Do not remove any labels from plants unless directed to do so by the Consultant.

### 1.4. Submittals

#### Product Data:

- Submit copies of manufacturer's/ supplier's Product data:
  - Plant material – submit source and supplier.
  - 'Triple Mix' soil (if used) – submit source, supplier and specifications.
  - Fertilizer.
  - Bonemeal.
  - Anti-desiccant.
  - Manufacturer's product data for proprietary flexible tie system (if used).

#### Samples:

- Submit Samples:
  - Planting Soil Mixture or 'Triple Mix' soil.
  - Mulch.

#### Warranty and Maintenance Reports:

- Submit copies of the following indicating:
  - Maintenance program and schedule for 1 year Warranty period by Contractor.
  - Maintenance reports 3 times per year during Warranty period (May, August, October) outlining the actions carried out as per the maintenance requirements under this Section, as well as dates, personnel at each visit, and notes on growing conditions. Maintenance reports shall be signed by maintenance contractor, formally verified by the Town and copies shall be submitted to Owner, and Contractor.
  - If necessary, the Contractor will indicate any preventative or corrective measures required which are outside Contractor's responsibility.

### 1.5. Substitutions

- All plants shall be supplied as specified on the Contract Drawings. Substitutions will not be accepted unless approved in writing by the Consultant.
- Give timely advanced notice to the Consultant, in writing, when applying for substitutions.

### 1.6. Delivery, Storage And Handling

- All materials such as fertilizers, bonemeal, mulches, etc. supplied in standard containers shall be delivered to the jobsite clearly indicating contents, weight, analysis and name of manufacturer. Where such materials are supplied in bulk, written statements of the same information shall be submitted to the Owner in accordance with submittal requirements of this Section.
- Protect plant material from frost, excessive heat, wind and sun during delivery.
- Plants shall be transported in trucks equipped with solid sides and tops, or framing and canvas/ tarpaulin sheeting, to protect the entire plant from any element of the transportation process that would desiccate, bruise, burn, distort or damage the trunk, branches, root ball, or the general quality or character of the plant.
- Crowns wrapped for transport must be unwrapped prior to inspection.
- Trunks shall not be used for hoisting purposes and branches shall be carefully padded at points of contact with the equipment. Trees exhibiting any mechanical damage will not be accepted.
- Immediately store and protect plant material which will not be installed within one (1) hour after arrival at site in storage location approved by Consultant.
- Protect stored plant material from frost, wind and sun and as follows:
- For bare root plant material, preserve moisture around roots by heeling-in or burying roots in sand or topsoil and watering to full depth of root zone.
- For pots and containers, maintain moisture level in containers. Heel-in fibre pots.
- For balled and burlapped and wire basket root balls, place to protect branches from damage. Maintain moisture level in root zones.
- Store all plants in a shaded area.
- Store materials which are subject to deterioration resulting from weather or any other causes thereby impairing their effectiveness in a dry waterproof place. Follow regulations regarding Health and Safety.
- Plants with broken or cracked rootballs or plants which are strongly desiccated will be subject to rejection upon arrival on the project site.

### 1.7. Examination

- Examine the site before commencement of work and inform the Consultant if site conditions will not permit completion of work as specified in this Section.
- Where applicable to the Contract, ensure that subgrade preparation and drainage are satisfactory for continuing maintenance and growth of materials specified in this Section.

### 1.8. Warranty

- "Nursery Grown" plants installed during the period between May 15th to October 15th for which a Certificate of Substantial Performance has been issued, shall be warranted

- for twelve (12) months from date of Substantial Performance, providing adequate maintenance has been provided.
- "Nursery Grown" plants installed after October 15th for which a Certificate of Substantial Performance has been issued, shall be Warranted for twelve (12) months from May 15th of the following year, providing adequate maintenance has been provided.
  - The Consultant reserves the right to extend Contractor's Warranty responsibilities for an additional one year if, at end of initial Warranty period, leaf development and growth is not sufficient to ensure future survival.

## 2.0 Products

### 2.1 Plant Materials

- All plant materials shall be No. 1 Grade, nursery grown stock meeting the highest horticultural standards of the Canadian Nursery Landscape Association with respect to grading and quality.
- Plants shall be grown under proper cultural practices with respect to fertile soil, ample spacing, regular cultivation, weed, pest and disease control, adequate moisture and pruning. All such plants shall have been transplanted and/or root pruned regularly, but not later than (36) thirty-six months prior to arrival on the site.
- Ball sizes shall be sufficiently large to contain at least seventy-five percent (75%) of the fibrous root system. Ball sizes shall be in accordance with the Canadian Nursery Landscape Association Standards.
- Where trees are to be planted "balled and burlapped" (B/B) they shall be moved with the root system as solid units, with balls of earth wrapped with burlap. The diameter and depth of the balls must be sufficient to encompass a fibrous and feeding root system necessary for the healthy development of the plant. No canned or potted stock shall be accepted. No plant shall be accepted when the ball of earth surrounding its roots has been cracked or broken during transplanting. The least possible time shall elapse between the digging of a tree and its final planting. The Consultant shall be the sole judge as to the allowable lapse of time.
- Burlap and rope shall be manufactured of natural decomposable fibres without treatment for waterproofing or rot resistance. Plastic or metal fibres or strands shall not be used.
- All plants shall be legibly tagged with their proper name and size and source. Tags must remain in place until approved by the Consultant.
- Nomenclature of specified plants shall conform to the international Code of Nomenclature for Cultivated Plants and shall be in accordance with the approved scientific names given in the latest edition of Standardized Plant Names. The names of the varieties not named therein shall conform to the names accepted in the nursery trades.
- Plants shall be sound, healthy, vigorous, well branched and densely foliated when in leaf. They shall be free of disease, insect pests, eggs or larvae and shall have healthy, well-developed root systems. All shrubs and trees shall possess all characteristics of the specified kind with all the leaders intact, undamaged and uncut, growing from an un-mutilated root system and exhibiting previous 2 years shoot elongation as typical. The stems shall be free from sun scalds, frost cracks, abrasions, fire and rusts. All old injuries shall be completely callused over. Pruning wounds must show vigorous bark on all edges.



- All plant materials shall be moist, showing active green cambium when cut. Coniferous plants that are dry, brittle or showing a faded green not typical of the species will not be acceptable. Coniferous trees, with the exception of ornamental cedars, are to be unclipped. All trees shall have only one un-pruned central leader.
- All plant materials specified shall be the best available quality. Trees indicated as “specimen” on the plant list shall be supreme examples of the particular species without irregularities or blemishes. They shall be uniform in character with all other “specimens” of the same species required under this Contract.
- All plants shall conform to the measurements specified in the plant list, except that plants larger than specified may be used if approved by the Consultant. Use of such plants shall not increase the Contract price. If larger plants are approved, the ball of earth shall be increased in proportion to the size of the plants.
- All plants shall be measured when the branches are in their normal position. Height and spread dimensions specified refer to the main body of the plant and not from branch tip to root base or from branch tip to branch tip. Trees that exhibit weak graft unions shall not be accepted.
- Where trees are measured by Caliper (cal.), reference is made to the diameter of the trunk measured 150mm above ground as the tree stands in the nursery. All plant materials shall be nursery grown under climatic, soil, and local site conditions similar to those on the contract site for at least two (2) years.
- Any plants dug from native stands, woodlots, orchards or neglected nurseries and which have not received proper cultural maintenance as advocated by the Canadian Nursery Landscape Association, shall be designated as “Collected Plants”. These plants should be used only with specific permission from the Consultant.

## 2.2 Planting Soil Mixture

- Planting soil mixture to be 2 parts topsoil, 1 part composted soil amendment and 0.6kg/m<sup>2</sup> bonemeal.
  - Topsoil: to be friable loam, neither heavy clay nor material of a very light sandy nature, containing minimum of 4% organic matter for clay loams and 2% for sandy loams, to maximum of 25% by volume. Free of subsoil, roots, grass, weeds, toxic materials, stones, or foreign objects, and having an acidity range (pH) of 5.5-8.5. Topsoil containing crabgrass, couchgrass, or other noxious weeds is not acceptable.
  - Composted soil amendment: to be decomposed plant material, fairly elastic and homogeneous, free of decomposed colloidal residue, wood, sulphur, or iron, containing minimum 50% organic matter by weight. Shredded particles may not exceed 25mm in size. Maximum pH value of 8.5. Carbon to nitrogen ratio shall not exceed 30:1.
  - Bonemeal: shall be commercial raw bonemeal, finely ground, with a minimum analysis of four percent (4%) nitrogen and twenty percent (20%) phosphoric acid
- Mix topsoil, composted soil amendment and bone meal thoroughly on the site, not more than two (2) days before backfilling.
- If mixing the planting soil mixture, the Contractor is required to provide the empty bags of all composted soil amendment and bone meal used on the site to the Consultant upon completion of planting operations.
- ‘Triple Mix’ soil will be accepted as planting soil mixture.

## 2.3 Water

- Free of impurities that would inhibit plant growth.

## 2.4 Ties

- Suitable ties include:
  - Black ArborTie installed as per manufacturer's recommendations (supplied by Deep Root Canada Corp., Unit 740 - 1190 Melville Street, Vancouver, BC V6E 3W1, (800) 561-3883), or approved equal.
  - Burlap strips, 50mm wide, installed as detailed in the Contract Documents.
- Wire or wire encased in hose is not acceptable.

## 2.5 Stakes

- T-bar, steel, 40 x 40 x 5 x 2440 mm

## 2.6 Trunk protection

- 100mm diameter corrugated drain collar 500mm in height.

## 2.7 Mulch

- Shredded cedar bark: varying in size from 35 to 75 mm in length, undyed, and free of chemicals.

## 2.8 Fertilizer

- Complete commercial slow release fertilizer with a maximum 35% water soluble nitrogen with the following percentages by weight of nitrogen, phosphorus, and potassium, in that order: 10-10-10 or as determined by soil tests.

## 2.9 Anti-desiccant

- Wax-like emulsion shall be permeable to permit transpiration and shall be delivered, mixed and applied in accordance with the manufacturer's recommendations.

## 3.0 Execution

### 3.1 Pre-planting Operations

- No planting shall be executed until finished grade has been established.
- Remove damaged roots and branches from plant material.
- Obtain approval from Consultant of plant material prior to planting.

### 3.2 Excavation and Preparation of Planting Beds

- Excavate to depth and width of planting bed or planting pit as indicated in the Contract Documents.

- Remove and dispose of excavated material including sub-soil, rocks, roots and other debris.
- Scarify sides and bottom of planting hole or planting bed.
- Remove water which enters excavations prior to planting. Notify Consultant if water source is ground water.
- Obtain approval from the Consultant of the planting bed sub-grade prior to backfilling with planting soil mixture.
- Backfill planting beds and/or planting pits with planting soil mixture as indicated in the Contract Documents.
- For individual planting pits:
  - Stake out location of individual trees and obtain approval from Consultant prior to excavating.
  - Do not leave tree pits open overnight.
- Planting bed preparation:
  - Place planting soil mixture after Consultant has accepted sub-grade of planting bed.
  - Spread planting soil mixture in uniform layers not exceeding 150 mm.
  - Spread planting soil mixture to the minimum depths as detailed in the Contract Documents.
  - Manually spread planting soil around trees, shrubs and other obstacles.
- Do not place or mix planting soil mixture when in a muddy or frozen condition.

### 3.3 Planting

- All planting shall be executed in accordance with the Contract Documents.
- Planting shall be done during suitable weather conditions.
- For jute burlapped root balls, cut away top one third of wrapping and wire basket without damaging root ball. Do not pull burlap or rope from under root ball.
- For container stock or root balls in non-degradable wrapping, remove entire container or wrapping without damaging root ball.
- Trees and other plant materials shall be planted vertically and faced to give the best appearance or relationship to adjacent structures, road and walkways to the approval of the Consultant.
- For trees and shrubs:
  - Plants shall be set plumb in the centre of the planting pits at a relationship to existing grade allowing for normal natural settlement, as detailed in the Contract Documents.
  - Remove all ropes, wires, etc., and pull burlap away from top of rootball.
  - Set bare root plants so that their roots lie in their natural position.
  - The shrub root ball or the natural spread of the roots shall be a minimum of 300mm away from the edge of the planting bed. The shrub hole shall be deep enough so that the top of the ball is at the same level as the surrounding grade, with a minimum of 150mm of tamped soil mixture under the ball.
  - Where trees are to be planted "bare root" (B.R.) or container grown, the diameter of the hole shall be at least 600mm wider than the natural spread of the roots.
  - The tree hole shall be deep enough that when backfilling is completed, the tree shall be 50mm above the depth as it previously stood in the nursery to allow for settling.
  - Backfill soil mixture in layers not exceeding 150mm in depth and tamp each lift to eliminate air pockets.
  - Constantly tamp soil mixture around rootball to eliminate air pockets.

- Soak soil mixture thoroughly with water when hole is filled half-way. Fill hole with soil mixture completely, leaving a shallow saucer directly over root ball, and slightly smaller in diameter than the excavation.
- Backfill to a height above finished grade sufficient to allow for normal, natural settlement. Finished grade, after settlement, shall be as detailed in the Contract Documents.
- Prune only as necessary to remove dead, broken branches.
- For groundcovers, backfill soil evenly to finish grade and tamp to eliminate air pockets.
- Water trees, shrubs, and ground covers thoroughly immediately after planting.
- After soil settlement has occurred, fill with soil to finish grade.
- Dispose of burlap, wire and container material off site.

#### 3.4 Trunk Protection

- Install trunk protection on deciduous trees as detailed in the Contract Documents, prior to installation of tree supports.

#### 3.5 Tree Supports

- Install tree supports as detailed in the Contract Documents or as recommended by the Manufacturer of a proprietary tree support system.

#### 3.6 Mulching

- Ensure soil settlement has been corrected prior to mulching.
- Spread mulch in planting beds and tree saucers to depth of 75mm as detailed in the Contract Documents.

#### 3.7 Clean-Up

- Immediately after planting, remove all excess materials, rubbish and debris from the site, leaving the area neat and tidy. Clean all areas which are contaminated as a result of planting operations and reinstate to existing conditions or better.

#### 3.8 Acceptance

- Prior to acceptance by the Consultant, all plants and materials shall be completely free of disease and/or insect infestation and in a healthy and vigorous growing condition. Tree stakes shall be taut and all accessories in good condition as specified. Planting areas and tree saucers shall be freshly cultivated and free of weeds and debris.

#### 3.9 Maintenance During Warranty Period

- From the time of planting to end of the Warranty period, perform the following maintenance operations.
  - Water to maintain soil moisture conditions for optimum growth and health of plant material without causing erosion.
  - Reform damaged watering saucers.
  - Remove weeds monthly.
  - Replace or re-spread damaged, missing or disturbed mulch.

- If required to control insects, fungus and disease, use appropriate control methods in accordance with Federal, Provincial and Municipal regulations. Obtain product approval from Consultant prior to application.
- Apply fertilizer in early spring and any other time as required by soil testing or the Consultant.
- Prune and remove dead, broken or hazardous branches from plant material.
- Keep trunk protection and tree supports in proper repair and adjustment.
- Resetting plants to proper grades or upright position.
- Remove trunk protection, tree supports and level watering saucers at end of warranty period.
- Remove and replace dead plants and plants not in healthy growing condition. Make replacements in same manner as specified for original plantings.
- Replacements
  - Plant material must be replaced during the Warranty period, as required by the Consultant. Replacement of plants only at the end of the warranty period will not be acceptable.
  - Plant material found dead within the Warranty period, not in a healthy, satisfactory growing condition or that do not meet the requirements of the specifications, shall be replaced by the Contractor under the Contract Warranty.
  - The cost of replacements resulting from theft, vandalism, carelessness or neglect on the part of others, or any cause due to circumstances beyond the control of the Contractor, shall be borne by the Owner.
  - All replacements shall be plants of the same size and species as originally specified and shall be supplied and planted in accordance with the Contract Documents as directed by the Consultant.
  - The Warranty period and Contractor's responsibilities for replacements shall be the same length as the Warranty period for the original plant material and shall extend from the date of acceptance of the replacement. Any replacement must be undertaken immediately upon notification by the Owner or as identified by the Contractor during the periodic inspections required during the Warranty period.
  - Tag or mark, in a permanently visible manner, all replacement trees and notify the Consultant in writing of the date on which replacements were planted. Include sketch showing location of replaced plants.
  - Plant replacements shall be conducted at a time which is in accordance with good horticultural practice.

**End of Addendum No. 3**