210 Structure Backfill

210.1 Description
(1) This section describes furnishing backfill materials and backfilling excavations for bridges, box culverts, retaining walls, and structural plate pipes and pipe arches.

210.2 Materials
210.2.1 General Requirements
(1) Conform to the definitions under 301.2. Furnish virgin materials consisting of either sand-sized particles or sand-sized particles mixed with gravel, crushed gravel, or crushed stone. Do not use crushed concrete or reclaimed asphalt.
(2) Ensure that the material provided has a liquid limit less than or equal to 25 and a plasticity index less than or equal to 6. The contractor may substitute type A for type B material.

210.2.2 Gradation
(1) Furnish granular backfill material with a gradation conforming to the following:

<table>
<thead>
<tr>
<th>SIEVE</th>
<th>TYPE A</th>
<th>TYPE B</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-inch</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>No. 4</td>
<td>25 - 100</td>
<td>25 - 100</td>
</tr>
<tr>
<td>No. 40</td>
<td>0 - 75</td>
<td></td>
</tr>
<tr>
<td>No. 100</td>
<td>0 - 15</td>
<td></td>
</tr>
<tr>
<td>No. 200</td>
<td>0 - 8.0</td>
<td>0 - 15.0</td>
</tr>
</tbody>
</table>

210.2.3 Sampling and Testing
(1) The department will sample and test material according to the following:
   - Sampling\[1\] ........................................................................................................................................ AASHTO T2
   - Percent passing the 200 sieve ........................................................................................................ AASHTO T11
   - Gradation\[1\] ..................................................................................................................................... AASHTO T27
   - Liquid limit ....................................................................................................................................... AASHTO T89
   - Plasticity index and plastic limit ...................................................................................................... AASHTO T90

\[1\] As modified in CMM 860.

210.2.4 Source
(1) Except as specified for materials used from roadway excavation under 104.8, the contractor is responsible for negotiating with property owners to obtain granular material.
(2) Remove the granular material and restore the pit to a final condition as specified for final cleanup and material disposal under 104.9 and 208.3.
(3) In addition to removing the topsoil, substantially remove any overburden of soil, or earthy materials passing the No. 200 sieve before excavating the granular material.
(4) Restore the site by replacing or disposing of the removed overburden and ensure that disposal sites are neatly constructed.

210.3 Construction
(1) Place and compact as specified in 206.3.13. If structure backfill is specified for other applications, place and compact as specified for those applications.

210.4 Measurement
(1) The department will measure the Backfill Structure bid items by the ton or cubic yard acceptably completed. The department will only include material placed within the limits and in the places the plans show, the contract designates, or the engineer directs. For minor quantities, the engineer may measure by the cubic yard in the vehicle. The department may convert the measurement between weight and volume as specified in 109.1.
(2) For measurement by the cubic yard, the department will determine volume in its final position.
(3) For measurement by the ton, the department will determine weight based on contractor-provided
tickets submitted daily. Submit tickets as specified in 109.1.4.2. For material with more than 7 percent
moisture, the department will reduce the ticket weight by the weight of water exceeding 7 percent. The
department will determine moisture content as a percent of dry weight.

210.5 Payment

(1) The department will pay for measured quantities at the contract unit price under the following bid
items:

<table>
<thead>
<tr>
<th>ITEM NUMBER</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>210.1100</td>
<td>Backfill Structure Type A</td>
<td>CY</td>
</tr>
<tr>
<td>210.1500</td>
<td>Backfill Structure Type A</td>
<td>TON</td>
</tr>
<tr>
<td>210.2100</td>
<td>Backfill Structure Type B</td>
<td>CY</td>
</tr>
<tr>
<td>210.2500</td>
<td>Backfill Structure Type B</td>
<td>TON</td>
</tr>
</tbody>
</table>

(2) Payment for the Backfill Structure bid items is full compensation for providing structure backfill. The
department will pay for the Backfill Structure bid items as specified in 209.5 for Backfill Granular
except; if the contractor substitutes type A for type B material as allowed under 210.2, the department
will pay at the contract unit price for Backfill Structure Type B.