Amend **Section 203 - Excavation and Embankment** to read as follows:

"SECTION 203 - EXCAVATION AND EMBANKMENT

203.01 Description. This section is for roadway excavation, embankment construction, and disposal of unsuitable or surplus excavated material.

(A) Roadway Excavation. Roadway excavation includes the use or disposal of materials of whatever character encountered in the work. Use the suitable material removed from excavation in the formation of embankment, subgrade, shoulders, slopes, bedding, and backfill for structures, and for other purposes shown on the plans or as specified by the Engineer.

(B) Embankment Construction. Embankment construction includes:

(1) preparing the embankment area;

(2) placing and compacting acceptable material within the project area where unsuitable material were removed; and

(3) placing and compacting of embankment material in holes, pits and other depressions within the project area.

203.02 Materials. None specified.

203.03 Construction Requirements. Clear and grub all areas requiring excavation, grading, and embankment according to Section 201 - Clearing and Grubbing. Excavate and embank roadways, intersections and entrances to a smooth and uniform surface. Excavate so as not to disturb the material outside the limits of slopes.

(A) Excavation. When encountering remains of prehistoric people's dwelling sites or artifacts of historical or archaeological significance, refer to Subsection 107.17(D) - Archaeological, Historic, and Burial Site Findings.

(B) Excavated Material.

(1) Selected Material. Selected material is suitable excavated material from areas within the highway right-of-way.

Use the selected material:

(a) for finishing the top portion of the roadbed,

(b) for constructing roadbed shoulders,

(c) for structure backfill,

(d) for erosion control,

(e) for other uses according to the plans, or

(f) as specified by the Engineer.

Place selected material on the roadbed according to Subsection 203.03(c) - Embankment Construction and selected topsoil for erosion control according to Section 209 - Erosion Control.

The selected material shall remain in place until the Contractor can haul, place, and compact it in final position. The Contractor may stockpile the material at specified locations for later placement in final position only if it is according to the contract. The stockpile locations shall be determined by the Contractor and accepted by the Engineer. The Engineer will not allow additional compensation for any delay or inconvenience in excavation caused by stockpiling the material.

The Engineer will not consider selected topsoil placed in windrows along the tops of roadway slopes for erosion control work as stockpiled material.

(2) Surplus Selected Material. Use surplus excavated material to uniformly widen the embankments, flatten the slopes, or dispose along the locations specified by the Engineer. Do not dispose surplus material above the grade of the adjacent roadbed. Complete the embankments before arranging the disposal of surplus excavation.

Do not dispose material unless authorized by the Engineer.

The quantity of surplus material, when shown, is only approximate. When disposing the surplus excavated material prematurely, replace the shortage of material at no cost to the State.

Unused surplus excavated material shall become the Contractor's property. Level or free the disposal area from depressions and humps upon completion of disposal operations.

(3) Unsuitable Material. Where excavation to the finished grade results in a subgrade or slopes of unsuitable soil, the Engineer

will require:

(a) removing of the unsuitable material and

(b) backfilling to the finished grade with acceptable material according to Subsection 203.03(c) - Embankment Construction.

The Engineer may designate as unsuitable those soils that cannot be properly compacted in embankment. Unsuitable material may include vegetable matter, garbage and junk piles, on the surface or buried. Unsuitable material shall become the property of the Contractor.

Conduct the operations so that the Engineer can take the necessary cross-sectional measurement before placing the backfill.

When the relative compaction of the original ground is less than the compaction shown in Subsection 203.03(C)(2)- Compaction of Embankment with Moisture and Density Control and Subsection 203.03(C)(3) - Compaction of Embankment without Moisture and Density Control, compact the upper 6 inches of the exposed original ground according to the contract.

(4) Highly Sensitive Soil. When soil, having a high moisture content, loses its stability and becomes plastic or muddy, the Engineer will allow such equipment and methods in excavating the material that will result in the least possible manipulation or churning of this material. The Engineer will not permit cable operated scrapers of the Sauerman type.

(C) Embankment Construction.

(1) General. Use only acceptable material in the construction of embankments. Do not place rocks, broken concrete, or other solid materials in embankment areas where driving piles.

When:

(a) placing and compacting material for embankment on hillsides and existing embankments, or

(b) building embankment half width at a time,

the Contractor shall continuously bench the slopes that are steeper

than four horizontal to one vertical (4H:1V) while bringing the work up in layers.

The Contractor may place excess material outside the embankment slopes and within the right-of-way provided the Engineer accepts such material and its location. Place the material to maintain a distance below the finished shoulder elevation. The Engineer will consider not placing excess material as specified above as surplus material. Refer to Subsection 203.03(B)(3) - Surplus Selected Material.

Place embankment material in horizontal layers not exceeding 8 inches in loose thickness. Compact as specified before placing the next layer. Spread each lift to get uniform thickness before compacting. Level and manipulate continuously to assure uniform density as the compaction of each layer progresses. Add or remove water to get the required density. Route construction equipment uniformly over the entire surface of each layer.

When embankment material:

(a) consists predominantly of rock fragments, hardpan or cemented gravel that cannot be broken readily and

(b) includes 25% or more of materials larger than 6 inches in greatest dimension,

the Contractor may place such material in the embankment in layers not exceeding three feet and shall uniformly distribute such material throughout the embankment. Do not construct the lifts above an elevation two and a half feet below the finished grade. Compose the balance of the embankment of suitable material smoothed and placed in layers not exceeding 8 inches in loose thickness. Compact as specified for embankments.

While depositing the embankment material to fill the interstices, place sufficient earth or other fine material around the large material. Produce a dense compact embankment. When earth or other fine material to fill the interstices is not available in excavation, the furnishing of such material shall be at no cost to the State.

Processing of embankment material to reduce maximum size of particles so that the Contractor can place the material in the specified lifts shall be at no cost to the State.

Whenever possible, deposit embankment material having an SE value of less than 10 in the lower portions of embankments. Do not place such material within three feet of planned finished grade. Break up clods or hard lumps of earth over 6 inches in greatest dimension before compacting material in embankment except as provided above.

Caves are often present in lava formations. The Engineer will decide if the caves are too close to the road surface. If too close, the Contractor shall open their tops. Fill and compact the cave and the hole formed in the top as required.

Until the Engineer makes final acceptance of the contract, the Contractor shall be responsible for the stability of the constructed embankments. Maintain the embankments to the grade and cross section shown in the contract. Replace portions that become displaced or damaged at no cost to the State.

The Engineer will consider shutting down the operation during heavy rain.

(2) Compaction Of Embankment Without Moisture And Density Control. Deposit embankment materials in layers not exceeding 8 inches in loose thickness before compaction except rock fills and the first layer of fills over swampy ground.

Compact rock embankments to the maximum compaction obtainable by routing the loaded hauling equipment over the entire width of the layer, supplemented by using acceptable rollers. Do not use rollers equipped with tamping studs or tamping rollers to compact rock fills.

Keep dumping and rolling areas separately. Do not cover the lift by another until securing compaction according to this subsection.

(3) Proof Rolling. When specified, the Contractor shall proof roll. The Engineer will pay according to the methods and equipment set forth.

203.04 Method of Measurement.

(A) Roadway Excavation. The Engineer will measure roadway excavation per cubic yard.

The Engineer will compute the quantities of roadway excavation by the

average end area method and centerline distances. The Engineer will not apply correction for curvature to the quantities within the roadway prism shown on the cross sections. The Engineer will make correction for curvature having a centerline radius of 1,000 feet or less in computing excavation quantities from outside the roadway prism where using the roadway centerline as a base.

When the Engineer cannot measure the roadway excavation quantities by the average end area method due to the nature of a particular operation or changed conditions, the Engineer will determine the method to get an accurate quantity estimate.

The Engineer will not measure for payment excavation that is more than the planned or authorized cross section except as provided in Subsections 203.03(A)(4) - Potential Slide Area, 203.03(A)(2) - Widening or Flattening and Steepening Cut Slopes, and 203.03(B)(3) - Surplus Selected Material. Backfill and compact unauthorized excavated areas to the original ground elevation at no cost to the State.

The Engineer will not measure stockpiling of selected material for payment.

(B) Embankment. The Engineer will not measure embankment for payment.

203.05 Basis of Payment.

(A) Roadway Excavation. The Engineer will pay for the accepted roadway excavation at the contract unit price per cubic yard.

The price includes full compensation for obliterating old roadways; preparing the subgrade; placing selected material in final position; disposing surplus excavation material; rounding of slopes; using water for compaction; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work.

The Engineer will not pay for stockpiling selected material or subsequently placing it in final position. The Engineer will consider payment for this work to be included in the contract unit price for roadway excavation.

The Engineer will consider full compensation to be included in the contract price for roadway excavation within the authorized lines and elevations for removing and disposing of material that may come into excavations for structures and drainage facilities.

When choosing to remove the rocks and lumps or break up hardened material and the contract specifies the source of the selected material, such work shall be at no cost to the State. When the contract does not specify the source of the selected material, the Engineer will pay this work as extra work as specified in Subsection 104.03 - Extra Work.

When specified, the Engineer will pay for:

(1) removing of the unsuitable material below the subgrade and

(2) backfilling and compacting to the finished grade with acceptable material.

(B) Embankment. The Engineer will not pay for embankments separately. The Engineer will consider the cost for constructing embankments included in the contract price for roadway excavation.

The price includes full compensation for drying embankment material; constructing earth dikes for roadway protection within or outside the highway right-of-way; placing and compacting acceptable material within the roadway area where the Contractor removed unsuitable fill foundation material; and furnishing labor, materials, tools, equipment, and incidentals necessary to complete the work.

The Engineer will make payment under:

Pay Item	**Pay Unit**
Roadway Excavation	Cubic Yard

END OF SECTION