These amendments apply to and are to be read in conjunction with the latest version of OPSS and OPSD. These specifications will be adopted in their entirety. Each Contract will have its specifications adapted to suit its design requirements as necessary.

VOLUME 1 GENERAL & CONSTRUCTION SPECIFICATIONS

Division 1 General Specifications – No amendments.

Division 3 Pavement (Flexible and Rigid)

OPSS 310 Construction Specification for Hot Mix Asphalt

310 Hot mix asphalt requirements shall comply with OPSS 310 except where superceded by Contract Special Provisions – refer to Contract Documents.

Division 4 Drainage, Watermains and Utility

OPSS 407 Construction Specification for New Maintenance Hole, Catch Basin, Ditch Inlet and Valve Chamber Installation

407.05.05 Precast concrete collars are permitted for temporary adjustments only. Rubber and HDPE adjustment units are not permitted. Frames are to be set in concrete.

407.07.16 All permanent adjustments are to be poured in place concrete.

407.07.19 New manholes - 1st step to be 450 mm (+ 40 mm) from finished road grade, however existing rebuilds to be 450 mm (+ 150 mm) from finished road grade.

407.07.21 To conform to City Specifications and/or Contract Documents.

407.07.22

407.07.23

OPSS 412 Construction Specification for Sewage Forcemain Installation in Open Cut

412.05 Acceptable materials shall be identified by the Contract Documents.

412.05.04 Polyvinyl chloride pressure pipe only permitted where specified in Contract Documents.

412.05.05 Polyethylene plastic pressure pipe only permitted where specified in Contract Documents.

412.05.06 Steel pipe is acceptable in Special Projects only as per the Contract Documents.

412.05.07 Valve type to be selected from the Approved Products List or as specified in the contract documents. Valve operators - conform to City Standard and operating torque specifications.

412.05.07.04 Knife Gate Valves acceptable where specified in the Contract Documents.

412.05.07.05 Air and Vacuum valves - conform to City Specifications, double acting kinetic valves only selected from Approved Sewer Products List.
Pipe bedding and backfill to conform to City Specifications, OPS not acceptable.

Superseded by the following:

Wherever it is required to deflect mechanical - joint pipe, the maximum amount of deflection in a joint in any direction, shall not exceed the limits shown on Tables 4.1 and 4.2.

**TABLE 4.1**

<table>
<thead>
<tr>
<th>NOMINAL PIPE SIZE (mm)</th>
<th>MAXIMUM PERMISSIBLE BEND ANGLE PER JOINT (Degrees)</th>
<th>MAXIMUM PERMISSIBLE DEFLECTION PER 5.49m LENGTH OF PIPE (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>5</td>
<td>87</td>
</tr>
<tr>
<td>150</td>
<td>4</td>
<td>70</td>
</tr>
<tr>
<td>200</td>
<td>3</td>
<td>52</td>
</tr>
<tr>
<td>250</td>
<td>3</td>
<td>52</td>
</tr>
<tr>
<td>300</td>
<td>3</td>
<td>52</td>
</tr>
<tr>
<td>350</td>
<td>2</td>
<td>35</td>
</tr>
<tr>
<td>400</td>
<td>2</td>
<td>35</td>
</tr>
</tbody>
</table>

Permissible Deflection in Tyton-Joint Pipe

Wherever it is required to deflect Tyton-Joint pipe, the maximum amount of deflection in a joint in any direction, shall not exceed the limits shown on the following table:

**TABLE 4.2**

<table>
<thead>
<tr>
<th>NOMINAL PIPE SIZE (mm)</th>
<th>MAXIMUM PERMISSIBLE BEND ANGLE PER JOINT (Degrees)</th>
<th>MAXIMUM PERMISSIBLE DEFLECTION PER 5.49m LENGTH OF PIPE (mm)</th>
<th>MINIMUM PERMISSIBLE RADIUS OF CURVE (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>3</td>
<td>290</td>
<td>103</td>
</tr>
<tr>
<td>150</td>
<td>3</td>
<td>290</td>
<td>103</td>
</tr>
<tr>
<td>200</td>
<td>3</td>
<td>290</td>
<td>103</td>
</tr>
<tr>
<td>250</td>
<td>3</td>
<td>290</td>
<td>103</td>
</tr>
<tr>
<td>300</td>
<td>3</td>
<td>290</td>
<td>103</td>
</tr>
<tr>
<td>350</td>
<td>2.5</td>
<td>240</td>
<td>125</td>
</tr>
<tr>
<td>400</td>
<td>2.5</td>
<td>240</td>
<td>125</td>
</tr>
</tbody>
</table>
412.07.14.03 PVC & PE pipe deflections to be 1/2 of manufacturer’s recommendations.
412.07.14.04

412.07.17 Hydrostatic Testing

412.07.17.01 All flushing, cleaning, swabbing and hydrostatic Leakage testing shall be in accordance with Form 400, Appendix A and Contract Documents.

OPSS 416 Construction Specification for Pipeline and Utility Installation by Jacking and Boring

416.07.05 Pipe Installation as per design requirements. Space between pipe and wall to be filled with slurry, sand or grout, as specified in Contract Documents. Hardwood skids to be steel strapped prior to jacking.

416.07.07 Cathodic protection shall be provided on the casing pipe where specified in the Contract Documents.

Division 5 Miscellaneous – No amendments.

Division 6 Electrical - This entire section will be adapted to suit Contract requirements.

OPSS 603 Construction Specification for the Installation of Ducts

OPSS 616 Construction Specification for Footings and Pads for Electrical Equipment

Specification acceptable, shall be superseded by City of Hamilton Traffic Department Drawing No. DT:0111-01 and Contract Documents where applicable.

Division 7 Traffic Safety – No amendments.

Division 8 Environmental and Landscape

OPSS 801 Construction Specification for the Protection of Trees

801 Acceptable with amendments by City of Hamilton Tree By-Law and Contract Documents.

Division 9 Structural - No amendments.

VOLUME 2 MATERIAL SPECIFICATIONS

For revisions to OPSS Materials Specifications, refer to the Contract Documents and the following:

Form 600 - Specification for Granular Fill Materials
Form 700 - Specification for Portland Cement Concrete
Form 800 – Specification for Hot Mix Asphalt
Form 900 – Specification for Standard Compaction Requirements
VOLUME 3  DRAWINGS FOR ROADS, BARRIERS, DRAINAGE, SANITARY SEWERS, WATERMAINS AND STRUCTURES (OPSD)

Division 100  Abbreviations
Abbreviations and legends will be a combination of OPSS, OPSD and City Specifications used and denoted as required.

Division 200  Grading

Division 300  Side Entrances
Delete expansion joint material in OPSD 310.010, 310.020 and 310.050 except as directed by the City.

OPSD 310.030 - Refer to RD-124, Sheets 1 - 3
OPSD 310.040 – Refer to RD102.02

Division 400  Frames and Grates
Frames and Grates shall be as listed in the applicable Approved Product List(s) or Contract Documents.

Division 500  Paving
509.010 shall be read in conjunction with RD-100.01 and RD-100.02

Division 600  Curbs and Gutters
Curbs and gutter shall be as specified in Contract Documents.

Division 700  Catch Basins and Manholes
OPSD 701.010, 701.011, 701.012, 701.013, 701.014, 705.015, 705.010 and 705.020 are all acceptable with a goss trap (SEW-304)

Delete OPSD 708.01

Division 800  Culverts and Drains
Delete: all 802 series and 805.02, 806.02, 806.04, 806.06, 807.03, 807.04 and 807.05

Division 900  Fencing, Guide Rails
All acceptable.

Division 1000  Sanitary Sewers, Manholes and Catch Basins
OPSD 1003.010 permitted
OPSD 1003.020, 1003.030, 1003.031, and 1006.010 not permitted.

Division 1100  Watermains
OPSD 1104.02 and 1109.011 permitted
Remaining 1100 drawings are superceded by Hamilton Standard Watermain Drawings (WM Series).
VOLUME 4   DRAWINGS FOR ELECTRICAL WORK

All specifications and drawings for electrical works shall be in accordance with the Contract Documents.

VOLUME 5
Not applicable.

VOLUME 6
Not applicable.

VOLUME 7   MUNICIPAL-ORIENTED OPS GENERAL CONDITIONS OF CONTRACT AND GENERAL & CONSTRUCTION SPECIFICATIONS

OPSS.MUNI 100   OPS General Conditions of Contract
Not applicable, refer to Contract Documents.

Division 2   General Grading

OPSS.MUNI 206   Construction Specification for Grading
206.07.01.07   Grading tolerances to "match existing line and grade", or as specified in the contract documents.
206.09   "Measurement For Payment" shall not apply. Excavation and/or break out limits shall be as defined by the Measurement For Payment Drawings RD-119.01 to RD-119.04 inclusive or as specified in the Contract Documents.

Division 4   Drainage, Watermains and Utility

OPSS.MUNI 401   Construction Specification for Trenching Backfilling and Compacting
401.07.13   Superseded by Form 300.22.01 and Contract Documents

OPSS.MUNI 403   Construction Specification for Rock Excavation for Pipelines, Utilities and Associated Structures in Open Cut
403.07.02   Superseded by City Blasting and Use of Explosives Form 300.35

OPSS.MUNI 410   Construction Specification for Pipe Sewer Installation in Open Cut
Acceptable, payments for dual sewer will be used when applicable.

OPSS.MUNI 441   Construction Specification for Watermain Installation in Open Cut
For all amendments to OPSS 441, refer to Form 400 - Specification for the Installation of Watermains and Appendix A.

VOLUME 8   MUNICIPAL-ORIENTED MATERIAL SPECIFICATIONS

OPSS.MUNI 1101   Material Specification for Performance Graded Asphalt Cement
As modified by Form 800 and Contract Documents.
OPSS.MUNI 1151  Material Specification for Superpave and Stone Mastic Asphalt Mixtures
As modified by Form 800 and Contract Documents.