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:

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) 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.

(C) 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.

(D) 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.

(A) Structure Excavation. The Engineer will measure structure excavation per cubic yard. The limits for payment shall be according to the contract or as specified by the Engineer.

In the case of excavation for bridge, retaining wall, culvert headwalls, and other structures, no deduction in pay quantities will be made where the Contractor does not choose, subject to the Engineer's acceptance, to excavate material that is outside the limits of the actual structure but within the limits of excavation shown in the contract.

The Engineer will not measure beyond the limits of concrete neat pour lines.

The lower limit for payment of structure excavation for foundations for bridges, retaining walls, culvert headwalls, and other structures shall be the bottom of the completed foundations.

When specified by the Engineer to increase the depth of structure excavation below the depth shown in the contract, the Engineer will measure the material removed to a depth of not more than three feet below said depth at the contract price per cubic yard for structure excavation.

The Engineer will measure for the removal of material from depths greater than three feet below said depth as extra work according to Subsection 104.03 - Extra Work. The Contractor has the option of measuring the material removed at the contract price per cubic yard for structure excavation before the excavation is made.

The Engineer will not make compensation for the:

(1) removal and disposal of material that may come into an excavation from outside the designated limits;

(2) the removal and disposal of swell material resulting from the driving of piles in an excavation;

(3) furnishing and placing backfill material in an excavation that is below the designated grade.

The Engineer will not include such quantities in the quantities of structure excavation to be paid for.

The upper limit for payment of structure excavation shall be the original ground surface before the start of construction operations with the following exceptions:

(1) When structure excavation is done within the roadway excavation area or ditch and channel excavation area, the upper limit shall be the planes of the bottom and side slopes of said areas excavated shown on the contract or as specified by the Engineer.

(2) When structure excavation is made in new embankments, the upper limit shall be the planes of the new embankment at the elevation shown in the contract or specified by the Engineer for construction ahead of doing the required structure excavation. The upper limit shall be the surface of the embankment at the time the excavation is made.

Except for culverts, the lateral limits for payment of structure excavation including cement rubble masonry and concrete headwalls shall be the vertical surfaces one foot outside the neat lines of the footings.

For culverts, except for structural plate culverts, the lateral limits for payment of structure excavation shall be 18 inches outside the external limits of the pipe. For structural plate culverts, the lateral limits for payment shall be three feet outside the external limits of the pipe.

The lateral limits for payment of structure excavation for a battery of two or more culverts (culverts placed next to each other and intended to serve as a unit), except for structural plate culverts, shall be 18 inches outside the external limits of the two outer pipes. The lateral limits for payment of structure excavation shall be three feet outside the external limits of the two outer pipes for structural plate culverts.

For culverts and structural plate culverts, the lower limits for payment shall be the bottom elevation of the bed course material, and the upper limits shall be the existing ground.

For culverts and structural plate culverts in embankment fill, the lateral, lower, and upper excavation limits shall be measured after the embankment is completed according to Section 603.03(A).

The Engineer will not apply these requirements where the spaces between the pipes permit the use of compacting equipment such as power rollers. Treat each pipe as a single culvert where using such equipment.

The Contractor shall remove soft, spongy, or unsuitable material from the width equal to the span or diameter of the culvert plus one diameter outside the lateral limits of the culvert when encountering such material.

When using CLSM for backfill, the trench width may be reduced to the outside diameter or span of the culvert plus six inches on each side for culverts less than or equal to 42 inches in diameter or span, and 12 inches on each side for culverts greater than 42 inches in diameter or span.

(B) Structure Backfill. The Engineer will not measure structure backfill for payment.

(C) Structure and Trench Backfill for Culverts. The Engineer will not measure structure and trench backfills for culverts other than structural plate culverts.

206.05 Basis of Payment.

(A) Structure Excavation. The Engineer will pay for the accepted structure excavation at the contract unit price per cubic yard complete in place.

The price includes full compensation for excavating for structures and culvert trenches; keeping the foundation dry, placing and compacting surplus structure excavation in roadway embankments or disposing of the material along the roadway, providing cofferdams, notifying the Engineer for inspecting and accepting the elevation and character of the foundation; backfilling culvert trenches except for structural plate culverts; backfilling culvert trenches with CLSM except for structural plate culverts; furnishing and applying water for the compaction of structure backfill; testing the samples; placing backfill material in uniform horizontal layers; moistening and compacting each layer of backfill; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work.

If required, the price includes preparing an NPDES Dewatering Activities Permit application; obtaining a NPDES Permit Application (CWB-NOI Form G) from the Department of Health, Clean Water Branch; installing, operating, monitoring, and maintaining the dewatering activities; removing all equipment and facilities from the site; restoring the site to its original condition; and furnishing materials, equipment, tools, labor and other incidentals necessary to complete the work.

The Engineer will deduct the cost from the progress payment for citations received by the Department of Health for non-compliance with the NGPC.

(B) Structure Backfill for Wingwalls. The Engineer will not pay for structure backfill for wingwalls separately. The Engineer will consider the price for structure backfill for wingwalls incidental to structure excavation.

The price includes full compensation for using suitable material for backfilling structures and trenches; furnishing and applying water for the compaction of structure backfill; testing the samples; placing backfill material in uniform horizontal layers; moistening and compacting each layer of backfill; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work.

(C) Structure and Trench Backfill for Culverts. The Engineer will not pay for structure and trench backfill for culverts other than structural plate culverts. The cost shall be incidental to Structure Excavation.

The Engineer will make payment under:

Pay Item	**Pay Unit**
Structure Excavation for _____	Cubic Yard

END OF SECTION