

CORPORATION OF THE CITY OF BURLINGTON

C-2 CITY OF BURLINGTON AMENDMENTS TO ONTARIO PROVINCIAL

STANDARD SPECIFICATIONS (OPSS)

The City has adopted the use of Ontario Provincial Standard Specifications as shown in the quoted items with the following revisions:

1. OPSS.MUNI 206 - GRADING

Plan Quantity Measurement

Payment at the contract price for each item shall be full compensation to do the work.

2. OPSS 351 - SIDEWALK

Premoulded bituminous fiber expansion joints to be placed at a maximum of 30m intervals.

Measurement for Payment and OPSS 351.10 Basis for Payment

Payment at the contract price for sidewalk placed shall be full compensation for all labour, equipment, and material to do the work as outlined.

Excavation shall be paid under the item for "Excavation" unless otherwise noted.

3. OPSS.MUNI 353 - CURB, CURB AND GUTTER

Curb Lengths

All concrete curbs and curb returns more than 30m in length shall be constructed with a heavy duty curb machine capable of extruding a uniform and straight concrete curb with 0 – 15mm slump for the different City of Burlington curb standards.

Curb Machines

All curb machines must be able to extrude the curb, curb and gutter with a specified slump no more than 15mm. No tampering with the slump (adding water) is allowed during construction of the curb.

4. **OPSS 405 - SUBDRAINS**

OPSS 405.05.06 Granular Backfill

Materials for backfilling shall be 10 mm clear stone and shall completely surround the pipe.

OPSS 405.07.08.02(b) Laying Pipe

Treatment of subdrain in proximity of trees. This clause shall be deleted.

5. **OPSS.MUNI 501 - COMPACTION**

Water for compaction and dust suppression.

Measurement for payment. OPSS.MUNI 501.10 Basis of Payment

Water for compaction and dust suppression shall be included in the contract price of items for the materials placed.

6. **OPSS 802 - TOPSOIL**

OPSS 802.05 Materials

In addition to this specification, all topsoil shall be screened using 35mm (1 ½") size screen. This applies to all topsoil whether acquired from the jobsite or imported from offsite.

The topsoil shall be a fertile, friable natural loam containing not less than 4% of organic matter for clay loams and not less than 2% for sandy loams with an acidity value ranging from PH 6.0 to 7.5 and capable of sustaining vigorous plant growth. It shall be free of any admixtures of subsoil, clay lumps and free of stones, roots and other extraneous matter. If this is not attainable from the topsoil on site, then either this topsoil shall not be used or it shall be mixed with imported material to attain the above-mentioned specification.

Placing of Topsoil

The topsoil shall be rolled with a 50kg roller for compaction. The finished topsoil surface shall be smooth and firm against footprints.

Measure for Payment and OPSS 802.10 Basis of Payment

Method of payment for topsoil shall be included under contract price for quoted items for sod and seed.

7. OPSS 803 - SODDING

OPSS 803.08

All sodded areas shall be guaranteed for 1 year after placement.

OPSS 803.09 Measurement for Payment and OPSS 803.10 Basis of Payment

The payment of sod in m² shall include supply and placement of sod and topsoil, fertilizer, grading, removal of unsuitable materials, cleaning out weeded areas, pegging, rolling, watering and maintenance.

8. OPSS.MUNI 804 - SEED & COVER

OPSS.MUNI 804.05 Material

Clause OPSS.MUNI 804.05 of the OPSS for seeding shall be superseded by the following:

Seed to be prepared with a minimum 80mm of topsoil and seeded with this mixture at a rate of 1kg per 90m² mechanically sown:

60% Creeping Red Fescue
25% Kentucky Bluegrass
15% Canada Bluegrass

9. ASPHALT

9.1 General

The Quality Control staff or their representative shall have access without any prior notice to the premises of the asphalt plant for the purpose of inspection.

All asphalt tickets shall be electronically printed and submitted in numerical order to Contract Administrator by 9:00 am the morning following the placement of asphalt. Under no circumstances will hand written tickets be accepted.

Payment for asphalt cement to be included in the cost of the quoted items.

9.2 Asphalt Cement

Asphalt Cement shall conform to OPSS.MUNI. 1101

Performance Graded Asphalt Cement (PGAC) means an asphalt binder supplied from MTO DSM #3.05.22 (Designated Sources for Materials) and meeting requirements of OPSS.MUNI. 1101. (Example: PGAC 58-28)

Performance Graded Asphalt Cement with Elastic Recovery: means a performance graded asphalt cement with an additional elastic recovery requirement. Must meet requirements of OPSS.MUNI. Appendix 1101-B. (Example: PGAC 58H-28)

9.3 Asphalt Aggregates

Asphalt Aggregates shall conform to OPSS 1001 and OPSS.MUNI. 1003

Use of steel slag or blast furnace slag in asphalt mixtures will not be allowed.

9.4 Asphalt Mix Designs

Asphalt Mix Designs shall conform to OPSS 1150, except as ammended or extended herein.

Mix designs shall be completed by the contractor in accordance with OPSS 1150.04.01.02.02 (Mix Design Method)

A minimum of 14 Business Days prior to the start of paving operation, the proposed mix design and Job Mix Formula (JMF) shall be submitted in writing to the Contract Administrator for approval. The documents included in the mix design submittal shall show the information listed in OPSS 1150.04.02.03

9.6 Mix Types and Design Properties

Mix Type	PGAC Grade	A/C Content (%),Minimum	RAP (%), Maximum	Air Voids %	Stability (N @ 60°C, Min
HL-3	58-28	5.30	0	3.5 – 4.5	10,000
HL-8	58-28	5.00	15	3.5 – 4.5	10,000
HL-3 HS	58H-28	5.30	0	3.5 – 4.5	12,000
HL-1	58H-28	5.20	0	3.5 – 4.5	12,000
HDBC	58H-28	5.00	0	3.5 – 4.5	12,000
HL-3F	58-28	5.80	15	4.0 – 5.0	5,800

Notes:

- HL-1: Coarse aggregate from MTO DSM #3.05.22 (Designated Sources for Materials)
- HL-1, HL-3HS, HDBC: Fine Aggregates to be 100% crushed limestone; Manufactured Sand and ¼ Chip permitted. (Max 10% Limestone Screenings)
- HL-3: Fine Aggregate Limestone Screenings, maximum 15%.
- HL-8: No Fine Aggregate Limestone Screenings if mix contains RAP.

- Stockpiles of RAP shall be free of any slag or slag material and shall be tested on a regular basis for A/C content. All stockpiles of recycled asphalt shall be examined and approved for use by the City's Quality Control Staff.
- HMA with RAP is permitted for use from April 1st – October 31st only.

9.7 Placement of Hot Mix on Roads

Asphalt placement shall conform to OPSS 310, except as ammended or extended herein.

The City requires a minimum 48 hours notice prior to any paving.

Quality Assurance Testing will be arranged by the City and asphalt acceptance based on OPSS 310.

A material transfer vehicle (MTV) must be used for all mainline roadway paving operations, with exception of base repairs. The bid price per tonne for placing hot mix asphalt shall include all costs related to use of the material transfer vehicle.

The requirements of OPSS 310.07.11 (Longitudinal and Transverse Joints) shall apply except amended herein:

Where proposed toplift asphalt paving abuts existing pavement, a butt joint shall be used. Lap joints shall not be accepted in the top course of pavement. Existing pavement shall be saw cut or milled to the depth of the proposed toplift paving thickness and the face of the existing pavement shall be flat, smooth and clean of any debris. The face of existing pavement shall have SS-1 tack coat (or equivalent) applied prior to paving.

9.8 Pre-Pave Meetings

Prior to any paving works, the Contractor shall schedule a pre-pave meeting with the City Inspector to review the existing surface condition. The City Inspector will notify the Contractor in writing of all deficiencies. All deficiencies noted in the meeting shall be corrected prior to paving. If the Contractor fails to schedule a pre-pave meeting, the City reserves the right to deny the paving work from taking place.

9.9 Paving Equipment – Road Right-of-Way

The requirements of OPSS 310.07.07 shall apply except as modified herein. Highway class Pavers and Rollers shall be used to accomplish the placement and compaction of hot mix asphalt pavement. Equipment shall be approved by the City of Burlingtons' Contract Administrator and operated by an experienced, manufacturer-trained operator. Trackless pavers only will be allowed for paving when using glass grid.

Paving spreader shall have a uniformly heated screed, fully floating, hydraulically operated with gradual vibrating controller and a minimum width of 3m extended to 5m with automatic grade and slope controls. The screed should be capable of producing a desirable, smooth surface and even texture, free of any mat defects such as tearing, shoving, gouging and segregation. Spreader shall be certified annually by the manufacturer before each paving season. The following parameters shall apply to paving spreaders:

- Hopper capacity: minimum 12 tonne
- Track length: 3 metres or equivalent with Rubber tires
- Operating weight 16 tonne
- Paving speed: 76m per minute

9.10 Paving Equipment – Parking Lots

Placement of hot mix asphalt pavement for parking lots shall be accomplished by using an approved paver and roller by the City's Contract administrator. The paving spreader must have a uniformly heated screed, fully floating, hydraulically operated with gradual vibrating controllers and a minimum width of 2.5m and extended to 4.0m with an automatic grade and slope controller the screed should be capable of producing a desirable, smooth surface and even texture, free from any mat defects such as tearing, shoving, gouging and segregation. Screed shall be certified annually by the manufacturer before the start the paving season. Hopper capacity must be minimum 8 tonnes and a minimum rubber track length of 2.0m is required.

9.11 Placement of Hot Mix for Pedestrian and Bike Pathways

Mainline paving of pedestrian and bike pathways must be done using a paving spreader. Hand work will only be accepted when patching areas less than 20m² in size.

9.12 Commercial, Industrial & Multi-Residential Driveways

Commercial driveways affected during construction, shall be repaired/restored. The contractor shall notify the City in advance of driveway paving with enough time to allow the Inspector to mark out the physical location of the final removal limits of the driveway. The following City of Burlington Standard Drawings shall apply accordingly.

S-110 - Commercial, Industrial Driveway Standard Entrance

S-111 - Commercial, Industrial Driveway Standard Restricted Access Entrance

S-112 - Commercial, Industrial Multi-Residential Driveway Entrances

9.13 Residential Driveways

Residential driveways affected during construction, shall be repaired/restored. The contractor shall notify the City in advance of driveway paving with enough time to allow the Inspector to mark out the physical location of the final removal limits of the

driveway. Residential Driveways shall be paved with 50mm of HL3F, or match existing depth.

10. **GRANULAR MATERIALS.**

- a) The Contractor shall not change any source of granular material supply until he has notified the City's Quality Control Staff or this representative in writing and has obtained approval.
- b) The Contract Administrator or his representative shall have access without any prior notice to the premises of the gravel pit or quarry operation for the purpose of inspection.
- c) Granular B Aggregates - The use of screenings for granular "B" or "C" for road base is not permitted.
- d) When a full depth granular "A" material is required for road base, only granular "A" crushed lime stone is permitted to be used for road base.
- e) When a composite material of 19mm granular "A" and 50mm crusher run is required for road base, either granular "A" crushed lime stone or granular "A" pit run material with 80% crushed percentage on two faces is permitted on top of 50mm crushed lime stone.
- f) All granular tickets shall be electronically printed and submitted to the Contract Administrator by 9:00 o'clock a.m. the following day with the total tonnage summarized. No late submissions will be accepted.
- g) All suppliers of granular material (quarries, gravel pits) must supply dry density values (Proctor) twice a year before allowing their material to be used on City projects.
- h) All recycled material used for trench backfill must be accompanied with a Proctor Value provided by the Supplier.

11. **CONCRETE**

The requirements of OPSS.MUNI 904, OPSS.MUNI 1002, OPSS.MUNI 1303, OPSS.MUNI 1350, **AND** OPSS 1212, 1301, 1302, 1305, 1306, 1308, 1315 and shall apply except as modified:

- a) Slag cement is not permitted in concrete mix on hot and windy days or after November 1st. The City will accept a maximum of 25% of slag by mass in the total quantity of Portland cement in the mix design. No fly

ash is permitted in any concrete mix design supplied to any City of Burlington projects.

- b) Crushed percentage for coarse aggregate shall not be less than 80%, shall be fractured on two faces, and must meet A.C.I. Gradation.
- c) Approved concrete mix design by Type "A" certified lab shall be submitted two weeks prior to structural pours over 10m³ including the cement content.
- d) All concrete plants shall be approved by the Contract Administrator or his representative.
- e) The Contact Administrator or his representative shall have access without prior notice to premises of the concrete plant for the purpose of inspection.
- f) Prices for preparation and placement of concrete in hot and cold weather including concrete, labour and materials forms shall be included in the unit cost items.
- g) OPSS.MUNI 1350.05.02 Performance Requirements for Concrete
The following table for cement content shall apply to concrete mixes unless otherwise specified:

Class of Concrete	Min. 30 Mpa @ 28 days
Cement Content	Type 10 (325 kg/m ³)
Coarse Aggregate	19 mm nominal maximum size
Air Content	6.5% +/- 1%
Maximum Slump	80 mm

12. **STORM SEWERS**

The requirements of OPSS.MUNI 517, OPSS.MUNI 518, OPSS.MUNI 904, OPSS.MUNI 905, OPSS.MUNI 1002, OPSS.MUNI 1004, OPSS.MUNI 1303, OPSS.MUNI 1350, OPSS.MUNI 1440, OPSS.MUNI 1820 OPSS.MUNI 410, OPSS.MUNI 501, OPSS.MUNI 510, **AND** OPSS 407, 408, 503, 504, 506, 507, 514, 515, 516, 538, 565, 570, 1301, 1302, 1351, 1810, , 1830, 1840, 1841, 1850, shall apply except as modified herein:

- a) No asbestos pipe will be accepted.
- b) All polyvinyl chloride and high density polyethylene pipes have to be accompanied by a certificate indicating that the product is produced as per ASTM D 2321, D 2412, F 405, F 667-82, CGSR 41-G P-29m and

CGSB 41-GP-25, CSA B 182.2, B 182.3, B 182.4, ASTM D 3034, 679, F 794 and UNI-B-5, B-6 and B-9. Maximum size plastic pipe allowed: 450 mm.

- c) The Contract Administrator or his representative shall be allowed access to pipe production facilities without prior notice and will be provided with testing facilities and pipe specimens free of charge. He shall also have access to any test records that he may require.
- d) All concrete pipe and concrete box culvert manufacturing companies shall be approved by a prequalification committee that includes the MTO, MOE, MEA and OCPA and shall be inspected and approved by an independent consulting engineer reporting to the pre-qualification committee.
- e) All the trench backfill material shall be compacted to 100% standard proctor density on the travelled portion of the road and 95% standard proctor density on the untravelled portion of the road.
- f) The installation of all proposed storm sewer works, shall be paid for in the cost of the tendered items and shall include the following:
 - i) All labour, materials, equipment that may be required to complete the proposed work in its entirety to OPSS and City of Burlington specifications.
 - ii) Excavation of rock or any other materials that may be encountered and all necessary restoration of disturbed areas to their original condition.