Appendix D

Temporary Backfill Restoration

CROSS SECTION FOR TEMPORARY RE-INSTATEMENT THROUGH AN ARTERIAL ROAD

CROSS SECTION FOR TEMPORARY RE-INSTATEMENT THROUGH A LOCAL ROAD

Exemptions from the minimum clearance may be granted, at the discretion of the affected plant owners and the approval of the City of Hamilton’s Corridor Management Section.

City of Hamilton
Public Works Department

TEMPORARY RE-INSTATEMENT OVER UTILITY CUTS

DIMENSIONS SHOWN ARE IN MILLIMETRES (UNLESS OTHERWISE NOTED) (N.T.S.)

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ROW Utility Installation and Permit Manual

Engineering Services
Geomatics & Corridor Management

CROSS SECTION FOR TEMPORARY RE-INSTATEMENT THROUGH A SIDEWALK OR CONC. ALLEYWAY

CROSS SECTION FOR TEMPORARY RE-INSTATEMENT THROUGH A SODDED AREA

Exemptions from the minimum clearance may be granted, at the discretion of the affected plant owners and the approval of the City of Hamilton's Corridor Management Section

City of Hamilton
Public Works Department

TEMPORARY RE-INSTATEMENT OVER UTILITY CUTS

DIMENSIONS SHOWN ARE IN MILLIMETRES UNLESS OTHERWISE NOTED (N.T.S.)

DATE: June 2013

REV No. FORMERLY:

HAMILTON STD No. D2

July 2013
## Appendix D

### Standard Compaction Requirements

<table>
<thead>
<tr>
<th>Material</th>
<th>Location / Use</th>
<th>Minimum Specified Compaction</th>
<th>Specification Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Mix Asphalt</td>
<td>Pavement Structures on Roads and Paved Parking Areas</td>
<td>97% MARSHALL DENSITY</td>
<td>OPSS 310</td>
</tr>
<tr>
<td>Granular “A” Base Course</td>
<td>Road, Curb, Sidewalk, and Bike Path Construction</td>
<td>100% SPMDD</td>
<td>OPSS 501</td>
</tr>
<tr>
<td>Granular “B” Sub-Base</td>
<td>Road Construction</td>
<td>100% SPMDD</td>
<td>OPSS 501</td>
</tr>
<tr>
<td>Granular Backfill Form 600</td>
<td>Trench Backfill for Sewers, Watermains, Utilities, Catchbasins, Manholes, Valve Chambers</td>
<td>95% SPMDD</td>
<td>OPSS 514 OPSS 516</td>
</tr>
<tr>
<td>Earth, Soils, and/or Native Materials</td>
<td>Trench Backfill for Sewers, Watermains, Utilities, Catchbasins, Manholes, Valve Chambers</td>
<td>95% SPMDD</td>
<td>OPSS 514 OPSS 516</td>
</tr>
<tr>
<td></td>
<td>Embankment Fill and Subgrade Material for Pavements, Sidewalks, and Bike Paths</td>
<td>95% SPMDD</td>
<td>OPSS 501</td>
</tr>
<tr>
<td></td>
<td>General Fill for Landscaped Areas</td>
<td>90% SPMDD</td>
<td>See Contract Documents</td>
</tr>
<tr>
<td>Granular Backfill around Structures</td>
<td>Fill next to Footings, Bridge Abutments, and behind Retaining Walls</td>
<td>100% SPMDD</td>
<td>OPSS 514</td>
</tr>
<tr>
<td>Granular Bedding</td>
<td>Pipe Bedding for Watermains and Sewers</td>
<td>95% SPMDD</td>
<td>FORM 600 OPSS 701</td>
</tr>
</tbody>
</table>

**Notes:**

1) Unless otherwise directed, compaction will be assessed using a nuclear density gauge, as per ASTM D2922 and D3017.
2) SPMDD refers to Standard Proctor Maximum Dry Density as determined by MTO laboratory test method LS-706.
Compaction Methods

All contract references to % compaction or maximum compacted densities by whatever method specified, shall be interpreted as being “the maximum dry density as determined by current City procedures”.

Current City procedures shall mean the method described in the current Standards:

D.698-70  Moisture – Density Relations of Soils Using 5.5 lb Hammer and 12” Drop
D.2922-71  Determining the Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
D.2950-71T  Density of Bituminous Concrete in Place by Nuclear Methods

As an expedient, the City may determine the (degree of compaction) maximum dry density by “the constant dry weight methods” as set out in D.H.O. Research Report No. 141, together with such variations of the above methods as the City may from time to time introduce.

Any such deviation between current City procedures and methods formerly specified or any modifications to current City procedures which may be introduced shall be for the purpose of increasing the reliability of the test result and speed in field testing and will result in no increase in the compactive effort required.

All backfill materials shall be placed in layers not exceeding 300 mm (12”) in depth and compacted to a minimum of 95% Standard Proctor Dry Density – see chart on previous page.