206.01 Description. This section describes the following:

(A) Excavating and backfilling to depths and lines established for drainage structure foundations.

(B) Excavating and backfilling trenches for culverts, structural plate culverts, culvert headwalls, grouted rubble paving, hand-laid and dumped rip-rap, and drainage structures.

(C) Disposing of surplus material from excavations.

206.02 Materials.

Structure Backfill Material 703.20
Trench Backfill Material 703.21
Cullet and Cullet-Made Materials 717

Structure and trench backfill material shall include mixture of aggregate and cullet. When cullet is not produced on the project island, or material unit price of cullet is greater than material unit price of structure backfill or greater than material unit price of trench backfill, cullet may be excluded for that backfill application. Before excluding cullet, submit availability and pricing documentation.

Controlled Low Strength Material (CLSM) in accordance with Section 314 – Controlled Low Strength Material (CLSM) for Utilities and Structures may be used in place of trench and structure backfill material, subject to the Engineer’s acceptance. Where CLSM is allowed, provide drainage system to accommodate underground water seepage. CLSM will not be allowed as trench backfill when installing aluminum and aluminum-coated pipe culverts.

206.03 Construction.

(A) Structure and Trench Excavation.

(1) General. Notify the Engineer 10 working days before excavating for drainage structures and culverts.

The Contractor shall be responsible for the stability of temporary open cuts during construction of structures or trenches and shall take appropriate measures to meet OSHA requirements.
Keep foundation excavation dry by draining, bailing, pumping, driving sheathings, or other methods accepted by the Engineer.

In excavation operations, do not disturb ground below bottom of bed course material. If ground below bottom of bed course material is disturbed, excavate disturbed ground until undisturbed ground is reached. Backfill this area with Class D concrete to required bottom elevation of bed course material.

Remove solid rock encountered during excavation from culvert invert elevation to bottom grade of bed course material. Remove saturated or organic material, material containing debris or trash, and other unsuitable material, to width equal to culvert trench width and to depth ordered by the Engineer. Backfill rock-removal and unsuitable material excavation with bed course material in maximum 6-inch lifts, and compact to relative compaction of not less than 95 percent.

When material from excavation does not meet quality requirements specified for backfill in accordance with Subsection 206.02 - Materials, furnish conforming material, as required.

Deposit remaining structure or trench excavation material that is not used as backfill, in roadway embankments in accordance with Subsection 203.03(B)(1) - Selected Material. Dispose of surplus selected material in accordance with Subsection 203.03(B)(3) – Surplus Selected Material.

(2) Culverts In Embankment Fill. Except for structural plate culverts, culverts installed above existing ground shall be considered to be culverts placed in embankment fill and shall be installed in accordance with requirements of this subsection.

When culverts are placed in embankment fill, excavate after constructing embankment in accordance with Subsection 203.03(C) - Embankment Construction and this subsection. Place embankment material on each side of culvert for a distance of not less than 5 times outside diameter or span, to height of either 0.5 times outside diameter or rise of culvert, or to required finish grade elevation, whichever is less.

Excavate culvert trench through constructed embankment.

(3) Structural Plate Culverts in Embankment Fill. Structural plate culverts installed above existing ground shall be considered to be structural plate culverts placed in embankment fill and shall be installed in accordance with requirements of this subsection.
When structural plate culverts are placed in embankment fill, construct embankment after assembling and installing culvert. Place backfill material around culvert and above top of culvert. Construct embankment to width on both sides of culvert equal to at least one diameter or span of culvert. Perform embankment work in accordance with Subsection 203.03(C) - Embankment Construction and this section.

(B) Structure and Trench Backfill. For cast-in-place drainage structures, do not deposit fill material against back of outside walls until test samples indicate that concrete has developed strength required in Subsection 503.03(E) - Loading.

Cure test samples under conditions similar to those affecting the structure. Continue backfilling so that excessive unbalanced loads are not introduced against the structure.

Place backfill material in uniform horizontal layers not exceeding 8 inches in loose thickness before compaction. Moisten and compact each layer of backfill until relative compaction of not less than 95 percent is achieved in accordance with Subsection 203.03(C)(2) – Relative Compaction Test. The Engineer may reduce 95 percent compaction requirement in situations where such compaction is not feasible.

When the Engineer cannot use field density test, compact each layer of backfill with vibratory, or other equipment acceptable to Engineer, on granular backfill material.

When compacting structure and trench backfill for metal pipes, do not use water containing excessive quantity of salt or other deleterious substances.

Compaction of backfill material by ponding or jetting will not be allowed.

When required, place sufficient fill at culverts ahead of other grading operations to permit public traffic to cross.

Compact backfill material in the following areas to a relative compaction of not less than 90 percent:

(1) Cement rubble masonry and concrete headwalls.

(2) Drainage facilities in median areas or in traffic interchange loops.
206.04

206.04 Measurement. Excavation will be paid for on a lump sum basis. Measurement for payment will not apply.

206.05 Payment. The Engineer will pay for the accepted excavation on a contract lump sum basis. Payment will be full compensation for the work prescribed in this section and the contract documents.

The Engineer will pay for the following pay item when included in the proposal schedule:

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excavation for ____________</td>
<td>Lump Sum</td>
</tr>
</tbody>
</table>

The Engineer will pay for removal of material from depths greater than 3 feet below depths indicated in the contract documents in accordance with Subsection 104.02 - Changes.

The Engineer will not pay for structure and trench backfill for culverts and structural plate culverts separately and will consider the cost for those items as included in the contract prices for the various culvert contract pay items. The cost is for the work prescribed in this section and the contract documents.

END OF SECTION 206