Amend **Section 206 - Excavation and Backfill for Conduits and Structures** to read as follows:

"SECTION 206 - EXCAVATION AND BACKFILL FOR CONDUITS AND STRUCTURES

206.01 Description. This section is for:

(1) excavation to the depth and lines established for the foundations of bridges, and other structures;

(2) excavation and backfilling trenches for culverts, structural plate culverts, utility pipes (including water and sewer lines), concrete and cement rubble masonry headwalls, grouted rubble paving, hand-laid and dumped riprap;

(3) other excavation specifically designated in the contract as structure excavation;

(4) backfilling according to this section and Section 624 - Water System and Section 625 - Sewer System;

(5) disposal of surplus material from the structure excavation;

(6) bailing, draining, sheathing and the construction of cofferdams, if found necessary, and the subsequent removal of sheathing and cofferdams;

(7) work associated with dewatering activities and complying with the conditions of the National Pollutant Discharge Elimination System (NPDES) Permit for Dewatering Activities.

Excavation for structures does not include the excavation:

(1) of post holes for fences, gates, or similar items;

(2) necessary to properly set curbs, paved gutters, headers, pavement or base course forms.

206.02 Materials. Materials shall conform to the following:

Filter Material	703.18
Structure Backfill Material	703.20
Trench Backfill Material	703.21

The Contractor may use Section 313 - Controlled Low Strength Material (CLSM) in place of trench and structure backfill material subject to the Engineer's acceptance. Do not use CLSM as trench backfill when installing aluminum and aluminum coated pipe culverts. When using CLSM, the Engineer will consider CLSM as the required backfill.

206.03 Construction Requirements.

(A) General. Notify the Engineer 10 working days before excavation for structures, so that the Engineer can take cross-sectional elevations and measurements of the undisturbed ground.

Excavate foundations to the elevations according to the particular type of structure to be placed.

Do not disturb the ground below the elevations shown in the contract in structure excavation operations. When disturbing such ground below the required elevations, excavate the disturbed ground until the undisturbed ground is reached. Backfill this area with Class D concrete until the required foundation footing elevation is reached. This work shall be at no cost to the State.

Keep the foundation dry by draining, bailing, pumping, driving sheathings or constructing cofferdams and cribs.

When the material from excavation does not meet the quality requirements specified for the backfill, furnish such suitable material as required.

Use or dispose surplus and suitable material from structure excavation remaining after completing backfilling according to Section 203 - Excavation and Embankment.

(B) Cofferdams. Carry cofferdams for foundation construction well below the bottom of the footings. Brace well and as watertight as practicable. Provide the interior dimensions of cofferdams sufficient clearance for driving piles, constructing forms and, when placing no seal, to permit pumping outside the forms.

When the clearance provided in the contract between the outside line of the footing and piles or interior wall or surface is not sufficient to permit the driving of piles or building of forms, the Contractor may provide such clearance. The Engineer will consider such enlargement over one foot outside the dimensions of the footing shown in the contract for the sole purpose of expediting the work of the Contractor and is of no

value to the State. The Engineer will not include such excavation and backfill for payment.

Correct or enlarge cofferdams that are tilted or moved out of position during the process of sinking. Such work shall be at no cost to the State.

In tidal waters or in streams at a time of probable flood, vent cofferdam walls at low water elevation to insure full hydrostatic head both inside and outside the cofferdam when pouring and setting of seals.

The Engineer will not permit shoring in cofferdams that will induce stress, shock, or vibration in the permanent structure.

When permitted, cross struts or bracing may extend through foundation concrete. The Engineer will permit such struts or bracing below low water to remain in place. Remove struts or bracing above low water. Fill the volume with concrete of the same mix as that specified for the surrounding concrete.

If requested by the Engineer, submit drawings and design calculations showing the proposed method of cofferdam construction and other details left open to its choice or not fully shown on the contract for substructure work. The type and clearance of cofferdams shall be subject to acceptance.

Remove the cofferdams with sheathing and bracing to the level one foot below the streambed at no cost to the State after the completion of the substructure. Remove the cofferdam so as not to disturb or mar the finished concrete or masonry.

(C) Foundation Treatment. Uncover the rock fully when footing concrete or masonry is to rest upon rock. Remove the surface to a depth sufficient to expose sound rock. Level off the rock roughly or cut and roughen to approximate horizontal and vertical steps.

Grout seams in rock under pressure. The Engineer will pay the cost as extra work according to Subsection 104.03 - Extra Work.

Do not disturb the bottom of the excavation when not using piles and footing concrete or masonry is to rest on an excavated surface other than rock. Do not make the final removal of the foundation material to grade until just before placing the concrete or masonry.

Complete the excavation for piers and abutments to the bottom of the footings before driving piles therein. Remove excess materials

remaining in the excavation after pile driving to the elevation of the bottom of the footings.

The Engineer will permit excavating a sufficient distance below the bottom of the footing as shown on the contract at no cost to the State when using piles. When the ground has risen above plan grade after driving the piles, remove the surplus material at no cost to the State. When the surface of the ground is below plan grade after driving the piles, backfill and compact to the plan grade with acceptable material at no cost to the State.

(D) Inspection. When the Engineer needs to determine the character of the foundation material, dig test pits and make test borings and foundation bearing tests. The Engineer will pay the cost according to Subsection 104.03 - Extra Work.

Notify the Engineer for inspecting and accepting the elevation and character of the foundation before placing concrete or masonry in the footing whenever completing the structure excavation to the foundation grade of a footing.

(E) Structure and Trench Backfill. Do not deposit material in fills until the test samples imply that the concrete has developed a strength required in Subsection 503.03(E) - Loading against the back of:

(1) concrete abutments,

(2) piers,

(3) concrete retaining walls, or

(4) the outside walls of concrete box culverts

Cure the 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 obtaining a relative compaction of not less than 95%. The Engineer may reduce compaction requirement of 95% in situations where such compaction is not feasible such as in footings located in running streams or in swampy areas. The Engineer will be the sole judge of the degree of reduction. Backfill the footings with rockfill instead of the 95% compaction requirement in stream beds subject to appreciable scour.

When the Engineer cannot use the field density test, compact each layer of backfill with vibratory or suitable equipment on granular backfill material. Test methods to decide maximum densities and relative compaction according to Subsection 106.09 - Special Test Methods.

Do not use water containing an excessive quantity of salt or other deleterious substances for compaction of structure and trench backfill for metal pipes.

The Engineer will not permit compaction of backfill material by ponding or jetting.

When required, make sufficient fill at culverts and bridges ahead of other grading operations to permit public traffic to cross. Compact structure backfill at the following areas to a relative compaction of not less than 90%:

(1) Oversized drains not beneath surfacing;

(2) Footing for slope protection, slope paving, and aprons;

(3) Headwalls, endwalls, and culvert wingwalls;

(4) Retaining walls except portions under surfacing and crib wall;

(5) Inlets in median areas or in traffic interchange loops;

(6) Footings not beneath surfacing;

(7) Other locations where the plans show 90% relative compaction for structure backfill.

(F) Filter Material. Place filter material for backfill at bridge abutments, and retaining walls according to the contract.

Make the subgrade as impervious as possible by pneumatic tamping where the material is placed. Compact the filter material thoroughly in layers with the backfill.

(G) Dewatering Activities. If excavation or backfilling operations requires dewatering, and the Contractor elects to discharge dewatering effluent into Waters of the United States or existing drainage systems, the Contractor shall obtain a National Pollutant Discharge Elimination System (NPDES) Activity Dewatering Permit from the Department of Health, Clean Water Branch (DOH-CWB). Do not begin dewatering

activities until the DOH-CWB has issued a Notice of General Permit Coverage (NGPC). Dewatering operations shall be according to the conditions in the NGPC. Submit a copy of the NPDES Activity Dewatering Application and Permit to the Engineer.

206.04 Method of Measurement. The Engineer will not measure structure excavation and structure backfill for concrete end posts.

206.05 Basis of Payment.

(A) Structure Excavation. The Engineer will not pay for the accepted structure excavation separately. The Engineer will consider the cost for structure excavation as included in the contract price for concrete end posts.

The cost includes excavating; keeping the foundation dry; using or disposing surplus and suitable material; providing cofferdams; submitting drawings showing the proposed method of cofferdam; notifying the Engineer for inspecting and accepting the elevation and character of the foundation; and furnishing labors, materials, tools, equipment, and incidentals necessary to complete the work.

(B) Structure Backfill. The Engineer will not pay for the accepted structure backfill separately. The Engineer will consider the cost for structure backfill as included in the contract price for concrete end posts.

The cost includes using suitable material for backfilling; testing the samples; placing backfill material in uniform horizontal layers; moistening and compacting each layer of backfill; and furnishing labors, materials, tools, equipment, and incidentals necessary to complete the work.

END OF SECTION 206